S. PARADISO

United States
Department of
Agriculture

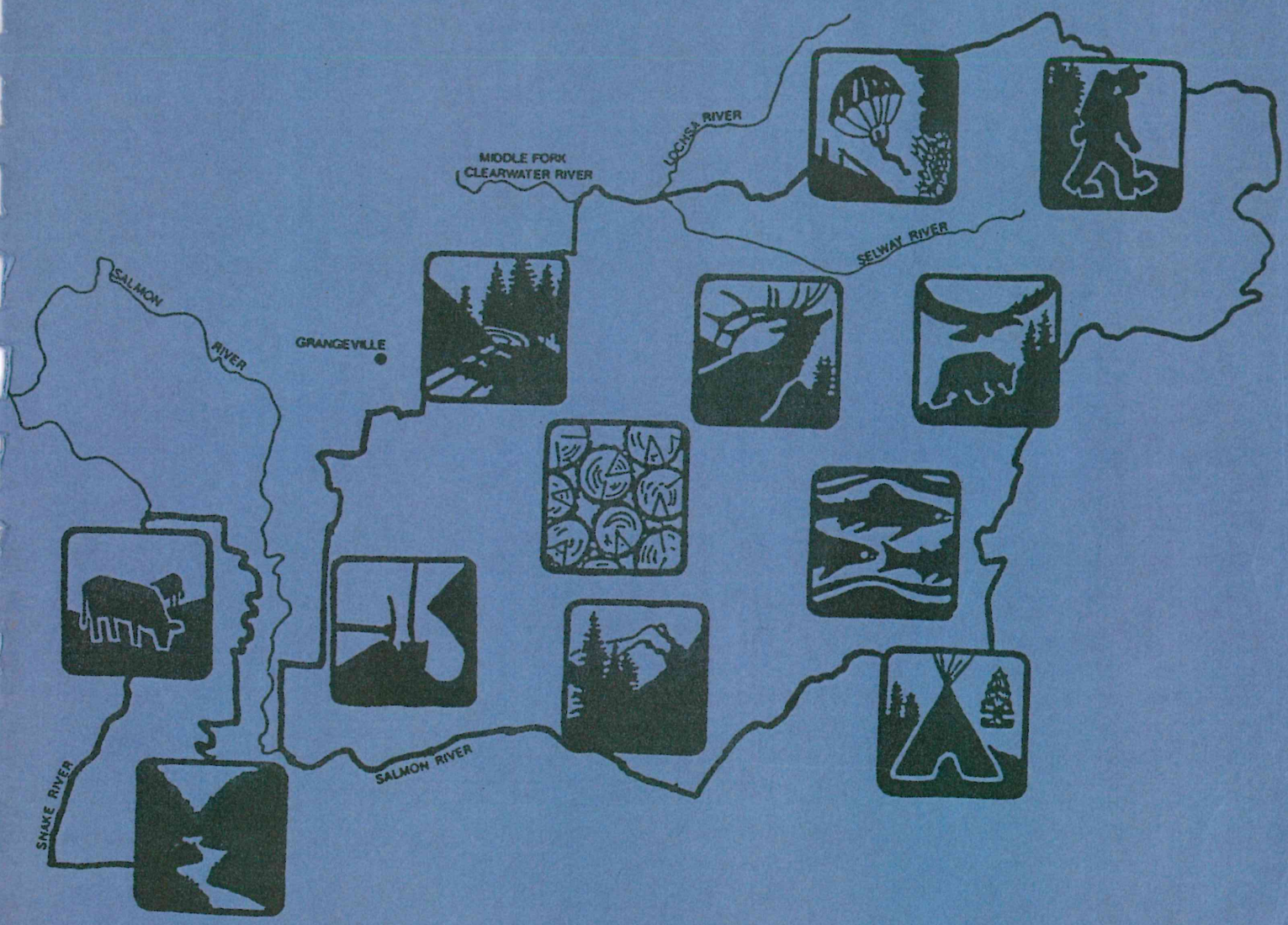
Forest Service

Nezperce
National Forest

Nez Perce National Forest Plan

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDICES
Volume 1



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APPENDIX A

IDENTIFICATION OF ISSUES, CONCERNS, AND OPPORTUNITIES

The Nez Perce National Forest Plan addresses major public issues and concerns about management of the Forest. These issues and concerns are identified and addressed in an effort to provide Forest management that is responsive to the public. They are also used to determine the scope of the EIS (40 CFR 1501.7).

A. Process

The Notice of Intent to prepare a Forest Plan and Environmental Impact Statement was published in the Federal Register and sent to the State Clearinghouse, Idaho County Commissioners, and Nez Perce Tribal Council in October, 1979.

As the first step in the public involvement process, a letter was sent to 364 landowners and mining claim holders and a brochure was sent to over 400 individuals, agencies, and organizations announcing the intent to begin preparation of a Forest Plan. Legal notices were placed in the Idaho County Free Press and the Lewiston Morning Tribune; and news releases were sent to area newspapers and radio and TV stations.

Major public issues and concerns were identified during a series of six public workshops and through comments submitted by letter. Additional management concerns were identified during eight Forest employee workshops.

A total of 247 people attended the 6 public workshops held in Moscow, Kamiah, Lewiston, Grangeville, Elk City, and Riggins. The majority of participants were from the wood products sector (31 percent) or attended as interested citizens (22 percent). Students and government employees contributed 18 percent and 12 percent respectively. The remaining participants were from environmental, conservation, and other special interest groups, and business. The Moscow workshop was heavily influenced by students from the University of Idaho. The wood products industry employees had a major influence at the other five public workshops. The Forest also received 51 written comments and a number of verbal comments concerning the initial Forest planning activities.

A structured group decisionmaking process called the Nominal Group Technique was used at the workshops. Participants were asked to list all concerns relative to Forest management, choose and rank the seven most important to them, and then distribute 100 points among the seven. The weighting system (point distribution) allowed relative distinctions to be made between concerns based on the emphasis given by participants. It also permitted the final issues to be prioritized. The Nominal Group Technique was selected for public involvement to insure that every workshop participant was given an opportunity to voice his or her concerns and to affect the final outcome of the process. A total of 819 concerns were listed. A Forest interdisciplinary team grouped similar concerns into a list of 213 issues. These were evaluated by the interdisciplinary team and screened through the following criteria:

- Is the concern applicable to the Nez Perce Forest Plan or is it better addressed at other levels of planning in other functional areas, or by sources outside of the Forest Service?

- Will the concern be addressed as a mandatory requirement of laws, regulations, or current policy?

- Is the concern widespread, involving two or more Ranger Districts or mentioned at two or more workshops?

- Does the Forest have the capability to resolve the concern through the Forest Plan?

This process reduced the original list by 50 percent. Those eliminated were deferred for resolution outside of the planning process and are in the Forest planning records. Examples are concerns such as firewood policies, availability of wilderness lands to all users, timber sale administration policies, and the Forest planning process itself. Concerns which are addressed through mandatory requirements of laws, regulations, or current policy were assigned to receive the same treatment in all alternatives.

The interdisciplinary team then grouped the remaining concerns into major categories to derive the 13 major issues to be addressed in the Nez Perce Forest Plan. These were published in a brochure which was distributed to approximately 450 interested individuals, organizations, and agencies in April, 1980. Comments submitted through letters were used to validate the brochure.

The 13 major issues were treated differently in the alternatives, as is shown graphically in Chapter II.

Additional public involvement was initiated in September, 1983 to aid in the roadless area re-evaluation. Seventy-five letters were received commenting on this subject. Planning updates were periodically prepared by the Forest Planning Team and made available to the general public and Forest employees.

The Notice of Availability of the Draft Environmental Impact Statement and Proposed Plan appeared in the Federal Register on February 22, 1985, showing that the review period would end June 1, 1985; however, we accepted comments until May 1986, when the documents were ready for publication. In addition to the public comments, concerns were raised by the congressional delegation and the timber industry over the cumulative effects on the timber supply of Forest Plans in the State of Idaho. As a result, the Forest Service conducted a study, "The Idaho Timber Supply Study, February, 1987", which considered present and future timber supplies within the State. The information in this study was used in arriving at the final decision for the Forest Plan.

During the review period, meetings were held with individuals, groups, organizations, and the general public to discuss the documents. Comments received were considered and are addressed in the Final EIS. Additional information on public involvement can be found in Chapter VI of the EIS.

B. Consultation With Others

1. Agencies and Indian Tribes

The following agencies are included on the Forest Plan mailing list. They received planning update notes which provided information on the status of the Plan, comments requested, and public meeting dates. The Nez Perce Indians were contacted to determine the presence of any sites on the Forest of religious or cultural importance to them.

Clearwater Economic Development Association
Columbia River Fisheries Council
Columbia River Inter-Tribal Fish Council
Idaho Bureau of Mines
Idaho County Commissioners
Idaho Department of Fish and Game
Idaho Department of Health and Welfare
Idaho Department of Lands
Idaho Department of Parks and Recreation
Idaho Department of Tourism
Idaho Department of Water Resources
Idaho-Oregon Regional Planning and Development
Idaho State Clearinghouse
Idaho State Historical Society
Idaho Water Resources Board
National Marine Fisheries Service
Nez Perce Tribal Council
Rural Electrification Administration
USDA Soil Conservation Service
USDI Bureau of Indian Affairs
USDI Bureau of Land Management
USDI Fish and Wildlife Service

2. Coordination With Other Public Planning Efforts

To the degree possible, the Nez Perce National Forest has coordinated this planning effort with Federal, State, and County agencies, and other public organizations. This coordination included the Nez Perce Tribe.

Following is a listing of those with whom the Forest has coordinated planning efforts:

Federal Agencies

Bureau of Land Management
Soil Conservation Service
Rural Electrification Administration
U.S. Fish and Wildlife Service
National Marine Fisheries Service
Columbia River Fisheries Council
Clearwater National Forest
Payette National Forest
Bitterroot National Forest
Wallowa-Whitman National Forest
Salmon National Forest

State Agencies

Idaho-Oregon Regional Planning and Development
Idaho Bureau of Mines
Idaho Department of Fish and Game
Idaho Department of Parks and Recreation
Idaho Department of Health and Welfare
Idaho Department of Water Resources
Idaho State Department of Lands
Idaho State Historical Society
Idaho State Governor
Idaho State Attorney General
Idaho State Clearinghouse
University of Idaho

Other

Nez Perce Tribal Executive Committee
Columbia River Inter-Tribal Fish Council
Washington State University
Idaho County Commissioners
Gospel-Hump Advisory Committee

From the beginning, these agencies and organizations have been kept informed through a series of eight brochures and "Planning Updates" issued throughout development of the Plan. In addition, many agencies have corresponded directly with the Forest and meetings have been held with others when necessary. These are documented in the Forest planning records. Where possible, expressed concerns of these agencies have been addressed, or, in some cases, referred to other Forest units for resolution when the concern was not applicable to the Plan.

In some cases, agencies have established goals and objectives which relate directly to management of the Forest. Among them are the Idaho Department of Fish and Game, Idaho Department of Water Resources, National Marine Fisheries Service, Idaho Department of Parks and Recreation, and the Bureau of Land Management. Idaho Water Quality Standards administered through the Idaho Department of Health and Welfare also apply to activities on the Forest. The Proposed Forest Plan addresses these objectives and fulfills them to the extent possible. These relationships are discussed throughout this document and most commonly relate to water quality, fisheries, and wildlife, and, to a lesser degree, cooperative fire control and shared transportation systems.

As part of the coordination process, the Forest also made a search of Idaho County records to determine the names of private landowners with parcels within, adjacent to, or near National Forest boundaries. Direct contact was made with these individuals to determine those who desired continued coordination during the planning process. Those who specifically said they did were added to the Forest mailing list and received the same information as those agencies and organizations cited above.

The initial and continuing contacts surfaced those agencies which had plans or objectives that required interaction with the plans of the Forest. A listing of these agencies and the details of the resulting coordination follow:

a. The Idaho Department of Fish and Game

The plans of this organization were reviewed. Their goals and objectives are to provide a continuing supply of fish and wildlife for citizens of Idaho. For wildlife their plans are specific to big-game units and for fish to major drainages. The Forest has paid particular attention to these subdivisions where they overlap or are within Forest boundaries.

As a result, all alternatives have specific objectives for fish habitat on a drainage by drainage basis, and for big-game habitat objectives on summer and winter range. Road management and moose habitat management on the Forest are also influenced by Idaho Department of Fish and Game objectives.

It was not possible to satisfy all of the needs of this agency in every alternative. However, one alternative was formulated specifically to satisfy Idaho Department of Fish and Game needs.

b. The Idaho Department of Health and Welfare

This agency formulated and administers the State Water Quality Standards. The Department of Health and Welfare is currently working to perfect a more specific definition of the "serious injury" portion of the water quality standards. When this is completed the Forest will adapt to it.

c. The State Land Board

The objectives of the State Land Board are to return optimal revenues to the State while still protecting the resources that they administer. There is no significant State land within the boundaries of the Forest, but several small tracts are immediately adjacent. In discussing State plans for these areas with the local manager it was agreed that all Forest alternatives would continue the coordination and cooperation presently in practice. This is mainly in the area of fire management, but includes annual meetings to coordinate other needs as they arise.

d. The Idaho Department of Transportation

Several State highways run through or adjacent to the Forest. All alternatives will continue the present coordination that is necessary for the reconstruction and maintenance of these highways.

e. The Bureau of Land Management (BLM)

The BLM plans have been reviewed and discussed with the local manager. All alternatives will continue the present coordination and cooperation that takes place in regard to road, wildlife, fish, and facility management. Annual meetings will be held to deal with new needs as they arise.

f. The Nez Perce Tribe

Management plans for tribal lands deal with lands far removed from Forest boundaries, therefore there is no direct coordination or consideration necessary. However, the Tribe is guaranteed certain rights within the Forest by treaty. These rights will be continued under all alternatives. Because of

these treaty rights, the Tribe has made requests for additional considerations within the Forest plan. They have asked that presently roadless areas remain roadless, that habitat for fish and game be maintained at its highest level, and that Forest road management plans consider their reasonable needs for late season access to favored hunting areas. All alternatives considered respond to these needs to some extent.

g. U.S. Fish and Wildlife Service (FWS)

Forest coordination with the Fish and Wildlife Service is principally concerned with management of anadromous fish and with recovery of threatened and endangered plant and animal species. Informal consultations are frequently held. Formal consultation will take place on this document.

In addition, riparian areas on the Forest are being inventoried under the National Wildlife Inventory Standards for wetlands.

h. Idaho County

The Idaho County Land Use Plan is not complete at this time, but its development has been tracked, and no difficulty is foreseen in coordinating any of the Forest alternatives with the County plan as it is presently envisioned. All alternatives will continue the present coordination search and rescue efforts, road management, and law enforcement.

i. Clearwater, Bitterroot, Wallowa-Whitman, Payette, and Salmon National Forests

The Clearwater Forest adjoins the Nez Perce on the north, the Bitterroot on the east, the Wallowa-Whitman on the west, and the Payette and Salmon on the south.

Coordination with these neighboring Forests is ongoing, involving day-to-day operations as well as Forestwide Planning. However, additional coordination was necessary with the Clearwater, Bitterroot, and Payette National Forests in evaluating contiguous roadless areas.

C. Selected Issues, Concerns, and Opportunities

Following is a discussion of the major issues, concerns, and opportunities that are the focus of the Nez Perce National Forest Plan and EIS. A detailed discussion of the present situation is given in Chpater III of the EIS. The issues are based on an analysis of the Forest's public involvement.

1. Timber

What level of sustained annual yield of timber products should the Forest provide while still maintaining Forest productivity and meeting local, regional, and national needs?

a. Resource Situation

During the period 1974-83, an average of 102 million board feet of timber has been sold each year on the Nez Perce National Forest. Dominant species harvested include grand fir, Douglas-fir, and, to a lesser degree, western larch, ponderosa pine, and lodgepole pine.

The majority of the timber was purchased by mills in Grangeville, Riggins, Elk City, Kooskia, and Kamiah. In June 1979, the timber industry in Idaho County employed 674 workers, or 33 percent of the total number employed in the regional area excluding proprietors and farm workers. During the second quarter of 1979, employees of the timber industry were paid $11 million, or 46 percent of all wages paid during that period. Given the local importance of the timber industry, any reduction in National Forest timber sale offerings is likely to be viewed negatively by many Idaho County residents. The interrelationship of timber management and its effects on other Forest resources and uses is likely to change under varying harvest levels.

b. Issue-Related Questions Raised by the Public

(1) To what degree will employment levels in the local wood products industry be affected by future harvest levels?

(2) How much of the total forest land can be designated for management of the timber resource considering other forest values?

(3) To what degree can timber production be feasibly increased through more intensive management and improvements in wood utilization?

(4) What is the level of expenditure warranted to obtain optimum timber harvests?

(5) How many old-growth stands will be preserved?

(6) To what extent will the receipts to Idaho County be affected?

(7) Will sale programs be based on land capability rather than political and economic pressures?

(8) Will logging systems be conventional or will specialized systems predominate?

(9) Should intensive timber management be practiced on low as well as highly productive sites?

(10) How will the Forest Plan provide for implementation of pest management?

c. Procedure to Resolve

These issues were analyzed within the range of the alternatives by a varying range of timber management prescriptions that allowed for a range of management intensities and timber harvest volumes. The effects of these differences were analyzed among the alternatives. Standards and guidelines are developed for specific resource protection management practices within the management

prescriptions and for each alternative. Indicators of how this issue was addressed in the alternatives include the level of timber harvest volume produced by decade (MMCF and MMBF), the number of acres identified as suitable for timber management, and the volume representing the long-term sustained yield capacity.

2. Timber, Roads, and Water

What is the compatibility of timber harvest, road development, water quality, and associated anadromous fish habitat?

a. Resource Situation

High quality water from the Forest provides important habitat for fisheries and makes significant contributions to downstream hydroelectric power generation, irrigation, and municipal uses. About 3.6 million acre-feet of water leaves the Forest each year, enough to supply the domestic requirements of more than 18 million people.

About 954 miles of stream on the Forest provide spawning and rearing habitat for anadromous fish, a multi-million dollar resource. An important native trout fishery also exists on the Forest that provides a wide range of recreational fishing opportunities.

Sediment from timber harvest and road building activities is the greatest threat on the Forest to water quality and spawning and rearing habitats of fish. To concurrently manage both the timber and fisheries resources to their greatest potential will require stringent and often expensive erosion control measures.

b. Issue-Related Questions Raised by the Public

(1) How will streambanks and riparian zones be protected?

(2) To what degree will anadromous fishery aquatic habitat be maintained and populations enhanced?

(3) What will be the consequences (sediment) of timber harvest and associated road development activities on watersheds and fish habitat?

(4) Will the westslope cutthroat trout receive adequate consideration for species perpetuation?

c. Procedure to Resolve

Within the range of alternatives, these issues were analyzed by varying levels of fishery objectives for specific watersheds and associated constraints on road construction and timber harvesting and by assigning key anadromous fish habitat to roadless management. These objectives and constraints were specific to prescription watersheds and varied according to the overall fishery objective of each alternative. Standards and guidelines are developed for specific resource protection management practices. Indicators of how this issue was addressed in the alternatives include the Forestwide anadromous fish

habitat potential, anadromous smolt production, market benefits of anadromous fisheries, miles of road construction, and the level of timber harvest volume.

3. Roadless Areas

Should some or all of the Forest's roadless areas remain roadless, be opened to roaded development, or be recommended to Congress for wilderness classification?

a. Resource Situation

The roadless resource on the Nez Perce National Forest consists of 503,162 acres in 16 areas.

All roadless areas on the Forest have been considered at least once by Congress for wilderness classification, and several have been considered more than once. Between 1975 and 1980, 340,000 acres were so designated. This was in addition to the 560,088 Nez Perce acres included in the 1964 Wilderness Act.

National Forest Management Act regulations require that all roadless areas in the National Forests that are not legally exempt must be re-evaluated for wilderness classification.

All of the Forest's roadless areas are, by definition, eligible candidates for inclusion into the National Wilderness Preservation System. They range in size from 8,006 to 201,535 acres. Six adjoin existing wildernesses; the others are smaller and more isolated. Most of these are near development activity of one kind or another; and some are completely surrounded by roads. Two of these smaller areas contain established Research Natural Areas. Four of the roadless areas contain or are immediately adjacent to rivers in the National Wild and Scenic Rivers System.

Wilderness classification or continued roadless management of these lands enhances fish, wildlife, and recreation values, but constrains the landbase available for timber harvest and other roaded management activities.

b. Issue-Related Questions Raised by the Public

(1) What will be the effects on timber harvest and other Forest outputs if some or all of these areas remain undeveloped?

(2) How should areas remaining roadless be managed?

(3) What effect will court decisions and Congressional actions have on Forest plans for these areas?

c. Procedure to Resolve

These issues were analyzed by assigning various combinations of the 16 identified roadless areas to Wilderness prescriptions or prescriptions that preclude new road construction within the area. Standards are developed for specific resource protection management practices for the unroaded prescriptions. Indicators of how this issue was addressed in the alternatives

are the number of acres recommended for Wilderness and the acres assigned to prescriptions precluding road construction.

4. Wildlife

To what degree should wildlife demands be provided?

a. Resource Situation

Diverse habitats found in the Forest provide for many wildlife species. Of these, several are considered threatened and endangered -- the bald eagle, the peregrine falcon, the gray wolf, and the grizzly bear. Although there have been no recent sightings of the falcon, suitable habitat is present. Habitat also exists for the gray wolf and grizzly bear. Bald eagles are known inhabitants during the winter months. Other non-game species of particular importance include the osprey, pileated woodpecker, and marten. The eight big-game species represented on the Forest also draw a great deal of interest.

The interaction of wildlife species with their environment is incredibly complex. Close coordination between wildlife needs and Forest management activities that could affect the abundance and variety of wildlife habitats is essential. Because the Forest Service manages wildlife habitat and the Idaho Department of Fish and Game sets bag limits and seasons and otherwise manages wildlife populations, cooperation and coordination between the agencies is a necessity if increased demands for wildlife are to be met.

b. Issue-Related Questions Raised by the Public

(1) Do management activities create too much habitat accessibility?

(2) Will habitat for threatened and endangered species continue to be maintained?

(3) Will suitable habitat be provided for all indigenous wildlife?

(4) Will ecological diversity be provided to maintain a variety of wildlife species?

(5) Will coordination with management goals of the Idaho Department of Fish & Game be increased?

(6) Will Forest visitors be more likely to view wildlife than at the present?

(7) How will fire management affect wildlife habitat?

c. Procedure to Resolve

Standards in all alternatives are established to provide habitat levels sufficient to provide viable populations of current wildlife population and also to protect critical components of wildlife habitat. Examples are minimum old-growth allocations and riparian protection measures. All alternatives provide for meeting T & E requirements required by regualtions. Within the range of alternatives, the emphasis on wildlife and fisheries varies by the land-use patterns assigned, and broad Forestwide standards to enhance

habitats. Indicators of how this issue is resolved by the alternatives includes the acres allocated to old growth, acres of riparian area within the suitable landbase, and the objectives of each alternative for wildlife.

5. Recreation, Recreation Access, and Roads

To what degree should motorized recreation use be preferred over nonmotorized use?

a. Resource Situation

Each year the Forest transportation system of more than 2,300 miles of trail and 2,000 miles of road is reviewed to determine if deletions, additions, or other changes are needed in the Forest Travel Plan, a map showing where and when travel restrictions exist on the Forest. Most travel restrictions are implemented to reduce erosion and resultant sedimentation of streams, to provide for protection of key wildlife habitat areas, or to minimize user conflicts. Determination of future transportation needs including availability of roads and trails for motorized access is an integral part of the Forest Plan.

Forest statistics show that use of roads and trails for pleasure driving, cycling, or hiking accounts for more than 40 percent of all recreation use on the Forest. As motorbiking, four-wheeling, cross-country skiing, hiking, and other road- and trail-oriented activities increase, unwanted encounters between motorized and non-motorized forms of recreation use will also increase. This will be particularly true in areas coveted by both motorized and non-motorized recreationists.

b. Issue-Related Questions Raised by the Public

(1) Will access be maintained to provide continued recreation opportunities on the Forest for the elderly and handicapped?

(2) Will opportunities for off-road vehicle use on the Forest be increased or decreased?

(3) Will the transportation system provide for user dispersal, resource protection, and a variety of quality recreation opportunities for all seasons?

(4) What role will energy consumption play in use allocations?

(5) What will the level of maintenance be on Forest roads and trails?

c. Procedures to Resolve

A wide range of land use patterns were analyzed in the alternatives that provided varying mixes of recreation opportunities, from primitive, nonmotorized opportunities to motorized recreation opportunities. The amount of Forest area planned for development and the miles of road constructed in each alternative have significant influence on the relative mix of recreation opportunities. In addition, standards written to guide road-use patterns in the future determine where and what kind of recreation opportunities will be available on the roads.

6. Recreation

How should conflicts between competing recreational activities be settled?

a. Resource Situation

Approximately 83 percent of all recreation use on the Forest involves activities such as hiking, hunting, fishing, berrypicking, and pleasure driving. Developed recreation opportunities occur primarily in the 27 campgrounds on the Forest, half of which are located along the Salmon, Selway, or South Fork of the Clearwater Rivers. These rivers also provide floating and boating opportunities.

Total Forest recreation use was estimated at 863,400 recreation visitor days during 1980, a 52 percent increase over 1975 levels. As all recreation uses continue to increase, the question will be where to balance the various uses so that each opportunity is equitably represented on the Forest. Determination of carrying capacities and future demands for the various uses will be key factors in finding the desired balance.

b. Issue-Related Questions Raised by the Public

(1) Will emphasis be increased for recreation management and development of facilities?

(2) Will winter recreation opportunities be enhanced?

(3) What role will energy consumption concerns play?

(4) Will the Forest continue to provide recreational opportunities for a wide variety of interests and abilities?

c. Procedure to Resolve

A variety of land use patterns involving different categories of recreation opportunities were analyzed in the alternatives. Some alternatives emphasized recreation opportunities associated with road access and development, while others emphasized recreation opportunities associated with roadless management. Specific opportunities with these broad categories are addressed in management prescriptions and broad standards and guidelines to implement the alternative.

7. Roads

What road standards (width, alignment, surfacing) and locations are necessary to support Nez Perce Forest activities?

a. Resource Situation

The Forest has 2,050 miles of road that vary from the most primitive of standards to two-lane paved highways. Some of the roads in the Forest system today were built by the Civilian Conservation Corps in the 1930s. Others were built to accommodate mining operations in the early 1900s.

In addition to projected logging and recreation traffic needs, overriding considerations in determining road standards today are the need to control the amount of sediment delivered to streams and the need to minimize impacts on wildlife habitat. Sediment control may require design features to facilitate drainage of water, minimize the size of cuts and fills, and otherwise control erosion. These sediment control measures increase road costs.

b. Issue-Related Questions Raised by the Public

(1) Are new roads cost-efficient?

(2) What are the effects of different standards on soil, water, and big-game resources?

(3) Can standards be reduced and still meet management objectives?

c. Procedure to Resolve

The amount of road access and road standards necessary to implement varying levels of forest management were analyzed in the development of management prescriptions. As a result, the road standards and road density were determined for each management prescription involving road access. In most cases, these prescriptions were ones that include timber harvesting. The standards for each of these prescriptions includes a list of possible mitigation procedures that may be used to achieve the sediment mitigation levels necessary to meet the fishery objectives of each alternative. The miles of road constructed by time period and associated costs are indicators of how this issue was treated in each alternative.

8. Wilderness and Wild and Scenic Rivers

To what extent should use be controlled to maintain the quality of wild and scenic rivers, wildernesses, and other pristine attractions?

a. Resource Situation

The Nez Perce National Forest contains part of the Selway-Bitterroot, Hells Canyon, and Frank Church-River of No Return Wildernesses and all of the Gospel-Hump Wilderness. In addition, parts of four rivers classified under the National Wild and Scenic Rivers Act are located on the Forest. These are the Salmon, Middlefork of the Clearwater, Selway, and Rapid Rivers.

Management of all classified areas except the Gospel-Hump Wilderness is shared with one or more National Forests adjacent to the Nez Perce.

Increased use in these areas threatens the pristine setting which is the basis of their popularity. User education programs, patrols, greater enforcement of regulations, and implementation of permit systems are among the options to reduce impacts.

b. Issue-Related Questions Raised by the Public

(1) How will the quality of Wilderness, and Wild and Scenic River Corridors be maintained?

(2) Are user controls necessary?

(3) How will limits of acceptable change be determined?

(4) Are trail systems adequate to accommodate and disperse use?

(5) Are controls on horse use and domestic livestock grazing necessary to maintain quality?

c. Procedure to Resolve

Wild and Scenic Rivers

In all alternatives, the Wild and Scenic River corridors will be managed to protect the resource values of the areas as prescribed by law. The level at which different uses within the area are controlled to maintain the scenic and recreational opportunities is in large part dependent on the funding available. The funding levels associated with the management prescriptions assigned to the Wild and Scenic River corridors in the alternatives reflects the degree to which specific issues will be addressed.

Wilderness

In all alternatives, the wilderness resource will be preserved to the extent possible under existing laws and regulations. The capacity and quality of the wilderness resource for future use are directly linked to the wilderness resource management programs.

Varying levels of funding for wilderness management were analyzed during the development of wilderness management prescriptions. Factors considered were current use and conditions and projections for future use. Based on this analysis, varying funding levels were selected for each wilderness on the Forest. Wilderness management will reflect the funding levels portrayed by the management prescription assigned to each in the alternatives.

9. Grazing, Recreation, and Wildlife

How should livestock grazing be balanced with other resource demands?

a. Resource Situation

Domestic livestock grazing on the Forest dates back to the 1860s. It reached its peak when 70,456 head of sheep were permitted in 1918 and 13,992 head of cattle in 1919. Sheep grazing declined rapidly during World War II and has never regained its prominence.

Today, 14 percent of the Forest is classified as suitable for domestic livestock grazing. Some of this 316,000 acres is transitory range created by timber harvests, although the grasslands along the Salmon and Snake River Breaks provide permanent rangeland. About 6,600 head of cattle and 3,400 head of sheep are currently permitted to graze on the Forest for part of the year. The grazing industry is an important component of the local economy. The question is where to balance grazing use on the Forest with other competing and, in some cases, conflicting uses such as wildlife and recreation.

b. Issue-Related Questions Raised by the Public

(1) Will grazing-related impacts on water quality, scenery, and the recreation resource be reduced?

(2) What is the proper balance between forage for livestock and forage for wildlife?

(3) Will management decisions alter grazing allotments and their traditional role as an important contributor to the local and regional cattle and sheep industry?

(4) Can the carrying capacity for domestic livestock grazing on the Forest be increased without adversely affecting other resource values?

c. Procedure to Resolve

These issues were addressed in the alternative by assigning varying intensities of grazing prescriptions to primary range lands and analyzing varying degrees of utilization on transitory ranges, consistent with the overall objectives of the alternative. The management prescriptions reflect varying levels of range management intensity and utilization. The indicators of how these issues are resolved in each alternative are the livestock grazing use in Animal Unit Months, and the total acres suitable for range.

10. Timber, Roads, and Big Game

How can timber harvest, roads, and big-game habitat needs be made compatible?

a. Resource Situation

Although elk are the most sought-after big-game animal and the one that often draws the greatest interest on the Forest, mule deer, whitetail deer, bighorn sheep, moose, mountain goats, cougar, and bear also may be found.

Timber harvest and associated activities are often viewed as a detriment to big-game management, but can be and often are used today as management techniques to improve big-game habitat. Travel restrictions and road closures in critical big-game areas and prescribed burning are also used to maintain or enhance habitat. Road closures and travel restrictions have been and will continue to be controversial.

b. Issue-Related Questions Raised by the Public

(1) To what extent do timber harvest and roads affect big-game winter range, habitat use patterns, and calving areas?

(2) To what extent can seral vegetation stages (browse) be prolonged for elk and deer use considering other resource needs?

(3) Can elk habitat be managed to maintain or increase herd size within constraints imposed for other resource needs?

c. Procedure to Resolve

These issues were addressed in the alternatives through the assignment of varying management prescriptions, differing land use patterns and broad standards applying to road closures and summer habitat objectives.

On key winter range habitats, management prescriptions designed to enhance carrying capacities were available for assignment depending on the objectives of the alternative. In some cases, these management prescriptions involved changing land assignments from timber harvesting to non-timber (periodic burning to maintain seral brush conditions). Broad, Forest-wide standards for the management of the summer habitat were also included for those alternatives where big game was an emphasized resource.

Standards for road uses/closures were included in management prescriptions for winter habitat as well as in the broad, Forest-wide direction for summer habitat. The indicators of how these issues were resolved in each alternative are in the carrying capacity of winter and summer range in number of acres of land assignments to winter range management, and the presence or absence of direction for summer range management.

11. Minerals

What are the effects of surface resource allocation on mineral exploration and development?

a. Resource Situation

Mining activities on Federal lands are authorized by laws dating back to the late 1800s that are administered by the Department of Interior. The main effects that Forest Service activities have on mineral exploration and development include providing access to areas, determining validity of existing claims, and approving operating plans to insure that adequate protection is provided for other resources. Although some individuals have expressed a need for greater control of mining activities, it is not within the jurisdiction of the Forest Service to do so.

The following minerals exist on the Forest: gold, silver, platinum, lead, zinc, copper, stibnite, manganese, uranium, cobalt, chromite, and molybdenum. The potential also exists for quarried rocks, decorative rocks, sand, gravel, limestone, and gem stones. An increase in gold dredging and panning, as well as placer and lode mining, can be anticipated both as a recreation venture and commercial operation.

b. Issue-Related Questions Raised by the Public

(1) To what degree can mining be regulated to minimize impacts, given the existing mining laws?

(2) How active a role should the Forest Service play to encourage mineral exploration?

(3) Can significant contributions be made from the Forest toward meeting national mineral needs?

c. Procedure to Resolve

Under all alternatives, Forest administration of mineral activities would be in accordance with the 1872 Mining Law, the 1920 Mineral Leasing Act, the Federal Land Planning and Management Act of 1976, and 36 CFR 252.

The most significant variations between the alternatives related to these issues is in the amount of area recommended for wilderness which could result in mineral withdrawals and the amount of area planned for development and road access. Increase in access could increase the opportunities for mineral discoveries and development. Indicators of how these issues could be influenced by the different alternatives would be the acres recommended for Wilderness and the miles of road construction planned.

12. **Fire**

What are the effects of fire management on other resource values and uses?

a. Resource Situation

Wildfire has been an ever-present force on the Forest. Consequently, the evolution of all native flora and fauna has been dependent to some degree on natural fire.

With a dramatic improvement in firefighting effectiveness over the last 30-40 years, the burned-over acreage on the Forest has been greatly reduced. The fires that ravaged the Forest in the late 1800s and early 1900s have not been experienced in recent years. This exclusion of fire has had a significant effect on vegetative succession, an effect which has become more pronounced over time, and one which has had varying effects on different resources.

Current Forest Service policy is immediate control of wildfires unless they occur in an area under a fire management plan, in which case a fire may be allowed to more nearly play its natural role in the environment. The Selway-Bitterroot Wilderness is covered by such a plan, and others are being developed. Prescribed burning is an important resource management tool when used as a silvicultural treatment to improve range and wildlife habitat, reduce fire hazard, and allow regeneration.

b. Issue-Related Questions Raised by the Public

(1) To what degree can fire management be incorporated into the Forest Plan?

(2) Will the natural fire program be expanded?

(3) If departures are made from the current policy of immediate control of wildfires (except in those areas currently under a fire management plan), are the risks to resources greater than the costs involved in fire protection?

c. Procedure to Resolve

These issues were addressed primarily by analyzing outputs and effects of alternatives measured by the acres where full suppression will be implemented and the number of acres where prescribed burning will be used for resource

management objectives. In most cases, prescribed burning programs are associated with slash disposal/site preparation in timber harvest areas and to maintain seral brush conditions in big-game winter range. Opportunities for prescribed natural fire have been examined within the context of Wilderness Management Plans that provide specific direction for management of each Wilderness.

13. Timber and Scenery

What is the compatibility between management of the timber resource and desires for scenic quality?

a. Resource Situation

The 2,050 miles of road on the Forest provide ready access for Forest visitors. Major travel routes follow the larger rivers. Often Forest visitors expect to view an unaltered landscape from Forest roads, many of which were constructed for management of the timber resource. Large clearcut blocks created in the past are particularly unappealing to some visitors. Today, the Forest uses a system designed to analyze physical features such as landform, water form, vegetative patterns, and rock form to determine acceptable degrees of landscape alteration.

b. Issue-Related Questions Raised by the Public

(1) To what extent should maintenance of scenic quality be a constraining factor in the design of developmental activities?

(2) To what extent will efforts be made for changes in appearance to be reasonable, timely, and controlled?

(3) Will unique landscape features and areas of visual diversity in the general forest be maintained?

(4) What constraints will be placed on clearcutting to minimize effects on scenic quality?

c. Procedure to Resolve

These issues were addressed through the development of timber management prescriptions with specified levels of visual quality management and the assignment of these prescriptions to specific areas within each alternative. These management prescriptions include standards necessary to achieve the desired level of visual quality and associated costs and other resource outputs associated with these objectives. The indicators of how these issues are resolved in each alternative are the acres assigned to the varying levels of visual quality objectives: retention, partial retention and modification/ maximum modification.

D. Development of Alternatives From Public Issues and Concerns

Alternatives were formulated to deal with each of the concerns raised. It was quickly evident that the degree to which concerns for water quality or fish habitat were met limited the extent to which concerns for timber outputs could be met, and vice versa. Similar interaction takes place with concerns about the effects of roaded development on wildlife habitat. Other issues could be more easily resolved within the same alternatives, such as the effects of timber harvest on moose winter range. More detail about alternative formulation appears in Appendix B.

Alternative D was formulated in direct response to wood products industry participation. It opens all tentatively suitable lands to roaded development, and furnishes the highest first decade cut. It also displays the highest decrease in anadromous fish habitat potential.

Alternative C was developed in response to objectives of the Idaho Department of Fish and Game. Anadromous fish habitat potential is reduced only slightly, and elk objectives are also high. Six roadless areas are allocated to continued roadless management. However, the first decade cut is lower than that of any other alternative.

Alternative F incorporates suggestions of several environmental groups. It emphasizes fish and wildlife resources with a specified minimum level of timber production.

Other alternatives offer different combinations of timber harvests, fish and wildlife objectives, and roadless and wilderness management; the result is a complete range of alternatives.

APPENDIX B

DESCRIPTION OF THE ANALYSIS PROCESS

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I. INTRODUCTION

A. Planning Situation

One of the primary responsibilities of the Forest Service is to decide how best to manage National Forest lands to produce the goods and services the public desires. These lands must be managed to provide adequate levels of resources and services for both current and future uses. Because National Forest lands and the natural resources they contain are valuable to society, commitments to various uses represent significant and far-reaching decisions.

The Nez Perce National Forest is located in north-central Idaho and contains 2,218,040 acres of diverse land forms and vegetation. The wide variety of seral and climax-type vegetation communities that exist support a rich and varied wildlife community. The timber industry is important to the local economy. In addition, the Forest provides an attractive setting for recreationists who spend money for supplies and services.

Planning under the National Forest Management Act (NFMA) responds to the increasing complexity and social significance of the Forest and magnitude of the analysis and management decisions. The Forest's major planning goal is to provide enough information to help decisionmakers determine which combination of goods, services, and land assignments will maximize net public benefit (see Section IV for a discussion of net public benefits). The regulations (36 CFR 219) developed under NFMA provide the analytical framework within which these decisions are made.

The National Forest Management Act and its regulations also state that the requirements of the National Environmental Policy Act (NEPA) and its regulations (40 CFR 1500-1508) must be applied in this analysis process. The NEPA regulations require that the environmental effects of a proposed action and alternatives to that proposed action must be disclosed in an environmental impact statement (EIS).

B. Planning Process

The planning and environmental analysis process brings a new outlook and a new technology to National Forest land management, principally: a) land management planning requires that processes formerly used to make individual resource decisions must be combined into integrated management decisions, and b) new mathematical modeling techniques are used to represent the elements of the land management problem and to help identify the most efficient pattern of management. This is discussed in the NFMA regulations and on page I-2 of the EIS as a 10-element planning process. This Appendix is concerned with describing the analysis phase of this process, which are elements 3, 4, 5, and 6. The judgment phases, elements 1, 2, 7, and 8, are described in Chapters I and II and in Appendix A of the EIS. The execution phases, elements 9 and 10, are presented in the Forest Plan.

The analytical elements are as follows:

1. Inventory Data and Information Collection (Step 3)

The interdisciplinary team determined what data were necessary, based on the issues and concerns. Data collection is part of normal Forest operations. Existing data were used whenever possible and supplemented with new data where required to help resolve sensitive issues or management concerns. Data (including resource capability areas and acreages; resource supply and demand; and expected outputs, values, and costs resulting from management prescriptions) are needed for formulation of the models used in the analysis of the management situation, formulation of alternatives, monitoring, and other phases of the planning process. These data are on file in the Forest Supervisor's headquarters.

2. Analysis of the Management Situation (AMS) (Step 4)

This analysis brings existing information together, puts it into a total Forest perspective, and states the problem the various alternatives should resolve. It examines supply analysis, market assessments for forest and rangeland outputs, and determines suitability and feasibility for meeting needs. A computer model (FORPLAN) was built to address a number of specific requirements, including benchmarks, preliminary to the formulation of alternatives. They 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) monetary benchmarks which estimate the output mix which maximizes present net value of resources having an established market value or an assigned value. The AMS provides the information necessary to formulate a range of reasonable alternatives.

3. Formulation of Alternatives (Step 5)

The information gathered during the first four planning action elements is combined and analyzed to formulate alternative plans suitable for evaluation and presentation in the environmental impact statement. The alternatives reflect a range of resource management direction. Each identified major public issue was addressed in one or more alternatives. The programs formulated represent the most cost-efficient way of attaining the objective set forth for each alternative. This process provides a basis for identifying the alternative that comes nearest to maximizing the priced component of net public benefits, consistent with the resource integration and minimum management requirements. Nonpriced outputs are also considered.

4. Estimation of Effects of Alternatives (Step 6)

The physical, biological, economic, and social effects of each alternative were estimated including how each responds to the range of goals and objectives assigned by the Resource Planning Act (RPA) Program. The Forest computer model estimates many of the anticipated consequences of changes in the flow of goods and services from the Forest in terms of resource output levels. Other effects examined outside the model include ecological and social considerations. Specifically, the analysis includes: a) direct effects; b) indirect effects; c) coordination 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 potential; g) urban quality, historic and cultural resources; and h) means of mitigation.

II. INVENTORY DATA AND INFORMATION COLLECTION

A. Resource Data Development

1. Capability Areas

This is the first step in the analysis phase of the planning process. Inventory data are needed for developing the planning model used in the analysis of the management situation, the formulation and evaluation of alternatives, and monitoring of accomplishments. The interdisciplinary team collected and assembled the amount of data necessary for making management decisions. Some data existed prior to initiation of the NFMA Forest planning effort while other data were collected to supplement information needed to resolve public issues and concerns. The basic storage cell in the computerized data base is the capability area which is defined by physical and biological attributes identified on the ground. It may be further delineated by political boundaries. Capability areas represent lands delineated to estimate responsiveness to various management practices, resource values, output coefficients, and multiresource or joint production functions (FSM 1920.5). On the Nez Perce, 13,074 capability areas were delineated by:

- Proclaimed Forest
- State
- County
- Ranger District
- Legally designated areas, e.g., classified wilderness, Wild and Scenic River corridors
- Timber compartment boundaries
- Landtypes grouped into ecologic land units (includes habitat types)
- Land classes grouped by similar geologic landforms

The result of the delineation steps described above was overlaid with the photo-interpreted stands done in the 1973 timber inventory. This resulted in subdivisions of capability areas called "cells." Each cell had a unique condition class assignment.

2. Analysis Areas

Capability area cells were then grouped to establish 480 analysis areas. They are grouped on the basis that:

- Analysis areas need not be a contiguous area.
- Issues and concerns are related to specific resources and the uses of those resources.

3. Production Coefficients

Specific resource outputs and uses such as timber harvest and wildlife are analyzed in the planning process in response to the issues and concerns. The

resource data for each capability area in the analysis area were combined to form the basis for a number (production coefficient) that serves as a measure of a physical property. Major production coefficients used on the Nez Perce are expressed in the following units:

- Thousand Cubic Feet (MCF) of timber per acre
- Thousand Recreation Visitor Days (MRVD) per acre
- Thousand Animal Unit Months (MAUM) of grazing per acre
- Thousands of Elk (M Elk) per acre
- Thousand Acres Roadless (M Acres)
- Miles of Road per acre

Fish and sediment production are calculated outside the FORPLAN model (see Section III-G).

4. Suitable Lands

The Forest used specific data to determine the acres that are tentatively suitable for management practices. All areas are considered available for some form of recreation and some type of wildlife use. Roadless area size and evidence of human activity were used to determine wilderness suitability. Forest habitat type, elevation, and legal status were used to determine areas tentatively suitable for timber production. Forest habitat type, elevation, and aspect were used to determine areas tentatively suitable for domestic livestock management practices and use by elk for winter or summer range.

A breakdown of tentatively suitable lands by productivity class and condition class can be found in Table III-13 of the EIS.

Table B-1
Tentatively Suitable Lands (Acres)

Land Category	Acreage
1. Total Net Forest	2,218,040
2. Non-Forest (Includes Water)	245,323
3. Forest Land 10 Percent Stocked With Trees (Item 1 minus Item 2)	1,972,717
4. Forest Land Withdrawn	
Wilderness, Wild and Scenic Rivers, Research Natural Areas	766,224
Hells Canyon RNA (administered by Wallowa-Whitman, R-6)	57,173
5. Forest Land Producing Less Than 20 Cubic Feet/Acre/Year[1] or Inadequate Information	78,906
6. Forest Land	
a. Not Technologically Suited	0
b. Irreversible Resource Damage	0
c. Restocking Not Assured	0
7. Tentatively Suitable Land (Item 3 minus Items 4, 5, 6a, 6b, 6c)	1,070,414

1/ Lands not capable of producing at least 20 cubic feet/acre/year were determined prior to September 30, 1982 (36 CFR 219.29b).

5. Assignments and Scheduling

Condition class (existing vegetation) data were used to help lay out scheduling of management activities over time for the various alternatives considered in detail.

6. Monitoring

Forest planning data used to develop the key production coefficients will also be used to help monitor implementation activities. Forest planning data provides a base or standard from which changes that result from implementation of the Forest Plan can be measured.

7. Plan Implementation Programs

The Forest planning data base provides biological and physical data that will help develop subsequent programs for plan implementation. As more information is available, the data base will be updated and improved.

B. Sources of Data

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

- Forest Service Manual, Management Information Handbook (MIH 1309.11) provides definitions for outputs, activities, effects, and other information.
- Forest Habitat Types of Northern Idaho and Eastern Washington, J. Daubenmire, 1952, 1968.
- Landtypes - USDA - Forest Service, Region 1 Guidelines.
- Nezperce National Forest Management Plan - Timber Compartment Map, 1979.
- Nezperce National Forest Administrative Boundaries Map, 1980.
- Roadless Area Review and Evaluation (RARE II) Final Environmental Impact Statement, January 1979, USDA - Forest Service.
- Forest Service Manual, Range Analysis, Handbook 2009.21, Chapter II, sections 260-263.
- Forest Inventory System, FINSYS.
- Recreation Information Management Handbook (RIM), FSH 2309.11.
- Transportation Systems Inventory (TIS).
- Elk and livestock forage information was adopted from Range Analysis Handbook, FSH 2209.21-R1; Wildlife Surveys Handbook, FSH 2609.21; Clipping Studies (USDA Forest Service, nd); Production Coefficients and Economic Guidelines for Big Game and Livestock (Reid, 1981, July 1); research conducted locally (Pierce, 1983, Hershey and Leege, 1982).

- Economics. Stumpage value was based on bidder transaction evidence for 1974 to 1980; price trends from Haynes and Adam (1980); other resource values (price trends) from 1980 RPA reports; costs developed by Forest personnel as documented in planning records: Directory of Management Practices, 1984; economic impact analysis from INPLAN I/O Model (1983); social impact analysis from independent sociological analysis (Bacigalupi, 1980).

- Fisheries inventory data generated through literature by: Murphy and Metsker, 1962; Mallet, 1974; Martin, 1975 and 1976; Forest Service Habitat Survey, 1975 through 1980; fisheries research conducted by Shepard and Bjornn, 1981; R1/R4 fish and watershed models, Stowell, et al., 1983, and USDA Forest Service, 1981.

- Landtypes delineated on aerial photographs with field verification in the mid to late 1970s and transferred to U.S.G.S. topographic maps. These landtypes were aggregated from landform associations to landform groups to landclasses. Landforms were used in the final capability area delineations in 1980. These landclasses have been re-aggregated into landclass groupings. Forest management activities by landclass groupings are used in the sediment yield and economic calculations.

- Riparian areas identified on U.S.G.S. topographic maps in 1980. Additional acreages of wetlands were related to an appropriate landclass.

- Major Forest hydrologic boundaries delineated based on the U.S.G.S. Hydrologic Unit Map. These watersheds were further divided and subdivided into third to fifth order watersheds on U.S.G.S. topographic maps and on the Forest Travel Plan map in 1979.

- A summary of all pre-1980 road construction and timber harvest activity on the Forest by third to fifth order watershed. This treatment inventory was utilized in sediment and water yield calculations.

- Sediment yields for baseline conditions, and existing and proposed forest management activities (timber harvesting and road construction) predicted by USDA (1981a; 1981b; 1981c).

- Water yields for baseline conditions, and existing and proposed Forest management activities (timber harvesting and road construction) estimated by former Nez Perce hydrologists and USDA (1975-1983).

- The main channels of most third to fifth order watersheds were typed (A, B, or C) by USDA (1980). This information was used in the water yield and fishery habitat calculations, and in the establishment of fishery/water quality objectives.

- Minerals potential statistics based on: Geoplan, 1974-75, Nez Perce I and II Contract Reports; Green, W.R., 1972, Mineral Belts of Idaho: Idaho Bureau of Mines and Geology, I.C. #22; Koehler, S.W., 1978, Petrogenesis of the Gold Vein at Florence, Idaho: Ph.D. thesis, U. of I.; USFS (Minerals and Geology), 1980, RARE II Minerals Potential Map; O&G lease applications, 1982, Nez Perce NF; Ross, C.P. 1936, Metal and

Coal Mining Districts of Idaho: IBMG Pamphlet #57; USBM, Current Mining Claims Recordation; USBM, 1981, Minerals Industry Location System.

- Forest Habitat Types of Northern Idaho, editorial draft, S. Cooper, K. Neiman, R. Steele, 1985.

III. THE FOREST PLANNING MODEL (FORPLAN)

A. Overview

The planning model consists of information and various analytic techniques combined to address planning questions and issues. The major analytic model is called FORPLAN.

FORPLAN is a linear program that assigns unique sets of management activities to specific areas of the Forest to compare the productivity of measurable goods and services towards a specific goal called an "objective function."

The specific areas of the Forest are delineated by land characteristics which have a fairly uniform response to the management activities. These specific areas are called "analysis areas." The management activities are combined into compatible sets representative of the multiple uses that could apply to the analysis areas. These sets of management activities are called "management prescriptions."

In the Nez Perce National Forest model, from 2 to 10 management prescriptions are available to be assigned to each of the 480 analysis areas.

When FORPLAN is run, it assigns only those management prescriptions to the analysis areas which produce the goods and services that achieve the objective function in an optimal way given the objective function and constraints used. It also schedules the production of the goods and services over time.

Alternatives are generated by applying constraints either to produce a specified range of goods and services, to allow only a specified range of goods and services, or to allow only a specified set of management prescriptions to be assigned to specific analysis areas. These constraints are designed to achieve or maintain a situation considered necessary to meet the overall goal of the alternative. The conditions set by the constraints are satisfied before the objective function is optimized. The analysis of all alternatives had the same objective function -- maximize the present net value. In other words, after meeting all constraints, the FORPLAN model allocated the remaining opportunities in a way that produced the most economic value. Some benchmarks had other objective functions that will be described in Section VI.

As a result of public comments, additional analysis and several changes have been made since the Draft EIS. The additional analysis is summarized below:

- Alternative G (Preferred Alternative) was modified to maintain a stable harvest level over the planning horizon.

- Alternative G was modified by limiting timber harvesting to those timber prescription/analysis area combinations which showed a positive present net value.

- Alternative G was modified by adding additional suitable acres from East Meadow Creek, West Meadow Creek, and Rackliff-Gedney roadless areas.

- Alternative G was modified to compare and evaluate the effect of using 60 acres available for harvest per mile of new road construction in the first decade rather than 40 acres per mile.

- Sensitivity analysis was performed to estimate the impact that different timber price assumptions would have on land assignments and the economics of timber management using the FORPLAN model. Also, updated recreation/ wildlife values were used to estimate any impacts on land assignments and economic efficiency. This analysis was done on the Max PNV benchmark, Alternative D, and Alternative G. For additional information on this analysis, see Appendix D.

Summary of changes to alternatives since the Draft EIS:

The boundaries for the Mallard and Gospel-Hump roadless areas were adjusted to the original RARE II boundaries. This change was in response to the public concern that this Forest adjusted the RARE II boundaries because of timber sale and road construction activities which were expected to take place, but have not at this time.

Constraints common to all alternatives remain unchanged. Additional constraints were applied to Alternative G (Preferred Alternative) to meet specific resource and economic objectives. These constraints have been designed to meet the following objectives:

- Increase fish/water quality objectives in 64 drainages;

- Increase prescribed burning on deer/elk winter range from 2,700 acres to 5,000 acres per year during the Plan period (1988-1997);

- No scheduled road construction or timber harvesting activities in the West Meadow Creek roadless area during the Plan period (1988-1997), except for the portion which is west of the hydrologic divide between Meadow Creek and the Red River and American River drainages;

- Manage approximately 13,300 acres of the Silver Creek-Pilot Knob roadless area without additional roads and with no scheduled timber harvest;

- Make timber management prescriptions available for approximately 11,000 acres of tentatively suitable land in the Rackliff-Gedney roadless area;

- Include all riparian areas in the suitable timber base, but review harvesting activities on these area during implementation of the Forest Plan.

B. The Analysis Process and Analytical Tools Used

Preliminary analyses leading to the use of FORPLAN included predictions of resource production (timber, elk, fish, forage, water, and sediment). Several models were used to arrive at these predictions including the Fish Response to Sediment Yields in Idaho Batholith Watersheds (Stowell, et al., 1983), and the Timber Stand Prognosis Model (Intermountain Forest and Range Experiment Station, Stage, 1973). A social impact assessment study and the identification of baseline socio-economic conditions were also used.

Analysis leading up to FORPLAN included designing management prescriptions, assigning practices to prescriptions, developing management costs for each practice, and predicting resource outputs and benefits. Outputs predicted include timber yield, elk forage, range forage, water yield, sediment, roads, fisheries, costs, and benefits. The volume figures displayed by alternatives in this Appendix represent sawlog volume from FORPLAN reports. The non-interchangeable volume component of the allowable sale quantity for the Plan period (first decade) must be added to the sawlog volume. Refer to Table II-14 in Chapter II for the non-interchangeable volume component by alternative.

FORPLAN was then used to determine optimal assignments and scheduling of management prescriptions for each analysis area. This overall process is key to cost-efficient resource allocation. Cost-efficiency was considered by the interdisciplinary team while they were developing a realistic and flexible set of management prescriptions. Professional judgment played a major role. Major decisions that resulted from the preliminary analysis include the following that apply to all prescriptions:

All roads will be constructed and maintained to Forestwide standards (Nez Perce National Forest Plan, 1987). Variations occur by landtypes. Riparian areas will receive special emphasis. Costs range from $33,000 to $107,000 per mile (1978 dollars) depending on landclass, slope, soil stability, and road class. Road construction design standards were developed to maintain minimum management requirements for soil and water resources and anadromous fisheries habitat protection.

Timber sales are planned and will be administered according to Forestwide standards, including coordination with cultural, visual, wildlife, fishery, soil, and water resources. All harvesting is planned to ensure meeting prescription objectives, including minimum management requirements. Timber slash disposal and reforestation activities will take place in all prescriptions which include timber harvesting.

Wildlife habitat management includes practices to ensure adequate browse production on winter range and cover/forage ratios on summer range, as outlined in the North Idaho Elk Coordinating Guidelines. Access controls to protect wildlife were also included.

Limited livestock improvements and maintenance were included in all appropriate prescriptions, to maintain or enhance the current program.

FORPLAN was utilized to provide the basis for optimal land assignments and management prescription selection and scheduling for each analysis area. This process results in selection of the most cost-efficient management

prescriptions and land assignments that meet a given set of constraints and an objective function of maximizing present net value. An economic input-output model (INPLAN) was used to estimate the employment and income impacts of Forest outputs and activities on the regional and local areas. Direct, indirect, induced, and total impacts are estimated for each alternative.

A social impact assessment and the identification of baseline socio-economic conditions were developed for the local area. In addition, economic (cost) efficiency analysis was used to determine the benefits, costs, and tradeoffs associated with varying levels of goods and services produced on the Forest. This analysis is detailed in Section IV.

C. Identification of Analysis Areas

The rationale for delineating the analysis areas is shown in Table B-2. Each level is further described in this section.

Table B-2
Delineation of Analysis Areas
(Levels)

Analysis Area Level	FORPLAN Level Identifier	Reason for Delineation
Ranger Districts and Current Status	1	Administrative needs, prediction of collector road costs, and miles of road. Prediction of sediment. Legal and administrative constraints. Identification of lands not available for timber production. Identification of Gospel-Hump Multipurpose Resource Development area.
Land Class	5	Collector and local road costs and logging costs. Prediction of sediment.
Timber Productivity	4	Prediction of timber outputs over the long term.
Roaded or Roadless	3	Collector and local road costs and logging costs. Prediction of sediment. Primitive recreation. Consideration of roadless areas for wilderness.
Existing Vegetation	6	Predict timber outputs on the short term.

1. Level 1 Criterion--Ranger Districts and Current Status

This criterion was used to identify administrative boundaries including Ranger Districts, Gospel-Hump Multipurpose Resource Development Area (MRDA), and lands not available for timber production (wilderness, Wild & Scenic River corridors, Research Natural Areas). It was also used to predict the cost and miles of collector road construction, Forestwide sediment production, dispersed recreation capacity, wildlife habitat, and management costs. It is responsive to issues regarding fish and wildlife habitat protection, the effects of timber harvesting and road construction on these resources, and addresses the management of the MRDA on the Forest. Level 1 identifiers used are shown in Table B-3.

Table B-3
Level 1 Identifiers
(Number and Description)

Identifiers	Number	Description
D1	1	Salmon River Ranger District (RD)
D4MRDP	4	Clearwater RD-MRDA portion
D4OTHR	5	Clearwater RD-other than MRDA portion
D5MRDP	6	Red River RD-MRDA portion
D5OTHR	7	Red River RD-other than MRDA portion
D7	9	Selway RD
D8MRDP	10	Elk City RD-MRDA portion
D8OTHR	12	Elk City RD-other than MRDA portion
SELBIT	13	Selway-Bitterroot Wilderness
RNR	14	Frank Church-River of No Return Wilderness
GHUMP	15	Gospel-Hump Wilderness
MFW&S	16	Selway Wild and Scenic River and Middle Fork Clearwater Wild and Scenic River
SALW&S	17	Salmon Wild and Scenic River
RAPW&S	18	Rapid Wild and Scenic River
OHARNA	19	O'Hara Research Natural Area
MOORNA	20	Moose Meadows Research Natural Area
GOSCOR	21	Corridors to Gospel-Hump Wilderness
NBCRNA	22	Proposed No Business Creek Research Natural Area

2. Level 3 Criterion--Roaded or Roadless Status

This criterion was used to delineate between roaded (RDED) and roadless (RDLS) areas on the Forest. This classification was necessary to aid in predicting resource outputs for dispersed recreation, road construction, sediment, and management costs. It is responsive to issues regarding the amount and types of roadless area management on the Forest, the types of recreation opportunities that will be available, management of fish and wildlife habitat, and the degree of timber development that is responsive to local, regional, and national needs.

3. Working Group Criterion--Timber Productivity Classes

This criterion was used to define the biological potential of varying land groupings on the Forest, and to link this potential to the response coefficients for timber, range, and wildlife as a result of treatments performed in the prescriptions. In addition, it was used to predict management costs for these resources. This criterion is responsive to issues concerning levels of timber harvest, range outputs, wildlife, and fisheries potential. Working group identifiers are shown in Table B-4.

Table B-4
Working Group Identifiers
(Number and Description)

Working Group Identifier	Number	Description
PC7	1	Noncommercial forest land which produces less than 20 cubic feet of industrial wood products per acre per year.
PC8	2	Nonforest lands. These include foothill grasslands, mountain meadows, rock, and water.
PC3	3	Commercial forest lands capable of producing between 120-164 cubic feet of industrial wood products per acre per year.
PC4	4	Commercial forest lands capable of producing between 85-119 cubic feet of industrial wood products per acre per year.
PC5&6	5	Commercial forest lands capable of producing between 20-84 cubic feet of industrial wood products per acre per year.

4. Land Class Criterion

This criterion was used to define the physical characteristics of varying landforms on the Forest, and to link these characteristics to the response coefficients for timber, range, road construction and costs, sediment production, and management costs. This criterion is responsive to issues concerning timber management and road construction, sediment production and its related effects on fisheries, wildlife, and forage production for grazing. Land class identifiers are shown in Table B-5.

Table B-5
Land Class Identifiers
(Number and Description)

Land Class Identifier	Number	Description
10	1	This land class is typically composed of landforms associated with stream bottoms. Slopes are generally from 0-10 percent, and vegetation is on the moist end of the habitat type spectrum. This land class is typically composed of riparian areas.
22	2	This land class is composed of landforms ranging from rolling hills to ridges with flat or convex ridgetops and steep side canyons. Slopes range from 0-60 percent and the predominant vegetation is wet to dry forest types.
32	3	This land class is composed of landforms with convex ridgetops and steep side slopes ranging from 40-50 percent. These landforms are generally at higher elevations on the Forest. The predominant vegetation on these sites is dry forest types.
61	4	This land class is typically composed of landforms associated with deeply incised canyons. It also includes glacial cirques and areas with unstable soils. Slopes range up to 100 percent. Forest-type vegetation predominates.

5. Condition Class Criterion - Existing Vegetation

This criterion was used to identify existing timber conditions on the Forest. This information was used to predict response coefficients for timber, cover/forage relationships, old growth, grazing, and management costs. It is responsive to timber, wildlife, and grazing issues. Condition, size, and stocking classes were aggregated into the nine condition classes shown in Table B-6.

Table B-6
Condition Class Identifiers
(Number and Description)

Condition Class Identifier	Number	Description
SAW	2	Timber stands over 80 years of age.
POL	3	Timber stands between 40 and 79 years of age.
SS	4	Timber stands under 40 years of age.
NCF	5	Noncommercial forest lands.
NF	6	Nonforest lands.
MTNME	7	Mountain meadows.
FTGR	8	Foothill grasslands.
NS	9	Nonstocked commercial forest lands.
NONE	10	Classified areas (wilderness, Wild and Scenic Rivers, Research Natural Areas)

D. Identification of Prescriptions

1. Overview

The National Forest Management Act (NFMA) regulations define management prescriptions as "management practices selected and scheduled for application on a specific area to attain multiple use and other goals and objectives" (36 CFR 219.3). Generally, a multiple-use management prescription is a set of treatments or practices to develop and/or protect some combination of resources on a particular landtype.

2. Design of Management Prescriptions

The interdisciplinary team (ID Team) reviewed the public issues and concerns, used professional judgment, and consulted existing policy and legislative direction and research for guidance in developing cost-efficient multiple-use resource management prescriptions. This set of prescriptions portrays a broad range of management emphasis, intensities, management practices, standards, and guidelines. The management standards and guidelines needed to accomplish the goals of a prescription include the necessary mitigation and resource coordination measures that are required by existing laws, regulations, and policies. The management standards and guidelines will be contained in the Forest Plan, and are available from the Forest planning records.

Completed prescriptions received full review, discussion, and revision as necessary by the ID team. For the ID team review, the core team prepared the following criterion against which the ID team evaluated each prescription:

- Does this prescription adequately convey what the desired future condition will be of land managed under it?

- Does the prescription provide the technical management direction needed by a land manager to achieve the stated future condition?

- Does the prescription provide the information needed for developing costs and outputs for FORPLAN?

- Does the prescription address the planning issues and concerns?

To fully explore appropriate and practical ways of managing the Forest for a variety of resource uses, cost-efficiency considerations were used to guide the development and assignment of management prescriptions to various parts of the Forest (referred to as "analysis area" in FORPLAN). Within the rules and limitations of the model, the team considered all management prescriptions appropriate for each of the analysis areas on the Forest. The team based the assignment of management prescriptions on the land's inherent capability for resource production.

Prescriptions were designed to explore a full array of management options. Current management practices were described in the prescriptions to define practical and reasonable methods of implementing management. In addition, certain prescriptions were designed to maximize production of individual outputs, given the constraints of protecting all other resources at minimum legal or biological levels. This permitted analysts to study the productive potential of the Forest. True multiple-use prescriptions are also used to address land use conflicts, issues, and concerns. Prescriptions must be created so that the relative cost-efficiency of alternatives can be explored. "Cost-efficient use" of Forest land may be achieved by: (a) managing some areas of land for several purposes simultaneously; (b) managing some areas of land with a single output emphasis; and (c) leaving some areas of land in a minimal state of management. In order to find a cost-efficient management pattern, each of these three types of prescriptions was an option for each landtype represented in the model.

From this basic set of management prescriptions applied to the land, the Forest team developed yield and cost tables for use in modeling each prescription in FORPLAN. These prescriptions were used for the development of both benchmarks and alternatives after additional screening to ensure the cost-efficiency of the prescriptions necessary for development of cost-efficient alternatives.

Alternatives having similar outputs for some resources may differ widely in how the land is assigned to various prescriptions and in where the assignments take place. These differences are apparent when comparing the alternative maps.

3. Purpose, Criteria, and Assumptions for Prescription Categories

The prescriptions can be grouped into general categories by major resource element or application. The categories are timber, fisheries-recreation, visual, wildlife, old-growth, special areas, grazing, riparian, wilderness, and custodial management.

The purposes of specific prescriptions within each category are to portray a management activity presently being practiced on the Forest, to respond to a particular issue or group of issues, and to provide a range of management options that could be applied to various land areas.

Mathematical relationships existing between prescriptions are also examined. This information is useful in the explanation of tradeoffs that occur when numerous prescriptions interact within individual alternatives. Forest planning records contain detailed information.

a. Timber Category

(1) Purpose

The category of timber prescriptions was developed to provide an option for this type of management activity on every acre of land that was identified as being "tentatively suitable" for that use.

(2) Criteria and Assumptions

- Provide a range of timber management intensities for existing and regenerated stands through the application of commercial and precommercial thinning, final harvest methods, and stand entry time.
- Provide an option for conventional or aerial logging systems.
- Apply even-aged silvicultural systems.
- Recognize and provide for other resource uses compatible with timber production at full yields.
- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

b. Fisheries - Recreation Category

(1) Purpose

The category of fisheries-recreation prescriptions was developed to address two issues: habitat management for westslope cutthroat trout and anadromous fisheries; and to provide an option for placing emphasis on dispersed nonmotorized recreation opportunities in present roadless areas. The prescriptions include options to maintain a watershed in a roadless condition or to provide for timber management within standards designed to maintain the fish habitat at high levels.

(2) Criteria and Assumptions

- Design the prescriptions for application to currently roadless drainages only.

- Each roadless area would have as an option for management a prescription that maintained the area in a roadless condition.

- Recreation prescriptions were prepared for the entire spectrum of recreation opportunities.

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

c. Visual Category

(1) Purpose

The category of visual management prescriptions was developed to address the major issue of visual quality objectives (VQO) pertaining to timber harvest operation. The purpose was to provide an array of options for timber harvesting which would include VQOs for retention and partial retention. These prescriptions were designed to answer the question of how timber harvesting could be modified to maintain scenic quality in sensitive areas.

(2) Criteria and Assumptions

- Use the basic concepts and research findings contained in the USDA Forest Service Handbook (No. 462) "Manage for Retention VQO," and appropriate current silvicultural practices.

- Design the prescriptions to provide for other resource uses compatible with timber production under retention and partial retention VQOs.

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

d. Wildlife Category

(1) Purpose

The category of wildlife prescriptions was developed to address the major issue of big-game management, primarily elk. The purpose was to provide an array of options ranging from management exclusively for big game through a series of prescriptions that provided for timber production along with various levels of elk production. The wildlife-timber prescriptions were designed to answer the question of how these two resources could be managed jointly on areas important for both.

(2) Criteria and Assumptions

- Use the basic concepts and research findings contained in the North Idaho Elk Coordinating Guidelines (Idaho Department of Fish and Game).

- Design the prescriptions for use on key and regular big-game summer range and key big-game winter range.

- Provide for other uses compatible with big-game management objectives.

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

e. Old-Growth Category

(1) Purpose

Old-growth prescriptions were developed to address the issue of managing tentatively suitable timber lands for old-growth-dependent species of plants and animals. The purpose was to provide for suitable existing and future old-growth habitat while still permitting timber harvesting to occur. The prescriptions were designed to answer the question of what levels of old-growth habitat must be managed Forestwide in order to maintain minimum viable populations of old-growth-dependent species.

(2) Criteria and Assumptions

- A minimum level of old-growth habitat of 10 percent Forestwide or 5 percent per prescription watershed will be maintained for dependent species. Timber harvesting may occur in other old-growth areas.

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

f. Special Area Category

(1) Purpose

A "special area" prescription was developed for application to Research Natural Areas. This prescription was designed to provide continued management of existing special areas, such as the O'Hara Research Natural Area, and an option for designating additional areas for the same type of management.

(2) Criteria and Assumptions

- Where existing uses are in effect and no change in management is contemplated, pattern the management practices after the current approved direction.

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

g. Grazing Category

(1) Purpose

The category of grazing prescriptions was developed to address the level of grazing management intensity to be applied on riparian and nonriparian lands assigned exclusively to range management. The purpose was to provide

alternative levels of grazing investments for improvements, betterment, etc. and to see how these levels would affect animal unit month (AUM) outputs on both riparian and nonriparian grazing lands.

(2) Criteria and Assumptions

- Design grazing intensities to minimize the adverse effects on other resources (i.e, fisheries, riparian, wildlife).

- Develop standards, guidelines, and costs using commonly accepted management practices currently in use.

h. Riparian Category

(1) Purpose

The category of riparian prescriptions was developed to address the issue of protection of riparian areas for benefiting resources while still maintaining opportunities for other management (i.e., timber harvests). The purpose was to provide an array of options for riparian area management ranging from production of no controllable outputs to limited production aimed at riparian zone protection.

(2) Criteria and Assumptions

- Provide a range of intensities for riparian area management which will include production of controllable outputs (i.e., timber).

- Develop standards, guidelines, and costs, using commonly accepted management practices currently in use.

i. Wilderness Category

(1) Purpose

The category of wilderness prescriptions was developed to address the issue of how to manage the three wildernesses existing under Nez Perce National Forest administration and to recognize existing recreation uses that would continue in the Wild and Scenic River corridors.

(2) Criteria and Assumptions

- The wilderness prescription would be applied to the classified wildernesses.

- The Wild & Scenic River corridors have specific prescriptions reflecting management costs and practices.

- Wilderness prescriptions are applied to roadless areas under consideration for proposed wilderness.

j. Custodial Category

(1) Purpose

Several prescriptions were developed for application to nonforest lands and lands not suitable for timber production due to low productivity or regeneration problems. Included in this category is a minimum level or custodial management prescription for lands that are to be managed in their current state, deferring investment in timber production for the Plan period.

(2) Criteria and Assumptions

- Provide for a mix of uses, excluding timber management, that are compatible with surrounding land assignments.

4. Use of Cost-Efficiency in Developing Prescriptions

Cost-efficiency was considered in developing prescriptions in the following manner: objectives, standards, and guidelines were established for each prescription by resource element. Given the objective of the prescription, costs were estimated under each resource element to meet the standards or guidelines of the prescription. Costs of producing the outputs that would result from implementing the prescription were developed and compared to the benefit values also produced. Prescriptions were carried forward if they were cost-efficient in achieving prescription end products. Three basic assumptions used in developing prescription costs were:

- Costs experienced in implementing past practices were a reasonable basis from which to predict future costs.

- The funding for production of outputs would include only the necessary support funding.

- No great changes in future budget levels could be predicted and any change experienced would be related to the production of the resource outputs.

5. List of Prescriptions

Following are the prescriptions used in FORPLAN (a more detailed description of each prescription is available from the Forest planning records).

T1 Timber
Prescription: Low-Level Timber Management - Clearcut Harvest Type
Goal: Manage timber at a low level of intensity per acre (stocking control through planting or precommercial thinning); use clearcut harvest type.

T2 Timber
Prescription: Low-Level Timber Management - Shelterwood Harvest Type
Goal: Manage timber at a low level of intensity per acre (stocking control through planting or precommercial thinning); use shelterwood harvest type.

T3 Timber
Prescription: Moderate-Level Timber Management - Clearcut Harvest Type
Goal: Manage timber at a moderate level of intensity per acre (stocking control through planting or precommercial thinning plus one commercial thinning); use clearcut harvest type.

T4 Timber
Prescription: Moderate-Level Timber Management - Shelterwood Harvest Type
Goal: Manage timber at a moderate level of intensity per acre (stocking control through planting or precommercial thinning plus one commercial thinning); use shelterwood harvest type.

T5 Timber
Prescription: High-Level Timber Management - Clearcut Harvest Type
Goal: Manage timber at a high level of intensity per acre (stocking control through planting or precommercial thinning plus two commercial thinnings); use clearcut harvest type.

T6 Timber
Prescription: High-Level Timber Management - Shelterwood Harvest Type
Goal: Manage timber at a high level of intensity per acre (stocking control through planting or precommercial thinning plus two commercial thinnings); use shelterwood harvest type.

T8 Timber
Prescription: Minimum-Level Timber Management - Clearcut Harvest Type
Goal: Manage timber through a minimum level of stocking control per acre (final harvest and regeneration); use clearcut harvest type.

T9 Timber
Prescription: Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage timber through a minimum level of stocking control per acre (final harvest and regeneration); use shelterwood harvest type.

T10 Timber
Prescription: Maintenance Area Timber Management
Goal: This prescription will be assigned to account for areas that are maintenance (nonstocked). This prescription does not reforest the area.

T11 Timber
Prescription: Backlog Area Timber Management
Goal: This prescription will be assigned to account for areas that are backlog (nonstocked). This prescription does not reforest the area.

T12 Timber
Prescription: Minimum-Level Timber Management - Clearcut Harvest Type
Goal: Manage timber at a minimum level through a salvage thinning prior to final harvest; use clearcut harvest type.

T13 Timber
Prescription: Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage timber at a minimum level through a salvage thinning prior to final harvest; use shelterwood harvest type.

F1 Fisheries
Prescription: Minimum-Level
Goal: To provide a level of goods and services consistent with a maintenance level of management for the purpose of protecting anadromous fish habitat.

V1 Visual
Prescription: Retention Visual Quality Objectives (VQO) - Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage the landscape to meet the visual quality objective (VQO) of retention (R) with minimum-intensity timber management; use shelterwood harvest type.

V3 Visual
Prescription: Partial Retention VQO - Moderate-Level Timber Management - Clearcut Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention (PR) with moderate-intensity timber management; use clearcut harvest type.

V4 Visual
Prescription: Partial Retention VQO - Moderate-Level Timber Management - Shelterwood Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention (PR) with moderate-intensity timber management; use shelterwood harvest type.

V8 Visual
Prescription: Partial Retention VQO - Minimum-Level Timber Management - Clearcut Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention with minimum-intensity timber management; use clearcut harvest type.

V9 Visual
Prescription: Partial Retention VQO - Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention with minimum-intensity timber management; use shelterwood harvest type.

V10 Visual
Prescription: Partial Retention VQO - Minimum-Level Timber Management - Clearcut Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention with minimum-intensity timber management; salvage harvest prior to final harvest; use clearcut harvest type.

V11 Visual
Prescription: Partial Retention VQO - Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage the landscape to meet the VQO of Partial Retention with minimum-intensity timber management; salvage harvest prior to final harvest; use shelterwood harvest type.

W1 Wildlife
Prescription: Permanent Browse Management for Winter Range
Goal: Maintain existing deer and elk winter range to produce permanent winter forage.

W2 Wildlife
Prescription: Deer and Elk Winter Range and Moderate-Level Timber Management - Clearcut Harvest Type
Goal: Maintain existing deer and elk winter range to produce winter forage and cover; moderate-intensity timber management; use clearcut harvest type.

W3 Wildlife
Prescription: Deer and Elk Winter Range and Moderate-Level Timber Management - Shelterwood Harvest Type
Goal: Maintain existing deer and elk winter range to produce winter forage and cover; moderate-intensity timber management; use shelterwood harvest type.

W5 Wildlife
Prescription: Deer and Elk Winter Range and Minimum-Level Timber Management - Clearcut Harvest Type
Goal: Maintain existing deer and elk winter range to produce winter forage and cover; minimum-intensity timber management; use clearcut harvest type.

W6 Wildlife
Prescription: Deer and Elk Winter Range and Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Maintain existing deer and elk winter range to produce winter forage and cover; minimum-intensity timber management; use shelterwood harvest type.

W9 Wildlife
Prescription: Moose Winter Range and Minimum-Level Timber Management
Goal: Manage Pacific yew plant communities for moose winter range through appropriate silvicultural treatment.

W11 Old-Growth (OG-1)
Prescription: Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Provide suitable habitat for all old-growth-dependent species. Harvest will be deferred until replacement stands reach the old-growth category in the 10th decade. Harvest will be clearcut or shelterwood. Firewood cutting will not be allowed except after or as part of harvest.

W12 Old-Growth (OG-2)
Prescription: Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Provide suitable habitat for old-growth-dependent species (replacement stand). No harvest will be allowed in the first 15 decades. Firewood cutting must be prohibited during this same period.

N1 Special Areas
Prescription: Minimum-Level Timber Management
Goal: Manage Research Natural Areas for non-manipulative research.

G1 Grazing
Prescription: Low Investment, Grazing
Goal: Manage grazing of riparian meadows and mountain meadows with a moderate level of resource protection and low intensity of grazing.

G2 Grazing
Prescription: Moderate Investment, Grazing
Goal: Manage grazing of riparian meadows and mountain meadows with a moderate level of resource protection and a moderate intensity of range management using moderately complex grazing systems.

G3 Grazing
Prescription: High Investment, Grazing
Goal: Manage grazing of riparian meadows and mountain meadows with a high level of resource protection and a high intensity of range management using intensive grazing systems where necessary.

G4 Grazing
Prescription: Low Investment, Grazing
Goal: Manage grazing of mountain grasslands and noncommercial timberlands, with low-intensity range management using simple management systems that will maintain a static trend of range condition.

G5 Grazing
Prescription: Moderate Investment, Grazing
Goal: Manage grazing of mountain grasslands and noncommercial timberlands with a moderate-intensity range management that obtains proper utilization of forage and maintains an upward trend in range condition.

G6 Grazing
Prescription: High Investment, Grazing
Goal: Manage grazing of mountain grasslands and noncommercial timberlands with high intensity of range management that obtains proper utilization of forage and improves the trend in range condition and increases carrying capacity.

RIP2 Riparian
Prescription: Riparian Area and Minimum-Level Timber Management - Shelterwood Harvest Type
Goal: Manage riparian areas to maintain water quality and fish and wildlife habitat; minimum level of stocking control; use shelterwood harvest type.

RIP3 Riparian
Prescription: Riparian Area and Minimum-Level Timber Management - Unregulated Harvest Type
Goal: Manage riparian areas to maintain water quality and fish and wildlife habitat with unregulated timber harvest.

RIP4 Riparian
Prescription: Riparian Area and No Grazing
Goal: Manage nonforested riparian areas to maintain water quality and fish and wildlife habitat; allow no grazing.

WIL1 Wilderness
Prescription: Low-Level Management
Goal: Maintain the quality of the Selway-Bitterroot Wilderness through a low level of management.

WIL2 Wilderness
Prescription: Moderate-Level Management
Goal: Maintain or enhance the quality of the Selway-Bitterroot Wilderness through a moderate level of management (current situation).

WIL3 Wilderness
Prescription: High-Level Management
Goal: Maintain and enhance the quality of the Selway-Bitterroot Wilderness through a high level of management.

WIL4 Wilderness
Prescription: Low-Level Management
Goal: Maintain the quality of the Gospel-Hump Wilderness through a low level of management.

WIL5 Wilderness
Prescription: Moderate-Level Management
Goal: Maintain or enhance the quality of the Gospel-Hump Wilderness through a moderate level of management (current situation).

WIL6 Wilderness
Prescription: High-Level Management
Goal: Maintain and enhance the quality of the Gospel-Hump Wilderness through a high level of management.

WIL7 Wilderness
Prescription: Low-Level Management
Goal: Maintain the quality of the Frank Church-River of No Return Wilderness through a low level of management (current situation).

WIL8 Wilderness
Prescription: Moderate-Level Management
Goal: Maintain or enhance the quality of the Frank Church-River of No Return Wilderness through a moderate level of management.

WIL9 Wilderness
Prescription: High-Level Management
Goal: Maintain and enhance the quality of the Frank Church-River of No Return Wilderness through a high level of management.

W&S1 Wild & Scenic
Prescription: Wild and Scenic River Management - Unregulated Harvest Type
Goal: Maintain the quality of the designated "recreation" portion of the Selway River with unregulated timber harvest.

W&S2 Wild & Scenic
Prescription: Wild and Scenic River Management - Unregulated Harvest Type
Goal: Maintain or enhance the quality of the designated "recreation" portion of the Selway River with unregulated timber harvest.

W&S3 Wild & Scenic
Prescription: Wild and Scenic River Management - Unregulated Harvest Type
Goal: Maintain and enhance the quality of the designated "recreation" portion of the Selway River with unregulated timber harvest.

W&S4 Wild & Scenic
Prescription: Low Investment
Goal: Maintain the quality of the designated "wild" portion of the Salmon and Rapid Rivers.

W&S5 Wild & Scenic
Prescription: Moderate Investment
Goal: Maintain or enhance the quality of the designated "wild" portion of the Salmon and Rapid Rivers.

W&S6 Wild & Scenic
Prescription: High Investment
Goal: Maintain and enhance the quality of the designated "wild" portion of the Salmon and Rapid Rivers.

Table B-7 illustrates how the Forestwide standards were incorporated into the multiple-use management prescriptions used in the FORPLAN analysis.

Table B-7
Comparison of Prescriptions to Forestwide Standards

Table B-7
Comparison of Prescriptions to Forestwide Standards

			Timber Management		
	Road Density Mi/Sq.Mi.	Regulated Harvests	Reforestation within 5 years	Rotation Period (Years)	Size of Opening Acres
Timber	0-4.5	Yes	Yes	80-120	40
Range	NA	No	NA	NA	NA
Winter Range (Burning)	NA	No	NA	NA	40
Winter Range (Timber Harvesting)	0-4.5	Yes	No	120-160	40
Partial Retention	0-4.5	Yes	Yes	80-120	40
Retention	0-4.5	Yes	Yes	80-120	40
Riparian (Unregulated)	NA	No	NA	NA	NA
Riparian (Regulated)	0-4.5	Yes	Yes	100-120	2-5
Old Growth	0-4.5	Yes	Yes	200-250	40
Fisheries/ Wildlife/ Dispersed Recreation	0	No	NA	NA	NA
Wilderness	0	No	NA	NA	NA
Moose Winter Range	0-4.5	Yes	No	200	20
Min Level	NA	No	NA	NA	NA

Firewood Harvesting	Utilization Percent	Quality Objective	Recreation ROS Class	Mitigation Percent
Yes	35	Mod.-Max-Mod.	Roaded Natural	60
NA	28-45	Full Range VQOs	SP-RN	NA
NA	35	Mod.-Max.-Mod.	SP-RN	NA
Yes	35	Mod.-Max.-Mod.	RN	60
Yes	35	Partial Retention	RN	60
Yes	35	Retention	RN	60
NA	35	Full Range VQOs	SP	NA
Yes	35	Full Range VQOs	RN	70
No	35	Mod.-Max.-Mod.	SP-RN	60
NA	35	Full Range VQO's	SP	NA
NA	35	Preser-vation	P	NA
Yes	35	Mod.-Max.-Mod.	RN	60
NA	35	NA	SP-RN	NA

E. Development of Timber Harvest Options and Intensities

Timber harvest options were developed for FORPLAN by considering the types of silvicultural treatments that are technologically feasible given the management practices presently in use. Yield tables were developed to predict yields for those silvicultural treatment regimes that were considered feasible, utilizing the Growth Prognosis Model. Costs and revenues associated with these regimes were also developed.

Initially, all options were considered for all tentatively suitable acres. Initial analysis, outside the FORPLAN model, pointed out several areas where specific combinations of timber condition classes, degree of development (roads), and certain timber options were infeasible or improbable based on current or anticipated practices. Examples are extensive salvage operations in currently unroaded areas and intensive management of stands beyond culmination of mean annual increment (CMAI). Based on this, logic was developed to assign a range of timber prescriptions to all analysis areas tentatively suitable for timber management.

Cost-efficiency was considered in the development of timber management options in a manner similar to the process used for developing management prescriptions (see Use of Cost-Efficiency in Developing Prescriptions, B-27). Objectives, standards, and guidelines were established for each timber option shown in the following list. These included cultural practices to be used (reforestation methods, precommercial thinning, commercial thinning), final product size, logging system limitations, and minimum management requirements. In addition, variables such as initial stocking levels and the timing of treatments were evaluated. The costs of these variables were analyzed based on the costs experienced from similar practices in the past. These costs and the objectives of each level of timber intensity option were used to establish the most cost-efficient means for each option considered. As noted above, biological limitations such as site productivity also played a key role in the final determination of timber management options, i.e. not all intensities of management can be implemented on all timber sites.

Allowable entry dates (rotation lengths) for timber stands were derived based on an analysis of the time required to achieve 95 percent of the CMAI. All stands classified as sawtimber are at or beyond the CMAI and therefore available for entry beginning in the first decade. Early entry dates for other condition classes (poletimber, seedling-sapling, and regenerated) vary by productivity class, condition class, and timber management option. Based on the sample stands used to develop the timber yield tables for each management option, the average age when 95 percent of the CMAI was reached was determined. This was used for the early entry date (minimum rotation length).

As part of the benchmark analysis (see Section VI), rotations were also developed based on when the average tree size in a stand reached the minimum size for merchantability. This minimum size is that found in the timber utilization standards proposed in the Regional Guide. Since existing sawtimber stands were already available for immediate entry under CMAI standards, no changes were necessary. For timber management options on poletimber, seedling-sapling, and regenerated condition classes, early entry dates were determined using a combination of two criteria. The first was when the 80th percentile stand diameter equaled or exceeded the minimum diameter in the

proposed standards. The second criterion was if the total stand volume equaled or exceeded 5,000 MBF/acre. This criterion is based on a minimum feasible operational limit used earlier in the process to evaluate commercial thinning opportunities. Both criterion were applied to the sample stand projections, and the one resulting in the older stand age was used as the early entry date.

Following is a list and brief description of the timber options used in the FORPLAN model:

MINCLR — Minimum intensity management using clearcutting as the primary harvest method. No management activities are planned prior to the final harvest. This option is available for existing stands, so no regeneration practices are planned.

MINSHE — Same as above, except shelterwood is used as the primary harvest method.

SALCLR — Minimum intensity of timber management, except that one entry can be made prior to the final harvest (clearcut) to remove current mortality.

SALSHE — Same as above, except final harvest method is shelterwood.

LOWCLR — Low intensity management with clearcutting as final harvest method. Planting with precommercial thinning is the only activity planned prior to final harvest.

LOWSHE — Same as above, but with shelterwood final harvest.

MODCLR — Moderate intensity timber management with clearcutting as the final harvest method. Planned practices are planting with precommercial thinning (age 20) and one commercial thinning prior to the final harvest. Dates of commercial thinnings vary by productivity class.

MODSHE — Same as above, except shelterwood is used for the regeneration harvest.

HIGHCLR — High intensity timber management with clearcutting as the final harvest method. Planned practices prior to the final harvest are planting with precommercial thinning (age 20) and two commercial thinnings. The dates of the commercial thinnings vary by productivity class.

HIGHSHE — High intensity timber management with shelterwood regeneration harvest. Other practices are the same as above.

F. Development of Yield Coefficients

1. Overview

This section describes how the yields of each resource were calculated. Additional information regarding each resource can be found in the respective background papers on file in the Forest planning records.

2. Timber

Yield tables for the Forest Management Plan were developed by projecting timber management inventory stand data using the Growth Prognosis Model. The Regional Office also developed a program by which groups of stands could be simulated, the summaries saved, and then weighted together to get a single yield table for that particular group. The advantage of this method over projection of a single representative stand lies in the weighting procedure. Each stand has a weighting factor based on the sampling procedure used in the Timber Management Inventory. A weighted yield table utilizing individual stand projections, species mix, tree diameter, and weighting factors results in a more accurate projection for the Forest than a single representative stand projection.

3. Range

a. Primary Range

Forage production was expressed in dry weight for all vegetation types found on the Forest. Percent utilization for livestock varied with the intensity of range management as follows:

Low Intensity =	28 percent
Moderate Intensity =	35 percent
High Intensity =	45 percent

The calculation of forage yield by Animal Unit Month (AUM) for primary range per decade was:

$$\text{AUM/acre} = \frac{(S)\ (\text{use factor})}{720}$$

Where S = Total pounds dry weight forage yield per decade; Use factor = Percent utilization allowed for livestock; and 720 = Pounds dry weight forage required per AUM.

b. Transitory Range

Forage production for transitory range was estimated for clearcut and shelterwood timber harvest and varied by timber productivity classes. An allowable use standard of 35 percent was maintained for all vegetation types. Forage production was assumed to have a 20-year life with maximum production of 10 years.

Calculation of the forage yield was:

$$l = a + (n-1)\ d$$

Where l = last year's cumulative total yield; a = first year's total yield; d = increment or annual change; and n = total number of years. Total forage at the end of n years (S) equals n/2 (a + 1).

The calculation of AUMs is the same as for primary range.

4. Main Access Roads (Arterial and Major Collector Road Construction)

The miles required and costs for the construction of main access roads are reported in FORPLAN. Main access roads are defined as the arterial and major collector routes required to provide the basic access to large undeveloped areas of the Forest. Main access roads average 1/2 mile per square mile of land area and an estimated total of 300 miles will be required under this Plan. Seventy percent are assumed to be constructed in the first decade and 30 percent in the second decade, which is the annual rate of 21 miles through the first decade and 9 miles in the second decade.

This management practice includes arterial road preconstruction, arterial road construction engineering, arterial road construction, arterial road reconstruction, collector road preconstruction, collector road construction engineering, collector road construction, and collector road reconstruction.

Main access roads were modeled in FORPLAN in the following manner: from analysis of five undeveloped areas on the Forest, the average density required to open the areas for resource development is 0.5 mi/mi^2 (see 1920 memo, Arterial Road Development dated 5/14/81). The construction pattern for these major access routes is 70 percent in the first decade and 30 percent in the second. The remaining collector-local road system would be built during the project development phase. Arterial and major collector roads are assumed to have a 60-year life, and reconstruction costs are 30 percent of initial construction costs.

5. Local and Minor Collector Road Construction/Reconstruction

Total miles of local and collector road construction are reported in FORPLAN. Roads are modeled as built during the first entry of existing stands. Each area is classified with the existing road density as either undeveloped (existing density is 0.0 mi/square mile), partially developed (existing density is 2.0 mi/square mile), or totally developed (existing density is 4.0 mi/square mile). The miles of road required to totally develop an area are modeled as built during the first entry.

Since the FORPLAN outputs tended to put the required road construction in the later decades, the data was adjusted outside of FORPLAN to provide a more realistic distribution of the construction during the earlier decades, and to relate the miles of road to timber harvest. The total miles for each alternative were not changed. The factors used are shown in Table B-8.

Table B-8
Road Density Coefficients
(Miles/MMBF)

	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037	2038-2047	2048-2057	2058-2067	2068 on
Coefficients	0.60	0.45	0.30	0.25	0.20	0.20	0.15	0.10	0.05

The road construction costs were developed from actual Forest cost records for the period of fiscal year 1978-1981. Costs were adjusted for inflation and include a road reconstruction cost for existing roads.

6. Road Maintenance

Road maintenance mileage considered in Forest planning is based on the amount of new and existing road mileage being used during the planning period. Normally about 30 percent of the road mileage is closed or unmaintained. FORPLAN modeling assumes a cost of $212/mile/year and that once a road is constructed it will be maintained throughout the planning horizon. Road maintenance includes five levels of maintenance. Also included are bridge and major culvert projects. In 1980, an estimated 1,860 miles of road were in the total system base.

Either road maintenance costs need to be adjusted outside of the FORPLAN Model, or the initial road closure assumptions must be modified. During the planning process, it became necessary to revise basic assumptions and develop road management standards for system closures. The projected road closure mileage during the first decade will equal or exceed the annual construction mileage. Road system miles after the first decade will level out so that the total system will not exceed 1 mile per square mile considering the total suitable timber acres. Road maintenance costs will then be computed utilizing a stable system base of 1,500 miles at an increased maintenance level commensurate with public use and safety. Maintenance cost will need to be further adjusted to reflect a custodial maintenance for restricted road closures (Level 1).

7. Dispersed Recreation

Dispersed recreation yield coefficients express potential capacity in recreation visitor days per acre (RVD/acre). The process for determining potential capacity was derived from "Recreation Opportunity Inventory and Evaluation," R-1-75-006, June 1974, also known as ROS.

In general, the process worked as follows: basic output levels were determined for each ROS class, physical characteristics of land were identified that affect its capacity to support recreation use, the degree of positive or negative influence of these characteristics was estimated and a multiplier was assigned to each, and the base output level was multiplied against all of the multipliers, or factors, to obtain final yield coefficients, which are shown in Table B-9.

Table B-9
Dispersed Recreation Yield Coefficients
(RVD/Acre/Decade)

ROS Class	Area	RVD/Acre/Decade
Semiprimitive Nonmotorized(SPNM)	Salmon River/Selway	5.0
	Clearwater/Red River/Elk City	2.0
Semiprimitive Motorized (SPM)	Red River/Selway	30.0
	Salmon River/Clearwater/Elk City	5.0
Roaded Natural Appearing (RNA)	Salmon River/Clearwater/Red River/Selway	100.0
	Elk City	40.0

Physical characteristics included size, percent of year usable, and amount of area usable for recreation. Capacity estimates were based on existing travel

facilities, recreation developments, and visitor group sizes per acre or per mile of roads and trails. The final coefficients fell within a range of coefficients suggested by the Northern Region for each ROS class.

The capacities arrived at by applying the coefficients do not reflect use or demand. They are gross averages and are useful primarily for comparing the potential capacity to provide dispersed recreation output in a relative sense under different management emphases.

8. Wilderness

Wilderness recreation yield coefficients for the three classified wildernesses were developed from 1980 Recreation Information Management use figures adjusted over time, using Pacific Northwest River Basin Commission estimates of increases in demand. Outputs for the three classified wildernesses were assumed to remain constant for all alternatives. Projections were only made for 50 years, so the output was held constant beyond the fifth decade. These coefficients are displayed in Table B-10.

Table B-10
Wilderness Yield Coefficients
(RVD/Acre/Decade)

Wilderness	Acres	1980-1990	1990-2000	2000-2010	2010-2020	2020-on
Selway-Bitterroot	560,088	1.0	1.2	1.3	1.5	1.7
Gospel-Hump	200,464	1.6	1.9	2.3	2.7	3.0
Frank Church-RONR	105,736	2.4	2.8	3.5	3.9	4.5

9. Other Classified Areas

Yield coefficients were based on the 1980 Salmon River Management Plan for the Salmon Wild and Scenic River, and on the Recreation Opportunity Inventory (ROI) potential capacity process for the Middle Fork Clearwater River, Rapid River, the two Research Natural Areas, and the Gospel-Hump Corridor. These are shown in Table B-11. Outputs were assumed to remain constant for all decades for all alternatives.

Table B-11
Other Classified Area Yield Coefficients
(RVD/Acre/Decade)

Classified Area	All Decades
Salmon Wild and Scenic River	126.0
Middle Fork Clearwater Wild and Scenic River	653.4
Rapid River	5.0
O'Hara Research Natural Area	5.0
Moose Meadows Research Natural Area	2.0
Gospel-Hump Corridor	30.0

10. Developed Recreation

Yield coefficients were not determined for developed recreation.

11. Elk

Forage is assumed to be the limiting factor on winter ranges. Therefore, potentials were determined solely on the basis of forage production. Winter forage comprises both herbaceous plants (grasses and herbs) and browse.

Potential key and regular elk winter ranges were delineated according to the relationship of elk winter distribution to changing snow depths (Leege, 1977) and a review of Idaho Department of Fish and Game's 1960-79 winter surveys. Key winter range is that portion of the winter range where snow depths are less than 1.5 feet on most days of an average winter. These areas are usually below 4,100 feet in elevation. Regular winter range has snow depths less than 2.0 feet, but greater than 1.5 feet on most days of an average winter. These areas are usually between the 4,100 and 4,500-foot elevation.

The following assumptions were used in estimating elk winter range capacity and yields.

- Forage is the limiting factor on winter ranges.
- Elk are present on winter range for a 3-month period (90 days each year) on shrubland ranges and a 4-month period (120 days) on grassland ranges.
- Forage consumption per elk on winter range is 7 pounds (air-dry) per day (630 pounds each year) and 10 pounds per day on grassland ranges.
- Proper use is 65 percent of available forage on shrubland ranges and 75 percent on grassland ranges.
- Regular winter range will produce 75 percent of the winter elk capacity that key winter range produces on both shrub and grass ranges.
- Elk yield values will reflect forage allowances for mule and white-tailed deer.

The Forest planning records contain details on how these assumptions were used to calculate carrying capacity and develop yield tables.

G. Analysis Done Outside FORPLAN

This section describes how the yields for resources were adjusted, modified, and calculated outside of the FORPLAN model. Additional information regarding these analyses can be found in the respective background papers on file in the Forest planning records.

1. Range

Since primary range is considered fully occupied, any increases in livestock grazing are attributed to timber harvest in transitory range. Based on this assumption, timber harvest acres for clearcut and shelterwood units were totaled for each alternative and decade (future intermediate excluded). Transitory Animal Unit Month (AUM) production was calculated by applying these acres to yield tables designed for transitory range (previously explained in Yield Table

Summary). Total range output was determined by adding transitory and primary AUMs together.

2. Roads

Adjustment needs became apparent when FORPLAN outputs tended to underestimate the miles of local roads and costs required to harvest the scheduled acres in the first few decades of the planning horizon. Within FORPLAN, the required road construction costs associated with harvesting a particular analysis area are linked only to the area for harvest, only those roads within the analysis area are built, and only their costs are reported. Thus, the model does not include the miles of local road construction required in order to reach a particular harvest area. As a consequence, the total road miles are not accounted for throughout the planning horizon. Total road mileage required for harvest is underestimated in the first decades because the miles of road required to get to the analysis area are not accounted for. Likewise, the model overestimates road construction in later decades, because road density is higher in those areas which were "passed through" in earlier decades, but that FORPLAN views as being essentially unroaded.

The following methodology was developed to provide an approach that will be consistent with the magnitude of outputs that are directly related to road building in FORPLAN, and provide a pattern of road building that is consistent with present management and costs.

The first step in this analysis was to determine what validity could be placed on the miles of road constructed in the FORPLAN model with respect to timber harvested. After analyzing the situation, it became apparent that while FORPLAN was not representing the timing of road building well, it did report total miles of road built in the planning horizon adequately. This was illustrated by reviewing the historic road densities as they pertained to total miles of road that could be constructed on the Forest. Assuming that "fully roading" the nonclassified portion of the Forest would constitute building approximately 4 mi/sq.mi. of roads on 1,244,000 acres, or 1,944 sq.mi., then:

> 1,944 sq.mi. at 4 mi./sq.mi. = 7,776 or 7,800 miles of road for the Forest. Assuming that 1,800 miles of road exist, those alternatives that have all nonclassified acres available for timber harvest should have approximately 6,000 miles of road left to be constructed. Original analysis showed that total road miles for these alternatives ranged from 6,160 to 5,190 miles, and substantiated this argument.

The 1984 Transportation Inventory shows the Nez Perce to have 2,053 miles of road. This value was not changed to update FORPLAN analysis factors. (Road mileages per decade for the FORPLAN analysis were obtained from Economics Report No. 5, "Nontimber Costs & Prices," LeDuc, 4/14/82.) It was assumed that Alternatives C, E, and H, with reduced acres available, showed a proportionate share of road miles in accordance with this analysis.

Since total road miles reported in FORPLAN seemed appropriate, it was assumed that what was needed was a method for reallocating the miles to fit a more representative road building network. It was assumed that this schedule would show a decreasing number of miles of road being built each decade beginning in the first decade, thus substantiating the "cumulative" theory, and producing only

minor mileage of roads being built by the end of the planning horizon. This was accomplished by tying road mileage to volume of timber harvested per period.

There are two reasons for this approach: data on miles of road constructed to volume of timber harvested already existed, thus establishing a starting point; and the information could be easily obtained to make the adjustments from the FORPLAN outputs.

A review of historical data showed that approximately 0.81 mile of local road was built or reconstructed for every million board feet of timber harvested between 1978-1981. These ratios are shown in Table B-12. This data was obtained from Forest records of reconstruction and construction road mileages in relation to volume of timber sold (LeDuc, 6/82).

Table B-12
Unit Mileage of Local Road Construction/Reconstruction, FY 78-81 (Ratios)

Fiscal Year	Equivalent Road Construction (miles)[1]	Volume of Timber Sold(MMBF)	Ratio Mi/MMBF
78	40.5	105.2	.38
79	102.7	107.2	.96
80	78.7	102.4	.76
81	38.2	39.9	.96
Average road density			.76
Weighted average road density			.81

1/ Equivalent road miles are equal to the total local road construction miles plus 1/3 (3 to 1 ratio) of the local reconstruction miles.

The assumption was made that the density of local road construction constitutes only 75 percent of the total road density (based on a 3 to 1 ratio of construction to reconstruction miles) and hence, a density of 0.6 miles per million board feet (MMBF) was used as the base value for road density for the first decade in all alternatives.

The next step in the process was to determine what road density values should be used to predict local road miles being constructed in the later decades. It was important that these coefficients should not only portray the cumulative road construction stratification, but also predict total road mileages consistent with what the corresponding FORPLAN outputs showed. Through trial and error, the coefficients shown in Table B-13 were derived and were felt to meet these requirements.

Table B-13
Required Road Density by Decade
(Coefficients - Mi/MMBF)

	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037	2038-2047	2048-2057	2058-2067	2068 on
Coefficient	.60	.45	.30	.25	.20	.20	.15	.10	.05

Multiplying the coefficient for a given decade by the average annual harvest for that decade yields the "adjusted" local road mileage, reported as annual average or, if multiplied by 10, the decade total. For example, if the annual harvest for period 2 is 100 MMBF and the "required road density" coefficient is .45, then the adjusted local road total is 45 miles/year or 450 miles/decade. Table B-14 summarizes the information used to obtain the adjusted road data.

For each decade, the miles of local road construction predicted in FORPLAN are compared to those of the adjusted methodology. As can be seen, the adjusted road miles more closely represent the decreasing trend in road construction over time, while still predicting the total miles of local road construction within acceptable limits (variation in adjusted miles to FORPLAN miles is 2 to 6 percent).

During the evaluation it was found that the road density coefficient was not always a true reflection of road development planning. Variances in annual harvest volumes and scheduling could deviate road density for out-year entries. Each benchmark and alternative was evaluated separately and compared for similarities in suitable acres, entry timing, and entry demands by other resource objectives. These evaluations resulted in manipulation of coefficients. Total roading needs remained within acceptable levels although decade trends would change.

Table B-14
Example of Alternative Adjustments by Decade - Alternative D

Decade[1]	Required Road Density[2]	Miles of Road From FORPLAN[3] (Miles/Year/Decade)	Volume Harvested (MMBF)[4]	Adjusted Road Miles[5] (Miles/Year/Decade)
1	60	(99) 78	157	(115) 94
2	45	(43) 34	198	(98) 89
3	30	31	243	73
4	25	34	244	61
5	20	23	248	50
6	20	18	250	50
7	15	88	243	36
8	10	0	241	24
9	5	29	239	24
10	5	20	246	12
11	5	57	244	12
12	5	37	238	12
13	5	44	232	12
14	5	0	246	12
15	5	99	239	12

Annual Total Road Miles from FORPLAN	622	Annual Total Adjusted Road Miles[10]	603
Total New Construction	6220	Total Adjusted New Const.	6030
Total All Roads	8020	Total Adjusted All Roads	7830

1/ Figures in this table are planned in Decade 1 and projected in all other decades.
2/ Table B-13
3/ Economic Report 5 - Roads (1800 - decade total)
4/ Harvest Report 3 (Volumes M/CUFT - Periodic)
5/ Volume column 4 times column 2 density
6/ Adjusted Road Miles Column 5 minus Fortran Road Miles Column 3
7/ Economic Report 7 - Logging
8/ Total of Column 7 divided by total of (Column 3 minus Arterial-Collectors Mileage 30)
9/ Unit Costs Column 8 multiplied by adjusted Road Miles Column 5 (Local Miles Only)
10/ Represents a 3-percent change from FORPLAN

Net Change in Road Miles[6]	Total Road Costs From FORPLAN ($ Million/Yr/Decade)[7]	Estimated Unit Cost/ Mile[8]	Adjusted Road Costs ($ Million/Yr/Decade)[9]
+16	2.0000	72365	6.800
+55	2.4203	72365	6.440
+42	2.4412	72365	5.280
+27	2.8227	72365	4.410
+27	2.5016	72365	3.620
+32	1.6163	72365	3.620
-52	5.0421	72365	2.610
+24	1.7558	72365	1.740
-5	3.9855	72365	1.740
-8	2.7140	72365	0.870
-45	2.9838	72365	0.870
-25	2.2903	72365	0.870
-32	4.1582	72365	0.870
+12	0.7343	72365	0.870
-87	5.3727	72365	0.870
	Total Costs 42.8400		Adjusted Costs 41.480

Once local road mileages were predicted, approximations of road costs were analyzed. It was apparent that since the actual road mileages had been altered from FORPLAN, the corresponding costs per decade would also change. Three procedures were analyzed to determine an acceptable cost estimation. First, the per-decade local road construction and reconstruction costs were checked to see if they could be used to predict the costs of the adjusted road construction miles. Analysis showed that, when viewed on a unit basis, the costs in FORPLAN were comparable to the average road construction cost for fiscal years 1978-1981 of $63,396 per miles in 1978 dollars. (Costs based on price adjustments from Federal Highway Administration "Highway Bid Price Index", for 1978-81. Fiscal year data were obtained from Regional Office records, LeDuc, 5/28/82). Table B-15 summarizes these costs.

Table B-15
Local Road Costs by Alternative
(1978 Dollars)

Alternative	Total Road Cost From FORPLAN ($Million)	Total Local Roads (Mi)	Unit Cost($)
A	226.032	2330	97009
C	326.335	3950	82616
D	414.80	5730	72391
E	412.199	5130	80351
F	364.072	4260	85463
G	358.85	4250	84435
G1	367.970	4670	78794
H	248.137	3000	82712
H1	295.351	2970	99445
I	293.519	3650	80416
J	348.252	4610	75543
K	370.85	4350	85253
L	369.67	4810	76854
Max PNV	447.10	5710	78301
Min Lvl	0	2058	0

As can be seen, FORPLAN costs are significantly higher than the Forest average. This is because the FORPLAN costs include estimates for reconstruction, which is assumed to occur at the initial entry of every fully roaded existing stand or all regenerated stands. It was felt that this would not pose a serious problem for cost estimates since the model was programmed to predict these costs already. Therefore, the unit road cost for each alternative was used to predict the per-decade road costs for that particular alternative. Table B-14 illustrates these costs. These values are calculated by multiplying the per-decade road mileage by the unit cost per mile to obtain the total value. For instance, in alternative D1B, the total miles of roads built per year in decade 2 is 89, and the unit cost is $72,365 per mile. Therefore, the total cost of constructing and reconstructing local roads is $6,440,000 per decade.

3. Recreation

a. Developed Recreation

Developed recreation was not analyzed in FORPLAN. No yield tables were built to express developed recreation RVDs (Recreation Visitor Days).

Developed recreation outputs were expressed as current supply (capacity level) until projected demand exceeded supply. Once projected demand exceeded supply, the outputs were expressed as that projected demand because the assumption was made that the Forest can and will increase its developed recreation capacity to meet demand.

Demand was projected by applying the Pacific Northwest River Basin Commission growth rates to 1979 Recreation Information Management (RIM) use data. Projections were only made for 50 years, so the output was held constant beyond the fifth decade, as shown in Table B-16.

Table B-16
Developed Recreation Outputs
(Thousand RVD/year)

Planned	Projected			
1988-1997	1998-2007	2008-2017	2018-2027	2028-on
186.0	186.0	188.2	218.3	253.8

Current supply was expressed as maximum optimal capacity, which is 40 percent of theoretical capacity: 40% x 465.0 MRVD/year (from 1980 RIM data) = 186.0 MRVD/year.

Outputs were assumed to remain constant for all alternatives and benchmarks.

b. Nonwilderness Dispersed Recreation

Nonwilderness dispersed recreation outputs were determined by subtracting the amount of wilderness RVD per decade (from FORPLAN) from the total amount of dispersed RVD per decade (from FORPLAN).

c. Semiprimitive Recreation

For the first 5 decades, semiprimitive recreation outputs were expressed as potential RVDs in roadless analysis areas receiving non-timber prescriptions PLUS potential RVDs in roadless analysis areas receiving timber prescriptions, until the decade of first entry harvest. Following the trend of the first 5 decades, semiprimitive recreation beyond the fifth decade was reduced by 3 percent each decade.

Current potential output of semiprimitive nonmotorized (SPNM) recreation was calculated to be approximately 10 percent of total semiprimitive recreation. The ratio of SPNM to total semiprimitive recreation was held constant for all decades for all alternatives at 10 percent.

Semiprimitive motorized (SPM) recreation outputs were determined by subtracting the amount of semiprimitive nonmotorized RVDs per decade from the total amount of semiprimitive RVDs per decade.

d. Roaded Recreation

Roaded recreation outputs were determined by subtracting the amount of all semiprimitive RVDs per decade from the total amount of nonwilderness dispersed RVDs per decade.

e. Roadless Areas

Acres in each roadless area were multiplied by the yield coefficient for that area to give us RVDs per decade for each roadless area. In alternatives which assigned no additional roadless acres to wilderness, the roadless area output remained as nonwilderness dispersed RVDs. In alternatives which did assign additional roadless acres to wilderness, the roadless area output was changed to wilderness RVDs.

4. Elk

a. Winter Range for Elk

Elk/livestock relations on winter ranges are evaluated on the basis of available forage for key species. These evaluations were made outside the FORPLAN model. Livestock utilization of key species under low, moderate, and high intensities of livestock management is 50 percent, 58 percent, and 70 percent, respectively. Assuming proper use to be no more than 75 percent total utilization and recognizing that key species are the principal forage species for wildlife on winter ranges, utilization available for wildlife under the low, moderate, and high intensities of livestock grazing is 25 percent, 17 percent, and 5 percent, respectively. The Forest's planning files contain detailed information.

b. Summer Range for Elk

Biologists agreed that not all summer range acres had equal potential to support elk and that two stratifications, key range and regular range, would suffice for Forest planning.

The term "key elk summer range" is defined as those areas that can support a high density of elk as a result of inherently ideal habitat conditions. Such conditions include a gentle topography, an abundance of water, and herbaceous vegetation. Adequate security from people must also be available to realize full utilization of key summer range.

Little research has been done to determine the actual animal numbers each range could support. Estimates were derived from experience of biologists working in northern Idaho and from literature review. Biologists determined that regular

range can support one elk per 80 acres (0.0125 elk per acre) at 100 percent effectiveness. These figures assume that habitat conditions are optimum for elk. Few areas, however, provide optimum habitat conditions. To account for factors other than cover/forage ratios, roads, and livestock, a reduction from optimum of 10 percent is used to calculate yields. "Guidelines for Protecting and Evaluating Summer Elk Habitat in Northern Idaho" discusses other factors and the Nez Perce National Forest planning files contain documentation on how this value was determined. These values represent maximum potential carrying capacity. Open road densities and livestock densities are used as a measure of the percentage of actual elk potential on summer ranges.

For analysis purposes, the open road densities in Table B-17 were assumed on the land assignments, with a corresponding percentage of elk habitat effectiveness (potential capacity) on elk summer range:

Table B-17
Elk Habitat Effectiveness
(Percent)

Land Assignment	Miles Road/Sq.Mile (Open Roads)	Habitat Effectiveness (Percent Potential Capacity)
Roadless/wilderness	0	100
High intensity timber management	3	33
Low/moderate intensity timber management	2	55
Other elk summer range	0.25	95

5. Minerals

The minerals information required as part of the Forest Plan, per 36 CFR 219.22(a through f), came primarily from the following sources:

- Information on active mining claims on the Forest, which is kept current by the U.S. Bureau of Land Management. The "Recordation" information is collected under authority of Section 314 of the Federal Land Policy and Management Act. Mining claim locations and proof of annual assessment work is submitted to the BLM by the claimants. The BLM records the information and provides a synopsis to the Forest. The Forest maintains the "Recordation" information supplied by the BLM, actively uses and relies upon it in the administration of various Forest and mining projects, and keeps it available to the public.

- Forest and Regional Office Land Status records were reviewed to determine land status for Outstanding and Reserved mineral rights. Forest planning records were used to establish the locations and acreages for lands that are currently, or proposed to be, withdrawn from mineral entry (i.e., wilderness, Wild and Scenic River, National Recreation Area, administrative).

- Mineral occurrence and potential evaluations were based on evaluation of published and unpublished records, evidence of activity both past and present, and sampling data in some cases. Determination of low, moderate, high, and very high potential ratings is based on guidance and direction received from the Minerals and Geology group of the Regional Office, and was so noted to provide rating continuity across Region One.

6. Sediment Yield

Forestwide, sediment impacts from proposed management activity (road construction and timber harvesting) were calculated using yield tables outside FORPLAN. Coefficients for those yield tables were derived to reflect surface erosional processes that were based on field observations, research, and data from the northern Rockies and the Idaho Batholith (USDA, 1981a; 1981b; 1981c). Relative comparisons between alternatives and indications of trends were produced by this analysis.

To calculate the sediment yields, acres of timber harvest by silvicultural treatment by landclass groupings from FORPLAN and miles of system/main arterial roads were obtained by decade. Miles of road construction were distributed by the landclass groupings that corresponded to the timber harvesting schedule. Coefficients for harvest sediment included weighted averages for anticipated logging systems by landclass grouping. For each alternative, sediment yields for the existing situation, new road construction, proposed timber harvest, and baseline conditions (for the classified and nonclassified portions of the Forest) were summed by decade.

To achieve the minimum management requirement for water quality/fisheries and the various fishery objectives, FORPLAN was constrained by the acres of harvest for decades 1 and 2 and an accessibility constraint. A computerized version of the Guide for Predicting Sediment Yields from Forested Watersheds (USDA, 1981a) that estimates the sediment levels from proposed management activity on third to fifth order watersheds determined these acreage constraints.

7. Water Yield

Impacts from timber harvesting and road construction on Forestwide water yield were estimated using the Equivalent Clearcut Area concept (USDA, 1975). This concept was developed from field observations, research, and data from the northern Rockies on streamflow responses to Forest management activities. The analysis produced reasonable indications of water yield trends; relative differences between alternative actions; and approximate, quantified, and expected outputs for water yield.

To perform the water yield computations, acres of timber harvest by silvicultural treatment from FORPLAN and miles of system/main arterial roads were obtained by decade. The existing and baseline situations were determined from past calculations by the former Nez Perce National Forest hydrologists and by a computerized version of Forest Hydrology, Part II: Hydrologic Effects of Vegetation Manipulation (USDA, 1975) that estimated the water yield situations for all third to fifth order watersheds on the Forest. No peak flow analysis was conducted on any alternatives.

Even though water yield was not an issue or concern, a minimum management requirement in the form of an accessibility constraint was used in FORPLAN to model the legal considerations for the hydrologic integrity of stream channels.

8. Trails

Evaluating trails is complicated because while management guidelines recognize the values of trails, no emphasis has been placed on developing, through construction, new systems for administrative or recreational uses.

Major emphasis has been placed on high-use recreation trails, National Recreation Trail systems, and wilderness access trails. Public involvement has not implied a desire for future development of additional trail systems but concerns have been recognized for increase of user safety, elimination of conflict by trail users, and quality upgrading of existing facilities.

Analysis evaluations for FORPLAN were accomplished using historic Forest maps, transportation (road) mapping, and a visual observation analysis of management operations and effects on given blocks of land.

Land use management through development of road systems has replaced the needs of many Forest trail systems. Continued increases in road systems will continually decrease the need for trail systems.

All existing roadless areas were analyzed for trail needs and user potential. As these roadless areas are developed, the trail system will be decreased to match existing facility inventory in presently developed areas - approximately 1/4 mile per square mile. Most trails in developed areas are replaced by road facilities that serve the recreation traveler or remaining trails provide the user cross-country access between road systems.

An evaluation of trail needs shows that the Forest would maintain a minimum of 1,419 miles of trails and a maximum of 2,342 miles at the end of the planning horizon (150 years), even if the Preferred Alternative is maximum timber harvest. This total includes all present wilderness, National Recreation, and high public demand trail facilities.

Management objectives specify that no new trails are to be added to the system and only those trails designated high use by the Forest task force in 1982 are to be considered residual systems.

Because of the difficulty in determining road access development scheduling, the FORPLAN Effects Data Base only considers an initial and final mileage base. The interim planning horizons will need a project analysis to review trail systems per land unit. This analysis will determine the trail needs as development and public demands change.

9. Energy

Energy consumption was computed outside of FORPLAN. The energy consumption for each alternative is based on the estimated energy use required for Forest Service administrative activities, road construction, road maintenance, timber harvest, recreation use, and grazing permittees. Energy consumption is based on the gallons of gasoline and diesel fuel used in each of the activities. The energy coefficients used are shown in Table B-18.

Table B-18
Energy Coefficients
(Specified Units)

Activity	Coefficient
Developed Recreation	$.015 \times 10^7$ BTU/RVD
Dispersed Recreation	$.010 \times 10^7$ BTU/RVD
Road Maintenance	$.16 \times 10^7$ BTU/Mile
Administrative Sites	928.3×10^7 BTUs annually
Administrative Travel	$1407. \times 10^7$ BTUs annually
Timber Harvest	$.13 \times 10^7$ BTU/MBF
Road Construction	26.3×10^7 BTU/Mile
Range	$.0076 \times 10^7$ BTU/AUM

10. Fish/Water Quality

The quantification of the fish resource was achieved using four data components. One, a stream habitat data base, was developed by Newhouse and Robertson in 1980. This data file was generated through literature (Murphy and Metsker, 1962; Mallet, 1974; and Martin, 1975 and 1976), 1975 through 1980 Forest Service habitat surveys, and personal knowledge. Where data was lacking, streams of first and second order were assumed to have no available habitat due to small size and high gradient. This file describes, by reach (dissimilar stream sections) for each prescription watershed, the fish species present by age class and total available habitat area. Streams are classified as anadromous, resident, or nonresident (no fish). Each reach is channel-typed according to standard Forest Service criteria.

The second data component used was fisheries research conducted by the University of Idaho (Shepard and Bjornn, 1981). These researchers investigated expected fish densities by species, age class, and channel type at full seeding capacity. When combined with the habitat area and species data file, the resulting file yields the Forest's biological potential to produce fish (area x density/species = total fish/species). The primary assumption is that the density of fish in the study area is representative of the entire Forest. This file is referred to as the 'Fisheries Yield Tables'.

The third and fourth data components used in the analysis were the Fish Response and Sediment Yield Guidelines (Stowell et al., 1983 and USDA Forest Service, 1981a). A tie between biological potential (Fisheries Yield Tables) and current habitat potential was made using these analysis tools. The basic premise behind these two models is that roading and logging produce sediment in

excess of natural rates and this excess sediment is detrimental to salmonid populations. The existing watershed data base for sediment yields was run through the fisheries model to get the existing habitat condition, due to management sediment, for each prescription watershed. Current habitat potential is expressed in numbers of anadromous smolt and catachable trout (more than 6 inches). This data file was developed under the assumption that excess sediment delivered to a critical fish habitat was cumulative and little if any recovery in habitat condition has occurred since the activity took place. Current fish habitat potential was then used to compare FORPLAN benchmark and alternative runs.

Once the number of fish the Forest can produce was established, the matter of how the alternatives affect fish populations was a rather complex problem. It was first thought that sediment yields by alternative, as they came out of FORPLAN, could be used through the Fish Response Guidelines. This approach, however, proved to be infeasible for several reasons. Sediment yield tables in FORPLAN had to be repeatedly compromised (condensed) in order to make room in an already overburdened model. This resulted in sediment yields only being available on a Forestwide basis. Forestwide averages tend to dilute results and hide problem areas. Also, they do not allow for close analysis of individual watersheds as previously planned. The solution to this problem was to establish fish habitat objectives by watershed and convert these objectives to a FORPLAN constraint related to sediment yields. In essence, the Fish Response Guidelines were applied in reverse. The question became: for a given level of fish habitat capacity (objective), how much sediment can we produce and still meet this goal?

The fish habitat objectives were established by Rick Stowell (Forest Fisheries Biologist) using the following criterion:

a. Fishery Type:

   (1) Anadromous - Priority 1
   (2) Resident - Priority 2

b. Habitat Condition:

   (1) Pristine - Priority 1
   (2) Degraded - priority 2

c. High importance to public and Idaho Department of Fish and Game's goals - Priority 1

Each priority was given a numerical objective which related to the percent of habitat carrying capacity desired for each category. Objectives varied by drainage and alternative and were set no lower than than 60 percent to provide for viable populations (See Forest planning records). Objectives were set primarily on the above criterion, but personal knowledge of the Forest's fishery resource was also applied. Objectives were set using the following categories:

- Anadromous/Pristine - 100 percent or 90 percent
- Anadromous/Degraded - 80 percent or 70 percent
- Resident/Pristine - 100 percent or 70 percent
- Resident/Degraded - 70 percent
- Highly Important - 100 percent or 90 percent
- Viable Level - 60 percent

Sediment yields used to support the preceding objectives were derived from the Fish Response Guidelines (Table B-19). These sediment yields, referred to as sediment budgets, are the levels of sediment which cannot be exceeded and meet the stated objective. Sediment yields necessary to meet the 90 percent objectives are referred to as threshold levels. Threshold sediment yields are those levels over the natural rate that would not result in a measurable impact to fish habitat. Threshold levels were derived from data collected on the Nez Perce and Clearwater Forests and documented in the Fish Response Guidelines.

Table B-19
Sediment Yields Over the Natural Rate Necessary to Meet Fisheries Objectives by Species and Channel Type
(Percentage)

	Fish Objective - Resident/Steelhead			
Channel-Type	60	70	80	90
A	80	70	60	60
B	75	60	45	40
C	65	50	35	30
	Fish Objective - Chinook			
A[1]	-	-	-	-
B	45	40	35	30
C	30	25	20	15

1/ Chinook production in 'A' channel types does not exist on the Forest.

Another feature of the fish/water quality objectives is the concept of entry frequency. Entry frequencies are estimates of the rate of road building activity (activity years per decade) which would also be necessary to meet stated fisheries objectives. The concept applies to the ability of fish habitat to recover toward its original condition after excess sediment has been introduced into the system. It was felt that fish habitat could not recover if the budget or threshold was reached more than once for thresholds and more than two to three times for budgets in any given 10-year period. This methodology is an attempt to address the cumulative impacts issue. By not exceeding sediment levels within the stated frequency, cumulative impacts should not exceed desired objectives.

IV. COST EFFICIENCY AND NET PUBLIC BENEFIT

This section describes how the efficiency criteria and Net Public Benefits (NPB) measures described in Chapter II are derived. This analysis is required by National Forest Management Act regulations (36 CFR, Part 219) and plays an important part in the development and comparison of Forest planning alternatives. After evaluating all public comments on the Proposed Forest Plan and Draft Environmental Impact Statement (EIS), it was decided to do a sensitivity analysis on timber price projections and the valuation of timber, recreation, and wildlife. See Appendix D for the results of this analysis. Table B-20 displays the factors which define Net Public Benefits.

Table B-20
Derivation of Net Public Benefits
(Specified Units)

PRESENT NET VALUE (PNV)
Priced Outputs
Nonmarket Market
(e.g. Recreation) + (e.g. Timber)

\+ = NET PUBLIC BENEFITS (NPB)
(Non-numeric value)

NET SUBJECTIVE VALUE (NSV)
Nonpriced Outputs
Nonquantitative Quantitative
(e.g. T&E Species Quality + (e.g. #Elk)

In response to public comments on timber price projections and values, additional analysis was performed on the Max PNV benchmark, Alternative D, and Alternative G. The purpose of this analysis was to determine what impacts updated values and projections would have on resource output capability and economic efficiency. Additional analysis was also done using updated wildlife/recreation values to determine the impact on present net value and land assignments for Alternative G. For additional information in regard to this sensitivity analysis, see Appendix D.

A. Net Public Benefit (NPB)

Net Public Benefit is the overall value to the nation of all outputs and positive effects (benefits) less all the associated Forest Service inputs and negative effects (costs) of producing priced and nonpriced outputs from National Forest System lands (36 CFR 219.3). Thus, Net Public Benefits represent the sum of net priced outputs (PNV) plus the net subjective value of nonpriced outputs. Net Public Benefit cannot be expressed as a numeric quantity because PNV cannot be numerically added to qualitatively valued nonpriced outputs. Maximization of Net Public Benefits is a goal of the Forest planning process.

B. Present Net Value (PNV)

PNV represents the dollar difference between the discounted value of all priced outputs and all Forest Service costs projected over the 150-year planning horizon. Two discount rates, 4 percent and 7-1/8 percent, were used to represent the real cost of money over time (36 CFR 219.3).

This cost-efficiency measure is part of NPB and is used to determine the net economic value of priced outputs. Priced outputs included in the Nez Perce FORPLAN model were those with estimated market values (timber and range) and assigned nonmarket values (dispersed, developed, and wilderness recreation and recreation activities related to on-site fishing and big-game hunting). Values for special uses and anadromous fishery opportunities attributed to the Forest were also calculated and added to the PNV amounts.
Each benchmark and alternative was designed to achieve the goals and objectives in a manner that produced the greatest PNV. This was accomplished by solving FORPLAN with the objective function of maximizing PNV while meeting the specified constraints of the benchmark alternative. The PNV calculated in FORPLAN is modified by including priced benefits and costs not modeled in FORPLAN. The modified PNVs were used to evaluate the benchmarks and alternatives. The benefits and costs which were not included in FORPLAN were those which do not influence and are not influenced by land assignments and output scheduling. This section describes how the prices and costs were calculated.

1. Priced Output Parameters Used in PNV

a. Discounting

Two discount rates were used to solve FORPLAN and to calculate the economic consequences of the benchmarks and alternatives. The 4-percent rate approximates the real return on corporate long-range investments above the rate of inflation (Row, Kaiser, Sessions, 1981). Inflation is not included in the discount rates, benefits, and costs due to the difficulty of estimating future inflation rates and because inflation is assumed to equally affect both costs and prices. This rate was used to solve FORPLAN in all cases except one and is also the primary rate used to evaluate benchmarks and alternatives. The second rate, 7-1/8 percent, was used to determine sensitivity of the Preferred Alternative to the discount rate by solving FORPLAN at 7-1/8 percent (FSM 1971.5, R-1, ID No. 7). A summary of this information is included in Chapter II. Also, the PNV of all benchmarks and alternatives was recalculated at 7-1/8 percent for comparison purposes. All costs and benefits were discounted from the midpoint of the planning period.

b. Timber Demand Curve

No local demand curve for timber was used in the FORPLAN computer model. None of the available techniques for developing Forest-level demand functions has a strong enough theoretical basis for use in Region 1. Available evidence also indicates that if a reliable Forest-level demand function could be calculated, the elasticity would be such that the use in FORPLAN would not be significant.

As specified by the Washington Office (1920 letter to Regional Forester, "Downward Sloping Demand Curves," dated 2/3/81), the demand curve is assumed to be horizontal.

As a result of public concerns about the timber supply in Idaho and the effect changes in demand would have on the Preferred Alternative (Alternative G), a study on Idaho's timber supply ("A Report on Idaho's Timber Supply") was completed on February, 1987. The result of this study and additional supply and demand analysis is contained in Appendix D.

c. Real Price Increases

Price trends used for valuing the resources in future decades are long-term estimates which may not reflect short-term market situations. Two price trends were directly incorporated in the FORPLAN computer model for timber values: lumber price and private lumber production costs. These trends reflect the assumption that future demand increases or supply restrictions will increase national product prices. Stumpage values used in the FORPLAN model were the residual of these projected lumber prices and private production costs, and result from the application of both price trends.

Table B-21 summarizes timber price and cost trends that are consistent with the requirements of FSM 1971.4 (R-1 ID No. 5). Cost and price trends displayed in Table B-21 are expressed in terms of proportional annual shifts per decade for 6 decades. The accumulated trend through the sixth decade was used for the seventh decade and beyond. The annual shifts were used to calculate the price and cost multipliers for the midpoint of each decade.

Price trends for valuing range forage and recreation (dispersed and developed) were incorporated into the model by using appended rows and columns to the linear program (LP) matrix. Price trends were also used in valuing anadromous fishery outputs calculated outside of FORPLAN. These include anadromous fishery values for sport and commercial fishing. The price trends were consistent with 1980 RPA assessments of the demand for these resources (FSM 1971.4, R-1, ID No. 6). The price trends for these resources are expressed as proportionate annual shifts in value for the first 5 decades. The accumulated trend in the fifth decade is used for the sixth decade and beyond.

No real cost increases were used to determine anticipated agency costs beyond the base year. However, the average unit costs of many activities will increase through time as more expensive management activities are scheduled. These costs are used in the model. For example, the unit costs of site preparation will increase as steeper and more expensive land classes are harvested.

d. Real Dollar Adjustments

All prices and costs are expressed in first quarter 1978 dollars. The gross national product (GNP) implicit price deflator index is used to inflate or deflate price and cost data to this common base (FSM 1971.32b).

2. Benefits and Costs Used in PNV

Priced outputs determine the dollar benefits used in the PNV calculations. Priced outputs include only those resources that are or could be exchanged in the market place. On the Nez Perce National Forest, only timber and range prices were based on locally estimated market values. Recreation prices are national-level estimates of consumers' willingness to pay. Willingness-to-pay values were derived in the 1980 Resource Planning Act (RPA) Assessment, and represent what consumers would be willing to pay for a recreational experience rather than forego the opportunity. They represent the consumer surplus, or the value above and beyond the actual cost of participation. Anadromous fishery values and special use returns related to the Forest were not included in the FORPLAN model, but their PNV contributions were added later.

Costs used in PNV include both priced output costs and costs built into prescriptions to produce varying levels of nonpriced outputs (discussed in detail later). PNV does not contain the value of all benefits or costs because some are nonpriced outputs; however, the costs to produce these outputs are included.

The compilation and analysis of data used to determine cost and benefit information for the alternatives and benchmarks involved two distinct procedures. First, those costs and benefits which contributed to land assignments and scheduling of prescriptions in the FORPLAN linear program (LP) were compiled and entered into the model through the use of economic yield tables and appended rows and columns to the LP matrix. These tables relate costs and priced output values associated with management practices, production costs, and timber values. The tables were assigned to individual analysis area prescriptions and allowed FORPLAN to assign the most cost-efficient prescription to any given analysis area to meet the constraints of the alternatives or benchmarks. Appended rows and columns to the LP matrix were used to incorporate the price benefits for recreation and range. These benefits were modeled to conform to future real price increases and maximum consumptive ceilings (see "Priced Benefits").

The second procedure in the analysis involved determining the costs and benefits that were not associated with land assignment or prescription assignment, but which were also affected by alternative formulation. These include the costs and/or benefits of site-specific programs (i.e., developed recreation). Estimation of these costs and benefits was done outside the FORPLAN analysis, but they were included in the PNV totals.

A more detailed analysis of the benefits and costs used to determine PNV can be found in the "Directory of Management Practices" package, Nez Perce National Forest planning records.

a. Costs

Agency costs were estimated for the 150-year planning horizon for all benchmarks and alternatives. This section discusses how costs were developed and allocated into the major expenditure categories. Costs were developed by Forest personnel in conjunction with developing standards and guidelines for management prescriptions. Agency cost estimates were determined for all management activities and classified according to FSH 1309.11, Management

Information Handbook (MIH) codes. These individual MIH costs were further combined to define management practices for recreation, wilderness, wildlife, fish, range, timber, water, minerals, human and community development, lands, soils, facilities, and protection. Management practices were used to define the primary unit costs associated with both the FORPLAN and external analyses. Cost estimates were based on 1980 base year activity, and expressed in 1978 dollars. Some costs include expenditures necessary to produce both priced and nonpriced outputs. The costs are based on historical data and professional judgment, and approximate the minimum funds needed to achieve the standards and guidelines in the management prescriptions. Cost data were used in developing feasible and cost-efficient prescriptions, consistent with FSM 1970.2, "Economic and Social Analysis Objectives." The costs which are dependent on land assignment and timber harvest schedule were modeled in FORPLAN. These costs were entered in the economic tables in FORPLAN. By solving FORPLAN to maximize PNV, the cost-efficient level of agency expenditures for these costs was estimated for 150 years. Other or "overhead" costs which were not modeled in FORPLAN were developed by the planning team to meet the objectives of each benchmark and alternative. The actual cost data is discussed later in this section. More detailed information on data sources and FORPLAN modeling procedures is located in the Forest Planning records.

Costs were divided into four broad expenditure categories:

Fixed Costs represent the inescapable costs of managing the Forest in the absence of producing controllable outputs. These are costs associated with meeting minimum management requirements and legal standards, avoiding undue environmental damage, and providing for the safety of incidental users. Fixed costs represent the costs of activities which the Forest must maintain, regardless of any controlled outputs being produced. Fixed costs were assumed to be constant for all alternatives and were calculated outside FORPLAN. Fixed costs did not contribute to the FORPLAN objective function that maximized Present Net Value and do not affect land assignments. However, these costs were added to the Forest costs, present value costs, and PNV outside the model. An average annual fixed cost of 2.024 million dollars was added to each alternative.

Variable or "Allocation" Costs were calculated in FORPLAN and are the costs of Forest Service management practices that vary in amount and timing as well as in response to different landtypes and management objectives. These are the costs associated with assigning a particular set of management activities (prescription) to a given analysis area. Each management prescription has a unique set of variable costs. Variable costs directly influence land assignments and scheduling of resource outputs. Variable costs for each alternative and benchmark are calculated per decade and are contained in the FORPLAN Economic Reports contained in the Forest Planning records. The costs reported include: road, site preparation, sale prep and silvicultural exam, timber stand improvement, reforestation, and nontimber resource management costs.

Overhead Costs represent the cost of activities which did not affect land assignments or scheduling of resource outputs, but are required to produce, enhance, or mitigate more than one resource. For example, the cost of Fire Prevention and Detection is classified as an overhead cost because this activity benefits all resources. Overhead costs comprise a large segment of

the total Forest program, accounting for approximately 30 percent of total agency costs. Overhead costs for each alternative and benchmark did not contribute to the FORPLAN objective function that maximized Present Net Value and do not affect land assignments. However, these costs were added to the Forest costs, present value costs, and PNV external to the model. Overhead costs vary by decade, and vary from $2.128 to $2.208 million dollars annually. Production Costs, also referred to as logging costs, are non-Forest Service logging and manufacturing costs. Production costs were developed using the Nez Perce stumpage valuation equations. These costs were used in the cost-efficiency analysis conducted by the FORPLAN computer model for stumpage price calculations but were excluded from budget calculations because they are purchaser, not Forest Service, costs. Briefly, production costs (PC) were calculated as the residual value between lumber selling price (LP), (log scale) and stumpage value (SV). That is PC ($/MBF) = LP - SV. Production costs vary, depending upon timber yield, species composition, logging method, harvest type, harvest unit size, and d.b.h. class.

Adjustments were made to the local road construction miles needed per decade, necessitating adjustments to road construction and construction engineering costs. The FORPLAN model schedules road construction miles directly proportional to acres of timber harvested. This results in an underestimate of the miles of roads needed in the early decades of the planning horizon because roads are needed to connect the new harvest areas to the existing road system. The total miles of road needed to complete the transportation system for a given alternative remained as calculated by FORPLAN; however, external to the model, some road miles were shifted from later to earlier decades. Associated variable costs were also brought forward.

(1) Cost Data by Resource Component

Costs were associated with each resource output component for timber, roads, range, recreation/wildlife, and other joint costs. The joint costs are not separated into resource, e.g., fire protection, and general administration. Costs are reported as annual averages per decade for each alternative and benchmark.

It is important to note that some of the costs include expenditures required to produce, enhance, or mitigate more than one resource. For example, slash disposal costs may contain a cost to mitigate visual quality. This cost is currently unseparable and appears in the timber category. This illustrates that the costs by resource output do not always have a direct relationship with the benefits by resource. In general, calculating a PNV by individual resource may be misleading.

(a) Timber

Most costs of timber management were considered variable and were calculated in the FORPLAN model. These include the costs of:

- Stand examination
- Reforestation
- Site preparation
- Timber stand improvements
- Sale preparation and administration

Timber costs were entered into the FORPLAN model by the use of the economic yield tables which assign costs to specific management prescriptions. These costs were calculated for each alternative and benchmark per decade and reported in the FORPLAN Economic Reports 1 - "Costs per Acre," 3 - "Cultural Treatment Costs," and 7 - "All Costs." In addition to these activities, the overhead costs for the following practices were added to the total timber costs:

- Timber planning and inventory
- Silvicultural review and evaluation
- Firewood administration
- Insect and disease management
- Genetic tree improvement program

These costs were calculated outside the FORPLAN model and were assumed constant for all alternatives and benchmarks. These costs constitute only a minor portion of the total timber costs and account for $0.120 million dollars annually.

Specifically, annual timber costs calculated for each alternative and benchmark were equal to:

$$\frac{\text{Stand exam costs/decade (calculated as: \$25x [(area in acres of first entry road costs) + (later entry road costs)] = Econ. Report 1}}{10}$$

+

$$\frac{\text{Cultural treatment costs/decade (minus release costs for Decade 1 and other costs for Decade 2) = Econ. Report 3}}{10}$$

+

$$\frac{\text{Site prep and sale prep costs = Econ. Report 7}}{10}$$

+

Annual overhead timber costs/decade ($0.1 million/yr.)

(b) Roads

The costs of preconstruction and construction engineering, road construction, purchaser road credits, and road maintenance were considered variable costs and were entered into the FORPLAN model in the economic yield tables. These costs were reported per decade for each alternative and benchmark in the FORPLAN Economic Reports 1 - "Costs per Acre," 3 - "Cultural Treatment Costs," and 5 - "Nontimber Costs." Local road construction costs (per-acre Logging Costs - Econ. Report 1) were further adjusted to account for an underestimation of road construction for timber harvests in the early decades. The cost of

transportation planning and inventory was added to the total road costs. The cost of this activity is assumed to be constant for all alternatives and benchmarks at 0.04 million dollars annually.

Annual road costs calculated for each alternative and benchmark were equal to:

$$\frac{\text{Preconstruction and construction engineering costs/decade (calculated as: residual of first entry road costs and first entry stand exam costs) = Econ. Report 1}}{10}$$

+

$$\frac{\text{First decade release costs and second decade other cultural treatment costs = Econ. Report 3}}{10}$$

+

$$\frac{\text{Road maintenance costs/decade (scheduled output 9) = Econ. Report 5}}{10}$$

+

Annual adjusted roadbuilding costs/decade

+

Annual overhead road costs/decade ($0.040 million)

(c) Range

The costs of administering and maintaining a range program on the Forest were considered variable costs, and were calculated in the FORPLAN model by use of the economic yield tables. These costs were reported by decade for each alternative and benchmark in the FORPLAN Economic Report 5 - "Non-timber Costs." Range costs include:

- Range planning and inventory
- Range management
- Range forage improvement
- Range structural improvement

An overhead cost of 0.003 million dollars was added to this cost to account for free use grazing permits included in the fixed cost estimates. Because of consumptive demand ceilings on Animal Unit Month (AUM) outputs, and the fact that these program levels can be achieved under most management levels, range costs were assumed to be constant for all alternatives and benchmarks except the minimum level and maximum range benchmarks. Range costs were calculated by applying a fixed unit cost to all inventoried acres of grazing lands.

Annual range costs for each alternative and benchmark were equal to:

$$\frac{\text{Range cost/decade (scheduled output 4) = Econ. Report 5}}{10}$$

+

Annual overhead range costs ($0.003 million)

(d) Recreation/Wildlife

Four recreation/wildlife costs were calculated in the FORPLAN model using the economic yield tables. These are:

- Wild and Scenic River management
- Dispersed recreation management
- Wilderness management
- Big-game habitat management

These costs were considered variable because they do affect land assignments and scheduling of resource outputs, although the costs of Wild and Scenic River and wilderness management were held constant for all alternatives and benchmarks. The costs were reported per decade for each alternative and benchmark in the FORPLAN Economic Reports 5 - "Non-timber Costs," and 7 - "Wildlife Costs." In addition to these costs, the following activities were added to the total recreation/wildlife cost estimates:

- Recreation planning and inventory
- Cultural resource management
- Visual resource planning and inventory
- Developed recreation planning
- Private recreation management
- Threatened and Endangered Species habitat management
- Stream inventories
- Fish habitat restoration and improvement

The costs of many of these activities can vary by alternative and benchmark, although they were considered to be constant overhead costs because they did not influence land assignments or scheduling of resource outputs. The overhead cost estimates account for 0.193 to 0.351 million dollars annually.

Annual recreation/wildlife costs were equal to:

$$\frac{\text{Recreation costs/decade (scheduled output 6) and wildlife costs/decade (scheduled output 7) = Econ Report 5}}{10}$$

+

Annual overhead recreation/wildlife costs/decade ($0.2-0.4 million)

(e) Other

Other costs constitute the balance of activities required to produce, enhance, or mitigate the resource programs already described. These costs are not separable among resource activities, but are necessary components of the Forest program. Other costs were calculated outside the FORPLAN model and account for 3.798 to 3.824 million dollars annually. Other costs include the following activities:

- Water planning and inventory
- Water uses
- Water resource improvements
- Minerals management
- Human resource programs
- Special uses
- Land ownership
- Landline maintenance
- Rights-of-way
- Land management planning
- Soils management
- Trail construction and maintenance
- Fire, Administrative, and Other (FA&O) construction and maintenance
- Fire prevention
- Cooperative law enforcement
- General administration

(2) Budget Costs

Budget costs consist of the estimated appropriated costs of management for each alternative and benchmark. These costs were reported as annual averages for each of the 15 decades. Budget costs were stratified into the following categories.

- Fixed costs
- Planning and inventory costs
- Operation and maintenance costs
- Capital investments

A fifth category, purchaser credit road costs, was added to show the cost of constructing purchaser credit roads for timber harvests. This cost was not included in the total budget costs, but was added to the total agency cost estimates used to calculate PNV. Delineation of what activity costs were included in each category followed the guidelines discussed in FSM 1971.32b (R-1, ID No. 6) and were adapted where applicable. Budget costs were calculated similarly to the method used to determine cost data by resource component. Variable or allocation costs for each budget cost category were summarized from the FORPLAN economic reports by decade for each alternative and benchmark. Overhead costs for each budget cost category were then added to these summaries to determine the total categorical costs. Following is a summary of how each budget cost was determined.

(a) Fixed Costs

As defined, fixed costs represent the inescapable costs of managing the Forest in the absence of producing controllable outputs (see preceding discussion). Fixed costs were assumed to be constant for all benchmarks and alternatives at 2.024 million dollars annually, and were calculated outside the FORPLAN model. Following are the activities which contributed to fixed costs:

- Cultural resource management
- Developed recreation management
- Private recreation management
- Threatened and Endangered Species habitat maintenance
- Recreation horse grazing permits
- Free-use firewood administration
- Water resource administration
- Minerals management
- Special use permits
- Road maintenance (custodial)
- Trail maintenance
- FA&O maintenance
- Fire prevention
- Law enforcement
- General administration

(b) Planning and Inventory Costs

Planning and inventory costs are defined as the costs associated with long-term management planning and resource inventories (FSM 1971.32b, R-1, ID No. 7).

These costs were assumed to be constant for all alternatives and benchmarks, although they do vary by decade from 0.155 to 0.130 million dollars annually. All planning and inventory costs were calculated outside the FORPLAN model, and include the following activities:

- Recreation planning and inventory
- Visual resource planning and inventory
- Timber planning and inventory
- Water resource planning and inventory
- Soils planning and inventory

(c) Operations and Maintenance Costs

Operations and maintenance costs include activities required to keep capital assets at agreed levels of service and availability, and activities required to produce, or incurred as, a result of producing controllable outputs (FSM 1971.32b, R-1 ID No. 7). Operations and maintenance costs were calculated as a summation of decade costs reported in the FORPLAN Economics Reports 5 - "Nontimber Costs," and 7 - "All Costs," for each alternative and benchmark, and a fixed level of overhead costs calculated outside the FORPLAN model. This fixed level of costs varied very little by decade and ranged from 1.675 to 1.678 million dollars annually. Operations and maintenance costs included in the FORPLAN model were derived from the following activities:

- Wild and Scenic River management
- Dispersed recreation management
- Wilderness management
- Deer and elk winter range management
- Range planning and inventory
- Range management
- Timber sale preparation
- Road maintenance

(d) Overhead Operations and Maintenance Costs

These costs added to the FORPLAN costs included the following activities:

- Stream inventories
- Firewood administration
- Water uses
- Water resource improvements
- Minerals management
- Human resource programs
- Land ownership
- Landline maintenance
- Rights-of-way
- Land management planning
- Soils management
- Transportation planning and inventory
- Fire prevention
- Search and rescue
- General administration

Specifically, annual operations and maintenance costs for each alternative and benchmark were calculated as:

$$\frac{0.45 \times [\text{Range cost/decade (Scheduled Output 4)} + \text{Recreation cost/decade (Scheduled Output 6)} + \text{Wildlife cost/decade (Scheduled Output 7)} + \text{Road maintenance cost/decade (Scheduled output 9)}] = \text{Econ Report 5}}{10}$$

+

$$\frac{\text{Sale prep cost/decade} = \text{Econ Report 7}}{10}$$

+

Annual overhead operations and maintenance cost/decade($1.675 - $1.678 million)

(e) Capital Investments

Capital investments are the costs associated with construction and reconstruction of arterial and collector roads or jointly used administrative or other facilities with benefits occurring over more than one 5-year planning cycle (FSM 1971.32b, R-1, ID No. 7). Capital investment costs were calculated

as a summation of decade costs reported in the FORPLAN Economics Reports 1 - "Per Acre Costs," 5 - "Nontimber Costs," and 7 - "All Costs, for each alternative and benchmark, and a fixed level of overhead costs calculated outside the FORPLAN model. Local road construction costs (Per Acre Costs - Econ Report 1) were further adjusted for an underestimation of road construction for timber harvests in the early decades, as previously discussed. It was assumed that 30 percent of the cost for local road construction would be funded with Forest Service appropriated funds for each alternative and benchmark.

Following are the activities which constituted capital investments calculated in the FORPLAN model:

- Range forage improvements
- Range structural improvements
- Stand examinations
- Reforestation
- Site preparation - slash disposal
- Timber stand improvements
- Arterial and local preconstruction and construction engineering
- Arterial road construction
- Local road construction (30 percent of total)

Overhead capital investments were assumed to be constant for all alternatives and benchmarks and varied from 0.324 to 0.481 million dollars annually by decade. Overhead capital investments were based on the costs of the following activities:

- Developed recreation management
- Threatened and Endangered Species habitat management
- Fish habitat restoration and improvement
- Genetic tree improvement program
- Trail construction and maintenance
- FA&O construction and maintenance

Specifically, annual capital investments calculated for each alternative and benchmark were equal to:

$$\frac{\text{Stand exam costs/decade (calculated as: \$25 x [(area in acres of first entry road costs) + (later entry road costs)] + preconstruction and construction engineering costs/decade* = Econ Report 1}}{10}$$

*Preconstruction and construction engineering cost/decade are calculated as 0.30 (residual of first entry road costs and first entry stand exam costs/decade).

+

$$\frac{\text{0.55 x range cost/decade (Scheduled Output 4) = Econ Report 5}}{10}$$

+

$$\frac{\text{Site prep and sale prep costs/decade = Econ Report 7}}{10}$$

+

0.30 (annual adjusted roadbuilding costs/decade)

+

Annual overhead capital investments/decade ($0.324 - $0.481 million)

(f) Purchaser Credit Road Costs

The purchaser-incurred costs of constructing and reconstructing local and minor collector roads required for timber harvest operations were included in the cost analysis to provide a true cost estimate of management activities. It is assumed that while these costs are purchaser-incurred, they do constitute government expenditures since timber revenues are paid to the purchaser for construction of these roads. They also constitute a portion of the costs used in assignment and scheduling within the FORPLAN linear program. However, purchaser credit road costs were reported separately because they do not constitute an appropriated fund required for implementation of any given alternative, but are necessary in order to produce timber outputs.

Purchaser credit road costs were derived from the FORPLAN cost estimates for local road construction for each alternative and benchmark (Per Acre Logging Costs - Econ Report 1). These costs were further adjusted for underestimations of road construction for timber harvest in the early decades, as previously discussed. It was assumed that 70 percent of the cost of local road construction for each alternative and benchmark would be funded with purchaser road credits.

Annual purchaser credit road costs for each alternative and benchmark were calculated as:

.70 (Annual adjusted roadbuilding costs/decade)

b. Priced Benefits Used in PNV

Resource outputs to which dollar values were assigned constitute the priced resource benefits included in the PNV calculations. Priced benefits were estimated for the 150-year planning horizon, and reported as annual average values for 15 decades for each alternative and benchmark. Priced benefits fell into two categories: market and nonmarket. Market benefits constitute the resources valued in terms of what people are willing to pay for them as witnessed by market transactions, or which could be traded under market conditions. These included benefits for timber, range forage, developed recreation, commercial anadromous fishing opportunities, land use, power, and minerals (FSM 6531.12b, "Annual Collection Statement").

Nonmarket benefits are defined as goods and services valued in terms of what reasonable people would be willing to pay rather than go without the output. The value represents the marginal willingness-to-pay or the theoretical site rent that could be charged to users in addition to the cost of participation (i.e., equipment, food, lodging, etc.). Nonmarket benefits used in the analysis include dispersed recreation, wildlife (elk), and anadromous fishery/ recreation opportunities.

(1) Prescription Assignment

As stated, both market and nonmarket benefits were used in the determination of total priced benefits. However, only certain resource benefits were used to determine the assignment and scheduling of prescriptions in FORPLAN. The reason these resource outputs were used is that their production could be linked to the analysis area/management prescription format. These include timber, dispersed recreation, wilderness, wildlife (elk), and range.

(a) Timber

The total value of both existing and future timber inventories produced on the Forest was derived through the use of the FORPLAN model, and used to predict land assignments and scheduling of prescriptions. Timber values represent the average stumpage value of timber harvested on the Forest. Stumpage value is the difference between lumber's selling price and all production costs. Values reflect differences in timber size, species group, volume per acre, logging method, Northern Region utilization standards, and time of harvest for existing and regenerated timber stands. The values were first computed in dollars per thousand board feet and then converted to dollars per thousand cubic feet using average conversion board foot-cubic foot values weighted by species mix.

A regression analysis of timber sales sold between 1974 and 1980 produced the following equations for predicting stumpage values:

For tractor and cable logging:

$$Y = -349.70 + 0.72009\ X_1 + 62.365\ X_2 + 36.034\ X_3$$

and helicopter logging:

$$Y = 255.16 + 0.5511\ X_4 + 47.94\ X_2$$

where:

Y = high bid stumpage value/MBF (1978$)
X_1 = weighted average lumber price, log scale (1978$)
X_2 = the summation of the natural logarithm of each dbh class times the proportion of the net sale volume in each class (analogous to the logarithm of the median dbh).
X_3 = percent of area that is tractor logged
X_4 = weighted average lumber price, lumber tally (1978$)

Directions on how the timber values were entered into the FORPLAN model can be found in the Forest Planning files.

Stumpage values were affected by incorporating two parameters to identify market response to variations in timber production. The first of these, use of a horizontal demand curve, assumes that the Forest's current production level is within the elastic portion of the demand function. The effect of this assumption is that unit prices for stumpage will be constant for all timber output levels predicted by FORPLAN, and that all additional output will be consumed (1970-1920 letter "Use of Demand Functions for Timber," 3/18/82).

The second parameter affecting market response to timber production involved the use of real price trends affecting lumber price and lumber production costs, consistent with the prediction of Adams and Haynes (see FSM 1970.4, R-1 ID No. 5). The use of independent price trends was necessary in order to portray the net real increase in stumpage values throughout the planning horizon. This is because the stumpage values used in the FORPLAN model are the residual of these projected lumber prices and production costs, and result from the application of both trends.

Costs and price trends in FORPLAN are expressed in terms of proportionate annual shifts per decade for the first 6 decades. The accumulated trend through the sixth decade is used for the seventh decade and beyond. Because resource inputs and outputs are assumed to occur in the fifth year of each decade, the annual shifts are used to calculate the price and cost multipliers for years 5, 15, 25, 35, etc. Table B-21 summarizes the predicted price and cost trends used in the analysis:

Table B-21
Lumber Price and Production-Cost Indices of Adams and Haynes
(Decades and Indices)

Decade	Lumber Price Index	Production Cost Index
1	114.5	111.8
2	142.5	136.5
3	165.3	150.9
4	186.3	154.7
5	207.3	158.1
6+	218.8	159.5

Priced timber benefits or estimated stumpage value for each alternative and benchmark were derived from the FORPLAN optimal solution Economic Report No. 6 titled "All Gross Revenues" and No. 7 titled "All Costs," and reported as average annual benefits per planning decade. Specifically, timber benefits were calculated as the residual value between lumber price (L.S.) and logging production costs such that:

Stumpage Value = Total Revenues - Per Thousand Logging Costs
(Economic Report 6) (Economic Report 7)

Where:

Total Revenues = Total Lumber Price (L.S.)

Per Thousand Logging Costs = Purchaser-incurred Logging Production Costs.

Actual net stumpage prices ranged from $74/thousand cubic feet on poor sites (Productivity Class 5/6) to $911/thousand cubic feet on the best sites (Productivity Class 3). This range does not reflect real price increases.

A second category of purchaser-incurred costs, "Per Acre Logging Costs," was not subtracted from total timber revenues in this analysis. This is because this cost category was used to summarize the purchaser-incurred cost of local and minor collector road construction already discussed (see "Costs" - timber purchaser road credits). These costs are assumed to be implicitly incurred by the Federal Government in the form of foregone timber revenues. The effect of these costs on net revenues will be discussed under "Present Net Value."

(b) Nontimber Benefits

These benefits constitute the remaining resource outputs used in land assignment scheduling procedures in FORPLAN. They include dispersed recreation, wilderness, wildlife (elk), and range. As stated, all three of these benefits constitute nonmarket values reflecting the user's marginal willingness-to-pay or theoretical site rent.

Value coefficients for dispersed recreation, wilderness, wildlife (elk), and range forage were entered into the FORPLAN model by appending rows and columns

to the LP matrix. This enabled the model to use the corresponding resource values to aid in determining land assignments and scheduling through the maximization of PNV.

This methodology also enabled the use of real price trends and demand ceilings to be used in determining total resource values. Price trends were used to define the real value increase in a particular resource over time. Demand ceilings defined the maximum resource output that could be valued, corresponding to estimates of present and anticipated future demand. Use of the demand ceilings was necessary because potential opportunities for these resources, as estimated in FORPLAN, exceeded demand in most cases. Both the real price increase and demand ceilings were predicted for 5 decades, and remained constant for the rest of the planning horizon. Table B-22 summarizes the real price increase and demand ceilings used in the FORPLAN model.

Table B-22
Real Price and Demand Projections Used in Appended Rows and Columns. (Specified Units)

		Planned	Projected			
Output	Units	1988	1998	2008	2018	2028+
Dispersed Rec.	$/RVD	4.45	4.67	5.30	5.92	6.68
	MRVD/Yr.	668.3	798.8	913.9	1048.1	1188.6
Wilderness	$/RVD	8.00	8.00	9.12	9.84	11.20
	MRVD/Yr.	148.6	170.0	196.6	228.3	264.6
Wildlife (Elk)	$/RVD/Elk	93.60	98.28	111.38	124.49	140.40
	Elk per Yr.	----------	----------	No Limit	----------	----------
Range	per AUM	8.20	8.60	8.98	9.15	9.30
	MAUM per Yr.	41.6	43.8	46.2	48.7	51.3

As stated, resource values were applied only to the amount of output expected to be consumed. For example, in the third decade, 46.2 thousand animal unit months (MAUM) of range output is projected to be valued at $8.98 per AUM. Any additional output was not valued. Because all winter range elk will be valued, no constraints were imposed.

Dispersed recreation values were developed at the national level for the 1980 Resource Planning Act Assessment and represent estimates of society's willingness-to-pay for a recreation day over and above the actual costs of participation. Values for dispersed recreation represent the weighted average mix of recreation types reported for Fiscal Year 1979 Recreation Information Management (RIM). The base value is $4.45 per Recreation Visitor Day (RVD). Anticipated demand for dispersed recreation on the Forest was calculated from an adaptation of the 1975 Pacific Northwest River Basin Commission (PNRBC) estimates of recreation use in Washington, Oregon, and Idaho. The demand estimates account for increases in use of 2.26 percent per year between 1981-1990, and 1.35 percent per year between 1991-2020. Dispersed recreation use values were obtained from each FORPLAN run in the "Other Columns" Report.

Wildlife (elk) values were developed in accordance with the 1980 RPA Assessment and were used to measure the recreational experience associated with the wildlife indicator species, elk. Valuation is based on the total incremental use (RVD) provided for by each elk. The base value is $93.60 per elk. No demand ceilings were imposed on outputs because it was assumed all output (elk) would have a corresponding recreation benefit. Wildlife values (elk) were obtained from each FORPLAN run in the "Other Columns" report.

Recreational values associated with wildlife on the Forest are a product of two functions: expected recreational demand and site-carrying capacity. Because recreational demand is independent of carrying capacity (demand could shift to other activities), the resulting valuation process must be responsive to shifts in resource outputs for wildlife, but still account for total recreational demand. Because of this relationship, the value for wildlife will be broken into two components:

1. That portion of the wildlife recreation value responsive to total recreation demand on the Forest. Since big-game hunting accounts for 8 percent of total recreation use (1980 RIM), the weighted average general recreation value will be adjusted by a factor of 8 percent of demand times the general recreation value ($3.00).

2. The remaining value, $21.00 less $3.00, or $18.00, represents the incremental value of wildlife above and beyond the general recreational value. This will be applied to each RVD attributable to wildlife recreation from FORPLAN. The relationship is:

Value/Wildlife RVD
x
#RVDs/Elk
x
#Elk/Acre
(Carrying Capacity)

Range values were developed by Economic and Statistics Research Services, USDA, to estimate the value of an allotted animal unit month (AUM) to a permittee. The base value is $7.89 per AUM. Real value increases were determined at the national level for the 1980 RPA Assessment. Demand ceilings represent an anticipated increase in demand for grazing of 29 percent by 2030. Grazing output values were obtained from each FORPLAN run in the "Other Columns" report.

(2) Other Priced Benefits

Resource outputs not affecting land assignments or prescription assignments include developed recreation, anadromous fishery (commercial and recreation), land use, recreation fees, power, minerals, and range receipts. These values are included in the present net value calculation in order to determine the total priced benefits (36 CFR 219.1).

Developed recreation, and commercial and recreational anadromous fishery resource outputs represent nonmarket benefits reflecting the user's marginal willingness-to-pay or theoretical site rent. The total benefits were derived by matching the resource outputs per decade with the corresponding per unit

value to obtain the total benefit per decade. All calculations are external to the FORPLAN analysis.

These benefits are also subject to real price increase and consumptive ceilings, as discussed in the corresponding background papers on the Analysis of the Management Situation. The information for all decades is included in Table B-23.

Table B-23
Real Price and Demand Projections
(Specified Units)

		Planned	Projected			
Output	Units	1988	1998	2008	2018	2028+
Developed	$ per RVD	3.00	3.15	3.57	3.99	4.50
Rec. MRVD	per year	138.1	162.2	188.2	218.3	253.8
Anadromous	$ per RVD	58.50	61.43	69.62	77.81	87.75
Fish	MRVD per Decade	----------No Limit----------				
	#Lbs.	1.61	1.69	1.92	2.14	2.42
	Lbs per yr.	----------No Limit ----------				

Developed recreation values, including real value increases, were developed at the national level for the 1980 RPA assessment. The base value of $3 per recreation visitor day represents the general value for developed recreation. Anticipated demand for developed recreation was calculated from adaptations of the 1975 Pacific Northwest River Basin Commission estimates of recreation use in Washington, Oregon, and Idaho. Demand estimates account for increases in use of 2.21 percent between 1980-1990, and 1.5 percent between 1991-2030.

The value of the anadromous fishery is derived from the recreational and commercial value which can be attributed to annual smolt production on the Forest. This represents total on-site and off-site values associated with a specified level of fish reared on the Forest. Since there are only minimal sport catches of smolts on the Forest, the bulk of the value represents the commercial and sport catch of adult fish in the ocean and during their return migration (i.e., off-site values). This approach seems valid when considering that all downstream benefits are dependent upon the Forest providing suitable habitat for reproduction of fish; if the habitat is not available, then the fishery would not exist. Real value increases were determined at the national level for the 1980 RPA Assessment for both sport and commercial values.

Resource benefits for developed recreation fees and range permit fees were calculated from the average Fiscal Year 1979 and 1980 levels of receipts to the Forest. The values were adjusted over time to account for anticipated increases in demand for these resources. The demand function for developed recreation and range forage use previously discussed were used to make these adjustments. The values per decade are included in Table B-24.

Table B-24
Anticipated Fee Collections - Developed Recreation and Range Receipts (Annual Average - Million Dollars)

Output	Value (Million Dollars) - Average Annual				
	Planned	Projected			
	1988	1998	2008	2018	2028+
Developed Rec.	0.016	0.016	0.017	0.018	0.020
Range	0.058	0.061	0.064	0.068	0.071

Since demand was assumed constant for both of these resources, values were also constant for all benchmarks and alternatives.

Resource output benefits for the remaining categories (land use, power, minerals) denoted as "other" benefits, constitute a minor contribution to total benefits. An average of Fiscal Year 1979 and 1980 receipts shows that these resources account for only $0.011 million. For planning purposes, it was determined that the contribution of "other" benefits would be held constant for each alternative and benchmark.

3. Present Net Value (PNV) Calculations

As stated, PNV was calculated to determine the relative cost-efficiency of each alternative and benchmark. PNV is the difference between the discounted values of all outputs to which monetary values or established market prices are assigned, and the total discounted costs of managing the planning area (36 CFR 219.3). PNV was calculated over the entire 150-year planning horizon for each alternative and benchmark.

In order to determine PNV, the present value (PV) of discounted costs (PVC) and discounted benefits (PVB) were calculated individually for each of the following resource components:

Costs	Benefits
Timber	Timber
Roads (including purchaser road credits)	
Range	Range
Recreation and Wildlife	Recreation and Wildlife
Other	Other

Benefits by resource component category were determined by stratifying the market and nonmarket benefits, discussed in Section 2b (Priced Benefits used in PNV), in the following classifications: (1) Timber - timber revenues, (2) Range - range forage and range receipts; (3) Recreation per Wildlife - developed and dispersed recreation values, wildlife recreation values, anadromous fish recreation and commercial values, and developed recreation receipts; (4) Other - land use, power, and mineral receipts.

The PV of each resource component was derived by multiplying the average annual decade values by a factor of 10 to determine the total decade value of each resource component. These total decade values were then discounted from the mid-point of each decade, and summed to determine total PV by resource component. The sum of all discounted resource component costs (PVC) was then subtracted from the sum of all discounted resource component benefits (PVB) to determine PNV at both the 4-percent and 7 1/8-percent discount rates. The benefit per cost (B per C) ratio for each alternative and benchmark was also calculated by determining the ratio of PNV per PVC (4 percent only).

In addition to the above categories, the PV of priced resource benefits was also categorized by market vs. nonmarket and Federal receipts vs. other benefit classifications to show their relative proportion of PVB. Benefits were classified in these categories in the following manner:

Market Benefits	vs.	Nonmarket Benefits
Timber returns		Dispersed recreation values
Range forage		Wildlife recreation values
Range receipts		Anadromous fish values (recreation)
Developed recreation values		
Developed recreation receipts		
Anadromous fish values (commercial)		
Other benefits (land use, power, mineral receipts)		

Federal Government Receipt Benefits	vs.	Other Benefits
Timber returns		Dispersed recreation values
Range receipts		Developed recreation values
Developed recreation receipts		Wildlife recreation values
Other benefits (land use, power, mineral values)		Anadromous fish values (commercial and recreation)
		Range forage

4. Economic Tradeoffs

In order to determine the relative cost-efficiency of the various alternatives and benchmarks, economic tradeoffs were derived to show the difference in PNV between FORPLAN runs. These tradeoffs are defined as the difference in PNV between the Max PNV (06D) benchmark, or alternatives with the highest PNV, and alternatives developed in response to the issues, constraints, and opportunities. The economic tradeoffs measure the change in PNV value for priced resource outputs, and can be used in the analysis of Net Public Benefits. For further discussion, see Chapter II, Section 17.

C. Net Subjective Values (Nonpriced Outputs)

Determination of PNV enables comparisons to be made between alternatives with regard to priced resource outputs. However, other factors also influence the decisionmaking process. In many instances, the subjectively-determined importance of nonpriced values that are consequences of management decisions can outweigh the advantages of producing higher levels of priced outputs.

These amenity values are addressed in the regulations of NFMA, which charge the Forest Service with maximizing the net public benefits (NPB) of the Forest. Net public benefits are the overall long-term value to the Nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs), whether they can be quantitatively valued or not (36 CFR 219.3). Net public benefits include both priced and nonpriced resource outputs, less all costs, produced under each alternative. As stated, priced resource outputs include those values contributing to PNV. The major nonpriced outputs include:

- Community Stability
- Protection for Threatened and Endangered Species Habitat
- Cultural Resources
- Providing Dispersed Recreation Opportunity
- Contributing Opportunities for Traditional Lifestyles
- Protection of Big-Game (Elk) Habitat
- Providing for Visual Quality in Sensitive Areas
- Attaining Anadromous fishery Goals
- Management of Habitat for Old-Growth-Dependent Species
- Wilderness

Nonpriced outputs do not have available market transaction evidence and no reasonable basis exists for making market value estimates comparable to priced output values. They are therefore valued subjectively and are not considered in PNV calculations (see chart in front of this section). Nonpriced outputs that occur in excess of the amounts provided by minimum management requirements are, however, included in the NPB determination of each alternative. Potential costs or reductions of nonpriced benefits below minimum management levels are also considered.

Many nonpriced outputs are produced by applying constraints in each alternative. These constraints usually result in a cost increase and/or a reduction in the production of priced outputs (e.g. timber). Either of these occurrences can reduce the PNV of the priced NPB component. Any dollar costs directly associated with the production of nonpriced outputs are included in PNV.

In comparing the nonpriced outputs of various alternatives, it is important to identify and report which nonpriced outputs have significant impacts on the PNV components of direct costs and priced benefits. Subjective judgment is involved in assessing the desirability of nonpriced output production which often results in a PNV tradeoff (loss). If a nonpriced output-caused PNV tradeoff is judged acceptable, the nonpriced output is assumed to be worth as much or more than the PNV foregone. The Nez Perce nonpriced output categories are described below. While the dollar values of each cannot be determined, each can be described by quantitative indicators such as acres. The actual contribution (value) to NPB is still subjectively determined from the information presented.

1. Nonpriced Output Parameters Used in Net Subjective Value (NSV)

a. Community Stability

Maintenance of a viable economic base to ensure the continued existence of historical trades and professions within dependent communities is a nonpriced benefit of National Forest management. The contribution of Forest resource outputs to potential employment was not included in PNV.

The economy of the regional area (Idaho, Lewis, Nez Perce, and Clearwater Counties) has historically been natural resource-oriented, with a high percentage of employment dependent on Forest resource outputs. Currently, the Forest contributes 2,065 jobs to the regional economy; this is 10 percent of the total employment base. Alternatives were evaluated by comparing average annual changes in employment resulting from increases or decreases in these outputs with base year (1980) employment in the regional area. Changes in employment and income for three sectors of the economy: timber, outfitters and guides, and other recreation were evaluated to show differences in emphasis among alternatives. The effect of these changes was evaluated with respect to economic stability in terms of "rapid change." As defined, rapid change would occur in the regional area if increases or decreases in Forest resource outputs create a 10 percent or greater change in potential employment, income, and job distribution within a 10-year period. (See Appendix B, Section V, for further discussion.)

b. Threatened and Endangered (T&E) Species Habitat

One threatened species, the grizzly bear, and three endangered species, the gray wolf, the peregrine falcon, and the bald eagle, are found on the Forest. Habitat for these species is maintained or enhanced in all alternatives, but the value of this habitat is not included in PNV.

Although provision is made for T&E habitat protection in all alternatives, those alternatives which propose the highest levels of timber harvest and road construction also require the most coordination to reduce conflicts between these activities and maintenance of habitat for threatened and endangered species. These differences in the degree of coordination required were used to compare alternatives.

Most of the peregrine falcon and bald eagle habitat is located in classified river corridors or on lands not suitable for timber production, and little coordination is required. However, the amount of development in the 503,162 acres of the Forest presently roadless may have a direct relationship to gray wolf and grizzly bear habitat, and intense coordination may be required.

Different alternatives specify different degrees of development in roadless areas, and this relationship was analyzed in relation to threatened and endangered species habitat.

c. Cultural Resources

Protection of known historic and prehistoric cultural sites and the evaluation and protection of undiscovered sites are treated the same under all alternatives. The value of these sites is not included in PNV. Those alternatives which have the most land-disturbing activities will lead to the earliest and most complete clearing and analysis of cultural resource sites in the nonclassified portion of the Forest, in that cultural resource surveys are conducted both prior to and during land-disturbing activities. Cultural inventory in classified areas is performed in response to specific requests and is not affected by any alternatives.

d. Semiprimitive Recreation Opportunity

The value of dispersed recreation opportunities has been accounted for in the determination of PNV for each alternative. However, quality variations significantly above or below average were not considered in PNV calculations: PNV values were based on average quality assumptions.

Total potential dispersed recreation opportunity exceeds projected demand in all alternatives. This is due to an increase in roaded recreation opportunity resulting from the Forest becoming more accessible (roaded) over time. However, under each alternative, semiprimitive recreation opportunities will decrease as fewer areas remain unroaded. The quality of this recreational experience outside of classified wilderness will decline and potential for overuse of the remaining roadless areas will increase. The change in semiprimitive recreation opportunities for each alternative could affect wilderness use and cause a decrease in the opportunity to experience solitude (Hendee, Stankey, and Lucas, 1978).

Areas assigned to roadless nonwilderness prescriptions in each alternative were used to evaluate the quality of semiprimitive recreation opportunities. These were compared to existing inventories that show the Forest currently provides semiprimitive recreation opportunities on 869,200 acres. These inventories are not the same as the current roadless area inventory.

e. Opportunities for Traditional Lifestyles

Contributions to traditional forms of employment with slow but steady growth, promotion of local use of Forest recreation opportunities, and permanence of existing lifestyles in local communities are viewed as important components of Nez Perce Forest planning by local citizens (Bacigalupi, 1980). The Forest's contribution in maintaining these values is addressed in the social impact analysis, but is not included in PNV.

All alternatives were determined to maintain traditional lifestyles. This is because the Forest's contribution to the regional economy under any alternative would not create large shifts in the sectors of employment offered in local communities, although all alternatives would increase the potential employment levels within these sectors over time.

f. Big-Game (Elk) Habitat

The value of big-game (elk) habitat, as it is related to the number of recreation visitor days provided, has been accounted for in PNV. However, the effect of timber harvest on big-game habitat has not been addressed in this value.

The "Guidelines for Evaluating and Managing Summer Elk Habitat in North Idaho" will be used to assess habitat effectiveness and attainment of elk habitat objectives in all alternatives; however, habitat effectiveness will vary by alternative. Managing for optimum elk habitat and managing for timber create potential conflicts between these resources. Those alternatives which harvest more area have the greatest potential for conflict. This is apparent in evaluating a road closure program to provide habitat security and incorporating the other coordinating recommendations. As more area becomes available for timber harvest, the probability of conflict increases. While conflict can also occur in unroaded areas, the chances are greatly reduced.

To evaluate the alternatives, the proportion of currently unroaded big-game summer habitat assigned for timber harvest was analyzed.

g. Visual Quality, Especially in Areas Inventoried For Retention or Partial Retention Visual Quality Objectives (VQOs)

The value of visual quality in sensitive areas is not included in PNV. However, decreases in PNV occur where timber harvest is spatially constrained by time period and cutting practice to achieve an assigned VQO of retention or partial retention. These changes are addressed as opportunity costs of managing for a given alternative. The current visual quality inventory identifies approximately 362,600 acres as retention or partial retention. The alternatives differ in the emphasis placed on achieving these VQOs.

h. Anadromous Fishery

The value of anadromous fishery habitat potential, as it relates to recreational and commercial opportunities, has been included in PNV; however, the maintenance of habitat to provide a harvestable surplus of fish was not considered in this value.

Anadromous fish are found in all river systems on the Forest. Each alternative provides habitat to support minimum harvestable populations of these fish, and this objective is exceeded in most alternatives.

At present, the anadromous fishery Forestwide is at 86 percent of biological potential. The maximum allowable reduction in this biological potential which would still furnish habitat to support minimum harvestable fish populations is 15 percent; or 71 percent of biological potential.

Alternatives were evaluated for the degree to which they exceed this requirement.

i. Habitat for Old-Growth-Dependent Species

Maintenance of adequate habitat for old-growth-dependent species was treated equally in all alternatives as a minimum management requirement. Each alternative was modeled to ensure that at least 5 percent of each prescription watershed would remain in old growth, and that old-growth habitat would be maintained on 10 percent of the landbase Forestwide. The value of old-growth habitat is not included in PNV; however, decreases in PNV occur where timber harvest is spatially constrained by time period to achieve old-growth habitat requirements.

While the minimum management requirement for old growth provides for adequate protection of dependent species, conflicts resulting from management activities on adjacent lands may result in more intense levels of resource management coordination to maintain suitable old-growth habitat. Alternatives which furnish more than 10 percent old-growth habitat Forestwide will tend to reduce these conflicts. Alternatives were evaluated on this basis.

j. Wilderness

The priced value of recreation in wilderness has been accounted for in the determination of PNV for each alternative; however, PNV does not recognize the nonpriced value of wilderness as a resource in itself. Wilderness is important in preserving natural integrity, apparent naturalness, outstanding opportunities for solitude, and primitive recreation opportunities.

The Forest presently contains 926,188 acres of this resource in four Congressionally-designated wildernesses. In addition, 503,162 acres remain roadless. The alternatives explored a full range of wilderness recommendations for these roadless lands.

Alternatives were evaluated on the basis of additional wilderness acreage proposed.

2. Indicators of Responsiveness for the Alternatives

Appendix A fully discusses each of the issues, concerns, and opportunities (ICOs). The indicators of responsiveness for the Alternatives for each ICO are as follows:

- The level of timber harvest while responding to other demands.
  Indicators:
  - volume of timber harvested in the first decade
  - long-term sustained yield
  - suitable acres managed for timber harvest

- Compatibility of timber harvest, road development, water quality, and anadromous fish.
  Indicators:
  - population of anadromous and resident fish
  - percent of habitat effectiveness

- Areas to be managed as roadless or wilderness while meeting other demands.
  - Indicators:
    - acres of wilderness
    - acres of roadless areas

- Quality of habitat for wildlife.
  - Indicators:
    - population of elk
    - level of management objectives
    - acres of winter range burned annually

- Acres to be managed for nonmotorized recreation use.
  - Indicators:
    - acres managed for semiprimitive nonmotorized recreation use

- The emphasis of recreation management for each alternative.
  - Indicators:o
    - measure of the primary recreation objective

- Road accessibility and quality of roads.
  - Indicators:
    - miles of road built per decade

- Management for special recreation areas.
  - Indicators:
    - level of management by area

- Range Management.
  - Indicators:
    - Animal Unit Months (AUMs) produced

- Compatibility of timber harvest, road development, and big-game habitat needs.
  - Indicators:
    - miles of road built per decade
    - big-game habitat effectiveness

- Minerals Management.
  - Indicators:
    - acres withdrawn from mineral entry

- Fire Management.
  - Indicators:
    - Acres managed for initial attack--will be managed the same for all alternatives

- Acres managed for scenic quality.
  - Indicators:
    - acres of retention and partial retention

- Community Stability.
  - Indicators:
    - employment and income levels

V. SOCIAL AND ECONOMIC IMPACT ANALYSIS

A. Overview

Social and economic impact analysis estimates the relationships National Forest activities have with people. Short-term impacts are of primary concern with consideration given to longer term situations (over 10 years) occurring within the impact area of the Forest.

Issues and concerns (Chapter I and Appendix A of the EIS) include areas for which social and economic information can provide useful insights. For instance, many resource outputs (recreation, timber, range, and minerals) cause economic effects on people in the impact area.

Forest-related economic impacts on employment, income, and State and local government revenues are directly related to the social well-being of people in the impact area (i.e., economic considerations are a subset of all Forest impacts that influence people's lives). Population, lifestyles, attitudes, beliefs, values, and social organization are also related to Forest Service activities.

After evaluating all public comments on the Proposed Forest Plan and Draft Environmental Impact Statement (EIS), it was decided to do additional analysis of impacts on major industrial sectors within the regional impact area that would be significantly affected by the various management alternatives.

Prior to the development of alternatives, information was gathered on the existing social and economic situation of the impact area. Additional economic impact analysis was done for significant industrial sectors within the impact area.

B. Impact Analysis Area

An "area of primary impact" was defined for the Nez Perce National Forest as the multi-county area receiving at least three-fourths of the resource flows from the Forest (Ceperley, 1979). Resource flows are defined as the movement of forest goods and services to consumers. The selected area was assumed to contain most of the economic and social impacts related to the Forest's activities.

The selected impact area includes the Idaho counties of Clearwater, Idaho, Nez Perce, and Lewis. This four-county impact area is based on economic influences that exist and is assumed to capture most of the area within which social and economic effects would occur. Table B-25 shows the percent of resource flows to the primary impact area. Table B-26 describes the resources considered in this analysis.

Table B-25
Resource Flows to Counties as a Percent of Total Nez Perce National Forest Output (FY 1979)
(Percentage of Specified Units)

Resource	Units	Total	Idaho Co.	Lewis Co.	Clear-water Co.	Nez Perce Co.	Latah Co.	Other Idaho State	Unknown & Out of State
Land Area	MAcres	2206.6	100	0	0	0	0	0	0
Comm.Tbr.	MMBF	1854.7	88	12	0	0	0	0	0
Firewood	Permits	770.0	87	6	*	4	*	(-----3----)	
Gen.Disp. Rec.	MRVD	547.0	(----------66----------)				18	7	9
Wilderness Use	MRVD	120.0	(---------6--------)			6	5	17	65
Minerals	Notices of Intent	103.0	42	0	3	15	2	4	34
Human Resources	Enrollees	97.0	56	1	1	4	0	38	0
Ranching	MAUM	40.5	81	1	0	0	0	8	10

*Less than 0.5%

Table B-26
Market Area Indicators
(Indicator and Source)

Indicators	Sources
Land Area	Land areas of the National Forest System as of September 30, 1978. USFS.
Commercial Timber	Report of Uncut Volume Remaining Under Contract (Annual). 1963-1979.
Firewood	Addresses of free use permittees, October 1, 1978 to July 1, 1979.
General Dispersed Recreation Use	Estimates by District staff, includes vehicle license survey for 1978 and 1979.
	RVD estimates for outfitter/guide permittees by District staff for 1984-1985 season.
	Origin of Recreators in Idaho. Regional Recreation Data Program. PNW River Basins Commission.
	Vehicle license plate identification of campground registration tickets. Castle Creek and South Fork Campgrounds, June 1 to September 15, 1978.
Wilderness	Survey of the sources of wilderness users, 1978.
Minerals	Residence of holders of mineral claims.
Human Resources	Residence of enrollees in the Nez Perce Human Resource Programs.
Ranching	Residences of holders of grazing permits on July 20, 1979.

C. Economic Impact Model

1. Overview

An input-output model (IMPLAN) is used to estimate the employment and income impacts of Forest outputs and activities. Direct, indirect, induced, and total impacts are calculated. Economic input-output (I-O) analysis is a procedure for describing the structural independencies of a Regional economy (impact area) and serves as a short-term predictive model for evaluating the impacts of shifts in National Forest System (NFS) outputs and activities. I-O analysis is based upon the interdependence of the production and consumption sectors in the impact area. Industries must purchase inputs from other industries, as well as primary (i.e., natural resource) sources, for use in the production of outputs which are sold either to other industries or to final consumers. Thus, a set

of I-O accounts can be thought of as a "picture" of an impact area's economic structure.

Flows of industrial inputs can be traced via the I-O accounts to show linkages between the industries composing the economy. The accounts are also transformed into a set of simultaneous equations that permit the prediction of economic effects (employment, income, etc.) resulting from changes in Forest outputs and activities.

I-O analysis is based on assumptions that limit the accuracy of projections made very far into the future; therefore, the numbers presented should be considered relative indicators of the future, rather than absolute projections.

2. Data Base - IMPLAN

This I-O model has a data base consisting of two parts: a national level technology matrix; and a county-by-county file of estimated activity levels for total gross output, six components of final demand, three components of final payments, and employment for 466 industrial/business sectors.

The national technology matrix is based on a 1972 Commerce Department I-O model that was converted to an "industry by industry" basis and updated to 1977 using the RAS procedure (Clopper, Almon, et al., 1983) . The county level information is based on a 1977 data set constructed by Engineering Economics Associates of Berkeley, California.

3. National Data Base Reduction to Impact Area

Utilizing the national technology matrix and the control totals for the local, multi-county impact area, a data reduction method is employed to develop a Regional input-output table. The method used exploits the property of "openness" displayed by Regional economies compared with the National economy (Richardson 1972). Smaller Regional economies exhibit much greater tendencies, more "open," to import and export than is observed at the national level. Based on the assumption that trade balances are the principal difference between national and Regional purchase patterns (i.e, industry production functions are identical, but Regional imports and exports make local inter-industry transactions different), the supply-demand pool technique (Schaffer and Chu, 1969) for data reduction was adopted.

4. Final Demand Expenditures

The I-O model translates Forest Service outputs and activities into employment and income impacts. An intermediate step in this process is the translation of NFS outputs (timber, range, recreation, etc.) into final demand dollars. Final demand expenditures are different from the "values" used in the cost-efficiency analysis. Final demand expenditures represent the dollars spent by the final consumers of the finished products derived from Forest Service 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 directly generated for the local impact area -- assuming that most is sold outside the impact area, causing the local impact. The cost-efficiency analysis examines only the market value of the raw material that leaves the Forest -- stumpage.

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" expected to take place in the existing economy. (Expenditure information is contained in the Planning Records.)

D. Base Year Alternative and Benchmark-Related Employment and Income Information

Forest outputs for 1980 were determined and run through the I-O model to provide a base situation from which employment and income changes could be measured. Table B-27 contains 1980 output levels and lists the employment and income amounts associated with Forest outputs and unit coefficients. Table B-28 lists the Forest-related employment and income associated with all alternatives and benchmarks. A third table, B-29, shows a breakdown of employment and income for three sectors of the economy: timber, outfitters and guides, and other recreational businesses. The purpose of this table is to show the impact of related Forest resource outputs on these sectors in the regional economy. Estimates for jobs and income are based on the IMPLAN model employment and income coefficients and the difference in outputs between the 1980 base level and the output level valued in the FORPLAN model. The difference in the timber output used in this analysis falls within the "rapid change" constraints used to ensure community stability. Dispersed recreation outputs are based on the difference from the 1980 base level and the projected use level from the Pacific Northwest River Basin Commission (PNRBC) study. The dispersed recreation outputs do not vary between alternatives because all alternatives meet the first and fifth decade PNRBC projected use levels. Dispersed recreation outputs allocated to the outfitter/guide sector were based on information provided by District recreation specialists. The differences in output levels were converted by using the unit coefficients in Table B-27.

Table B-27
Nez Perce National Forest Outputs and Unit Coefficients - 1980
(Specified Units)

Output	1980 Output Production		Jobs/Unit[2]	Income/Unit (Millions 1978 $)
Sawtimber	104.8	MMBF	11.2	0.269
Picnicking	17.3	MRVD	0.5	0.007
Camping	191.9	"	0.1	0.002
Downhill Skiing	0	"	0.0	0.000
Waterbased Rec.	102.7	"	0.4	0.005
Disp.Nonmotorized Rec.	107.1	"	0.9	0.011
Disp.Motorized Rec.	133.0	"	0.9	0.011
Big-Game Hunting	93.4	"	1.3	0.018
Small-Game Hunting	26.6	"	0.5	0.007
Nonhunting Wildlife	1.4	"	0.8	0.008
Fishing	45.3	"	0.4	0.005
Cattle	36.0	MAUM	0.7	0.017
Sheep	4.5	"	2.2	0.054
Coal	0	MTON	0.0	0.000
Oil & Gas	0	MOEB[1]	0.0	0.000
Locatable Minerals	0	MTON	0.0	0.000
Common Minerals	0	MTON	0.0	0.000
NFS Inv. Oper. Admin.	4.5	$MILLIO	54.9	0.808
NFS Salaries	5.5	$MILLIO	30.8	0.544
Total Regional Economy	--		20,669	472.204
Total Forest Service-Related Base	--		2,065	9.997

1/ Oil equivalent barrels

2/Includes direct, indirect, and induced jobs

Table B-28
Forest-Related Employment and Income for Alternatives and Benchmarks (Number of Jobs and Millions of 1978 Dollars)

Benchmarks and Alternatives	Jobs Planned Decade 1	Jobs Projected Decade 5	Income Planned Decade 1	Income Projected Decade 5
02A	823	3907	17.6	87.8
03A	6577	2995	150.6	65.9
04B	1856	2179	41.8	47.0
05A	828	2827	17.8	62.0
05C	799	2126	17.3	45.8
06D (Max. PNV)	1298	2143	28.9	46.1
08E	1834	2151	41.2	46.5
09C	1825	2110	41.2	45.3
10C	1870	2149	42.2	46.3
11C	828	3980	17.8	89.2
12B	828	3974	17.8	89.2
13A	1408	2340	31.3	50.6
15A	828	4012	17.8	89.8
16A	820	4012	17.7	89.8
17A	1420	2331	31.5	50.5
18A	1469	2143	31.9	46.1
19A (Min.Level)	- 1450	- 1059	- 32.8	- 27.6
20A	1101	1423	24.6	29.5
22Y	828	3972	17.8	89.0
23Y	901	3921	19.5	88.0
24D	454	3420	9.6	76.1
A(CD)	- 186	840	-5.0	15.8
C	- 280	1558	-7.5	32.4
D	799	2115	17.4	45.5
E	432	1964	8.8	41.8
F	323	1726	5.3	36.3
G(PA)	159	1739	2.7	36.7
G1	195	2438	3.6	53.0
H	- 46	1003	-2.4	19.5
H1	- 85	1485	-2.1	30.8
I	336	1280	6.9	26.1
J	527	1650	11.2	34.6
K	90	1595	1.0	33.2
L	90	1595	1.0	33.2

Table B-29
Changes in Employment and Income by Key Economic Sector - Decades 1 and 5
(Number of Jobs and Millions of 1978 Dollars)

		Jobs		Income	
		Planned	Projected	Planned	Projected
Alternative	Sector	Decade 1	Decade 5	Decade 1	Decade 5
A (CD)					
	Timber	-234	450	-5.700	10.800
	Out. & Guides	4	30	.224	1.833
	Other Recreat.	51	410	.700	5.316
C					
	Timber	-356	1077	-8.200	25.800
	Out. & Guides	4	30	.224	1.833
	Other Recreat.	51	410	.700	5.316
D					
	Timber	584	1604	13.800	38.500
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
E					
	Timber	248	1477	5.800	34.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
F					
	Timber	125	1234	3.800	29.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
G (PA)					
	Timber	38	1255	.955	30.155
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
G1					
	Timber	74	1901	1.775	45.649
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
H					
	Timber	-122	540	-3.200	12.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
H1					
	Timber	-176	1032	-3.200	24.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
I					
	Timber	204	797	4.900	18.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316
J					
	Timber	360	1122	8.600	26.900
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316

Table B-29 (Continued)
Changes in Employment and Income by Key Economic Sector - Decades 1 and 5
(Number of Jobs and Millions of 1978 Dollars)

		Jobs		Income	
		Planned	Projected	Planned	Projected
Alternative	Sector	Decade 1	Decade 5	Decade 1	Decade 5
K & L					
	Timber	-32	1111	-1.000	26.800
	Out. & Guides	4	30	.224	1.833
	Other Rec.	51	410	.700	5.316

The information from Table B-29 indicates the dominant influence of the timber sector on the stability/instability of the regional economy. If the anticipated demand projections for dispersed recreation should increase at a greater rate than those used in the PNRBC study, then the role of recreation and outfitter/guide operations would be greater in the local economy. The importance of the tourism/recreation industry, of which outfitter/guide operations is an element, should continue to grow regardless of the management alternative selected for this Forest. What will occur is a shift in the types of activities offered and the quality of recreational opportunities. Market- oriented alternatives, such as D and E, would provide more opportunities for developed or roaded natural recreation activities. Amenity-oriented alternatives, such as C and H, would emphasize activities such as backcountry hunting, fishing, and general dispersed recreation.

E. Returns to the U.S. Treasury and Local State Governments

Predicted returns to the U.S. Treasury and local governments for each alternative and benchmark were calculated in the analysis to show the effects on revenue programs administered by the Nez Perce National Forest. These returns illustrate the impact of management on both Federal Government receipts collected as a result of revenue-producing programs on the Forest, and the resultant change in revenues passed on to local government. Comparisons were made between the average annual returns per period for each alternative and benchmark, and the base year (1980).

Returns to the U.S. Treasury were calculated by deriving the revenue of income-producing programs on the Forest which correspond to FSM 6531.12b "Annual Collections Statement," or the National Forest Fund. Total Treasury returns were broken down into three categories: timber, grazing, and other (includes recreation, land use, power, and mineral fees). Timber returns were calculated for each FORPLAN run from the net value of timber revenues (Economics Report 6). Grazing returns were also calculated from the FORPLAN analysis and were equal to the average unit permit fee in 1980 ($1.39/AUM in 1978 dollars) times the average annual AUM output per period for each alternative and benchmark. Other returns were calculated as the sum of fees collected for recreation, land use, power, and minerals. Recreation fees were calculated by adjusting current collections ($.016 million) by the percentage increase in demand for developed recreation through the first decade (see developed recreation values). Returns for land use, power, and minerals were assumed to be constant at the current level (1980)

over the entire planning period. Table B-30 summarizes the base year returns to the U.S. Treasury.

Table B-30
Base Year Estimates - Returns to the U.S. Treasury 1980
(Millions of 1978 dollars)

Resource	Returns
Timber	$ 6.525
Range	$ 0.056
Other a. Recreation b. Land use, power, minerals	$ 0.027
Total	$ 6.608

Returns to local governments are Treasury funds paid to the State of Idaho and eventually passed to local government (Idaho County) resulting from revenue-producing programs on the Forest. The basis of this fund, Returns to the U.S. Treasury, is discussed above. Also included in the base value are collections for Knudsen-Vandenburg (KV) and purchaser road credits. Calculation of returns to local governments are defined as:

$$\text{Returns to Local Government} = .25 \left(\begin{array}{l}\text{Returns to U.S. Treasury} \\ \text{Plus KV collections and} \\ \text{purchaser road credits}\end{array}\right)$$

KV collections, which are funds contributed by timber purchasers, were accounted for as implicit values of the timber revenues reported in Economic Report 6. This was done to fully account for the cost of site preparation in the timber cost category. Purchaser road credits (see Costs section) were added to the U.S. Treasury returns to determine the basis for the 25 percent fund. (See Chapter II for alternative displays of these values).

F. Work Force

Shifts in Forest Service work force (measured as Full Time Equivalents - FTE) were calculated to show the change in government employment resulting from increases or decreases in land management programs for each alternative and benchmark. Adjustments were made to the base year level (315.55 FTE) according to the following assumptions:

- For all alternatives and benchmarks, the Forest will maintain a stable base work force of 142 FTE for all programs except timber and roads.
- Employment in the timber program will vary by 53.1 FTE for every $1.0 million of appropriated funds.
- Employment in the roads (engineering support) program will vary by 6.8 FTE for every $1.0 million of appropriated funds.

G. Social Measures

Social impact analysis is the estimation of how Forest Service policies and actions affect the quality of life or social well-being. The analysis is accomplished by projecting future social conditions in an area influenced by Forest Service actions if current management is unchanged, then comparing this projection with conditions likely to occur as a result of implementing management alternatives.

Social measures include two aspects of social impact analysis: social variables and social zones of influence. Social zones of influence identify who is affected by Forest Service activities, and social variables define how people are affected and the relationship between people and the natural environment. The following describes the social measures and how they are used.

1. Social Zones of Influence

The following is a description of the groups of people or communities within the impact analysis area.

a. Local Zone

The local zone of influence (Idaho County) is closely aligned to the Nez Perce National Forest because of geographic location, historic reasons for settlement, economic dependency, and traditional use patterns. Although precise dates as to when Native Americans first occupied the lands that comprise Idaho County are not available, it is thought that Native Americans have lived in north-central Idaho for some 7,000 to 10,000 years. More recently, studies have shown that Idaho County falls within the territory of the Sahaptin-speaking Nez Perce Indians. The Nez Perce used many different environments and resources in Idaho County, spending winters along primary rivers such as the Salmon, Snake, and Clearwater, and then moving to higher elevations in the spring and summer. The Nez Perce way of life continued uninterrupted for many years until the coming of Euro-Americans in search of gold.

Mining began in Idaho County in the early 1860s, and played an important role in the historic settlement of the area, creating communities such as Elk City, Newsome, Florence, and Dixie, and supporting the growth of others such as Mount Idaho. Because these communities needed many goods and services, mining was also the stimulus for the development of a transportation system within the County.

Later development of agriculture and cattle ranching occurred in the early 1900s, as a result of the migration of farmers and ranchers to the Camas Prairie. With the exception of timber, these historical industries have remained stable since that time. The local area is still predominantly rural and primarily dependent upon three major industries: cattle ranching, agriculture, and timber products. Analysis has shown that within the County, agriculture and timber products comprise 11 and 17 percent (521 and 798 jobs), respectively, of total employment. Recent trends, however, suggest that there is a growing opportunity for the development of the tourism and recreation industry in the area. Statewide, this is the third largest industry with a gross revenue exceeding $1 billion annually (1985). A particular segment of this industry, Outfitter and Guide operations, has seen increased growth as a result of renewed interest in leisure travel nationwide. At present this industry services 4 percent of all

dispersed recreation activity on the Forest, and should continue to grow as the demand for recreation increases.

The stable demand for products produced by these industries has had a direct impact on the slow but steady growth pattern in the dependent communities within the County. This is exhibited by the minimal changes in population that occurred during the last two census periods. The population of Idaho County decreased from 13,542 in 1960 to 12,891 in 1970, a 4.8 percent decrease, but grew to 14,769 in 1980, a 14.6 percent increase (U.S. Department of Census Statistics "Characteristics of Population," 1981). These changes represent only minor increases when compared to the growth in population Statewide between 1970 and 1980, 32.4 percent.

Because the local economy relies on Nez Perce Forest outputs, and because traditional leisure activities such as firewood cutting, hunting, and fishing are so important to local lifestyles, a close relationship exists between Forest management activities and residents of the local area. An estimated 25 percent of the Forest's recreation use originates within the local influence zone. More than 80 percent of Idaho County's 5,464,960 acres are in Federal ownership, much of which is National Forest (the Nez Perce National Forest encompasses 2,218,040 acres of the County).

Because each community within the local zone is unique in its social makeup, it is further delineated into subareas as follows:

(1) Lower Salmon River

This subarea extends from White Bird south to Riggins and the Little Salmon River area. Timber products and cattle ranching have been primary industries along with some mining activity. Riggins is the business center. A sawmill in Riggins burned in 1982 and the decision was made not to rebuild. Until that time, the timber products industry had been a major employer; now however, boating and recreation have come to play an increasingly significant role in the area economy. This subarea has been stable in terms of employment and social characteristics, and has been described by residents as being close-knit. There has been an influx of new residents in recent years, which has altered the social makeup of this subarea to some degree. The social characteristics here could be significantly altered in the next few years if the sawmill is not rebuilt or if radical change in Forest outputs occurs.

(2) Camas Prairie

This subarea extends from White Bird Hill and Mt. Idaho on the southern tip of the Camas Prairie northward across what is primarily agricultural country. Grangeville, the County seat, is the largest community within Idaho County and it serves as the business center for both the subarea and the County as a whole. Agriculture is a primary industry, as are timber products. The agricultural industry adds a measure of stability to this area not inherent in the others. Grangeville has one sawmill and it, together with woods workers, comprises the single greatest source of employment. This subarea more than any other has organized public interest groups which take an active part in helping shape Forest management priorities. Among the more prominent groups are off-road vehicle clubs, wildlife interest groups, local government agencies, and the Chamber of Commerce. Like the Lower Salmon River subarea, it has been described

as close-knit, and its residents have shown a willingness to work together to achieve mutual objectives. This subarea has also exhibited stability over the years in terms of employment and social characteristics, either of which could be altered if Forest outputs were to be drastically changed.

(3) Clearwater River Area

This subarea extends from the Kooskia-Stites-Harpster area to Kamiah and upriver to Syringa. A sawmill is located in Kooskia and a number of residents are employed in the timber industry. Along the Middle Fork of the Clearwater, there are a number of small business establishments that cater to tourism, recreation, and others traveling between Idaho and Montana via U.S. Highway 12. Like the other subareas, it can be categorized as having a high level of stability in terms of employment, and its social characteristics have remained constant. Given its location, this subarea is dependent on outputs from both the Nez Perce and Clearwater National Forests.

(4) Elk City Area

This subarea includes the Township of Elk City and other homesteads and patented mining claims within the Red River and Elk City Ranger Districts. Unlike the other subareas, it is located within rather than adjacent to the Forest, and is completely surrounded by Federal and State lands. Elk City is the business center and has a sawmill which provides the primary source of employment for the subarea. A number of miners live in this subarea and there are many outfitter-guide operations in the adjacent backcountry. Unlike the other subareas, however, residents have not characterized it as close-knit, but they do place a high value on the individual lifestyles such an environment permits. The turnover rate among its residents is high compared to other subareas. Any drastic change in Forest outputs would affect the lifestyles to which these people have become accustomed.

b. Regional Zone

The regional zone constitutes the major market area within which the direct, indirect, and induced impacts of Forest management activities and outputs apply. It encompasses the four-county area of Clearwater, Idaho, Lewis, and Nez Perce Counties, and includes the region's primary service center at Lewiston. The economy in the regional area reflects the impact of Lewiston in the market area. The major sectors, by employment, are forest products (5,971 jobs or 29 percent), wholesale/retail trade (4,281 jobs or 21 percent), miscellaneous services (4,187 jobs or 20 percent), and agriculture (1,344 jobs or 7 percent). Contributions of Forest resource outputs to the regional economy, based on employment, are reflected in Table B-27.

Population in the regional area has remained stable over the last two census periods (1970 and 1980). With the exception of Nez Perce County (Lewiston area), no real growth trends are apparent. This can be accounted for by the stable demand for both agricultural and forest products; both are mainstays in the Regional economy.

Other than manufacturing of market products, the primary importance of the Forest in the regional area is for recreation. There is a large group that uses the Forest for recreational pursuits (an estimated 50 percent of the use is by people

from the four-county area). There is also a trend toward more use of the Forest for leisure time activities. Fishing and hunting draw most Forest visitors from this zone. The Nez Perce Tribe has treaty rights of hunting and fishing on the Forest, and many members reside within the regional zone. These trends are partially responsible for the growth in the tourism/ recreation industry in this area. Statewide this is the third largest industry with gross revenue exceeding $1 billion annually (1985). It is anticipated that tourism will play a more significant role in the regional economy over time. Two communities, Riggins and Kamiah, have already experienced timber mill closures and are attempting to capture a significant portion of the tourism trade in this area. It is assumed that tourism and recreation will continue to grow along with the increase in statewide activity. Because of the diverse nature of this industry, it is difficult at this time to quantify specific impacts of management activities on the employment and income distribution in the Regional area. However, it is assumed that the growth of the industry in the Regional area will continue regardless of the management alternative selected on the Forest. What will occur, is a shift in the types of activities offered. Market-oriented alternatives would provide more opportunities for developed recreation activities while amenity-oriented alternatives would emphasize activities such as backpacking, hunting, etc.

Individuals in the regional area (Clearwater, Idaho, Lewis, and Nez Perce Counties) who use the Forest also have shown a strong attachment to and interest in how it is managed. A number of public interest groups, as well as individuals, have taken an active part in helping shape Forest management priorities. This is often expressed in the form of appreciation for amenity or aesthetic values. Except for aesthetics, however, even dramatic changes in Nez Perce Forest outputs are perceived as having only limited effect on the regional economy as a whole and almost no effect on the personal lifestyles of most of its residents.

c. National Zone

The national zone of influence is not significantly affected in terms of response to changes in Forest outputs for a given level of management. For instance, a change in timber output would not significantly vary supply or demand on a national scale. However, changes in policy affecting amenity values such as scenic quality, water quality, wildlife and fisheries management, and similar values will continue to draw attention from special interest groups at the state and national levels. This is evidenced in the past, by these interest groups' involvement in wilderness issues.

d. Nez Perce Tribe

Any discussion of the social characteristics of the Forest would be remiss without including the Nez Perce Tribe and their relationship to the Forest. Among the Forest users, the Forest Service has unique responsibilities to the Tribe. These responsibilities include the requirement of coordination with the land and resource protection efforts of the Tribe as well as assuring the Tribe's freedom to believe, express, and exercise its traditional religious beliefs within the Nez Perce National Forest as provided by the American Indian Religious Freedom Act. Furthermore, the Nez Perce Forest shares a common interest with the Tribe in securing a fisheries habitat on the Forest which is adequate to maintain a viable anadromous fishery population. The Tribe also expressed primary

concerns for protection of sites of cultural and religious importance, and the enhancement and perpetuation of big-game herds. In terms of big-game herds and anadromous fisheries, alternatives which maintain or enhance these resources would least change traditional lifestyles. Protection of cultural and religious sites is less affected by changes in output because protection needs are identified on a project-by-project basis through consultation with the Tribe or where the Forest already knows a site of significance exists. Because few Tribal members are employed directly by the Forest Service or in occupations dependent upon Forest outputs, any dramatic change in current output levels is not likely to affect them in terms of economic stability (employment).

2. Social-Economic Variables

To measure or quantify the social effects of the alternatives, a common quantifier was used to evaluate changes in the social-economic variables. Input-output modeling of the regional area economy showed that variations in employment, gross output, and personal income resulting from changes in Forest resource outputs by alternatives could have a significant impact on these social variables. As a result, the change in employment and personal income by alternative in the regional area was used to quantify these changes. It was assumed that modeling of the regional economy could be used not only to predict changes in the social variables for that area, but also for the local impact zone as well. Specifically, comparisons were made of the change in forest industry, general recreation, outfitter and guide, and total employment and income to the base level (1980) outputs for each alternative.

Although there are other factors that could affect the social variables, current data suggests that National Forest outputs can make a substantial difference in the social makeup of the impact areas identified. It should also be understood that many variables outside the realm of alternative outputs exert considerable influence on the social impact areas in question. These would include the recent economic recession, or the inclusion of new industries in the market area.

To quantify the impact of social factors in each zone of influence with regard to the varying outputs of the different alternatives, it was necessary to define five variables to conduct the quantification or measurement (Bacigalupi, 1980). These are defined below:

a. Economic Stability

The ability to maintain a viable economic base in order to insure the existence of historical trades and professions within the impact zone characterize this variable. This situation enables the affected community to "maintain or enhance a way of living which may be financially dependent upon particular resource-related work" (Bowen, et al., 1978).
This variable is applicable most directly to the local zone and secondarily to the regional zone, as previously described.

The ideal level, as perceived by local residents, is to maintain or minimally increase present employment and/or income levels. Drastic reductions or increases would be viewed as detrimental, since they would alter existing business patterns.

Because of the local dependence on timber production, the most critical factor that could affect this variable would be a drastic change in timber outputs from the Forest. This would directly alter forest industry income and employment, and the indirect effects would be felt in the other sectors of the local and regional economies. In order to measure the effects of the alternatives with respect to economic stability, it was determined that timber outputs should not invoke "rapid change." This was defined as an approximate 10-percent or greater deviation from base employment, income, or job distribution within a 10-year period. Because the base economy is not static, it was assumed a decrease of 20 million board feet (MMBF) from the historical (1980) annual harvest, or an increase of 20 MMBF above current milling capacity (135 MMBF) would be required to create approximately 10 percent change in base employment. This leaves a range of 77 MMBF to 155 MMBF within which harvest could vary without invoking "rapid change," during the first decade. For subsequent decades, it was assumed that as long as harvest levels did not fluctuate more than plus or minus 30 percent, rapid change would not occur.

In addition to the impacts of timber production, an evaluation of the impacts of each alternative on the tourism/recreation industry was also analyzed. The diverse nature of this industry, ranging from developed recreation resorts to backcountry outfitter operations, made quantification of management activities on employment and income difficult. The impacts that were estimated for each alternative were based on the Pacific Northwest River Basin Commission (PNRBC) demand projections for dispersed recreational activities for the local area. The importance of this industry should continue to grow regardless of the management alternative selected on the Forest. What will occur, is a shift in the types of activities offered. Market-oriented alternatives would provide more opportunities for developed recreation activities, such as resorts. Amenity-oriented alternatives would emphasize activities such as backcountry hunting, fishing, and general recreation trips; the type of activities most closely associated with the local outfitter and guide industry. Timber harvests and related road building can reduce traditional outfitter/guide operations on previously unroaded areas. From information provided by District recreation specialists, it is estimated that there would be a 50-percent reduction in an outfitter/guide's operation if roads were built into his/her assigned area. Based on this information, market-oriented alternatives, such as D and E, would have the potential for the greatest impact on outfitter/ guide's operations while amenity-oriented alternatives, such as C, H, and H1, would have the least impact. Below is a summary of potential impacts on outfitters and guides by Ranger Districts:

Salmon River RD

Alternatives D and E would have the greatest impact on one out of eight outfitters operating within this District. Alternatives G and G1 would reduce this same outfitter by 22 percent from current operations.

Clearwater RD

All alternatives would reduce the operations of the one outfitter by 50 percent.

Red River RD

Alternatives A, D, and E have the greatest negative impact by reducing 50 percent of the operations of all outfitters administered within this District. Alternatives C, H, and I would reduce by 50 percent operations on two out of five outfitters. Alternatives F, G, G1, J, K, and L would reduce operations by 50 percent on three out of the five outfitters.

Moose Creek RD

There would be no significant impact by the alternatives on outfitters and guide operations within this wilderness District. There is the potential for greater outfitter activity due to a shift in operations from other Districts significantly impacted by alternatives.

Selway RD

Alternatives A, D, and E would have the greatest impact on one outfitter by reducing operations 40 to 50 percent. Two other outfitter operations would be reduced by 5 to 10 percent. The remaining alternatives would impact only one out of the four outfitters and this would be a reduction of 5 percent on his/her operation.

Elk City RD

Alternatives D, E, and K would have the greatest impact on the one outfitter operating within this District. Outfitter activity would be reduced by 73 percent under these alternatives. Alternatives A and F have an impact of approximately 50 percent and Alternatives C, H, H1, and I have no significant impact.

b. Social Stability

The perception is that "future events can be counted on to permit living a desired life direction" (Ibid, 1978). Social stability can be characterized as an environment which maintains existing social and cultural ties in their present state in order to minimize conflicts with user groups. This variable is applicable only to the local area.

During interviews with local residents, the local area was perceived to be both stable and capable of providing a high level of continuity among the citizenry. While stability was a very important concern, slow but steady growth (with respect to population and employment) was also viewed as advantageous. It was assumed that growth was not aligned with any particular industry, but rather moving towards a more stable economy. Any alternative which would create a sudden increase or decrease in population would be viewed as undesirable.

c. Community Cohesion

"The quality of adherence to a particular community cause; a zealous collective support of community; community pride and loyalty; people working together for mutual benefit; a sense of belonging that is associated with mutual community interests and goals; the regard and respect people hold for their community and each other" (Ibid, 1978). This variable speaks directly to the degree to which

individuals and groups support or denounce broadbased social issues. It is important only at the local level.

In general, the local area can be categorized as being in agreement on land resource issues, although a certain degree of polarization exists over environmental vs. market-output questions. This could be an important issue if management activities are perceived as being weighted too heavily one way or the other.

There is a high level of community pride, and a strong sense of association within the local area. An alternative which promotes or maintains this cohesiveness would be acceptable.

d. Lifestyle

This variable pertains to preserving the traditional way of living commonly associated with Idaho County and the local subareas within it. It is important to note that most of the local people view their traditional level as being centered around individuality, freedom, permanency, and a strong identification with the area. Although moderate change in this lifestyle is not viewed as detrimental, most individuals would prefer to see little or no change.

e. Aesthetics

"Feelings of attachment" characterize this variable with regard to the perception of local individuals and their attitudes. Many people consider amenity values (preservation of wilderness, clean air, clean water) as the most important factors, while others maintain that use of the Forest for timber harvest, grazing, firewood cutting, hunting, etc. are more important issues. In addition, this variable can be measured on the regional and national levels since many of these same values are important to the surrounding communities and nation as well.

Each alternative can be analyzed as to what the emphasis of the management is perceived to be, and what values are best satisfied within each.

VI. ANALYSIS PRIOR TO DEVELOPMENT OF ALTERNATIVES

A. Introduction

This analysis process included compiling data (issues concerns, demand projections, the current situation assessment, etc.), and using the FORPLAN model to process and/or develop information on Forest output production capability, economics, and resource interrelationships.

During the Analysis of the Management Situation (AMS), resource supply potentials were determined by establishing minimum and maximum production levels called benchmarks. A point of reference was also defined from which the costs and effects of applying regulation and policy constraints were measured. Production capabilities were determined for single resources as well as for sets of multiple resource outputs produced in the most cost-efficient way. This analysis established the benchmark levels required by National planning

direction. Those benchmarks served as references from which the costs and effects of various objectives and constraints used in developing alternatives were evaluated.

The benchmark analysis was performed prior to the formulation of alternatives and used the FORPLAN model. The purpose of the benchmark analysis was fourfold:

- Estimate the schedule of management activities, resource outputs, effects, discounted benefits and costs, present net value, and acreages of prescription assignments appropriate to achieving the purposes of the benchmarks;

- Define the resource production levels associated with maximizing single resource outputs;

- Analyze the implications of legal and policy constraints; and

- Comply with the analysis of minimum management requirements of 36 CFR 219.27.

In order to fulfill these requirements, the Forest developed three types of benchmarks. These are:

- Maximize Present Net Value Benchmarks - Maximizes present net value for the Forest and displays the associated resource outputs.

- Resource Benchmarks - Defines the maximum potentials for timber production, elk, and wilderness.

- Minimum Level Benchmarks - Defines the minimum outputs associated with custodial management of the Forest and the unavoidable costs and benefits of public ownership.

Several variations of the Present Net Value and Resource Benchmarks were run to determine the opportunity cost and resource tradeoffs of meeting specific constraints, objectives, regulations, and policies. In addition to these requirements, all benchmarks were designed to be approximately implementable, were not constrained by budget, and generally used a maximization of PNV as the objective function to obtain a fixed analytical solution.

As a result of public comments, additional analysis and several changes have been made since the Draft EIS. The additional analysis is summarized below:

- Alternative G (Preferred Alternative) was modified to maintain a stable harvest level over the planning horizon.

- Alternative G was modified by limiting timber harvesting to those timber prescription/analysis area combinations which showed a positive present net value.

- Alternative G was modified by adding additional suitable acres from East Meadow Creek, West Meadow Creek, and Rackliff-Gedney roadless areas.

- Alternative G was modified to compare and evaluate the effect of using 60 acres available for harvest per mile of new road construction in the first decade rather than 40 acres per mile.

- Sensitivity analysis was performed to estimate the impact that different timber price assumptions would have on land assignments and the economics of timber management using the FORPLAN model. Also, updated recreation/ wildlife values were used to estimate any impacts on land assignments and economic efficiency. This analysis was done on the Max Present Net Value Benchmark, Alternative D, and Alternative G. For additional information on this analysis, see Appendix D.

Summary of changes to alternatives since the Draft EIS:

The boundaries of the Mallard and Gospel-Hump roadless areas were changed to the original RARE II boundaries. This change was in response to the public concern that this Forest adjusted the RARE II boundaries because of timber sale and road construction activities which were expected to take place, but have not at this time.

Constraints common to all alternatives remain unchanged. Additional constraints were applied to Alternative G (Preferred Alternative) to meet specific resource and economic objectives. These constraints have been designed to meet the following objectives:

- Increase fish/water quality objectives in 64 drainages;

- Increase prescribed burning on deer/elk winter range from 2,700 acres to 5,000 acres per year in the Plan period (1988-1997);

- No scheduled road construction or timber harvesting activities in the West Meadow Creek roadless area for the Plan period (1988-1997), except for the portion which is west of the hydrologic divide between Meadow Creek and the Red River and American River drainages;

- Managing approximately 13,300 acres in the Silver Creek-Pilot Knob roadless area without additional roads and with no scheduled timber harvest;

- Make timber management prescriptions available for approximately 11,000 acres of tentatively suitable land in the Rackliff-Gedney roadless area;

- Include all riparian acres in the suitable timber base, but review harvesting activities on any riparian areas during implementation of the Forest Plan.

B. Development of Management Requirements

In order to perform the stepwise analysis in the benchmarks, various sets of management requirements were modeled in FORPLAN in order to ensure that the purposes of the benchmark analysis could be achieved. These management requirements were divided into three categories: minimum management

requirements (MMRs); timber policy requirements; and maximum resource output constraints. The management requirements were incorporated into FORPLAN in two ways. First, many of the standards and guidelines for prescriptions were developed to include specific management requirements. These requirements are included in FORPLAN as cost and yield table variations reflecting management under these assumptions. Second, various management requirements were incorporated into FORPLAN by imposing constraints on the linear program. These constraints were used to ensure that outputs, effects, and forest conditions will be produced in the proportions required to achieve the particular purposes of a benchmark.

In linear programming analysis, constraints override the objective function. Thus, if a predetermined level of outputs or minimum physical condition is entered as a constraint, it is always achieved (or no feasible solution is found). Output levels and other desired effects entered as constraints, then, are implicitly assumed to contribute more to public benefits than the sum of their cost of production plus the foregone contribution of public benefits of any outputs they replace in the solution. In the design of the benchmarks, care was taken to ensure that the effects of various constraints or sets of constraints on PNV could be quantified, and that these constraints constituted the most cost-efficient method for attaining the desired results. Following is a discussion of the management requirements used in the Nez Perce FORPLAN model.

The minimum management requirements in 36 CFR 219.27 were identified and incorporated into the planning process. Several of the minimum management requirements are a part of the design for management prescriptions assigned in the FORPLAN model to benchmarks and alternatives. In addition, a set of modeling constraints were developed for FORPLAN to approximate the effects of MMRs which could not be tied to management prescriptions. Other minimum management requirements were considered outside the model. Following is a discussion of how each minimum management requirement was incorporated.

1. Minimum Management Requirements

a. Conservation of Soil and Water Resources

The basic soil, water quality, and water yield resources were protected by the application of specific management standards, guidelines, and practices integrated within management prescriptions, and accessibility and acres of harvest constraints in the FORPLAN model. This methodology provides a baseline necessary to protect the physical integrity of the land and water systems. Soil resources were protected by employing standards, guidelines, and practices within the management prescriptions which called for land-disturbing activities (i.e., timber harvesting and road construction). These measures were incorporated into the model to protect the basic productivity of the soil. Water quality resources were protected by a combination of standards, guidelines, and practices within the management prescriptions, and accessibility and acres of harvest constraints in the FORPLAN model. These measures were taken to limit stream sedimentation to acceptable levels. Water yields were protected by utilizing accessibility constraints in the FORPLAN model to protect Forestwide stream channel stability. Specifically, accessibility constraints limited harvest on all analysis areas over 400 acres to 10 percent per decade for the first four decades. The acres of final

harvest constraints limited harvest acres to levels which would not jeopardize minimum viable fisheries populations on each watershed available for timber harvest on the Forest.

b. Minimize Hazards from Flood, Wind, Wildfire, Erosion, or Other Natural Physical Forces

The Forestwide management standards and guidelines incorporated in management prescriptions include the necessary mitigation and protection from the above hazards.

c. Reduce Hazard From Pest Organisms

Activities to prevent conditions favorable to pest organisms are included in management prescriptions.

d. Protection of Riparian Zones

Riparian areas are protected by specific management standards, guidelines, and practices within the management prescriptions and scheduled output constraints limiting harvest in riparian areas per decade. All identified riparian areas are managed to protect riparian ecosystem resources and timber harvesting is limited to 10 percent of the riparian zone in any 10-year period.

e. Diversity

Animal and vegetative diversity is currently very high and is well distributed on the Forest. Vegetative diversity is maintained through a combination of managing for old-growth habitats, timber harvest, and fire management. A minimum of 10 percent of the forested area on the Forest is maintained at any one time as old growth with no less than 5 percent of the forested acres maintained as old growth within each prescription watershed or combination of watersheds totalling 5,000 to 10,000 acres. Animal diversity is further discussed under item "f."

f. Adequate Fish and Wildlife Habitat to Maintain Viable Populations

Fish - The fishery habitat to maintain minimum viable populations was met by the application of the accessibility constraints to the FORPLAN model.

Wildlife - One or more selected indicator species are used to represent wildlife species that have similar biological requirements. Eleven species were selected as indicator species. Species selected are either impacted by management direction or are the emphasis in management direction. Endangered, threatened, and/or sensitive species were included. Maintenance of minimum viable populations of wildlife was a part of the design for management prescriptions. As a result, all alternatives and benchmarks maintain at least those minimums.

Specific constraints for elk key summer range were modeled by capability area boundary or groups of capability areas. Open road density is the variable used to evaluate the effect of various management directions.

Three wildlife indicator species, goshawk, pine marten, and pileated woodpecker, have optimum habitat in old-growth ecosystems. Old growth is discussed in item "e."

g. Consistency with Multiple Use Laws

The Secretary of Agriculture under various laws is directed to administer national forests for multiple uses such as outdoor recreation, range, timber, watershed, wildlife, fish, and minerals. The Secretary is also directed to develop and administer the renewable surface resources.

Forest planning and environmental analyses require that processes formerly used to make individual resource decisions must be combined into integrated management decisions.

The riparian zone diversity, and fish and wildlife minimum management requirements (MMR) address how multiple use and sustained yield is achieved. The reforestation MMR provides for maintenance of a sustained yield of timber without impairment to the productivity of the land.

h. Protecting Threatened and Endangered Species Habitat

The gray wolf, peregrine falcon, grizzly bear, and bald eagle are threatened and endangered species for which habitat has been identified on the Forest. The Regional Guide directs the Forest to evaluate the capacity of supplying habitat for these species. Adequate prey base of big game (elk and deer) is discussed above. Availability of habitat was determined for each alternative and benchmark by evaluating prescriptions that provide a reduction in the likelihood of human-wolf encounters. The evaluation method is documented in the planning records.

i. Providing for Utility and Transportation Rights-of-Way and Corridors

Land-disturbing activities such as timber harvest, land clearing, road construction, pipeline trenches, and holes for power poles occur when providing rights-of-way. An analysis outside FORPLAN and prescriptions defined the kinds of land which should be excluded or avoided in permitting or constructing linear corridor facilities. Avoidance areas are areas where establishment and use of corridors conflicts with land use or management objectives such as cultural or historic sites, wildernesses, Research Natural Areas, and scenic areas. Recently established and expanded Wildernesses (Selway-Bitterroot and Frank Church-River of No Return) preclude any consideration of a major east-west corridor on the Forest.

j. Road Construction Standards

Access roads are necessary for efficient timber harvest, but road construction affects the soil, water, visual, wildlife, fisheries, and riparian resources. Safe road conditions for public use are necessary. The variables considered to establish road standards are road density per square mile and road design requirements.

Minimum road design considered type of road, clearing width, width of road, and grades. Roads are categorized into two types -- collector and local.

Clearing width was established at the top of the road cut and the toe of the road fill. No major difference in costs occurs between collector and local roads for clearing. Steeper slopes require larger clearing width and increased costs.

The width of local roads influences costs. The standard established was 12-foot width for rock-surfaced roads and 14-foot width for unsurfaced roads. Narrower road widths are not considered because of logging equipment requirements and safety. The costs for this standard vary, depending on the landtype (slope).

The grades of the road vary by road type. Collector roads were established at a maximum 6-percent sustained grade with some pitches to 10 percent. This percentage was based on traffic volume, road maintenance costs, construction costs, and the effects on soil and water. Local road grades were established at a maximum 8-percent sustained normal grade with pitches to 15 percent. Steep pitches are considered exceptions. A grade up to 15 percent is used rather than the 8 percent in those situations where less impact on soil, water, and visual resources is possible.

Mitigating measures will be applied to newly constructed roads and road maintenance to help maintain water quality and reduce damage to fisheries by limiting the amount of sediment that enters the streams. Some measures are applied to all roads while others are for specific sections such as within riparian zones or within sediment-contributing areas adjacent to active channels. The sediment mitigation guidelines for roads are on file in the Forest planning records. These guidelines are included in management prescriptions.

k. Revegetating Temporary Roads

Short temporary roads are sometimes needed to efficiently transport logs; however, they can affect soil and water resources. The road density for the Forest's transportation system and log skid distances were designed to preclude the use of temporary roads in most cases. The minimum requirement is to reestablish forage or grass cover by seeding. Revegetation is included in the logging practices for prescriptions that harvest timber.

l. Maintaining Air Quality

This requirement was handled outside of FORPLAN. The Regional Guide directs the Forest to work through cooperative agreements with the States to manage smoke emissions. Scheduling the time and number of prescribed burns is done outside the FORPLAN model and in cooperation with States of Montana and Idaho.

m. Reforestation

In order to have reasonable assurance of regeneration in 5 years, seedlings are planted on most harvested areas. Planting occurs because of the long periods between cone crops, insect (spruce budworm) and disease (dwarf mistletoe) effects on seed sources and seedlings, grass competition or prevention of

natural generation, and the need to close harvest openings within 20 years to meet the hydrologic recovery rate established in the soil and water MMR. Planting variables considered were: single species, species mix, stocking rates, and site preparation. The minimum requirement for species is a mix that minimizes plantation losses and the need to replant. Stocking rates are 200 to 600 trees per acre. The rate varies because the drier habitat types can't support full stocking. Site preparation is required in most cases because native planted species cannot grow efficiently if existing vegetation competes for soil nutrients, water, and sunshine. Reforestation is included in the prescriptions with timber harvest as a management practice.

n. Forty-Acre Clearcut Limit

Clearcutting is one silvicultural system used on the Forest for even-aged timber harvest. The Regional Guide establishes that the openings created by even-aged silviculture normally will be 40 acres or less. Costs and practices used are based on clearcuts of 40 acres or less and are included in the management prescriptions. As discussed in the soil and water MMR, the FORPLAN model harvested an entire analysis area in 1 decade. An access constraint which limited the amount of harvest in an analysis area was applied to assure that cutting could be limited to 40 acres.

Constraints used in modeling the benchmarks are summarized in Table B-31, and are discussed in this section.

Table B-31
Benchmark Constraint Summary
(Benchmarks and Constraints)

Run ID 11711C & 11721C	Run ID 11712B	Run ID 11713A	Run ID 11706D
Ending Inv.	Ending Inv.	Ending Inv.	Ending Inv.
Rotations based on utilization standards	Rotations based on 95% culmination of mean annual increment (CMAI)	Rotations based on utilization standards	Rotations based on 95% CMAI
Upper and lower bounds 25% per decade	Upper and lower bounds 25% per decade	Non-declining yield	Non-declining yield
1st decade volume ceiling 333 million cubic feet (MMCF)	1st decade volume ceiling 333 MMCF		
Full MMR constraint set	Full MMR constraint set	Full MMR constraint set	Full MMR constraint set
Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades

Table B-31 (Continued)
Benchmark Constraint Summary
(Benchmarks and Constraints)

Run ID 11715A	Run ID 11716A	Run ID 11702A	Run ID 11703A
Ending Inv.	Ending Inv.	Ending Inv.	Ending Inv
Rotations based on utilization standards	Rotations based on 95% CMAI	Rotations based on utilization standards	Rotations based on utilization standards
Upper and lower bounds 25% per decade	Upper and lower bounds 25% per decade	Upper and lower bounds 25% per decade	Upper and lower bounds 25% per decade
1st decade volume ceiling 333 MMCF	1st decade volume ceiling 333 MMCF	1st decade volume ceiling of 333 MMCF	
Full MMR constraint set	Full MMR constraint set		
Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades

Run ID 11717A	Run ID 11718A	Run ID 11705A	Run ID 11705C
Ending Inv	Ending Inv	Ending Inv	Ending Inv
Rotations based on utilization standards	Rotations based on 95% CMAI	Rotations based on 95% CMAI	Rotations based on 95% CMAI
Non-declining yield	Non-declining yield	Non-declining yield 1/	Non-declining yield 1/
		1st decade volume ceiling of 333 MMCF	1st decade volume ceiling of 333 MMCF
Full MMR constraint set	Full MMR constraint set	Full MMR constraint set	Full MMR constraint set
Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades

See footnotes at end of table.

Table B-31 (Continued)
Benchmark Constraint Summary
(Benchmarks and Constraints)

Run ID 11704B	Run ID 11708E	Run ID 11709C	Run ID 11710C
Ending Inv	Ending Inv	Ending Inv	Ending Inv
Rotations based on 95% CMAI	Rotations based on 95% CMAI	Rotations based on 95% CMAI	Rotations based on 95% CMAI
Non-declining yields	Non-declining yield	Non-declining yield	Non-declining yield
	Analysis area constraints of 10% per decade (fisheries/water quality)	Old growth MMR constraint	Riparian area MMR constraint
Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades	Max PNV assigned for 15 decades

Run ID 11722Y	Run ID 11723Y	Run ID 11720A
Ending Inv	Ending Inv	Ending Inv
Rotations based on utilization standards	Rotations based on utilization standards	Rotations based on 95% CMAI
Upper and lower bounds 25% per decade	Upper and lower bounds 25% per decade	Non-declining yield
1st decade volume ceiling 333 MMCF	1st decade volume ceiling 333MMCF	
Full MMR constraint set	Full MMR constraint set	Full set of MMR constraints
Max PNV assigned for 15 decades 2/	Max PNV assigned for 15 decades 3/	Max PNV assigned for 15 decades

See footnotes at end of table.

Table B-31 (Continued)
Benchmark Constraint Summary
(Benchmarks and Constraints)

Run ID 11799A	Run ID 11724D
Ending Inv	Ending Inv
Rotations based on 95% CMAI	Rotations based on utilization stds.
Non-declining yield	Upper and lower bounds 25% per decade
Full set of MMR constraints	
Max PNV assigned for 15 decades	

1/ Increase between decades limited to 25% up to LTSY level.

2/ The objective function for the inital run was Max Grazing for 5 decades. The resulting grazing outputs were locked in for the first 5 decades and rerun as 11722Y.

3/ The objective function for the inital run was Max Elk for 5 decades. The resulting elk outputs were locked in for the first 5 decades and rerun as 11723Y.

2. Timber Policy Requirements

a. Nondeclining Yield (NDY)

Nondeclining yield (NDY) is a constraint on timber outputs which limits the per-period harvests to levels greater than or equal to the preceding period level. This constraint was used to ensure a constant even flow of timber harvest levels throughout the planning period.

b. Sequential Upper and Lower Bounds; Harvest Floors and Ceilings

In lieu of the NDY constraint on timber outputs, sequential upper and lower bounds and floors and ceilings were used to constrain the harvest flows to reasonable levels in specific benchmark runs. Floors and ceilings were used to establish a parameter on first decade timber harvests which would not invoke substantial change in local consumptive patterns. Floors are a lower limit which may be a necessary limit on harvests to offer a level of reasonableness in a benchmark. Normally this limit is imposed in a benchmark on the first decade only, allowing the objective functions and other constraints to control the

solution beyond the first decade. Ceilings are an upper limit, only to be imposed for the same reasons as the floor.

Floors and ceilings for the Nez Perce National Forest were calculated with respect to timber outputs which would not create a "rapid change" in the local economy. Rapid change was defined as a 10-percent or greater deviation from base employment, income, or job distribution in the first planning period. In relation to output levels, it was determined that rapid change would occur if harvest levels changed an average of greater than 20 MMBF from the base year harvest level. Since the annual regulated harvest for the base year was 97 MMBF, the floor and ceiling limits for the first decade were calculated as 77-155 MMBF (the upper limit was calculated as +20 MMBF above the local milling capacity of 135 MMBF). Sequential upper and lower bounds were used in conjunction with the floors and ceilings to limit timber harvest levels after the first decade. Sequential upper and lower bounds were defined as the change in timber harvest levels for succeeding periods which did not invoke rapid change in the local economy. Expressed as a percentage, it was determined that timber harvest levels would be constrained to +/-25 percent of the previous period harvest. The justification for this level was an estimate of the change in harvest levels which would create a 10-percent or greater deviation in employment, income, or job distribution, and current local industry estimates of the incremental change in timber harvest levels required to efficiently operate new milling facilities.

c. Rotation Based on 95 Percent CMAI

Timber rotation lengths based on 95 percent of the culmination of mean annual increment (CMAI) for existing and regenerated stands is required by 36 CFR 219.16(2)(iii). The Forest Service is directed to analyze timber rotation lengths based on the time required for stands to reach the culmination of net growth. CMAI assures that all stands scheduled for harvest have reached this level. CMAI was used to constrain the FORPLAN model with regard to when timber harvests could actually occur.

d. Rotation based on Utilization Standards

In order to evaluate the effects of timber rotation lengths constrained by CMAI, rotation lengths based on Regionally proposed utilization standards were used to determine what, if any, change in timber harvest levels or PNV could be attributed to the more constraining CMAI levels.

3. Maximum Resource Output Objectives

Maximum resource output constraints were used to determine the physical or biological potential of achieving specific resource outputs for the Forest, and the resulting impact on other resources or programs. The outputs chosen for this analysis were timber, range, wildlife, and wilderness. The resource outputs were maximized by first assigning FORPLAN an objective function to maximize the particular output, locking in the resulting optimal land assignment, and rerunning FORPLAN with the objective function of maximizing PNV.

C. Displayed Benchmarks

Following are descriptions of the benchmarks developed and considered in the Nez Perce National Forest planning process.

1. Model Calibration - 01D

The purpose of this benchmark was to verify that the FORPLAN model was reasonable in terms of resource outputs and cost information, and to ensure that all data coding for scheduled outputs, costs, etc. was correctly done. The constraints used in this benchmark were:

- Timber rotations based on 95 percent of CMAI.
- Nondeclining yield (NDY) for timber harvest at or below long-term sustained yield capacity (LTSYC).

Because this benchmark was only used to validate the FORPLAN model, it was not carried through in the analysis of benchmarks to determine opportunity costs or resource outputs.

2. Max PNV (Assigned) - Variation 1 - 02A

The purpose of this benchmark was to form a basis for measuring the opportunity costs of timber harvest floors and ceilings and sequential upper and lower bounds in the first decade. The constraints used in this benchmark were:

- Harvest floors and ceilings for the first decade, and sequential upper and lower bounds for all decades thereafter.
- Timber rotations based on current utilization standards.

The long-term sustained yield capacity (LTSYC) in benchmark 02A was 49 MMCF per year, or 238 MMBF, with a first decade harvest level of 156 MMBF per year and 1,056,340 acres identified as suitable for timber management. PNV for this benchmark is $1,487 million. Because of a lack of minimum viable fishery constraints, the anadromous fishery is projected to be reduced to remnant populations by the third decade. Elk winter range capacity is projected to vary from a low of 14,500 elk in decade 2 to 15,700 elk in decade 3.

3. Max PNV (Assigned) - Variation 2 - 03A

The purpose of this benchmark is to determine the opportunity costs of timber floors and ceilings when compared with benchmark 02A, in the absence of MMRs. It is the same as benchmark 02A with the exception of no constraint on timber harvests in the first decade. The constraints used in this benchmark are:

- Sequential upper and lower bounds
- Rotations based on utility standards

The LTSYC in benchmark 03A was 49 MMCF per year, or 238 MMBF, with a first decade harvest level of 609 MMBF per year, and 1,056,874 acres identified as suitable for timber management. This run had the most rapid conversion of existing stands

to regenerated and achieved 90 percent of the potential LTSYC growth rate by the sixth decade. PNV for this benchmark is $1,860 million, the highest of all benchmarks. First period costs are increased $35 million over 02A, due to the high level of road construction. The anadromous fishery is projected to be reduced to remnant populations by the third decade because of the lack of a minimum viable fishery constraint. Elk winter range capacity is projected to vary from a low of 14,900 elk in decade 1 to 28,600 elk in decade 5.

4. Max PNV (Assigned) - Variation 3 - 04B

The purpose of this benchmark is to provide a base run against which the minimum management requirements can be analyzed. When compared with run 02A, it defines the opportunity cost of the nondeclining yield/long-term sustained yield capacity (NDY/LTSYC) link in conjunction with timber rotation based on 95 percent of the culmination of mean annual increment (CMAI).

The significant constraints applied to this benchmark are:

- NDY/LTSYC link.
- Rotations restricted to 95 percent of CMAI.

The LTSYC in benchmark 04B was 51 MMCF per year, or 246 MMBF, with an annual harvest in the first decade of 246 MMBF and 1,057,686 acres identified as suitable for timber management. PNV for this benchmark is $1,260 million. Because of a lack of minimum viable fishery constraints, the anadromous fishery is projected to be reduced to remnant populations by the third decade. Elk winter range capacity is projected to vary from a low of 14,400 elk in decade 2 to 16,000 elk in decade 3.

5. Max PNV (Assigned Values) - Variation 5 (Max PNV Benchmark) - 06D

This run provides the reference point for the comparison of the alternative runs to determine opportunity costs of the various goals and objectives. This run is also used to determine the opportunity costs of the full set of MMRs when employed with harvest constraints of NDY/LTSYC link and rotations restricted to 95 percent CMAI. Specific constraints applied to achieve MMRs are:

- Accessibility constraints of 10 percent per decade for the first 4 decades on all sawtimber analysis areas.

- Upper limit of 108,796 acres of regeneration harvests in decade 1 and 102,622 acres in decade 2 applied as scheduled output constraints by Ranger District.

- Prescriptions for existing and replacement old-growth stands locked in to 95,070 acres.

- A proportional scheduled output constraint restricting harvest in riparian areas to 10 percent of the total riparian area acres in any decade.

By comparing this run to 04B, the opportunity costs for the full set of MMRs can be determined. The LTSYC level in benchmark 06D was 51 MMCF per year, or 243 MMBF, with an annual harvest level of 196 MMBF in the first decade and 1,056,136

acres identified as suitable for timber management. PNV for this benchmark is $1,119 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 18,900 elk in decade 5.

6. Max PNV (Assigned) MMR Analysis - 08E

The purpose of this run was to determine the opportunity cost of the analysis area accessibility constraint applied in run 06D as part of the minimum management requirements (MMR) set. This single constraint achieves, partially or in full, the following MMRs:

- Size of opening restrictions
- Maximum water yields
- Water quality-fishery viability

This run is essentially the same as run 04B with NDY/LTSYC link and rotations restricted to 95 percent of CMAI being the primary harvest constraints. The only exception is the analysis area accessibility constraints that are set at 10 percent per decade for the first four decades and are applied to all sawtimber analysis areas greater than 400 acres. The LTSYC level in benchmark 08E was 51 MMCF per year, or 244 MMBF, with an annual harvest level of 244 MMBF in the first decade, and 1,057,686 acres identified as suitable for timber management. Present net value for this benchmark is $1,148 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 19,000 elk in decade 5.

7. Max PNV (Assigned) MMR Analysis - 10C

The purpose of this run is to determine the opportunity cost of the harvest constraint applied to riparian areas which partially achieves the MMR for riparian areas. The constraint limits the acres of riparian area harvest in any one decade to 10 percent of the inventoried riparian area Forestwide. This constraint, in conjunction with specific standards and guidelines, was used to fulfill the riparian area MMR.

This run is identical to run 04B with the exception of the riparian area constraint. By comparing the two, the opportunity cost of the constraint can be determined. NDY/LTSYC link and rotations restricted to 95 percent CMAI are the significant harvest constraints. The LTSYC level in benchmark 10C was 51 MMCF per year, or 246 MMBF, with an annual harvest level of 246 MMBF in the first decade, and 1,057,686 acres identified as suitable for timber management. PNV for this benchmark is $1,251 million. Because of a lack of minimum viable fishery constraints, the anadromous fishery is projected to be reduced to remnant populations by the third decade. Elk winter range capacity is projected to vary from a low of 14,400 elk in decade 2 to 16,000 elk in decade 3.

8. Max PNV (Assigned) MMR Analysis - 09C

The purpose of this run was to determine the opportunity costs of old-growth prescriptions to meet the MMR of maintaining viable populations of old-growth-dependent species. Prescriptions for existing old growth, with early timber entry dates delayed to the 10th decade, are assigned to 42,329 acres. Prescriptions for replacement old-growth stands with entry dates delayed to the 16th decade are assigned to 52,741 acres. The other significant constraints are NDY/LTSYC link and rotations restricted to 95 percent CMAI, the same as in 04B. Comparing this run to 04B will determine the impacts and opportunity costs of maintaining minimum viable populations of old-growth-dependent species. The LTSYC level in benchmark 09C was 51 MMCF per year, or 243 MMBF, with an annual harvest level of 243 MMBF in the first decade, and 1,056,136 acres identified as suitable for timber management. PNV for this benchmark is $1,230 million. Because of a lack of minimum viable fishery constraints, the anadromous fishery is projected to be reduced to remnant populations by the third decade. Elk winter range capacity is projected to vary from a low of 14,400 elk in decade 2 to 16,000 elk in decade 3.

9. Max PNV (Assigned Values) Variation 6 - 05C

This run is virtually the same as 06D: NDY/LTSYC link, full set of MMR constraints, and rotations restricted to 95 percent CMAI. In addition to these, this run has the additional constraint of a first decade ceiling of 155 MMBF with a sequential upper bound of 25 percent per decade.

Comparing this run to 06D will provide the opportunity cost of the harvest ceiling and 25 percent incremental increase constraint when applied with the NDY/LTSYC link harvest constraint and the full set of MMRs. The LTSYC in benchmark 05C was 50 MMCF per year, or 243 MMBF, with an annual harvest level in the first decade of 157 MMBF and 1,056,136 acres identified as suitable for timber management. PNV for this benchmark is $1,108 million. This benchmark shows only a 1 percent reduction in PNV due to the timber harvest floors and ceilings and sequential upper and lower bounds for the first five decades. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 18,100 elk in decade 5.

10. Max PNV (Assigned Values) Variation 7 - 05A

The purpose of this run was to determine the opportunity cost of linking the nondeclining flow over a 150-year planning horizon to the LTSYC level. This run is essentially the same as 05C with one exception. The nondeclining flow constraint is not linked to the LTSYC level. The result is a departure run, although the LTSYC is not linked with any other specific run, and the harvest level never comes down to the LTSYC level during the projected planning horizon.

By comparing this run to 05C, the opportunity costs of the LTSYC link can be determined. Even though this run is not a true departure analysis of 05C since the LTSYC levels are different, it does provide an opportunity to evaluate the potential impacts of a harvest schedule that departs from the nondeclining flow policy. The LTSYC in benchmark 05A was 48 MMCF per year, or 236 MMBF, with an annual first decade harvest level of 157 MMBF and 1,056,136 acres identified as

suitable for timber management. PNV for this benchmark is $1,174 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 14,900 elk in decade 1 to 17,100 elk in decade 3.

11. Max PNV (Assigned) Variation 8 - 12B

The purpose of this run is to analyze the opportunity costs of NDY/LTSYC link harvest constraint. Constraints common to this run and 06D are: rotations restricted to 95 percent CMAI and full set of MMR constraints. In this run, harvest constraints are sequential upper and lower bounds on the timber harvest and a ceiling on timber harvest in the first decade.

When this run is compared to 06D, it is possible to see the impacts of the NDY/LTSYC link constraint within the entire set of constraints that are common to both runs.

When this run is compared to 11C, the opportunity costs of rotations restricted to 95 percent CMAI are defined. When this run is compared to 16A, the opportunity cost of the Max PNV - market value objective function can be determined.

Also, comparing this run to 05A displays the opportunity cost nondeclining yield (NDY) without the long-term sustained yield capacity (LTSYC) link. Both runs are departures, but the presence of the NDY constraint in 05A results in a significantly different harvest schedule. The LTSYC level in benchmark 12B was 48 MMCF per year, or 234 MMBF, with an annual harvest level of 157 MMBF in the first decade and 1,055,324 acres identified as suitable for timber management. Present net value for this benchmark is $1,334 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,100 elk in decade 1 to 19,800 elk in decade 5.

12. Max PNV (Assigned) Variation 9 - 13A

The purpose of this run is to evaluate the opportunity costs of restricting the minimum rotation ages of timber stands to 95 percent CMAI in the stand. This run has several constraints that are also used in run 06D. They are NDY/LTSYC link constraints and the full set of MMR constraints. The difference between the two runs are the rotation ages for timber. In this run they are based on the minimum proposed utilization standards instead of 95 percent of CMAI as in 06D.

A comparison of this run with run 06D will show the opportunity costs of restrictions on rotation lengths. A comparison of this run and 11C will show the opportunity cost of the NDY/LTSYC link. A comparison of this run with 17A will show the opportunity cost of a Max PNV/market value objective function. The LTSYC level in benchmark 13A was 53 MMCF per year, or 256 MMBF, with an annual harvest level of 204 MMBF in the first decade and 1,054,262 acres identified as suitable for timber management. PNV for this benchmark is $1,149 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 18,800 elk in decade 5.

13. Max PNV (Assigned) Variation 10 - 11C

The purpose of this run is to evaluate the opportunity costs of the NDY/LTSYC link constraint when used with the following set of constraints: rotations based on minimum proposed utilization standards and the full set of MMR constraints. By comparing this run to 13A, the opportunity cost of the NDY/LTSYC link can be determined. In addition, the following comparisons can also be made: a) 11C to 12B shows the opportunity cost of rotations based on 95 percent CMAI; b) 11C to 06D shows the opportunity cost of a combination of rotations based on 95 percent CMAI and the NDY/LTSYC link; c) 11C to 02A shows a comparison of the opportunity costs of MMRs in the absence of rotations based on 95 percent CMAI and the NDY/LTSYC link; and d) 11C to 15A shows the opportunity cost of a Max PNV/market value objective function. The LTSYC level in benchmark 11C was 49 MMCF per year, or 230 MMBF, with an annual harvest level of 157 MMBF in the first decade and 1,055,324 acres identified as suitable for timber management. PNV for this benchmark is $1,348 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 19,500 elk in decade 5.

14. Max PNV (Market Values) Variation 11 - 16A

The purpose of this run is to evaluate the variation in outputs that result from maximizing PNV for market values only, given the same timber harvest constraints found in 12B: rotations restricted to 95 percent CMAI, sequential upper and lower bounds, harvest floors and ceilings, and MMRs. A comparison of this run with 18A will show the opportunity cost of the NDY/LTSYC link. By comparing 16A to 15A, the opportunity cost of a rotation based on 95 percent CMAI is defined. A comparison of 16A and 12B will show the opportunity cost of a Max PNV/market value objective function. The LTSYC level in benchmark 16A was 48 MMCF per year, or 236 MMBF, with an annual harvest level of 157 MMBF in the first decade and 1,055,324 acres identified as suitable for timber management. PNV for this benchmark is $1,320 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 12,400 elk in decade 1 to 16,700 elk in decade 5.

15. Max PNV (Market Values) Variation 12 - 17A

The purpose of this run is to evaluate the variation in outputs that results from maximizing only the PNV of those outputs which have an established market value (timber and range) in FORPLAN. The harvest constraints, rotation lengths, and MMRs are identical to run 13A. A comparison of this run to 13A will display changes resulting from valuing market outputs only in the FORPLAN model. In addition, the following comparisons can also be made: a) 17A to 18A defines the opportunity costs of rotations based on 95 percent CMAI; b) 17A to 15A shows the opportunity cost of the NDY/LTSYC link. The LTSYC level in benchmark 17A was 53 MMCF per year, or 256 MMBF, with an annual harvest level of 204 MMBF in the first decade and 1,053,136 acres were identified as suitable for timber management. PNV for this benchmark is $1,127 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 12,400 elk in decade 1 to 16,100 elk in decade 5.

16. Max PNV (Market Values) Variation 13 - 15A

This run is identical to run 17A, except that the harvest constraints are 25 percent sequential upper and lower bounds by decade with a first decade ceiling of 155 MMBF.

One purpose of this run is to evaluate the opportunity cost of the nondeclining yield/long-term sustained yield capacity (NDY/LTSYC) link when using an objective function to maximize only market outputs. This can be done by comparing this run to run 17A.

A second purpose is to analyze the impacts on outputs resulting from valuing only market outputs given a constant set of harvest constraints and minimum management requirements (MMR). A comparison of this run to 11C will display these results.

Third, a comparison of 15A to 16A will show the opportunity cost of rotations based on 95 percent culmination of mean annual increment (CMAI).

Fourth, a comparison of 15A to 18A will show the opportunity cost of the NDY/LTSYC link and rotations based on 95 percent CMAI. The LTSYC level in benchmark 15A was 49 MMCF per year, or 236 MMBF, with an annual harvest level of 159 MMBF in the first decade and 1,055,324 acres identified as suitable for timber management. Present net value (PNV) for this benchmark is $1,340 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 12,400 elk in decade 1 to 16,600 elk in decade 5.

17. Max PNV (Market Values) Variation 14 - 18A

This run has the same constraints as run 06D. The only change is that only the market outputs (timber and range) included in FORPLAN are maximized by the objective function. This run serves four purposes:

One purpose is to display the opportunity cost of restricting rotations to 95 percent CMAI when compared to run 17A. A second purpose is to show the differences that result when the outputs valued in the objective function are limited to timber and range. This comparison can be made by using run 06D. Third, the run shows the opportunity cost of the NDY/LTSYC link when compared with 16A; and fourth, it shows the opportunity cost of the combination of the NDY/LTSYC link and rotations based on 95 percent CMAI when compared to 15A. The LTSYC level in benchmark 18A was 51 MMCF per year, or 243 MMBF, with an annual harvest level of 196 MMBF in the first decade and 1,056,136 acres identified as suitable for timber management. PNV for this benchmark is $1,114 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 12,400 elk in decade 1 to 16,000 elk in decades 3 and 5.

18. Max PNV (Assigned Values) - 99C

The purpose of this run is to evaluate and analyze the changes that result when timber yields are derived using current utilization standards. The constraints

used in this run are identical to run 05C: timber harvest in decade 1 is limited to 155 MMBF, NDY/LTSYC link, full set of MMR constraints, and rotations based on 95 percent CMAI.

Comparing this run to 05C will show the changes that result when timber yields are derived from timber yield tables based on current utilization standards versus proposed utilization standards. The LTSYC level in benchmark 99C was 50 MMCF per year, or 242 MMBF, with an annual harvest level of 160 MMBF in the first decade and 1,056,136 acres identified as suitable for timber management. PNV for this benchmark is $1,093 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 18,100 elk in decade 5.

19. Max Timber Benchmark - 21C

This benchmark is designed to measure the maximum capability of the Forest to produce timber on the tentatively suitable lands within the following constraints: sequential upper and lower bounds of 25 percent on timber harvest between decades, first decade ceiling of 155 MMBF, full set of MMR constraints, and rotations based on minimum proposed utilization standards. The objective function was to maximize timber for the first five decades in the initial run. The harvest levels in the first five decades were identical to those in Max PNV benchmark 11C which also had identical constraints. Based on this observation, it was concluded that rerunning Max timber, with the timber harvest level locked in for decades 1 through 5 and an objective function of Max PNV, would produce the same results as run 11C. Max PNV benchmark 11C therefore was analyzed as the Max timber benchmark with an objective function of Max PNV.

Comparisons of this run to the maximum resource output runs will show the differences that result when different resource outputs are maximized. The LTSYC level in benchmark 21C was 49 MMCF per year, or 230 MMBF, with an annual harvest level of 157 MMBF in the first decade and 1,055,324 acres identified as suitable for timber management. PNV for this benchmark is $1,348 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 15,000 elk in decade 1 to 19,500 elk in decade 5.

20. Max Range Benchmark - 22Y

The purpose of this benchmark is to establish the maximum level of forage production for domestic grazing on areas outside of classified areas. The following constraints are applied to this benchmark: sequential upper and lower bounds of 25 percent on timber harvest between decades, first decade ceiling of 155 MMBF, full set of MMR constraints and rotations based on minimum, and proposed utilization standards. The LTSYC level in benchmark 22Y was 49 MMCF per year, or 238 MMBF, with an annual harvest level of 157 MMBF in the first decade and 1,055,130 acres identified as suitable for timber management. PNV for this benchmark is $1,239 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 12,400 elk in decade 1 to 17,200 elk in decade 5.

Two iterations of this benchmark were run. The first had an objective function to maximize domestic range outputs for the first five decades. The resulting levels were then locked in as constraints and a run was made with an objective function to maximize PNV (assigned values).

Comparing this run to run 11C will show the differences that result when range outputs are maximized versus maximizing PNV.

Also, comparisons of this run with 11C and 23Y (Max elk) will show changes resulting from objective functions maximizing timber and elk.

21. Max Elk Benchmark - 23Y

The purpose of this benchmark is to establish the maximum potential for elk based on the condition and availability of winter range. This analysis assumes that winter range is the limiting factor on elk production. Constraints applied to this benchmark were: sequential upper and lower bounds of 25 percent on timber harvest between decades, first decade ceiling of 155 MMBF per year, full set of minimum management requirement constraints, and rotations based on minimum proposed utilization standards. The objective function of the initial run was to maximize elk for the first 5 decades. The resulting elk values were then locked in as constraints and another run made to maximize present net value (assigned values).

Comparing this run to 11C will show the changes due to maximizing elk versus maximizing PNV (assigned values).

Also, comparisons of this run with runs 11C and 22Y (Max range) will show the differences that result when objective functions are Max timber or Max range. The LTSYC level in benchmark 23Y was 46 MMCF per year, or 227 MMBF, with an annual harvest level of 163 MMBF in the first decade and 1,003,057 acres identified as suitable for timber management. PNV for this benchmark is $1,310 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 21,200 elk in decade 1 to 34,800 elk in decade 3.

22. Max Wilderness Benchmark - 24D

This benchmark is designed to measure the effects on resource outputs if all current inventoried roadless areas on the Forest were classified as wilderness. The constraints for this run are the same as run 05C, with the exception of excluding the 503,162 acres of current roadless areas from controllable use.

Comparison of this run with 05C shows the opportunity cost of managing roadless areas for wilderness. The LTSYC level in benchmark 24D was 30 MMCF per year, or 147 MMBF, with an annual harvest level of 132 MMBF in the first decade and 665,772 acres identified as suitable for timber management. PNV for this benchmark is $1,074 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 11,800 elk in decade 1 to 15,500 elk in decade 5.

23. Current Management - 20A

This benchmark was designed to show the levels of outputs that would be produced on the Forest if current direction, as stated in existing management plans and policies, was followed. Under this benchmark, current direction concerning the management of all resources was evaluated and used to produce a set of constraints aimed at reflecting that direction. Specifically, timber was constrained to rotations based on 95 percent of CMAI and NDY/LTSYC link. Permanent browse burning was applied to 500 acres annually, and all MMRs are applied. This run is not constrained by budget and does show changes in resource outputs over time. When compared with run 05C, it shows the opportunity cost of operating at current management. The LTSYC level in benchmark 20A was 39 MMCF per year, or 190 MMBF, with an annual harvest level of 187 MMBF in the first decade and 826,052 acres were identified as suitable for timber management. PNV for this benchmark is $980 million. Anadromous fisheries are maintained at the minimum viable level, which is projected to reduce outputs to 72 percent of potential in the third decade. Elk winter range capacity is projected to vary from a low of 18,700 elk in decade 1 to 23,700 elk in decade 3.

24. Minimum Level - 19A

This run specifies the minimum level of management which would be needed to maintain the Forest in Federal ownership, and the management needed for uncontrollable outputs and uses. It is also used as a reference point in alternative comparisons along with 06D (Max PNV). Only the minimum level prescription was applied to analysis areas, and costs reflect only the fixed cost of Federal ownership. Uncontrollable outputs such as recreation, wildlife, and anadromous fish are valued in this run. When compared to run 05C, this run shows the opportunity costs of operating at minimum level. Benchmark 19A reduces the timber harvest to 0 MMBF in the first decade. The PNV for this benchmark is $325 million, the lowest value in the analysis. Fishery habitat would recover to a level of approximately 90 percent of potential, supporting the largest populations of anadromous fish of any benchmark or alternative. Elk winter range capacity is projected to vary from a low of 14,400 elk in decade 1 to 16,000 elk in decade 3.

D. Benchmark Analysis - Summary of Opportunity Costs Associated With Modeling Constraints

The monetary tradeoffs of the management opportunities explored during the analysis of the management situation (AMS) can be determined by comparing the benchmarks described in Section C. Monetary tradeoffs are limited to priced benefits. In this section, the tradeoffs of timber harvest floors and ceilings, minimum management requirements, timber policy constraints, market vs. assigned values, additional timber modeling constraints, providing maximum resource outputs, current direction, and the minimum level are discussed. Note that the "opportunity cost" reference points vary in the benchmark discussion. Alternative comparisons will use benchmark 06D as a common reference point.

1. Opportunity Cost of Timber Harvest Floors and Ceilings

An initial comparison of benchmarks was performed to portray the opportunity cost of limiting timber harvest to reasonable levels, given an unconstrained set of

management constraints modeled in FORPLAN. The results of this analysis showed that while first decade timber harvests are reduced from 609 MMBF to 156 MMBF, the LTSYC increased by 2 MMBF when a large increase in timber harvests is deferred to later decades. However, PNV is decreased 20 percent ($373 million) because the contribution to discounted timber benefits is also deferred. These benchmarks represent absolute timber resource potentials since no other resources were protected as minimum management requirements.

- Runs compared: 03A (PNV $1,859,580,000)
  02A (PNV $1,487,075,000)

  Opportunity cost: $372,505,000 (20 percent reduction)

PNV is reduced by 20 percent due to a constraint on first decade harvest equal to or less than current mill capacity (155 MMBF).

2. Opportunity Cost of Minimum Management Requirements (MMRs)

The tradeoffs associated with MMRs were analyzed by comparing the opportunity costs of benchmarks 02A, 04B, 06D, 08E, 09C, 20C, and 11C. First, each MMR was analyzed separately in FORPLAN in order to determine its opportunity cost, then they were applied as a set to determine the net effect. In addition, the opportunity costs of MMRs was analyzed using the timber policy constraints of timber harvest floors and ceilings, sequential upper and lower bounds, and rotations based on utilization standards. The analysis showed that when applied separately, MMRs for riparian areas and old growth had only minor changes in PNV of less than 1 percent and 2 percent respectively ($8 million, $29 million), and no significant change in the LTSYC or first decade harvest (243-246 MMBF). The major response of applying these MMRs was to limit the harvest in both riparian areas and inventoried old-growth stands, which was made up for by harvest on other tentatively suitable lands. Application of the fishery/water quality MMR constraints did show a significant reduction in PNV of $112 million, or 9 percent, and is attributable to timber harvesting on the most cost-efficient lands during the earlier planning periods. This is in response to the constraint which limits timber harvest in analysis areas over 400 acres to 10 percent per decade for the first 4 decades. When all MMRs were analyzed, PNV was reduced 11 percent ($140 million) and LTSYC by only 3 MMBF (246-243 MMBF). This reduction in PNV represents the opportunity cost of managing the Forest for optimum market outputs, especially timber, while still providing for minimum management requirements. When the timber policy requirements were relaxed in benchmark 11C, the opportunity cost of MMRs was $140 million, but represented only a 9-percent reduction from the base level (benchmark 02A). This is in response to a gradual increase in timber harvests throughout the planning horizon, above the LTSYC level.

a. Fishery/Water Quality Objectives

- Runs compared: 04B (PNV $1,259,512,,000)
  08E (PNV $1,147,544,000)

  Opportunity cost: $111,968,000 (9 percent reduction)

PNV is reduced 9 percent by the accessibility constraints which address the size of openings, water yield, water quality, and fishery objectives for minimum

viable population MMRs. Constraints on timber harvest acres in the first two decades for the fishery MMRs were not analyzed here because they were not constraining on the FORPLAN model and had no opportunity cost.

b. Riparian Area Objectives

- Runs compared: 04B (PNV $1,259,512,000)
  10C (PNV $1,251,119,000)

  Opportunity cost: $8,393,000 (<1 percent reduction)

PNV is reduced less than 1 percent for the harvest constraint on inventoried riparian areas in FORPLAN. This constraint has the least impact on PNV of any of the constraints used to model MMRs. However, riparian areas are further protected by standards and guidelines built into the management prescriptions applied to all riparian areas.

c. Old-Growth Objectives

- Runs compared: 04B (PNV $1,259,512,000)
  09C (PNV $1,230,110,000)

  Opportunity cost: $29,402,000 (2 percent reduction)

PNV is reduced 2 percent by the inclusion of restricted timber harvest entry dates to model old-growth habitat MMRs. Old-growth habitat is further protected by standards and guidelines built into the management prescriptions applied to all existing and replacement old-growth areas.

d. All MMRs

- Runs compared: 04B (PNV $1,259,512,000)
  06D (PNV $1,119,678,000)

  Opportunity cost: $139,834,000 (11 percent reduction)

PNV is reduced 11 percent by the combination of constraints from runs 08E, 10C, and 09C used to model MMRs under the NDY/LTSYC link and rotations based on 95 percent CMAI timber policy guidelines.

- Runs compared: 02A (PNV $1,487,075,000)
  11C (PNV $1,347,525,000)

  Opportunity cost: $139,550,000 (9 percent reduction)

PNV is reduced 9 percent by the combination of constraints from runs 08E, 10C, and 09C used to model MMRs under the timber harvest floors and ceilings, sequential upper and lower bounds, and rotations based on utilization standards and timber policy guidelines.

3. Opportunity Cost of Timber Policy Constraints

The impacts of timber policy constraints were analyzed to determine their impact on PNV. Two constraints, nondeclining yield/long-term sustained yield capacity

(NDY/LTSYC) link and rotations based on 95 percent of culmination of mean annual increment (CMAI), were applied to the FORPLAN model separately to determine their opportunity cost and then as a set to determine the net effect. The results of this analysis show that when analyzed together, the NDY/LTSYC link and CMAI constraints have a significant impact on present net value (PNV) ($228 million - 17 percent) when applied in conjunction with minimum management requirements (MMR) and a Max PNV assigned value objective function. Besides the opportunity cost for land withdrawals in the Max wilderness benchmark (24D), this represents the most significant decrease in PNV of any constraint analyzed. Reductions in timber harvest to levels at or below the LTSYC level account for the decrease in PNV, although the LTSYC level is increased (230-243 MMBF) under this scenario. The major factor in this decrease is the NDY/LTSYC link which, by itself, reduces PNV by 16 percent ($214 million). The reduction due to CMAI is minimal ($29 million) at 3 percent. Analysis also shows that when other constraints are released (i.e., rotations based on utilization standards, sequential upper and lower bounds), the effects are even less (see following descriptions).

In conjunction with this analysis, the opportunity costs of further timber policy constraints were analyzed to determine the effects on PNV. A reduction of 1 percent ($12 million) was attributable to limiting timber harvest in the first two decades to levels which would not disrupt local economic impacts. This reduced first decade timber harvest from 196 MMBF to 157 MMBF, and second decade timber harvest from 243 MMBF to 198 MMBF. NDY without the LTSYC link reduced PNV by 12 percent ($160 million), due to a substantial increase projected in timber harvests in the fourth through eighth decades. When NDY is not linked to the LTSYC level, PNV is reduced 6 percent, or $66 million. An analysis of rotations based on utilization standards vs. 95 percent CMAI shows only minimal changes in PNV ($15 million - 1 percent).

a. NDY/LTSYC Link

- Runs Compared: 12B (PNV $1,333,675,000)
  06D (PNV $1,119,678,000)

  Opportunity cost: $213,997,000 (16 percent reduction)

Present net value is reduced 16 percent by applying the NDY/LTSYC link in conjunction with timber rotations based on 95 percent CMAI, MMR constraints, and a Max PNV/assigned value objective function.

- Runs Compared: 16A (PNV $1,320,298,000)
  18A (PNV $1,113,776,000)

  Opportunity cost: $206,522,000 (16 percent reduction)

Present net value is reduced 16 percent by applying the NDY/LTSYC link in conjunction with timber rotations based on 95 percent CMAI, MMR constraints, and a Max PNV/market value objective function.

- Runs Compared: 11C (PNV $1,347,525,000)
  13A (PNV $1,148,964,000)

  Opportunity cost: $198,561,000 (15 percent reduction)

PNV is reduced 15 percent by applying the NDY/LTSYC link in conjunction with timber rotations based on utilization standards, MMR constraints, and a Max PNV/ assigned value objective function.

- Runs Compared: 15A (PNV $1,339,579,000)
  17A (PNV $1,127,039,000)

  Opportunity cost: $212,540,000 (16 percent reduction)

PNV is reduced 16 percent by applying the NDY/LTSYC link in conjunction with timber rotations based on utilization standards, MMR constraints, and a Max PNV/ market value objective function.

b. Rotations Based on 95 Percent CMAI

- Runs Compared: 13A (PNV $1,148,964,000)
  06D (PNV $1,119,678,000)

  Opportunity cost: $29,286,000 (3 percent reduction)

PNV is reduced 3 percent by applying the 95 percent CMAI constraint in conjunction with NDY/LTSYC link, MMR constraints, and a Max PNV/assigned value objective function. Benchmark 06D provides the basis for comparison of alternative runs to determine the opportunity costs of the various goals and objectives.

- Runs Compared: 11C (PNV $1,347,525,000)
  12B (PNV $1,333,675,000)

  Opportunity cost: $13,850,000 (1 percent reduction)

PNV is reduced 1 percent by applying the 95 percent CMAI constraint in conjunction with timber harvest floors and ceilings, sequential upper and lower bounds, MMR constraints, and a Max PNV/assigned value objective function.

- Runs Compared: 15A (PNV $1,339,579,000)
  16A (PNV $1,320,298,000)

  Opportunity Cost: $19,281,000 (1 percent reduction)

PNV is reduced 1 percent by applying the 95 percent CMAI constraint in conjunction with timber harvest floors and ceilings, sequential upper and lower bounds, MMR constraints, and a Max PNV/market value objective function.

- Runs Compared: 17A (PNV $1,127,039,000)
  18A (PNV $1,113,776,000)

  Opportunity Cost: $13,263,000 (1 percent reduction)

PNV is reduced 1 percent by applying the 95 percent CMAI constraint in conjunction with NDY/LTSYC link, MMR constraints, and a Max PNV/market value objective function.

c. Combinations of NDY/LTSYC Link and 95 Percent CMAI

- Runs Compared: 02A (PNV $1,487,075,000)
  04B (PNV $1,259,512,000)

  Opportunity Cost: $227,563,000 (15 percent reduction)

PNV is reduced 15 percent by applying the 95 percent CMAI and NDY/LTSYC link constraints in the absence of MMRs.

- Runs Compared: 11C (PNV $1,347,525,000)
  06D (PNV $1,119,678,000)

  Opportunity Cost: $227,847,000 (17 percent reduction)

PNV is reduced 17 percent by applying the 95 percent CMAI and NDY/LTSYC link constraints in conjunction with MMR constraints and a Max PNV/assigned value objective function. Benchmark 06D provides the basis for comparison of alternative runs to determine the opportunity costs of the various goals and objectives.

- Runs Compared: 15A (PNV $1,339,579,000)
  18A (PNV $1,113,776,000)

  Opportunity Cost: $225,803,000 (17 percent reduction)

PNV is reduced 17 percent by applying the 95 percent CMAI and NDY/LTSYC link constraints in conjunction with MMR constraints and a Max PNV/market value objective function.

d. Timber floors and ceilings, sequential upper and lower bounds

- Runs Compared: 06D (PNV $1,119,678,000)
  05C (PNV $1,108,033,000

  Opportunity Cost: $11,645,000 (1 percent reduction)

PNV is reduced 1 percent by constraining timber harvest with a first decade ceiling of 155 MMBF and sequential upper and lower bounds of 25 percent for the first five decades, assuming common constraints of rotations based on 95 percent CMAI, MMR constraints, and NDY/LTSYC link. The reason this constraint is considered is to show the opportunity cost of timber harvest constraints to insure run 05C is technically implementable with respect to timber utilization by the local industry. Benchmark 06D provides the basis for comparison of

alternative runs to determine the opportunity costs of the various goals and objectives.

e. LTSYC Link

- Runs Compared: 05A (PNV $1,174,135,000)
  05C (PNV $1,108,133,000)

  Opportunity Cost: $66,102,000 (6 percent reduction)

PNV is reduced 6 percent when the NDY of timber harvest is not linked to the LTSYC level, given common constraints of rotations based on 95 percent CMAI, and MMR constraints.

f. NDY

- Runs Compared: 12B (PNV $1,333,675,000)
  05A (PNV $1,174,135,000)

  Opportunity Cost: $159,540,000 (12 percent reduction)

PNV is reduced 12 percent when a timber harvest constraint of NDY is applied independently of the LTSYC link. These runs are compared with common constraints of MMR constraints and rotations based on 95 percent CMAI.

g. Utilization Standards

- Runs Compared: 05C (PNV $1,108,133,000)
  99C (PNV $1,092,668,000)

  Opportunity Cost: $15,465,000 (1 percent reduction)

PNV is reduced only 1 percent when current utilization standards for merchantable timber are substituted for proposed regional standards, given common constraints of rotations based on 95 percent CMAI, MMR constraints, NDY/ LTSYC link, and timber ceilings for the first five decades.

4. Opportunity Cost of Valuing Market Values Only

The sensitivity of land assignments and output schedules to assigned values of nonmarket resources is determined by comparing Benchmarks 06D, 11C, 13A, 15A, 16A, 17A, and 18A. The only difference between the benchmarks are the values of dispersed recreation, wildlife, and anadromous sport fishing.

In general, land assignment and output schedules are not sensitive to these values.

- Runs Compared: 11C (PNV $1,347,525,000)
  15A (PNV $1,339,579,000)

  Opportunity Cost: $7,946,000 (less than 1 percent reduction)

PNV is reduced less than 1 percent when only market values are valued in the objective function, in conjunction with timber harvest floors and ceilings,

sequential upper and lower bounds, MMR constraints, and rotations based on utilization standards.

- Runs Compared: 13A (PNV $1,148,964,000)
  17A (PNV $1,127,039,000)

  Opportunity Cost: $21,925,000 (2 percent reduction)

PNV is reduced 2 percent when only market values are valued in the objective function, in conjunction with NDY/LTSYC link, MMR constraints, and rotations based on utilization standards.

- Runs Compared: 12B (PNV $1,333,675,000)
  16A (PNV $1,320,298,000)

  Opportunity Cost: $13,377,000 (1 percent increase)

PNV is increased 1 percent when only market values are valued in the objective function, in conjunction with timber harvest floors and ceilings, sequential upper and lower bounds, MMR constraints, and rotations based on 95 percent CMAI.

- Runs Compared: 06D (PNV $1,119,678,000)
  18A (PNV $1,113,776,000)

  Opportunity Cost: $5,902,000 (less than 1 percent reduction)

PNV is reduced less than 1 percent when only market values are valued in the objective function, in conjunction with the NDY/LTSYC link, MMR constraints, and rotations based on 95 percent CMAI. Benchmark 06D provides the basis for comparison of alternative runs to determine the opportunity costs of the various goals and objectives.

5. Opportunity Costs of Maximum Resource Output, Minimum Level, and Current Direction Benchmarks

An analysis of maximum resource outputs was conducted to define the opportunity costs of these resources, and to determine maximum resource potentials. These runs were compared using common constraints of: rotation based on utilization standards, sequential upper and lower bounds, and minimum management requirements (MMR). The Max timber benchmark showed that by maximizing timber harvest through a departure from the long-term sustained yield capacity (LTSYC), both timber and present net value (PNV) could be maximized on the Forest. The reason for this relationship is the fact that timber constitutes the single most valuable resource in terms of priced benefits. In this run, net timber benefits account for 81 percent of total PNV, and harvest levels vary from 157 to 534 MMBF. In addition, both elk and livestock forage are maintained at high levels.

The minimum level benchmark defines the costs and benefits which can be attributed to operating the Forest in the absence of producing controllable outputs such as timber, range, etc. Management under this benchmark reduces PNV by 76 percent ($1,028 million), and essentially terminates all market outputs (except commercial anadromous fishery). The discounted cost of this run, $51 million, represents the cost of maintaining the Forest in public ownership.

Anadromous fishery habitat is maximized in this benchmark because of the termination of land-disturbing activities.

Both the Max range and Max wildlife benchmarks have only minor effects on PNV ($109 million and $38 million), due to the compatibility of managing for high timber harvest levels and production of suitable forage on transitory range. While timber harvest levels in both of these runs are not appreciably different from the Max timber benchmark, both livestock forage and wildlife forage are increased substantially from other benchmark runs and current levels. The Max range benchmark produces available forage for 82 thousand animal unit months (MAUM) per year in the first decade, projected up to 87 MAUM per year by the third decade. This represents a 102- to 114-percent increase in outputs over the current situation. The opportunity cost of this run is $109 million (8 percent reduction) primarily because of a substantial reduction in wildlife benefits. The Max wildlife benchmark produces from 21,000 to 35,000 elk on winter range (including wilderness). This represents a 75- to 292-percent increase above current levels. The opportunity cost of this run is $38 million, or 3 percent, and represents a decrease in range benefits.

The opportunity cost of maximizing wilderness on the Forest was analyzed to determine the impacts of this management scenario. Under this benchmark, all 503,162 acres of current roadless areas were assigned to wilderness management, which effectively reduces the suitable timber acres by 37 percent (665,772 acres). The results of this run show that PNV is reduced $274 million (20 percent), more than any other factor analyzed in the benchmarks. Timber harvest levels are reduced significantly. The LTSYC drops from 230 MMBF to 135 MMBF, and first decade timber harvest decreases from 157 MMBF to 132 MMBF. These levels are projected to increase in later decades, however, as the harvest levels depart from the LTSYC. Both livestock and wildlife forage are maintained at reasonable levels, although some reduction is evident because of the decrease in cutover lands. Recreation benefits are increased to their highest level in this run ($363 million), because of the shift to wilderness recreation.

The current direction benchmark illustrates the tradeoffs which occur by continuing management under current land use plans and direction, and in the absence of budget constraints. The PNV of this run is reduced significantly by 27 percent ($368 million), primarily because current direction calls for timber management on only 826,052 acres, which reduces the LTSYC level from 230 to 190 MMBF. Both wildlife and livestock forage are maintained at moderate levels.

a. Max Timber

- Runs Compared: 11C - This run is both the max timber and max PNV benchmark (PNV $1,347,525,000)

  Opportunity Cost: 0

b. Minimum Level

- Runs Compared: 11C (PNV $1,347,525,000)
  19A (PNV $324,638,000)

  Opportunity Cost: $1,022,887,000 (76 percent reduction)

PNV is reduced 76 percent when all controllable outputs on the Forest are terminated.

c. Max Range

- Runs Compared: 11C (PNV $1,347,525,000)
  22Y (PNV $1,238,736,000)

  Opportunity Cost: $108,789,000 (8 percent reduction)

PNV is reduced 8 percent when range resources (AUMs) are maximized in the objective function.

d. Max Wildlife

- Runs Compared: 11C (PNV $1,347,525,000)
  23Y (PNV $1,309,583,000)

  Opportunity Cost: $37,942,000 (3 percent reduction)

PNV is reduced 3 percent when wildlife resources (elk) are maximized in the objective function.

e. Max Wilderness

- Runs Compared: 11C (PNV $1,347,525,000)
  24D (PNV $1,073,473,000

  Opportunity Cost: $274,052,000 (20 percent reduction)

PNV is reduced 20 percent when all existing roadless areas are assigned to wilderness use.

f. Current Management

- Runs Compared: 11C (PNV $1,347,525,000)
  20A (PNV $979,601,000)

  Opportunity Cost: $367,924,000 (27 percent reduction)

PNV is reduced 27 percent when lands are assigned to uses described in present management plans and direction.

Figure B-1 summarizes the comparison of benchmarks with respect to the opportunity costs of timber policy and management constraints.

Figure B-1
Summary of Major Modeling Constraints and Opportunity Costs Explored in the Benchmarks

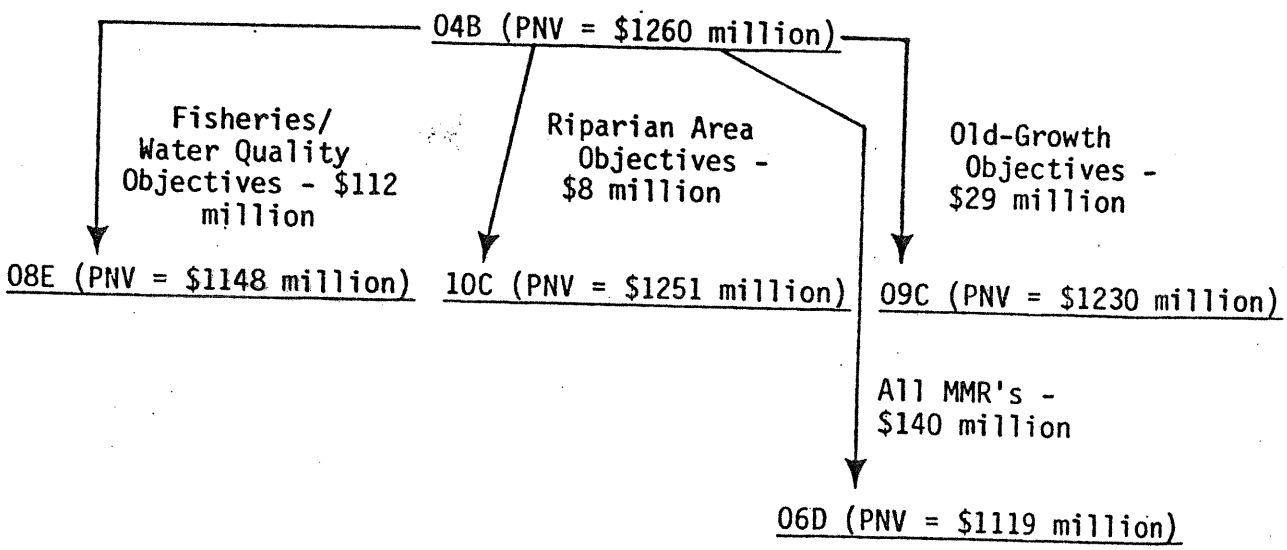
1. Timber Harvest Floors and Ceilings

03A (PNV = $1860 million)

↓ Timber Harvest Floors and Ceilings in First Decade - $373 million

02A (PNV = $1487 million)

2. Minimum Management Requirements



3. Timber Policy Constraints

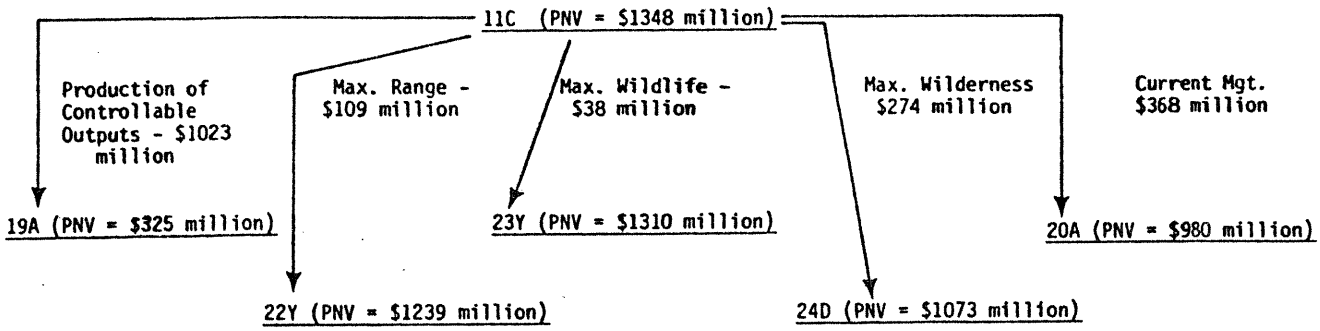
See narrative description.

4. Market vs. Assigned Values

See narrative description.

Figure B-1 (Continued)
Summary of Major Modeling Constraints and Opportunity Costs Explored in the Benchmarks

5. Maximum Resource Outputs



E. Resource Relationships

1. Timber Harvest/Roadless and Wilderness Management

Timber harvest levels and roadless/wilderness management are inversely related. The mix of resources which maximizes PNV (06D) is no additional roadless/wilderness and 100 percent of the potential timber harvest (243 MMBF). As the roadless/wilderness acreage is increased above the minimum, the efficient level of harvest over 150 years decreases. When roadless/wilderness acreage is maximized (503,162 acres), the efficient level of timber output is 147 MMBF, or 60 percent of the potential.

2. Timber Harvest/Livestock Forage

Creating livestock forage with timber harvest could increase livestock grazing potential from 40 MAUM to 87 MAUM. The mix of timber harvest and livestock forage which maximizes PNV for assigned values is 100 percent of the timber potential (243 MMBF) and 57 percent of livestock potential (50 MAUM). Anticipated livestock use is expected to increase to 51.3 MAUM by 2030.

3. Timber Harvest/Elk Forage

Creating elk forage with timber harvest could increase elk habitat potential from 12,000 elk to 35,000 elk. The mix of timber harvest and elk forage which maximizes PNV for assigned values is 100 percent of the timber harvest potential (243 MMBF) and 54 percent of the elk potential (19,000 elk). Maximizing elk forage reduces the amount of efficient timber harvest to 93 percent of the potential (227 MMBF).

4. Timber Harvest/Anadromous Fishery Habitat

Timber harvest levels directly affect anadromous fishery habitat by the adverse impact of roadbuilding on stream habitat. Timber harvest was limited in all benchmarks to habitat to support minimum viable populations of anadromous fish. The mix of timber harvest and anadromous fish habitat which maximizes PNV is 100 percent of the timber harvest potential (243 MMBF) and 72 percent of anadromous fish habitat potential. Maximum anadromous fish potential is attained at the minimum level (90 percent), where timber harvest is discontinued.

5. Livestock Forage/Elk Forage

Both livestock forage and elk winter range forage are increased with timber harvest. However, both forage outputs cannot be maximized at the same time because of competition between livestock and elk for forage. The mix which maximizes PNV values is 54 percent of the elk forage potential and 57 percent of the livestock forage potential. Maximizing livestock forage reduces efficient elk forage to 34 percent of the potential. Maximizing elk forage reduces efficient livestock forage to 0 percent of the potential.

6. Livestock Forage/Roadless and Wilderness Management

Producing high levels of roadless areas and livestock forage is not possible because roadless management precludes creating transitory forage with timber harvest. The mix which maximizes PNV for assigned values is no additional roadless management and 57 percent of livestock forage (50 MAUM).

7. Elk Forage/Roadless Area and Wilderness Management

Elk forage production is decreased when roadless management is maximized because of the decrease in acres of timber harvest which create forage. The mix of resources which maximizes PNV for assigned values is 54 percent of the elk forage potential (19,000 elk) and no additional wilderness.

F. Production Potential

The benchmarks provide information about production and economic potential of the Forest. This section discusses the potential and efficient mix of resource outputs to meet the potential.

1. Economic Potential of Max PNV with Assigned Values (Benchmark 06D)

The maximum present net value (PNV) of the Forest is defined in the Max PNV benchmark (06D) with the following constraints: nondeclining yield and a link to the long-term sustained yield level (NDY/LTSYC), rotations based on 95 percent of the culmination of mean annual increment (95% CMAI), and minimum management requirements (MMRs). The PNV of this benchmark is $1,119 million. Other benchmarks analyzed had higher PNVs, but did not meet the timber policy and legal requirements to be considered in this analysis. Timber management is cost efficient on 99 percent of the tentatively suitable lands, or 1,056,136 acres. Timber harvests are approximately 234 MMBF per year. Eighty percent of the tentatively suitable lands are assigned to a timber emphasis, 8 percent are assigned to a wildlife emphasis, 9 percent are assigned to old-growth emphasis, and 3 percent are assigned to a riparian emphasis. A moderate level of elk and livestock forage is produced. Eventually, all tentatively suitable acres outside wilderness will be roaded.

2. Fixed Costs of Public Land Ownership (Benchmark 19A)

The cost of maintaining the Forest in public ownership, protecting existing facilities, and providing for uncontrollable outputs is $2.0 million. The major activities include:

- Facilities maintenance is reduced to levels which protect the incidental user.
- Fire suppression would be limited to preventing safety hazards and protecting adjacent landowners.
- Timber harvest, road construction, and livestock grazing activities are limited to completing current contracts.

The present value of the costs is $51 million and the distribution is:

General Administration	56 percent
Fire	18 percent
Maintenance	13 percent
Other	13 percent
Minerals	
Recreation trails	
Range, timber, road contracts	

Outputs which are incidental to management include timber and livestock grazing under contracts, recreation use, and elk forage. Recreation use would be restricted as trails, roads, and facilities are closed. Elk winter range forage potential would eventually stabilize at 15,000 elk as transitory range was not created. Anadromous fishery habitat would recover to levels reflecting 90 percent of the biological potential. The present value of these outputs is $376 million, of which virtually all is attributed to recreation and wildlife.

3. Timber Potential (Benchmark 21C)

The Forest has the ability to produce more timber than it is currently producing, but a substantial portion of the natural fishery resource would be foregone. The impact on fishery will be substantial due to necessary road construction and other sediment-producing activities. Significant losses in recreation user-days of elk hunting and significant losses in semiprimitive nonmotorized recreational opportunity would result. The imminent threat of mountain pine beetle could mean a shift toward harvesting of lodgepole pine stands in the short term. The Max timber benchmark, 11C, was modeled to address the capability of harvesting maximum yields of timber. This benchmark had constraints for: a first decade timber harvest ceiling of 155 MMBF, sequential upper and lower bounds of 25 percent of timber harvest in latter decades, rotations based on utilization standards, and MMRs. The first decade timber harvest is 157 MMBF and the LTSYC is 230 MMBF. Timber management is cost-efficient on 1,055,324 acres, or 99 percent of the tentatively suitable lands. Eighty percent of the tentatively suitable lands are assigned to a timber emphasis, 9 percent to a wildlife emphasis, 9 percent to old growth, and 2 percent to a riparian emphasis. A moderate level of elk and livestock forage is produced. The PNV is $1,348 million.

4. Anadromous Fishery (Benchmark 19A)

Annually, the Forest has the biological potential to produce 821,000 anadromous smolts (summer steelhead and spring chinook) and 423,000 catchable trout. The Forest currently has the potential to produce 705,000 anadromous smolts and 364,000 catchable trout.

Several factors influence the difference between what the Forest can produce and what it is producing. In the past, survival of smolts migrating to the sea has been very poor due to dams on the Snake and Columbia Rivers. Adults experience mortalities at dams and must also survive commercial and sport fishing in the ocean and on the Columbia River. Mortalities of wild anadromous stocks have resulted in steelhead runs at approximately 60 percent of potential and chinook runs at about 30 percent of potential in both the Salmon and Clearwater drainages.

The South and Middle Forks of the Clearwater River are presently providing only 55 percent of their total potential fish habitat, primarily due to instream sediment impacts still remaining from such past activities as placer mining and road construction. Other Forest streams are providing fish habitat varying from 77 percent to 99 percent of capacity.

Timber harvesting/road construction activities have the most significant detrimental effect on fishery habitat through accelerated sedimentation in stream channels. The effects on fishery can be minimized, however, by limiting the amount of sedimentation to levels which are tolerable to the fishery. This idea was modeled in FORPLAN through the use of analysis area accessibility constraints and acres of final timber harvest constraints aimed at providing for minimum viable levels of anadromous fishery habitat (see section VI, minimum management requirement "f"). The Max PNV benchmark is modeled using this MMR. The maximum potential for fishery habitat occurs in the Min Level Benchmark (19A) due to reduced sediment yields. Fishery outputs are projected to recover to the biological potential by the third decade. The PNV is $325 million, of which most of the benefits are for recreation and wildlife. This benchmark eliminates all controllable outputs, including timber harvesting.

5. Elk Winter Range Forage Potential (Benchmark 23Y)

The potential to provide needed forage exceeds the targets set for elk populations by Regionally-disaggregated targets. However, if other impacts on elk populations were projected as indicated by present policies such as hunting seasons, hunting regulations, and open road densities, then elk populations would never reach the desired levels.

The Forest will need to intensify road management for wildlife habitat protection and see that timber on winter-game ranges is rotated as frequently as possible.

The Max Elk Benchmark was modeled to show the capability of producing elk habitat on the Forest. This benchmark had constraints for managing for maximum elk habitat production, no livestock forage, a first decade timber harvest ceiling of 155 MMBF, sequential upper and lower bounds of 25 percent of timber harvest in latter decades, rotations based on utilization standards, and MMRs. This benchmark produces the highest levels of elk habitat, capable of supporting 21,000 elk on winter range in the first period, and 30,000 by the fifth period. The first decade timber harvest is 163 MMBF in the first decade, and the LTSYC is 227 MMBF. Timber management is cost-efficient on 1,003,057 acres, or 94 percent of the tentatively suitable lands. Wildlife is emphasized on 9 percent of the tentatively suitable lands, in response to the objective of maximizing elk forage. Eighty percent of the tentatively suitable lands are assigned to a timber emphasis, 9 percent are assigned to old growth, and 2 percent are assigned to a riparian emphasis. The PNV is $1,310 million.

6. Wilderness Potential (Benchmark 24D)

The roadless resource of the Nez Perce National Forest consists of 503,162 acres in 16 separate areas. All of the Forest's roadless areas are presently, by definition, eligible candidates for inclusion into the National Wilderness Preservation System. They range in size from 8,006 to 201,715 acres. Six adjoin existing wildernesses; these are the most likely candidates for wilderness classification. The others are smaller and more isolated. Most of these are near development activity of one kind or another; some are completely surrounded by roads. Two of these smaller areas contain established Research Natural Areas, and another contains a proposed Research Natural Area. Four of the roadless areas contain or are immediately adjacent to rivers in the National Wild and Scenic Rivers System. The cost to administer these areas as wilderness is accounted for in this analysis. The Max Wilderness Benchmark (24D) assigns all 503,162 acres to proposed wilderness. Along with existing Wilderness, Wild and Scenic Rivers, and Research Natural Areas, the total classified area would be 1,400,231 acres, or 63 percent of the total Forest lands. This benchmark is modeled with constraints for all roadless areas proposed for wilderness first decade timber harvest ceiling of 155 MMBF, sequential upper and lower bounds of 25 percent of timber harvest in latter decades, NDY/LTSYC, and MMRs. Timber in the first decade is only 132 MMBF, because of the substantial decrease in tentatively suitable lands. The LTSYC is 147 MMBF, and 665,772 acres were cost efficient for timber management, 98 percent of the tentatively suitable lands. Eighty-two percent of the tentatively suitable lands were assigned to a timber emphasis, 9 percent to a wildlife emphasis, 9 percent to old growth, and 2 percent to a riparian emphasis. This benchmark produces moderate levels of livestock and range forage. The PNV is $1,073 million.

7. Range Forage Potential (Benchmark 22Y)

Range forage potential is maximized by providing transitory range on cutover timberlands. This transitory range far exceeds the level that is reasonably demanded by users of forage attainments on the Forest. Under this benchmark, forage outputs range from 82,300 AUM per year in the first decade to 85,700 AUM per year in the fifth decade. This represents a 103- to 112-percent increase over current use (40,500 AUM). Because demand is not expected to increase substantially in the foreseeable future, and elk compete for this forage, all benchmarks and alternatives were modeled to attain levels of livestock forage production only indicative of demand. The Max Range Benchmark (22Y) had constraints for managing for maximum livestock forage production, a first decade timber harvest ceiling of 155 MMBF, sequential upper and lower bounds of 25 percent of timber harvest in latter decades, rotations based on utilization standards, and MMRs. First decade timber harvest is 157 MMBF with a LTSYC of 238 MMBF. Timber management is cost efficient on 1,055,130 acres, or 99 percent of the tentatively suitable lands. Eighty percent of the tentatively suitable lands are assigned a timber emphasis, which helps yield the high forage outputs. Nine percent are assigned a wildlife emphasis, 9 percent to old growth, and 2 percent to riparian. This benchmark yields low levels of elk forage, because of the objective to maximize livestock forage. The PNV is $1,239 million.

8. Dispersed Recreation Potential (Benchmark 02A)

Although not addressed specifically in this analysis, dispersed recreation opportunities are expected to shift in emphasis among benchmarks. The type of recreation opportunities will shift from semiprimitive to roaded natural in proportion to the roading of present roadless areas. In the same proportion, outfitter operations will decrease and users preferring primitive experiences will be limited to wilderness use. There will be a decreased need for trail maintenance in present roadless areas and an increased need for trail maintenance in classified areas. This pattern will be most obvious in alternatives which show an emphasis in timber development. Benchmark 02A provides the highest level of dispersed recreation. In this benchmark, 2,261,800 recreation visitor days of dispersed recreation are provided for annually by the fifteenth decade.

9. Resource and Economic Potential Under Current Management (Benchmark 20A)

Continuing current management on the Forest with no budget constraint provides for a moderate level of roadless, wilderness, livestock forage, and elk winter range forage. Timber harvest starts at 187 MMBF/year for the first decade, then increases to 190 MMBF/year for the remaining 14 decades. All 826,052 acres of the tentatively suitable timberland is defined as suitable for timber management. Of the 826,052 acres in the suitable timber base, 79 percent is assigned to the timber emphasis, 7 percent is assigned to the wildlife emphasis, 11 percent is assigned to the old-growth emphasis, and 3 percent is assigned to the riparian emphasis. The PNV is $980 million, reflecting the $139 million opportunity cost of operating at the current level.

Tables B-32, B-33, and B-34 summarize the outputs and effects of the benchmark analysis.

Table B-32

Land Assignments by Management Emphasis for Benchmarks

Table B-32
Land Assignments by Management Emphasis for Benchmarks
(Acres)

	Management Emphasis						
Benchmark	Timber	Research Natural Areas	Winter Range	Old-Growth	Recreation Areas (Middle-Fork)	Grazing	Riparian
021	921,916	9,725	108,297	0	8,802	44,624	31,518
03A	935,172	9,725	97,575	0	8,802	44,624	31,518
05A	927,693	9,725	11,468	94,160	8,802	44,425	30,804
05C	856,780	9,725	81,471	95,070	8,802	44,425	30,804
06D(Max.PNV)	860,579	9,725	77,672	95,070	8,802	44,921	30,804
08E	945,391	9,725	86,168	0	8,802	44,624	31,518
09C	868,425	9,725	69,826	95,070	8,802	44,425	30,804
10C	953,315	9,725	78,244	0	8,802	44,624	31,518
11C	844,741	9,725	93,608	94,160	8,802	44,425	30,804
12B	839,642	9,725	98,707	94,160	8,802	44,425	30,804
13A	856,528	9,725	81,723	95,070	8,802	44,425	30,804
15A	860,485	9,725	77,864	94,160	8,802	71,194	30,804
16A	856,545	9,725	81,804	94,160	8,802	71,194	30,804
17A	862,688	9,725	75,563	95,070	8,802	71,194	30,804
18A	863,118	9,725	75,133	95,070	8,802	71,194	30,804
19A(Min.Level)	0	0	0	0	0	0	31,656
20A	653,502	9,725	62,896	94,368	8,802	44,485	29,973
22Y	846,332	9,725	91,823	94,160	8,802	71,194	30,804
23Y	809,685	9,725	165,697	94,160	8,802	0	30,551
24D	546,445	9,725	41,393	59,685	8,802	26,349	24,633

Management Emphasis				
Wilder-ness	Wild & Scenic Rivers	Min. Level	Fishery and Recrea-tion	Visuals
865,826	13,459	96,800	0	0
865,826	13,459	96,266	0	0
865,826	13,459	94,605	0	0
865,826	13,459	94,605	0	0
865,826	13,459	94,109	0	0
865,826	13,459	95,454	0	0
865,826	13,459	94,605	0	0
865,826	13,459	95,454	0	0
865,826	13,459	95,417	0	0
865,826	13,459	95,417	0	0
865,826	13,459	94,605	0	0
865,826	13,459	68,648	0	0
865,826	13,459	68,648	0	0
865,826	13,459	67,836	0	0
865,826	13,459	67,836	0	0
0	0	2,069,311	0	0
865,826	13,459	202,750	100,810	14,371
865,826	13,459	68,459	0	0
865,826	13,459	103,062	0	0
1,315,079	13,459	55,397	0	0

Table B-33
Present Value Benefits and Costs for Resource Groups by Benchmarks
(Millions of 1978 Dollars)

Benchmark	Present Net Value	Present Value Benefits			
		Timber	Range	Recreation/ Wildlife	Other
02A	1487	1610	12	345	0
03A	1860	2403	12	293	0
04B	1260	1369	12	343	0
05A	1174	1293	12	345	0
05C	1108	1170	12	346	0
06D(Max.PNV)	1119	1223	12	348	0
08E	1148	1266	12	347	0
09C	1230	1348	12	343	0
10C	1251	1366	12	343	0
11C	1348	1481	12	347	0
12B	1334	1450	12	348	0
13A	1149	1275	12	348	0
15A	1340	1482	12	339	0
16A	1320	1451	12	340	0
17A	1127	1276	12	340	0
18A	1114	1223	12	340	0
19A(Min.Level)	325	0	0	376	0
20A	980	1001	12	358	0
22Y	1239	1475	12	244	0
23Y	1310	1419	12	367	0
24D	1074	1091	12	358	0

1/ The direct comparison of individual resource benefits and costs is misleading because not all costs are allocated to each resource, ie. the "other" cost category contains inseparable joint costs associated with several resources.

Present Value Costs				
Timber	Roads	Range	Recreation/ Wildlife	Other
124	243	4	12	96
275	460	4	13	96
118	232	5	12	96
114	249	5	12	96
104	204	5	12	96
116	233	5	12	96
122	242	5	12	96
118	242	5	12	96
119	238	5	12	96
127	253	5	12	96
124	239	5	12	96
122	250	5	12	96
127	253	5	12	96
123	255	5	12	96
122	265	5	12	96
116	232	5	12	96
0	4	0	1	45
94	184	5	13	96
127	252	5	12	96
122	252	0	18	96
105	167	5	15	96

Table B-34
Total Resource Production by Benchmarks -- Planned in Decade 1, Projected in Later Decades
(Outputs Other Than Nonperiodic are Average Annual Outputs)

Output/Activity	Unit of Measure	02A	03A	04B	05A	05C	06D	08E	09C
Wilderness Mgmt.	Thousand Acres	900.4	900.4	900.4	900.4	900.4	900.4	900.4	900.4
Elk Winter Range - Wilderness	Thousand Elk								
-DECADE 1		8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
-DECADE 5		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
-DECADE 10		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
-DECADE 15		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Elk Winter Range - Nonwilderness	Thousand Elk								
-DECADE 1		6.7	6.6	6.6	6.6	6.7	6.7	6.7	6.6
-DECADE 5		4.0	17.7	5.1	5.9	7.2	8.1	8.2	5.1
-DECADE 10		15.3	4.4	11.8	5.8	13.3	11.2	7.9	15.8
-DECADE 15		3.1	3.0	4.7	3.3	4.8	4.7	4.3	4.3
Livestock Grazing Use	Thousand Animal Unit Months								
-DECADE 1		41.6	41.6	41.2	39.9	39.3	40.0	39.5	41.0
-DECADE 5		59.2	42.8	56.8	48.8	47.1	46.6	47.0	55.5
-DECADE 10		29.1	17.3	27.7	36.6	31.7	31.0	31.2	31.9
-DECADE 15		16.6	16.6	24.2	18.8	25.3	24.2	21.0	25.2
Timber - Suitable Acres	Acres	1056340	1056874	1057686	1056136	1056136	1056136	1057686	1056136
Long-Term Sustained Yield	Million Board Feet	238	236	246	236	243	243	250	243
Programed Sales Offered	Million Board Feet								
-DECADE 1		156	609	246	157	198	196	244	243
-DECADE 5		398	318	246	299	243	243	244	243
-DECADE 10		264	234	246	299	243	243	244	243
-DECADE 15		220	176	246	299	243	243	244	243
Anadromous	Thousand Smolts								
-DEDADE 1		705	291	705	705	705	705	705	705
-DECADE 5		492	0	492	492	492	492	492	492
-DECADE 10		492	0	492	492	492	492	492	492
-DECADE 15		492	0	492	492	492	492	492	492
Road Construction/ Reconstruction	Miles								
-DECADE 1		94	305	145	94	94	118	143	143
-DECADE 5		90	16	38	61	50	50	38	49
-DECADE 10		13	12	12	15	12	12	13	12
-DECADE 15		10	9	12	15	12	12	12	12
Present Value									
-Benefits (4%)	Thousand $	1971285.0	2711264.0	1727652.0	1654565.0	1532911.0	1582119.0	1629685.0	1707649.0
-Costs (4%)	Thousand $	480010.0	848173.0	463939.0	476230.0	420678.0	462442.0	477911.0	473339.0
Present Net Value -- Market/Nonmarket (4%)	Thousand $	1491275.0	1863090.0	1263712.0	1178335.0	1112233.0	1119678.0	1151774.0	1234310.0

Table B-34 (Continued)
Total Resource Production by Benchmarks -- Planned In Decade 1, Projected In Later Decades
(Outputs Other Than Nonperiodic are Average Annual Outputs)

Output/Activity	Unit of Measure	10C	11C	12B	13A	15A	16A	17A	18A
Wilderness Mgmt.	Thousand Acres	900.4	900.4	900.4	900.4	900.4	900.4	900.4	900.4
Elk Winter Range - Wilderness	Thousand Elk								
-DECADE 1		8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
-DECADE 5		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
-DECADE 10		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
-DECADE 15		10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Elk Winter Range - Nonwilderness	Thousand Elk								
-DECADE 1		6.6	6.7	6.8	6.7	4.1	4.1	4.1	4.1
-DECADE 5		4.1	8.6	9.0	8.0	5.8	5.9	5.3	5.2
-DECADE 10		11.5	10.2	10.1	11.8	6.3	6.0	8.5	6.6
-DECADE 15		4.3	3.1	3.1	4.8	.5	.5	1.8	1.8
Livestock Grazing Use	Thousand Animal Unit Months								
-DECADE 1		41.0	40.0	40.0	40.0	44.0	44.0	45.0	45.0
-DECADE 5		56.0	51.0	50.0	47.0	54.0	53.0	51.0	51.0
-DECADE 10		28.0	26.0	29.0	30.0	31.0	33.0	35.0	37.0
-DECADE 15		26.0	19.0	19.0	23.0	24.0	24.0	28.0	29.0
Timber - Suitable Acres	Acres	1057686	1055324	1055324	1054262	1055324	1055324	1053136	1056136
Long-Term Sustained Yield	Million Board Feet	246	230	234	256	236	236	256	243
Programed Sales Offered	Million Board Feet								
-DECADE 1		246	157	157	204	159	157	204	196
-DECADE 5		246	401	502	256	402	402	256	243
-DECADE 10		246	226	199	256	227	202	256	243
-DECADE 15		246	280	254	256	290	249	256	243
Anadromous	Thousand Smolts								
-DEDADE 1		705	705	705	705	705	705	705	705
-DECADE 5		492	492	492	492	492	492	492	492
-DECADE 10		492	492	492	492	492	492	492	492
-DECADE 15		492	492	492	492	492	492	492	492
Road Construction/ Reconstruction	Miles								
-DECADE 1		145	94	94	122	94	94	122	118
-DECADE 5		38	60	40	53	80	80	40	50
-DECADE 10		12	11	10	13	11	10	13	12
-DECADE 15		12	14	13	13	15	12	13	12
Present Value									
-Benefits (4%)	Thousand $	1725537.0	1844825.0	1814653.0	1638840.0	1837080.0	1806988.0	1631798.0	1579407.0
-Costs (4%)	Thousand $	470218.0	493100.0	470389.0	485676.0	493300.0	482490.0	500560.0	461448.0
Present Net Value -- Market/Nonmarket (4%)	Thousand $	1255319.0	1351725.0	1337875.0	1153164.0	1343779.0	1324498.0	1131239.0	1117976.0

Table B-34 (Continued)
Total Resource Production by Benchmarks -- Planned In Decade 1, Projected In Later Decades
(Outputs Other Than Nonperiodic are Average Annual Outputs)

Output/Activity	Unit of Measure	19A	20A	22Y	23Y	24D
Wilderness Mgmt.	Thousand Acres	900.4	900.4	900.4	900.4	1371.4
Elk Winter Range - Wilderness	Thousand Elk					
-DECADE 1		8.3	8.3	8.3	8.3	11.4
-DECADE 5		10.8	10.8	10.8	10.8	13.4
-DECADE 10		10.8	10.8	10.8	10.8	13.4
-DECADE 15		10.8	10.8	10.8	10.8	13.4
Elk Winter Range - Nonwilderness	Thousand Elk					
-DECADE 1		6.1	10.4	4.1	12.9	3.5
-DECADE 5		5.1	9.0	6.3	20.3	4.7
-DECADE 10		5.0	10.3	7.2	12.3	2.9
-DECADE 15		5.0	7.0	.5	10.1	.7
Livestock Grazing Use	Thousand Animal Unit Months					
-DECADE 1		.0	46.2	82.3	.0	45.3
-DECADE 5		.0	52.3	85.7	.0	53.3
-DECADE 10		.0	19.5	63.0	.0	32.6
-DECADE 15		.0	33.5	61.6	.0	31.3
Timber - Suitable Acres	Acres	0	826052	1055130	1003057	665772
Long-Term Sustained Yield	Million Board Feet	0	190	238	227	135
Programed Sales Offered	Million Board Feet					
-DECADE 1		0	187	157	163	132
-DECADE 5		0	187	400	398	356
-DECADE 10		0	187	226	212	154
-DECADE 15		0	187	276	307	153
Anadromous	Thousand Smolts					
-DEDADE 1		705	705	705	705	705
-DECADE 5		739	492	492	492	492
-DECADE 10		739	492	492	492	492
-DECADE 15		739	492	492	492	492
Road Construction/ Reconstruction	Miles					
-DECADE 1		0	110	94	98	66
-DECADE 5		0	19	60	40	36
-DECADE 10		0	10	11	11	7
-DECADE 15		0	9	14	15	7
Present Value						
-Benefits (4%)	Thousand $	375784.0	1375437.0	1735401.0	1802212.0	1465686.0
-Costs (4%)	Thousand $	51146.0	391636.0	492465.0	488429.0	388013.0
Present Net Value -- Market/Nonmarket (4%)	Thousand $	324638.0	983801.0	1242936.0	1313783.0	1077673.0

VII. FORMULATION OF ALTERNATIVES

A. Introduction

A Forest planning alternative is a mix of management prescriptions applied in specific amounts and locations to achieve a desired management emphasis as expressed in goals and objectives. To be viable (NFMA - 36 CFR 219.12f), the alternative must:

- Exist between maximum and minimum resource potential of the Forest;
- Facilitate analysis of opportunity costs and of resource use and environmental tradeoffs among alternatives;
- Facilitate evaluation of present net value, benefits, and costs of achieving various outputs as well as values that are not assigned monetary values;
- Show a different way to address and respond to major public issues, management concerns, and resource opportunities (ICOs);
- Represent the most cost-efficient combination of management prescriptions that can meet the objectives of the alternative;
- State the condition and uses that will result from implementation;
- State what goods and services will be produced including timing and flow of outputs and the costs and benefits generated;
- State the resource management standards and guidelines used; and
- State the purpose of the management direction used.

Formulating alternatives was planning action number five in the Forest planning process following the analysis of the management situation (AMS). During the analysis of the management situation a determination was made of the ability of the Forest to supply goods and services. Maximum and minimum output levels were established. These levels form the range within which the alternatives were developed. Two specific alternatives are required. One alternative must be developed which responds to and incorporates the Resource Planning Act (RPA) program tentative resource objective. Another alternative was developed to reflect the current and expected level of goods and services produced should current management be continued (the "no-action" alternative). The process for formulating alternatives can best be explained in a series of steps.

Step 1. Major public issues and concerns were identified through public involvement. (This process is further explained in Appendix A). These issues and concerns were reviewed by an interdisciplinary team and consolidated into a set of planning questions to be answered.

Step 2. A comprehensive multiresource data base was formed based on the identified issues and concerns and stored in a computer retrieval system.

Step 3. Land analysis areas with similar physical and biological attributes were identified and mapped. The capability, suitability, and management opportunities of specific areas of the Forest were considered in this step.
Step 4. A set of management prescriptions was prepared to represent a variety of possible ways and intensities to manage the Forest.

Step 5. The 480 analysis areas identified in Step 4 were assigned management prescriptions. Some analysis areas were assigned only one prescription while others were assigned a variety of prescriptions that could be applied. Single prescription assignments limit the model's allocation choices.

Step 6. Resource outputs and the associated costs and dollar values that would result when a prescription was implemented were calculated and entered into the computer model FORPLAN.

Step 7. Demand was estimated for the resources involved in the planning questions.

Step 8. Supply potentials were determined using the FORPLAN computer model. Various assumptions, constraints, and objectives were used to establish benchmarks for supply potentials of each resource. Benchmarks were established for the minimum, maximum, and constraint resource levels and maximum present net value. Existing resource supply and projected demand were compared to supply potentials of each benchmark. Opportunities to resolve issues and concerns were identified for each resource by comparing existing and projected demand to potential production levels. These potentials, when compared to the Current Direction, indicate opportunities and/or need for change. This step concluded the analysis of the management situation - benchmark analysis.

Step 9. Alternative objectives were established to provide a broad range of options for future management of the Forest. Selected benchmarks were used to define upper and lower limits for the production of each resource. These upper and lower limits outlined the decision space boundaries for the resources involved. The interdisciplinary team considered expected use, supply, potential (upper and lower limits), and evaluated public input to establish the range of alternatives within the decision spaces. Descriptions were written to define the resource management intent for each alternative.

Step 10. The FORPLAN model was again used to estimate the outputs and costs for each alternative by reflecting the objective of the alternative through a given set of constraints.

Step 11. The results of the FORPLAN analysis for each alternative were evaluated to assure conformance with laws, policies, and guidelines. Refinements were made to insure that each alternative could be achieved.

Further information on the FORPLAN model is presented in Section IV of this Appendix.

The interdisciplinary team incorporated cost-efficiency into the planning process. First, a comparative analysis was performed (see planning records) to identify the most cost-efficient prescriptions. For the timber resource, an additional analysis was done to identify the most cost-efficient level of management intensity on each timber prescription. Second, the

interdisciplinary team developed different alternatives and identified the necessary constraints to address specific objectives, issues, and concerns. Third, prescriptions meeting the cost-efficiency test were combined with the necessary constraints and incorporated into FORPLAN to form different alternatives. Each alternative produces a different combination of priced and nonpriced outputs. The technical feasibility of each alternative is analyzed with FORPLAN. All constraints must be satisfied or an infeasibility will result. The methodology used to account for both categories in alternative formulation and evaluation is discussed in Section IV of this Appendix.

As a result of public comments, additional analysis and several changes have been made since the Draft EIS. The additional analysis is summarized below:

- Alternative G (Preferred Alternative) was modified to maintain a stable harvest level over the planning horizon.

- Alternative G was modified by limiting timber harvesting to those timber prescription/analysis area combinations which showed a positive present net value.

- Alternative G was modified by adding additional suitable acres from East Meadow Creek, West Meadow Creek, and Rackliff-Gedney roadless areas.

- Alternative G was modified to compare and evaluate the effect of using 60 acres available for harvest per mile of new road construction in the first decade rather than 40 acres per mile.

- Sensitivity analysis was performed to estimate the impact that different timber price assumptions would have on land assignments and the economics of timber management using the FORPLAN model. Also, updated recreation/wildlife values were used to estimate any impacts on land assignments and economic efficiency. This analysis was done on the Max PNV benchmark, Alternative D, and Alternative G. For additional information on this analysis, see Appendix D.

Summary of changes to alternatives since the Draft EIS:

The boundaries of the Mallard (1847) and Gospel-Hump (1921) roadless areas were adjusted to the original RARE II boundaries. This change was in response to the public concern that this Forest adjusted the RARE II boundaries because of timber sale and road construction activities which were expected to take place, but have not at this time.

Constraints common to all alternatives remain unchanged. Additional constraints were applied to Alternative G (Preferred Alternative) to meet specific resource and economic objectives. These constraints have been designed to meet the following objectives:

- Increase fish/water quality objectives in 64 drainages;

- Increase prescribed burning on deer/elk winter range from 2,700 acres to 5,000 acres per year during the Plan period (1988-1997);

- No scheduled road construction or timber harvesting activities in the West Meadow Creek roadless area during the Plan period (1988-1997), except for the portion which is west of the hydrologic divide between Meadow Creek and the Red River and American River drainages;

- Manage approximately 13,300 acres of the Silver Creek-Pilot Knob roadless area without additional roads and with no scheduled timber harvest.

- Make timber management prescriptions available for approximately 11,000 acres of tentatively suitable land in the Rackliff-Gedney roadless area;

- Include all riparian areas in the suitable timber base, but review harvesting activities on these area during implementation of the Forest Plan.

B. Common Constraints

The constraints used in the maximum present net value (06D) benchmark formed the basis for constraints applied to all alternatives except current management (Alternative A). The effects of some constraints applied early in this analysis process were effectively replaced by constraints developed and applied later (see Section VI). Common benchmark constraints were developed, examined, and tested to see how well they addressed their stated purpose. They also represent the most cost-efficient approach to meeting the intended purpose. These constraints were previously analyzed in Section VI, "Analysis Prior to Development of Alternatives." The benchmark constraints common to all alternatives were as follows:

- Constraint: All alternatives except departures require nondeclining yield (NDY) for timber harvests.
  Purpose: Provides a sustained yield of timber harvests.
  Rationale: Assumes a constant supply or upward trend in timber supply.
  Tradeoff: Significant reduction in PNV and base timber harvest schedule (see Section VI).

- Constraint: Insure an appropriate level of timber inventory at the end of the planning horizon (long-term sustained yield link - LTSYC).
  Purpose: To assume that harvestable timber will be available in the decades immediately following the end of the planning horizon.
  Rationale: Assure a future sustained yield of timber harvest.
  Tradeoff: Significant reduction in PNV and timber harvest schedule, but not as substantial as NDY (see Section VI).

- Constraint: Timber rotations are based on 95 percent of the culmination of mean annual increment (CMAI) for existing and regenerated stands.

	Purpose:	Assure that timber is harvested at or beyond its maximum mean annual growth rate.
	Rationale:	Provide rotation ages that maintain high productivity and abide by Forest Service Manual direction.
	Tradeoff:	Significant reduction in present net value (PNV) but not as substantial as NDY (see Section VI).
-	Constraint:	Ensure that shifts in timber harvest levels do not exceed the parameter for rapid change of more than 20 MMBF below the present current annual harvest (97 MMBF) or 20 MMBF above the local milling capacity (135 MMBF) in the first decade. This equates to a range of 75 to 155 MMBF.
	Purpose:	To prevent a drastic change in timber offered for sale in the first decade.
	Rationale:	Assures that increases in timber harvest can be utilized by either new mills or increases in existing milling facilities.
	Tradeoff:	Slight reduction in PNV and timber harvest schedule. Most drastic changes are evident in the first decade.
-	Constraint:	Limit amount of access to analysis areas 400 acres or larger in the first 4 decades.
	Purpose:	Assure that basic soil, water quality, water yield, fisheries objectives, and legal size of opening requirements are maintained.
	Rationale:	Soil, water, and fisheries resources must be maintained at legally defined levels.
	Tradeoff:	PNV is reduced along with a significant change in base harvest schedule.
-	Constraint:	Riparian zones are protected by limiting timber harvest to 10 percent of the inventoried area per decade.
	Purpose:	Protect the areas that are most critical to a wide range of resources including timber, wildlife and fish, recreation, and water.
	Rationale:	Riparian ecosystems tend to be overcut if timber harvest is not constrained to protect other resources.
	Tradeoff:	Minor reduction in PNV and timber volume.
-	Constraint:	A minimum of 10 percent old growth is maintained on the suitable timber base Forestwide. A minimum of 5 percent of any prescription watershed must be maintained as old growth.
	Purpose:	Help maintain viable wildlife populations on traditional ranges.
	Rationale:	Old growth would not be maintained on the more productive timber sites without a constraint.
	Tradeoff:	Minor reduction in PNV and timber yield.
-	Constraint:	Limit the acres of regeneration harvest for the first 2 decades to levels that will ensure the protection of habitat for minimum harvestable levels of anadromous fish Forestwide.

Purpose:	Protect stream habitat to levels that are capable of maintaining minimum harvestable levels of anadromous fish.
Rationale:	Minimum harvestable levels of anadromous fish are a management requirement.
Tradeoff:	PNV is reduced by limits on acres of regeneration harvest in the first 2 decades.

C. Development of Alternatives

Alternative A (Current Direction)

The goal of this alternative is to continue management direction as set out in plans formulated and approved prior to passage of the National Forest Management Act, and included in existing policies, standards, and guidelines. This is the "no-action" alternative required by the National Environmental Policy Act (NEPA).

The criteria and assumptions underlying the development of this alternative are:

- Timber production is increased over time, not to exceed the long-term sustained yield capacity (LTSYC). Timber merchantability standards, yield tables, and inventory data are updated to current and/or proposed standards. However, suitable lands identified in the 1973 Timber Management Plan or in approved unit plans were available to determine timber harvest scheduling.

- Minimum management requirements (MMR), which were not previously required by law, are included with the understanding that current management adjusts to changes in law and policy.

- Resource Planning Act (RPA) targets for livestock are met.

- A burning program for deer/elk winter range habitat improvement of 550 acres per year is scheduled.

- This alternative is modeled so that appropriate budget levels will not exceed the historic FY 1980-82 level of $10.1 million.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B.)

- Constraint: Timber harvest is limited to acres identified as suitable in the 1973 Timber Management Plan or in approved unit plans.
  Purpose: Maintain direction of current timber management plans.
  Rationale: Conforms with direction from most current timber harvest plans.

- Constraint: Timber harvests are constrained to Visual Quality Objectives (VQOs) in approved land use plans.
  Purpose: Maintain direction in current VQO inventory.
  Rationale: Conforms with direction from most current timber harvest plans.

- Constraint: Exclude Rapid River and Rackliff-Gedney roadless area timber from development.
  Purpose: Maintain direction in current unit plans.
  Rationale: Conforms with direction from most current timber harvest plans.

- Constraint: Limit acres of regeneration harvest on suitable lands to 61,913 acres in decade 1 and 107,539 acres in decade 2.
  Purpose: Maintain fisheries habitat on suitable lands at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives outside of roadless areas.

- Constraint: Budget constrained to FY 1980-82 level of $10.1 million (1978 dollars).
  Purpose: Constrained budget is used to identify what resource outputs are linked to current funding levels throughout the planning horizon.
  Rationale: Constrained budget levels are required to meet the objectives of the "no-action" alternative by NEPA (36 CFR 219.12(E)(2).

Alternative C

The goal of this alternative is to emphasize nonmarket opportunities. Water, fish (wild gene pools), wildlife, recreation, and other amenities are highlighted. Other resources would be managed at economically and environmentally feasible levels.

The criteria and assumptions underlying the development of this alternative are:

- Fisheries, semiprimitive recreation, and wildlife resources are emphasized under this alternative by excluding new road construction in the following areas: Rackliff-Gedney (Nez Perce portion), East Meadow Creek, West Meadow Creek, Rapid River (Nez Perce portion), Jersey-Jack, and portions of Silver Creek-Pilot Knob. No new road construction will be allowed in the first two decades in Newsome Creek and the main fork of Red River.

- Big-game habitat management is enhanced by burning at least 2,650 acres of deer/elk winter range annually, and by managing summer range using the North Idaho Elk Coordinating Guidelines to make possible the following habitat effectiveness levels: 100 percent of existing habitat where roads are excluded; 75 percent in high elk objective

areas; 50 percent in all other areas, and by excluding development in certain roadless areas.

- Anadromous fisheries habitat will be managed to provide for levels of fish exceeding minimum harvestable, in line with providing quality fishing experiences both on- and off-Forest. These levels will limit timber harvest and road construction in high quality habitat watersheds.

- Development of timber resources will be compatible with the objectives for managing fisheries, recreation, and wildlife resources, and not to exceed the LTSYC.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B.)

- Constraint: Timber harvests are constrained to revised VQOs for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Exclude further road and timber development in areas of high recreation, wildlife, and fisheries value.
  Purpose: Maintain the high quality status of recreation/wildlife/fisheries resources in roadless areas.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Provide for at least 2,650 acres of deer/elk winter range burning annually.
  Purpose: To maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres.
  Purpose: To allow for proper dispersion of cutting units to meet elk objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvest on suitable lands to 33,508 acres in decade 1 and 45,481 acres in decade 2.
  Purpose: Provide for high levels of harvestable fish.
  Rationale: High harvestable levels of fish are required to meet the objectives of this alternative.

Alternative D

The goal of this alternative is to emphasize market opportunities for outputs that have an established market price. Other resources would be managed at economically and environmentally feasible levels.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources is emphasized on all tentatively suitable lands outside the classified areas, not to exceed the long-term sustained yield capacity (LTSYC), and within the constraints of minimum management requirements and minimum harvestable fisheries habitat requirements.

- Anadromous fisheries habitat will be managed to provide for minimum harvestable levels of fish from suitable acres.

- Resource Planning Act targets for livestock will be met or exceeded.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Limit acres of regeneration harvest on suitable lands to 70,419 acres in decade 1 and 120,702 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives outside classified areas.

Alternative E

The goal of this alternative is to determine how the Forest's Resource Planning Act (RPA) assignments, as set out in the Regional Guide, can best be met. This is required by the National Forest Management Act (NFMA).

The criteria and assumptions underlying the development of this alternative are:

- RPA targets for timber, fisheries, range, and elk are the primary objectives of this alternative. All tentatively suitable lands are available for harvest.

- RPA goals for big-game habitat management are enhanced by burning at least 2,500 acres of deer/elk winter range annually, and by managing summer range using the North Idaho Elk Coordinating Guidelines.

- Anadromous fisheries habitat will be managed to provide for high harvestable levels of fish on suitable lands.

- RPA targets for livestock will be met.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised visual quality objectives (VQO) for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Provide for 2,500 acres of deer/elk winter range burning annually.
  Purpose: Maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.

- Constraint: Limit acres of regeneration harvest on suitable lands to 34,311 acres in decade 1 and 53,262 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at high harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives outside of classified areas.

Alternative F

The goal of this alternative is to emphasize fish and wildlife resources with a specified minimum level of timber production.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the long-term sustained yield capacity (LTSYC). Timber harvest will be at least 75 million board feet (MMBF) annually for the first decade.

- Fisheries, semiprimitive recreation, and wildlife resources are emphasized under this alternative by excluding new road construction in the following areas: Jersey-Jack, Mallard, Rapid River (Nez Perce portion), Rackliff-Gedney (Nez Perce portion), and East Meadow Creek. No new road construction will be allowed in the first two decades in Newsome Creek and the main fork of Red River.

- Big-game habitat management is emphasized by burning at least 2,650 acres of deer/elk winter range annually, by managing summer range using the North Idaho Elk Coordinating Guidelines, and by excluding new road construction in certain roadless areas.

- Anadromous fisheries habitat will be managed to provide high harvestable levels of fish on suitable acres.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised VQOs for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Exclude further road development in areas of high recreation/wildlife/fisheries value.
  Purpose: Maintain the existing high quality status of recreation/wildlife/fisheries resources in the roadless areas.
  Rationale: Required to meet the objectives of this alternative and emphasize nonmarket resources.

- Constraint: Provide for at least 2,650 acres of deer/elk winter range burning annually.
  Purpose: Maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres per decade.
  Purpose: To allow for proper dispersion of cutting units to meet all objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvest on suitable lands to 45,472 acres in decade 1 and 64,825 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative G (Preferred Alternative)

The goal of this alternative is to emphasize fish and wildlife resources through specific drainage objectives, and provide a high level of market outputs.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, and will not be allowed to increase above the LTSYC.

- Fisheries, semiprimitive recreation, and wildlife resources are emphasized under this alternative by excluding new road construction in the following areas: Rapid River (Nez Perce portion), East Meadow Creek, and approximately 13,300 acres in the Silver Creek-Pilot Knob roadless area.

- Big-game habitat management is enhanced by burning 5,000 acres of deer/elk winter range annually. Summer range will be managed using the North Idaho Elk Coordinating Guidelines to achieve the following habitat effectiveness levels: 100 percent in roadless areas; 75 percent in high elk objective areas; 50 percent in moderate elk objective areas; and 25 percent in low elk objective areas.

- Anadromous fisheries habitat will be managed to provide levels exceeding minimum harvestable fish on suitable lands. This level will limit timber harvest and road construction in high quality habitat watersheds.

- Resource Planning Act (RPA) goals for livestock will be met.

- Increases in timber harvest levels beyond the planning period (1988-1997) will be within the range of potential demand for this Forest.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised visual quality objectives (VQOs) for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Exclude further road development in areas of high recreation/wildlife/fisheries value.
  Purpose: Maintain the existing high quality status of recreation/wildlife/fisheries resources in the roadless areas.
  Rationale: Required to meet the objectives of this alternative and emphasize nonmarket resources.

- Constraint: Provide for 5,000 acres of deer/elk winter range burning annually.
  Purpose: Maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres per decade.
  Purpose: To allow proper dispersion of cutting units to meet elk objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvests on suitable lands to 46,517 acres in decade 1 and 62,652 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at high harvestable levels.
  Rationale: Greater than minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

- Constraint: Timber harvest levels per decade are allowed to increase up to the upper bound on the range of potential demand developed for this Forest. (See Appendix D for additional information).
  Purpose: To be able to meet future potential demand.
  Rationale: Required to meet the objectives of this alternative.

Alternative G1

The goal of this alternative is to emphasize fish and wildlife resources through specific drainage objectives, and provide a high level of market outputs. Timber harvest levels are increased by modeling a departure from the long-term sustained yield capacity past the fifth decade, but within the parameters for community stability. This alternative is essentially the same as Alternative G, except for a slight increase in the timber harvest during the Plan period and in later decades. These differences are due to eliminating the non-declining yield constraint to model a departure in LTSYC.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, and will not be allowed to increase above the long-term sustained yield capacity (LTSYC) beginning in the fifth decade. The harvest level will never drop below the LTSYC and is projected to be equal to the LTSYC level by the end of the planning horizon. Any increases or decreases in the harvest level will be constrained to 25 percent of the previous decade's harvest level.

- Fisheries, semiprimitive recreation, and wildlife resources are emphasized under this alternative by excluding new road construction

in the following areas: Rapid River (Nez Perce portion), East Meadow Creek, and approximately 13,300 acres in the Silver Creek-Pilot Knob roadless area.

- Big-game habitat management is enhanced by burning at least 5,000 acres of deer/elk winter range annually. Summer range will be managed using the North Idaho Elk Coordinating Guidelines, to achieve the following habitat effectiveness levels: 100 percent in roadless areas; 75 percent in high elk objective areas; 50 percent in moderate elk objective areas; and 25 percent in low elk objective areas.

- Anadromous fisheries habitat will be managed to provide levels exceeding minimum harvestable fish on suitable lands. This level will limit timber harvest and road construction in high quality habitat watersheds.

- RPA goals for livestock will be met.

- Rapid increases in timber harvest levels will not be allowed.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints). Timber harvests depart from the LTSYC.

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised VQOs for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Exclude further road development in areas of high recreation/wildlife/fisheries value.
  Purpose: Maintain the existing high quality status of recreation/wildlife/fisheries resources in the roadless areas.
  Rationale: Required to meet the objectives of this alternative and emphasize nonmarket resources.

- Constraint: Provide for at least 5,000 acres of deer/elk winter range burning annually.
  Purpose: Maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres per decade.
  Purpose: To allow proper dispersion of cutting units to meet elk objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvests on suitable lands to 46,517 acres in decade 1 and 62,652 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at high harvestable levels.
  Rationale: Greater than minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

- Constraint: Timber harvest levels per decade are allowed to increase up to the upper bound on the range of potential demand developed for this Forest. (See Appendix D for additional information).
  Purpose: To be able to meet future potential demand.
  Rationale: Required to meet the objectives of this alternative.

Alternative H

The goal of this alternative is to maximize the Forest's wilderness resource. Market outputs from lands outside existing and proposed wilderness would be maximized. All roadless areas in the inventory, 503,162 acres, would be recommended to Congress for wilderness classification.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the long-term sustained yield capacity (LTSYC).

- This alternative proposes an additional 503,162 acres for wilderness, or 100 percent of the current roadless inventory. Market outputs from lands outside the wilderness will be emphasized.

- Anadromous fisheries habitat will be managed to provide minimum harvestable levels of fish on suitable acres.

- Resource Planning Act (RPA) goals for livestock will be met or exceeded.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Assign 503,162 acres to wilderness management.
  Purpose: Provide for a maximum level of additional wilderness on the Forest, and to identify the impacts on other resources.
  Rationale: To provide a maximum level wilderness proposal.

- Constraint: Limit acres of regeneration harvest on suitable lands to 39,633 acres in decade 1 and 62,273 acres in decade 2.

  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.

  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative H1

The goal of this alternative is to maximize the Forest's wilderness resource, and increase timber harvests by departing from the long-term sustained yield capacity (LTSYC). Market outputs from lands outside the wilderness would be maximized, but not to the point minimum management requirements for resource protection are not met. All roadless areas in the inventory, 503,162 acres, would be recommended to Congress for wilderness classification. This alternative is essentially the same as alternative H except for the increase in timber harvest in later decades.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be emphasized, but only where they are compatible with the objectives of fisheries, recreation, and wildlife resources. Timber harvests will be allowed to increase above the LTSYC beginning in the fifth decade. The harvest level will never drop below the LTSYC and will be equal to the LTSYC by the end of the planning horizon. Any increases or decreases in the harvest level will be constrained to 25 percent of the previous decade's harvest level.

- This alternative proposes an additional 503,162 acres for wilderness, or 100 percent of the current roadless inventory. Market outputs from lands outside the wilderness will be emphasized.

- Big-game habitat management is enhanced by managing summer range using the North Idaho Elk Coordinating Guidelines.

- Anadromous fisheries habitat will be managed to provide minimum harvestable levels of fish on suitable acres.

- RPA goals for livestock will be met or exceeded.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints). Timber harvests depart from the LTSYC.

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Assign an additional 503,162 acres to wilderness management.
  Purpose: Provide for a maximum level of additional wilderness on the Forest, and to identify the impacts on other resources.
  Rationale: To provide a maximum level wilderness proposal.

- Constraint: Limit acres of regeneration harvest on suitable lands to 39,633 acres in decade 1 and 62,273 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative I

The goal of this alternative is to furnish a high-acreage addition to the Forest's wilderness resource. Market outputs from lands outside the wilderness would be maximized, subject to constraints imposed by minimum management requirements. Six roadless areas -- Rapid River (Nez Perce portion), East Meadow Creek, West Meadow Creek, Rackliff-Gedney (Nez Perce portion), and portions of Mallard and Gospel-Hump (Jersey-Jack) would be recommended to Congress for wilderness classification. This would total 326,617 acres, or 65 percent of all roadless acreage on the Forest.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be emphasized, but only where they are compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the LTSYC.

- This alternative proposes 326,617 acres for wilderness or 65 percent of the current roadless inventory. Market outputs from lands outside the wilderness will be emphasized.

- Anadromous fisheries habitat will be managed to provide minimum harvestable levels of fish on suitable acres.

- Resource Planning Act goals for livestock will be met or exceeded.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Assigns an additional 326,617 acres to wilderness management.
  Purpose: Provide for a high acreage level of additional wilderness on the Forest, and to identify the impacts on other resources.
  Rationale: To provide a high level wilderness proposal.

- Constraint: Limit acres of regeneration harvest on suitable lands to 51,203 acres in decade 1 and 77,735 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative J

The goal of this alternative is to furnish a medium-acreage addition to the Forest's wilderness resource. Market outputs from lands outside the wilderness would also be emphasized. Five roadless areas -- Rapid River (Nez Perce portion), East Meadow Creek, Rackliff-Gedney (Nez Perce portion), and portions of Mallard and Gospel-Hump (Jersey-Jack) -- would be recommended to Congress for wilderness classification. This would total 219,105 acres, or 44 percent of all roadless acreage on the Forest.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be emphasized, but only where they are compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the long-term sustained yield capacity (LTSYC).

- This alternative proposes 219,105 acres for wilderness, or 44 percent of the current roadless inventory. Market outputs from lands outside the wilderness will be emphasized, but within the constraints imposed by minimum management requirements and specific wildlife and fisheries objectives.

- Anadromous fisheries habitat will be managed to provide minimum harvestable levels of fish Forestwide.

- Resource Planning Act goals for livestock will be met or exceeded.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Assigns an additional 219,105 acres to wilderness management.
  Purpose: Provide for a medium-level of additional wilderness on the Forest, and identify the impacts on other resources.
  Rationale: To provide a medium-level wilderness proposal.

- Constraint: Limit acres of regeneration harvest on suitable lands to 56,472 acres in decade 1 and 93,658 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at minimum harvestable levels.
  Rationale: Minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative K

The goal of this alternative is to furnish a moderate-acreage addition to the Forest's wilderness resource and to emphasize fish and wildlife resources outside the wilderness through specific drainage objectives. Three roadless areas -- East Meadow Creek, Rackliff-Gedney (Nez Perce portion), and Rapid River (Nez Perce portion) -- would be recommended to Congress for wilderness classification. This would total 172,966 acres, or 34 percent of all roadless acreage on the Forest.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the LTSYC.

- This alternative proposes an additional 172,966 acres for wilderness or 34 percent of the current roadless inventory.

- Big-game habitat management is enhanced by burning at least 1,400 acres of deer/elk winter range annually. Summer range will be managed using the North Idaho Elk Coordinating Guidelines to achieve the following habitat effectiveness levels: 100 percent in roadless areas; 75 percent in high elk objective areas; 50 percent in moderate elk objective areas; and 25 percent in low elk objective areas.

- Anadromous fisheries habitat will be managed to provide for levels exceeding minimum harvestable fish on suitable acres. This level will limit timber harvest and road construction in high quality habitat watersheds.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised visual quality objectives (VQOs) for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Assign an additional 172,966 acres to wilderness management.
  Purpose: Provide for a moderate level of additional wilderness on the Forest, and to identify the impacts on other resources.
  Rationale: To provide a moderate level wilderness proposal.

- Constraint: Provide for at least 1,400 acres of deer/elk winter range burning annually.
  Purpose: To maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres per decade.
  Purpose: To allow for proper dispersion of cutting units to meet elk objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvest on suitable lands to 53,008 acres in decade 1 and 73,432 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at levels exceeding minimum harvestable levels.
  Rationale: Greater than minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

Alternative L

The goal of this alternative is to furnish a low-acreage addition to the Forest's wilderness resource and to emphasize fish and wildlife resources outside the wilderness through specific drainage objectives. One roadless area -- East Meadow Creek -- would be recommended to Congress for wilderness classification. This would total 94,203 acres, or 19 percent of the roadless acreage on the Forest. Rapid River (Nez Perce portion) and Rackliff-Gedney (Nez Perce portion) would remain roadless.

The criteria and assumptions underlying the development of this alternative are:

- Development of timber resources will be compatible with the objectives of fisheries, recreation, and wildlife resources, not to exceed the long-term sustained yield capacity (LTSYC).

- This alternative proposes an additional 94,203 acres for wilderness, or 19 percent of the current roadless inventory.

- Big-game habitat management is enhanced by burning at least 2,500 acres of deer/elk winter range annually. Summer range will be managed using the North Idaho Elk Coordinating Guidelines to achieve the following habitat effectiveness levels: 100 percent in roadless areas; 75 percent in high elk objective areas; 50 percent in moderate elk objective areas; and 25 percent in low elk objective areas.

- Anadromous fisheries habitat will be managed to provide levels exceeding minimum harvestable levels on suitable acres. This level will limit timber harvest and road construction in high quality habitat watersheds.

The constraints used to meet the criteria and assumptions are:

- Constraint: Timber policy constraints (see Common Constraints).

- Constraint: Minimum management requirements (see Section VI-B).

- Constraint: Timber harvests are constrained to revised VQOs for use in modeling alternatives.
  Purpose: Attain management by proposed VQOs.
  Rationale: Conforms with most recent management proposal.

- Constraint: Assign an additional 94,203 acres to wilderness management.
  Purpose: Provide for a low-level of additional wilderness on the Forest, and to identify the impacts on other resources.
  Rationale: To provide a low level wilderness proposal.

- Constraint: Provide for at least 2,500 acres of deer/elk winter range burning annually.
  Purpose: To maintain existing permanent browse areas in a condition suitable with high deer/elk habitat objectives.
  Rationale: Required to meet the objectives of this alternative.

- Constraint: Regeneration harvest is limited to a maximum of 12 percent of the suitable acres per decade.
  Purpose: To allow for proper dispersion of cutting units to meet elk objectives.
  Rationale: To meet the objectives of this alternative.

- Constraint: Limit acres of regeneration harvest on suitable lands to 53,008 acres in decade 1 and 73,432 acres in decade 2.
  Purpose: Maintain fisheries habitat in developed areas at levels exceeding minimum harvestable populations.
  Rationale: Greater than minimum harvestable levels of fish habitat are required to meet legal commitments and management objectives of this alternative.

VIII. SUMMARY OF EFFECTS OF CONSTRAINTS, BENCHMARKS, AND ALTERNATIVES

A. Overview

The purpose of estimating and displaying the effects is to compare present net value, social and economic impacts, outputs of goods and services, and overall protection and enhancement of environmental resources. This comparative analysis is the basis for evaluating alternatives and selecting a Preferred Alternative, which are planning steps 7 and 8. This section focuses on the economic effects of alternatives and benchmarks. The constraints are discussed in detail in Section VII, and social and environmental effects are discussed in Chapters II and IV of the EIS.

B. Process for Evaluating Significant Constraints

Management objectives of benchmarks and alternatives were achieved by constraining FORPLAN as described in Section VII. The cost-efficiency tradeoffs of individual objectives can be determined by comparing the PNV of a FORPLAN solution which meets the objective and one which does not. The change in PNV is the cost-efficiency tradeoff of achieving a specific objective if both solutions have cost-efficient prescriptions, both solutions maximize PNV, and the constraints are cost-efficient. The cost-efficiency tradeoff was not determined for individual alternative objectives because of the prohibitive costs of analyzing every constraint used to develop alternatives. By comparing alternatives, the economic tradeoffs of the groups of objectives which have the most significant impact on PNV can be determined. These cost-efficiency tradeoffs can then be compared to environmental and social consequences to help decisionmakers identify the alternative which maximizes net public benefits.

Sensitivity analysis was performed to estimate the impact that different timber price assumptions would have on the assignment of land and on the economics of timber management. This analysis was done on the Max PNV benchmark, Alternative D, and Alternative G. Additional analysis was performed using updated wildlife/recreation values on Alternative G to determine the impacts on present net value, land assignments, and resource outputs. For additional information about this sensitivity analysis, see Appendix D.

A major factor in the economic tradeoff analysis is the order in which the objectives are analyzed. For example, the economic tradeoff of meeting hypothetical management objectives X and Y can be determined by comparing FORPLAN solutions with various combinations of the two objectives. The change in PNV due to meeting only X may be $5 million, and the change due to meeting only Y may be $11 million; however, the change due to meeting both X and Y will probably be less than $16 million. In addition, the cost of meeting objective X in one alternative will not necessarily be the same as meeting the same objective in another alternative. Therefore, the economic tradeoffs discussed in this section are only relevant to the actual alternative where the objectives were analyzed.

Tradeoffs among alternatives were not developed for individual alternative objectives due to the high cost of analyzing every constraint used to develop the alternatives. Still, by comparing the alternatives, the economic tradeoffs

of a set of objectives can be determined. The efficiency tradeoffs (differences in present net value) can be compared to environmental and social indicators which will aid in identifying the alternative that maximizes net public benefits.

C. Tradeoffs Among Alternatives

This discussion focuses on economic tradeoffs. The economic tradeoffs displayed in the following pages are related to the analysis displayed in Chapter II, Section 17 of the EIS. This analysis displays differences in economic values among the alternatives. Resource outputs and socio-economic effects are displayed in Chapter II, and environmental effects are discussed in Chapters II and IV of the EIS.

1. Response to Public Issues and Concerns

Alternatives were designed to address the 13 major issues. A single alternative cannot fully resolve all issues because of the conflicts among issues. Relationships between priced and nonpriced outputs illustrate the interactions of attempting to resolve various issues. Competitive public issues, management concerns, and resource opportunities exist and it is impossible to fully meet all wants and desires at the same time. By examining an array of priced and nonpriced outputs it becomes possible to see what is given up and what is achieved as a range of alternatives is explored. An understanding of the tradeoffs between alternatives is required to help decisionmakers decide which alternative maximizes net public benefit. The mixes of priced and nonpriced outputs resulting from each alternative are a direct result of the varied attempts to resolve the public issues discussed in Chapter I.

Appendix A in the EIS fully discusses each of the ICOs. The indicators of responsiveness for the Alternatives for each ICO are as follows:

- The level of timber harvest while responding to other demands.
  Indicators:
    - volume of timber harvested in the first decade
    - long-term sustained yield
    - suitable acres managed for timber harvest

- Compatibility of timber harvest, road development, water quality, and anadromous fish.
  Indicators:
    - population of anadromous and resident fish
    - percent of habitat effectiveness

- Areas to be managed as roadless or wilderness while meeting other demands.
  Indicators:
    - acres of wilderness
    - acres of roadless areas

- Quality of habitat for wildlife.
  - Indicators:
    - population of elk
    - level of management objectives
    - acres of winter range burned annually

- Acres to be managed for nonmotorized recreation use.
  - Indicators:
    - acres managed for semiprimitive nonmotorized recreation use

- The emphasis of recreation management for each alternative.
  - Indicators:
    - measure of the primary recreation objective

- Road accessibility and quality of roads.
  - Indicators:
    - miles of road built per decade

- Management for special recreation areas.
  - Indicators:
    - level of management by area

- Range Management.
  - Indicators:
    - Animal unit months produced

- Compatibility of timber harvest, road development, and big-game habitat needs.
  - Indicators:
    - miles of road built per decade
    - big-game habitat effectiveness

- Mineral Management.
  - Indicators:
    - acres withdrawn from mineral entry

- Fire Management.
  - Indicators:
    - Acres managed for initial attack are the same for all alternatives

- Acres managed for scenic quality.
  - Indicators:
    - acres of retention and partial retention

- Community Stability.
  - Indicators:
    - Employment and Income levels by economic sector

Table B-35 identifies the tradeoffs between monetary goals (Returns to the Treasury and PNV), and addresses the issues. The descriptions of tradeoffs proceed from the alternatives with the highest PNV to the lowest. Table B-36 compares the responses of each alternative to major issues.

Table B-35
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns (Decade 1 - Planned, Decade 5 - Projected)
(Outputs Other Than Nonperiodic Are Average Annual Outputs)

		Decades 1/5 Avg. Per Year		Timber Issues		
Alter-native	PNV ($Million)	Net Cash Receipts ($Million)	Non Cash Benefits ($Million)	First Decade Harvest Avg.Annual MMBF	LTSYC (MMBF)	Suitable Timber Lands (Thousand Acres)
D	1,113.4	-5.4/51.1	10.4/19.6	157	242	1,056
G1	1,067.2	-7.2/56.4	11.1/21.5	111	210	912
J	1,013.5	-5.5/42.4	10.5/19.8	137	205	896
F	1,005.2	-6.5/42.8	10.6/20.5	116	206	889
G(PA)	986.3	-6.5/42.9	11.1/21.6	108	210	912
K	980.1	-6.3/42.4	10.9/21.4	102	206	925
L	976.9	-6.3/42.4	10.8/21.2	102	206	925
C	944.1	-6.8/39.7	10.6/20.8	74	197	837
E	923.5	-8.1/44.5	9.9/20.1	127	228	974
I	915.7	-5.8/36.8	10.7/20.1	123	176	764
H1	877.7	-6.1/40.2	10.4/19.4	89	150	655
H	822.1	-5.6/29.6	10.4/19.4	94	150	655
A(CD)	806.5	-5.3/28.9	10.5/19.8	84	150	657

Table B-35 (Continued)
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns (Decade 1 - Planned, Decade 5 - Projected)
(Outputs Other Than Nonperiodic Are Average Annual Outputs)

	Water Quality & Fish Habitat			Wilderness & Roadless	
Alter-native	Anadromous Fish Decades 1/5 (Thousand Smolts)	Resident Fish Decades 1/5 (Thousand Catch.Trout)	Habitat Potential (Current Potential 86 Percent)	Proposed Wilderness (Acres)	Roadless Area Management (Acres)
D	667/594	351/325	72	0	0
G1	706/710	358/340	87	0	126,846
J	674/612	356/341	74	219,105	0
F	677/622	357/344	76	0	250,519
G(PA)	706/710	358/340	87	0	126,846
K	699/687	351/325	87	172,966	0
L	699/687	351/325	87	94,203	78,763
C	695/693	356/340	84	0	330,419
E	693/668	351/324	81	0	0
I	676/619	358/346	75	326,617	0
H1	689/627	361/350	75	503,162	0
H	679/627	359/350	76	503,162	0
A(CD)	682/634	361/356	78	0	78,763

Table B-35 (Continued)
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns (Decade 1 - Planned, Decade 5 - Projected)
(Outputs Other Than Nonperiodic Are Average Annual Outputs)

Alter-native	Quality of Wildlife Habitat: Elk Winter Range Decades 1/5 (Thousand Elk)	Quality of Wildlife Habitat: Wildlife Habitat Improvement Decades 1/5 (Acres)	Recreation: Semi-Prim. Recreation Opportunity (Acres)	Recreation: Semi-Prim. Recreation Opportunity (Percent[1])	Roads: Average Annual Miles Constructed Decades 1/5
D	15.0/18.5	0/0	111,000	13	115/50
G1	20.4/24.2	5,000/5,000	238,000	27	85/55
J	14.4/15.6	0/0	74,000	9	103/42
F	17.0/23.3	2,690/2,760	257,000	30	93/43
G(PA)	20.4/23.7	5,000/5,000	238,000	27	83/43
K	17.0/19.0	1,420/1,490	100,000	12	92/43
L	17.0/21.4	2,500/2,570	158,000	18	94/43
C	15.5/21.2	2,690/2,760	316,000	36	65/40
E	16.5/21.7	2,500/2,570	185,000	21	97/47
I	14.8/15.5	0/0	68,000	8	95/18
H1	13.8/13.9	0/0	55,000	6	76/30
H	13.9/14.0	0/0	55,000	6	76/31
A(CD)	16.0/16.8	550/550	466,000	54	71/14

1/ Current inventory for semiprimitive opportunity is 869,200 acres.

Table B-35 (Continued)
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns (Decade 1 - Planned, Decade 5 - Projected)
(Outputs Other Than Nonperiodic Are Average Annual Outputs)

Alternative	Range Management: Decades 1/5 (Thousand AUM/Yr)	Big-Game Habitat: Development in Roadless Habitat[2] (Acres)	Big-Game Habitat: Development in Roadless Habitat[2] (Percent)	Minerals Management: Acres Withdrawn
D	43/52	503,162	100	926,188
G1	43/48	376,316	75	926,188
J	42/46	284,057	56	1,145,293
F	42/46	252,643	50	926,188
G(PA)	43/48	376,316	75	926,188
K	42/46	330,196	66	1,099,154
L	42/47	330,196	66	1,020,391
C	42/42	172,743	34	926,188
E	40/41	503,162	100	926,188
I	42/46	176,545	35	1,252,805
H1	42/45	0	0	1,429,350
H	42/45	0	0	1,429,350
A(CD)	43/51	424,399	84	926,188

2/ Current roadless area big-game habitat is 503,162 acres (excludes wilderness).

Table B-35 (Continued)
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns (Decade 1 - Planned, Decade 5 - Projected)
(Outputs Other Than Nonperiodic Are Average Annual Outputs)

	Visual Quality		Community Stability Decades 1/5		
Alter-native	Retention (Acres Managed)	Partial Retention	Changes in Jobs (Person-Year)	Changes in Income ($Million)	Returns to State ($Million)
D	0	0	799/2115	17.3/45.5	5.7/22.6
G1	4,803	122,546	195/2438	3.5/52.9	4.0/25.1
J	0	0	527/1650	11.2/34.6	5.1/19.1
F	4,803	123,578	323/1726	6.4/36.3	4.6/19.7
G(PA)	4,803	122,546	159/1739	2.7/36.7	3.9/19.6
K	4,803	123,300	90/1595	1.0/33.2	3.9/19.4
L	4,803	123,641	90/1595	1.0/33.2	3.9/19.4
C	4,803	109,198	-280/1558	-7.5/32.3	2.8/18.3
E	4,803	123,582	432/1964	8.8/41.8	4.3/20.4
I	0	0	336/1280	6.9/26.1	4.6/16.2
H1	0	0	-85/1485	-2.1/30.8	3.4/17.9
H	0	0	-46/1003	-2.4/19.5	3.4/14.1
A(CD	23	14,348	-186/840	-5.0/15.8	3.5/13.1

Table B-36
Comparison of Alternatives for Response to Major Issues and Concerns
(Decade 1 - Planned; Decade 5 - Projected)

Issue/Concern	Current Direction A	C
1. Timber Harvest Levels	84 MMBF in 1st decade. 143 MMBF in 5th decade.	74 MMBF in 1st decade. 197 MMBF in 5th decade.
2. Timber-Anadromous Fishery	Maintain water quality to support a minimum harvestable fishery population.	Maintain water quality to support a fishery population that exceeds minimum harvestable levels.
3. Roadless/ Wilderness	78,763 acres are recommended for roadless area management.	330,419 acres are recommended for roadless area management.
4. Wildlife (Elk) Demands	Little emphasis is placed on managing winter range for elk. 550 acres of winter range burned annually.	Emphasis on winter range habitat management 2,700 to 3,200 acres of winter range burned annually.
5. Motorized vs. Nonmotorized Recreation	997,075 acres will be managed for semi-primitive non-motorized or primitive recreation.	1,223,565 acres will be managed for semiprimitive non-motorized or primitive recreation.
6. Recreation Uses	Roaded natural recreation opportunities will be emphasized.	Semiprimitive recreation opportunities will be emphasized.
7. Road Standards	Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
8. Special Recreation Areas	Quality is maintained in all alternatives.	Quality is maintained in all alternatives.
9. Livestock Grazing	43,000 AUMs in 1st decade. 51,000 AUMs in 5th decade.	42,000 AUMs in 1st decade. 42,000 in 5th decade.

D	E	F
157 MMBF in 1st decade. 242 MMBF in 5th decade.	127 MMBF in 1st decade. 228 MMBF in 5th decade.	116 MMBF in 1st decade. 206 MMBF in 5th decade.
Maintain water quality to support a minimum harvestable fishery population.	Maintain water quality to support a fishery population that exceeds minimum harvestable levels.	Maintain water quality to support a minimum harvestable fishery population.
No areas are recommended for roadless or wilderness management.	No areas are recommended for roadless or wilderness management.	250,519 acres are recommended for roadless management.
No emphasis is placed on managing winter range for elk.	Emphasis on winter range habitat management. 2,500 to 2,900 acres of winter range burned annually.	Emphasis on winter range habitat management. 2,700 to 3,200 acres of winter range burned annually.
926,188 acres remain wilderness. These lands provide primitive recreation.	926,188 acres remain wilderness. These lands provide primitive recreation.	1,151,655 acres will be managed for semiprimitive non-motorized or primitive recreation.
Roaded natural recreation opportunities will be emphasized.	Roaded natural recreation opportunities will be emphasized.	Semiprimitive recreation opportunities will be emphasized.
Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
Quality is maintained in all alternatives.	Quality is maintained in all alternatives.	Quality is maintained in all alternatives.
43,000 AUMs in 1st decade. 52,000 AUMs in 5th decade.	40,000 AUMs in 1st decade. 41,000 AUMs in 5th decade.	42,000 AUMs in 1st decade. 46,000 AUMs in 5th decade.

Table B-36 (Continued)
Comparison of Alternatives for Response to Major Issues and Concerns (Decade 1 - Planned; Decade 5 - Projected)

Issue/Concern	Current Direction A	C
10. Timber-Wildlife	An emphasis is placed on wildlife by prescribing high summer range objectives for elk.	An emphasis is placed on wildlife by prescribing high summer range objectives for elk.
11. Minerals	79 percent of high/very high mineral potential lands remain open to mineral entry.	79 percent of high/very high mineral potential land remain open to mineral entry.
12. Fire Management	All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
13. Visual Quality	Retention and partial retention VQOs are prescribed. Harvest occurs on 14,000 acres of these areas.	Retention and partial retention VQOs are prescribed. Harvest occurs on 114,000 acres of these areas.

D	E	F
No emphasis is placed on elk summer range management.	No emphasis is placed on elk summer range management.	An emphasis is placed on wildlife by prescribing high summer objectives for elk.
79 percent of high/very high mineral potential lands remain open to mineral entry.	79 percent of high/very high mineral potential lands remain open to mineral entry.	79 percent of high/very high mineral potential land remain open to mineral entry.
All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
No retention or partial retention VQOs are prescribed.	Retention and partial retention VQOs are prescribed. Harvest occurs on 128,000 acres of these areas.	Retention and partial retention VQOs are prescribed. Harvest occurs on 128,000 acres of these areas.

Table B-36 (Continued)
Comparison of Alternatives for Response to Major Issues Concerns (Decade 1 - Planned; Decade 5 - Projected)

Issue/Concern	Preferred Alternative G	G1
1. Timber Harvest Levels	108 MMBF in 1st decade. 210 MMBF in 5th decade.	111 MMBF in 1st decade. 275 MMBF in 5th decade.
2. Timber-Anadromous Fishery	Maintain water quality to support a fishery population that exceeds minimum harvestable levels.	Maintain water quality to support a fishery population that exceeds minimum harvestable levels.
3. Roadless/ Wilderness	126,846 acres are recommended for roadless area management.	126,846 acres are recommended for roadless area management.
4. Wildlife (Elk) Demands	Emphasis on winter range habitat management. 5,000 acres of winter range burned annually.	Emphasis on winter range habitat management. 5,000 acres of winter range burned annually.
5. Motorized vs. Nonmotorized Recreation	1,040,349 acres will be managed for semiprimitive non-motorized or pimitive recreation.	1,040,349 acres will be managed for semiprimitive non-motorized or primitve recreation.
6. Recreation Uses	Semiprimitive recreation opportunities will be emphasized.	Semiprimitive recreation opportunities will be emphasized.
7. Road Standards	Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
8. Special Recreation Areas	Quality is maintained in all alternatives	Quality is maintained in all alternatives.
9. Livestock Grazing	43,000 AUMs in 1st decade. 48,000 AUMs in 5th decade.	43,000 AUMs in 1st decade. 48,000 AUMs in 5th decade.

H	H1
94 MMBF in 1st decade. 150 MMBF in 5th decade.	89 MMBF in 1st decade. 197 MMBF in 5th decade.
Maintain water quality to support a minimum harvestable fishery population.	Maintain water quality to support a minimum harvestable fishery population.
503,162 acres are recommended for wilderness management.	503,162 acres are recommended for wilderness management.
No emphasis is placed on managing winter range for elk.	No emphasis is placed on managing winter range for elk.
1,429,350 acres are classified wilderness. These lands provide primitive recreation opportunities.	1,429,350 acres are classified wilderness. These lands provide primitive recreation opportunities.
Primitive recreation opportunities will be emphasized.	Primitive recreation opportunities will be emphasized.
Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
Quality is maintained in all alternatives.	Quality is maintained in all alternatives.
42,000 AUMs in 1st decade. 45,000 AUMs in 5th decade.	42,000 AUMs in 1st decade. 45,000 AUMs in 5th decade.

Table B-36 (Continued)
Comparison of Alternatives for Response to Major Issues and Concerns (Decade 1 - Planned; Decade - Projected)

Issue/Concern	Preferred Alternative G	G1
10. Timber-Wildlife	An emphasis is placed on wildlife by prescribing high summer range objectives for elk.	An emphasis is placed on wildlife by prescribing high summer range objectives for elk.
11. Minerals	79 percent of high/very high mineral potential lands remains open to mineral entry.	79 percent of high/very high mineral potential lands remains open to mineral entry.
12. Fire Management	All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
13. Visual Quality	Retention and partial retention VQOs are prescribed. Harvest occurs on 127,000 acres of these areas.	Retention and partial retention VQOs are prescribed. Harvest occurs on 127,000 acres of these areas.

H	H1
No emphasis is placed on elk summer range management outside of wilderness for elk.	No emphasis is placed on elk summer range management outside of wilderness for elk.
54 percent of high/very high mineral potential lands remains open to mineral entry.	54 percent of high/very high mineral potential lands remains open to mineral entry.
All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
No retention or partial retention VQOs are prescribed.	No retention or partial retention VQOs are prescribed.

Table B-36 (Continued)
Comparison of Alternatives for Response to Major Issues and Concerns (Decade 1 - Planned; Decade 5 - Projected)

Issue/Concern	I	J
1. Timber Harvest Levels	123 MMBF in 1st decade. 176 MMBF in 5th decade.	137 MMBF in 1st decade. 205 MMBF in 5th decade.
2. Timber-Anadromous Fishery	Maintain water quality to support a minimum harvestable fishery population.	Maintain water quality to support a minimum harvestable fishery population.
3. Roadless/ Wilderness	326,617 acres are recommended for wilderness management.	219,105 acres are recommended for wilderness management.
4. Wildlife (Elk) Demands	No emphasis is placed on managing winter or summer range for elk.	No emphasis is placed on managing winter or summer range for elk.
5. Motorized vs. Nonmotorized Recreation	1,252,805 acres are roadless or wilderness. These lands provide primitive recreation opportunities.	1,145,293 acres are roadless or wilderness. These lands provide primitive recreation opportunities.
6. Recreation Uses	Primitive recreation opportunities will be emphasized.	Primitive recreation opportunities will be emphasized.
7. Road Standards	Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
8. Special Recreation Areas	Quality is maintained in all alternatives.	Quality is maintained in all alternatives.
9. Livestock Grazing	42,000 AUMs in 1st decade. 46,000 AUMs in 5th decade.	42,000 AUMs in 1st decade. 46,000 AUMs in 5th decade.

K	L
102 MMBF in 1st decade. 206 MMBF in 5th decade.	102 MMBF in 1st decade. 206 MMBF in 5th decade.
Maintain water quality to support a fishery population that exceeds minimum harvestable levels.	Maintain water quality to support a fishery population that exceeds minimum harvestable levels.
172,966 acres are recommended for wilderness management.	Recommendations: 94,203 acres to wilderness; 78,763 acres to management without roads.
Emphasis on winter range habitat management. 1,350 to 1,500 acres of winter range are burned annually.	Emphasis on winter range habitat management. 2,500 to 2,900 acres of winter range are burned annually.
1,099,154 acres are wilderness. These lands provide primitive recreation opportunities.	1,091,278 acres will be managed for semiprimitive non-motorized or primitive recreation.
Primitive and roaded natural recreation opportunities will be emphasized.	Semiprimitive recreation opportunities will be emphasized.
Standards will be consistent with overall resource objectives.	Standards will be consistent with overall resource objectives.
Quality is maintained in all alternatives.	Quality is maintained in all alternatives.
42,000 AUMs in 1st decade. 46,000 AUMs in 5th decade.	42,000 AUMs in 1st decade. 47,000 AUMs in 5th decade.

Table B-36
(Continued)

Comparison of Alternatives for Response to Major Issues and Concerns (Decade 1 - Planned; Decade 5 - Projected)

Issue/Concern	I	J
10. Timber-Wildlife	No emphasis is placed on elk summer range management outside of wilderness.	No emphasis is placed on elk summer range management outside of wilderness.
11. Minerals	61 percent of high/very high mineral potential lands remain open to mineral entry.	68 percent of high/very high mineral potential lands remain open to mineral entry.
12. Fire Management	All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
13. Visual Quality	No retention or partial retention VQOs are prescribed.	No retention or partial retention VQOs are prescribed.

K	L
An emphasis is placed on wildlife by prescribing high summer range objectives for elk.	An emphasis is placed on wildlife by prescribing high summer range objectives for elk.
72 percent of high/very high mineral potential lands remain open to mineral entry.	73 percent of high/very high mineral potential lands remain open to mineral entry.
All alternatives have the same emphasis on fire management.	All alternatives have the same emphasis on fire management.
Retention and partial retention VQOs are prescribed. Harvest occurs on 128,000 acres of these areas.	Retention and partial retention VQOs are prescribed. Harvest occurs on 128,000 acres of these areas.

2. Economic Tradeoffs

This discussion identifies the economic consequences of implementing the alternatives by comparing each alternative to the maximum present net value (Max PNV) benchmark (06D) and to at least three other alternatives: the alternative with the next lowest discounted costs, the alternative with the next lowest PNV, and the Current Management Alternative (A). In some cases, alternatives with similar objectives are also compared. The comparisons form the basis for balancing economic tradeoffs with nonpriced resource outputs in selecting the Preferred Alternative.

One measure of the cost of an alternative is the discounted cost which represents the equivalent payment required by the government to implement an alternative. The minimum cost of federal ownership is defined by the minimum level benchmark at $51 million. Table B-37 displays the discounted costs, discounted benefits, and PNV in order of increasing costs. As the timber program and road construction declines, so do PNV and overall costs of the alternatives. By comparing the discounted benefits and costs of an alternative with another alternative with similar goals, the economic consequences of the additional expenditures can be compared to the additional nonpriced benefit values.

Table B-37
Alternatives in Order of Increasing Discounted Costs[1]

Alternative	Present Value Costs		Present Value Benefits		Present Net Value	
	$ Million	Change	$ Million	Change	$ Million	Change
Min Level	51	-	376	-	325	-
A(CD)	291	240	1097	721	806	481
H	311	20	1138	41	822	16
H1	313	2	1191	53	878	56
C	345	32	1289	98	944	66
I	360	15	1275	-14	915	29
G(PA)	362	2	1349	74	986	71
K	364	2	1344	-5	980	-6
L	364	0	1341	-3	977	-3
G1	381	17	1448	107	1067	90
F	385	4	1390	-58	1005	-62
J	391	6	1404	14	1013	8
E	398	7	1322	-82	923	-90
D	418	20	1532	210	1113	190
Max PNV	462	44	1582	50	1119	6

1/ All costs in millions of 1978 dollars

Another measure of the cost of an alternative is the change in PNV between alternatives. The maximum net value of the Forest is defined by the Max PNV benchmark (06D) as $1,119 million. The difference between $1,119 million and the PNV of an alternative represents the foregone investment opportunity to the government for implementing that alternative, or the opportunity cost. Table B-38 displays the present net value, present value benefits, and present value costs for each alternative.

Table B-38
Present Net Value, Present Value Benefits, and Present Value Costs by Alternative[1/2/]
($ million)

Alternative	Present Net Value	Present Value Benefits				Present Value Costs				
		Timber	Range	Rec/ Wildlife	Other	Timber	Roads	Range	Rec/ Wildlife	Other
Max PNV	1119	1223	12	348	<1	116	233	5	12	96
D	1113	1158	12	362	<1	104	201	5	12	96
G1	1067	1036	12	400	<1	82	178	5	20	96
J	1013	1024	12	368	<1	95	181	5	14	96
F	1005	1000	12	379	<1	89	179	5	16	96
G(PA)	986	936	12	400	<1	77	165	5	20	96
K	980	939	12	393	<1	78	169	5	16	96
L	977	939	12	390	<1	78	169	5	16	96
C	944	893	12	384	<1	76	152	5	16	96
E	923	955	12	355	<1	93	189	5	15	96
I	915	890	12	374	<1	83	162	5	14	96
H1	878	818	12	361	<1	71	126	5	15	96
H	822	760	12	361	<1	71	124	5	15	96
A(CD)	806	715	12	370	<1	57	120	5	13	96

1/ All costs in millions of 1978 dollars

2/ Note: The direct comparison of individual resource benefits and costs is misleading because not all costs are allocated to each resource, i.e., the "other" cost category contains unseparable joint costs associated with several resources.

A summary of net public benefits is displayed in Table B-39. Following this table is a discussion of changes in net subjective value (NSV) for each alternative.

Table B-39
Summary of Net Public Benefits (Planned in Decade 1; Projected in Other Decades)

Alternatives (In Order of Descending PNV)	D	G1	J	F	G(PA)	K
Priced Benefits						
PNV ($ million)	1113.434	1067.249	1013.541	1005.246	986.291	980.091
Opportunity Cost ($ million)	6.244	52.429	106.137	114.432	133.387	139.587
Nonpriced Benefits						
Community Stability - Change in potential employment and response to parameter of economic stability						
Person-Yrs[1]	799	195	527	323	159	90
Percent	39	9	26	16	8	4
T&E Species - Development in roadless habitat						
Thousand (M) Acres[2]	503	376	284	253	376	330
Percent	100	75	56	50	75	66
Cultural Resources - Acres considered for clearing & average program for first 5 decades[3]						
Inventory (M Acres)	1056/	925/	896/	896/	925/	925/
(Percent)	26	11	7	7	11	11
Program (M Acres)	9489/	8587/	8258/	8015/	7712/	7712/
(Percent)	111	91	84	78	71	71
Semiprimitive Recreation Opportunity - Acres available for semiprimitive rec.						
Thousand Acres[4]	111	238	74	257	238	100
Percent	13	27	9	30	27	12
Big-Game Habitat - Development in roadless habitat						
Thousand Acres[5]	503	376	284	253	376	330
Percent	100	75	56	50	75	66

See footnotes at end of Table.

L	C	E	I	H1	H	A(CD)
976.879	944.093	923.465	915.684	877.665	822.054	806.534
142.799	175.585	196.213	203.994	242.013	297.624	313.144
90	-280	432	336	-85	-46	-186
4	-14	21	16	-4	-2	-9
330	173	503	177	0	0	424
66	34	100	35	0	0	84
925/	837/	974/	764/	666/	666/	657/
11	0	17	-9	-20	-20	-21
7712/	7486/	10324/	7681/	7983/	6862/	7272/
71	66	129	71	77	52	62
158	316	185	68	55	55	466
18	36	21	8	6	6	54
330	173	503	177	0	0	424
66	34	100	35	0	0	84

Table B-39 (Continued)
Summary of Net Public Benefits (Planned in Decade 1; Projected in Other Decades)

Alternatives (In Order of Descending PNV)	D	G1	J	F	G(PA)	K
VQO - Acres of timber harvest with VQO of retention or partial retention						
Thousand Acres[6]	0	127	0	128	127	128
Percent	0	35	0	35	35	35
Anadromous Fishery Goals - Comparison of habitat potential minimum harvestable habitat parameter						
Percent	72	87	74	76	87	87
Comparison[7]	A	B	A	A	B	B
Old Growth - Percent of old Growth Forestwide						
Percent	16	23	28	27	35	27
Wilderness - Thousand Acres Proposed	0	0	219	0	0	173

1/ Change from Base Year (1980) Forest resource-related employment of 2,065 person-years.
2/ Current Roadless Area - T&E Habitat is 503,162 acres (excludes wilderness).
3/ Current inventory is based on surveying 835,280 acres suitable for timber inventory at approximately 4500 acres per year.
4/ Current inventory is 869,200 acres (excludes wilderness).
5/ Current roadless area - big-game habitat is 503,162 acres (excludes wilderness).
6/ Current inventory is 362,600 acres.
7/ A - Meets harvestable surplus habitat potential.
B - Exceeds harvestable surplus habitat potential.
Current potential is 86 percent of biological potential.

L	C	E	I	H1	H	A(CD)
128	114	128	0	0	0	14
35	32	35	0	0	0	4
87	84	81	75	75	76	78
B	B	B	A	A	A	A
27	36	26	37	40	49	52
94	0	0	327	503	503	0

The following discussion identifies the change in each net subjective value for each alternative:

a. Alternative A (Current Direction)

PNV: $807 million
Opportunity Cost: $313 million

Alternative A has an opportunity cost of $313 million which is due to increasing anadromous fishery habitat potential from minimum viable to minimum harvestable levels, continuing the direction outlined in existing land management plans, and imposing a ceiling on appropriated budget levels of $10.1 million annually.

Under this alternative, market values are emphasized, but because of the budget ceiling, present net value is below that of the other alternatives.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be decreased by 186 jobs in the first decade below the base year (1980) level, a 9-percent reduction. This is the second largest decrease in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels stabilize in the second decade along with timber harvest levels (150 million board feet (MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 424,399 acres, 84 percent of the inventoried roadless area on the Forest to roaded development. The potential for human intrusion in T&E species habitat will increase, and there will be a greater need for coordination between timber harvest and habitat management. Only 78,763 acres would remain unroaded.

(3) Cultural Resources

This alternative decreases the area considered for cultural resource inventory to 657,000 acres, a 21-percent change. This is the largest decrease of all alternatives and would cause a less thorough analysis of cultural sites than the current program. However, the average annual inventory program projected for the first 5 decades would be 7,272 acres, 62 percent above the current level. This increase is the tenth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the highest opportunity for semiprimitive recreation; 54 percent (466,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is in direct response to the reduction in lands suitable for timber harvest resulting from the constraints imposed in this alternative. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness

could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative A would eventually open 424,399 acres, 84 percent of the inventoried roadless area, to roaded development; and this would have a substantial impact on big game. A more thorough program of timber harvest and habitat management coordination for big game would be needed. Only 78,763 acres would remain unroaded.

(7) Visuals

Four percent, or 14,000 acres, of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 78 percent of biological potential, the fourth highest level of all alternatives. This is a result of individual drainage objectives to protect key fishery habitat. This level of fishery satisfies the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 52 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the highest level of all alternatives, requires the least coordination between timber harvest and habitat management activities, and provides for suitable habitat to maintain old-growth-dependent species. The large acreage is a result of the decrease in acres suitable for timber harvest.

(10) Wilderness

No new wilderness is recommended in this alternative.

b. Alternative C

PNV: $944 million
Opportunity Cost: $176 million

Alternative C has an opportunity cost of $176 million which results from providing high levels of nonmarket outputs by excluding timber management in specific roadless areas, and by establishing high fishery and wildlife goals.

Under this alternative, nonmarket values are emphasized and present net value is decreased primarily because of the reduction in timber harvest.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be decreased by 280 jobs in the first decade below the base year (1980) level, a 14-percent reduction. This is the largest decrease in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels in the second decade are projected to show substantial increase primarily as a result of increases in timber harvest levels and Forest Service expenditures, but these increases are offset by long-range stability in timber harvest levels (197 MMBF) by the third decade.

(2) T&E Species

This alternative opens 172,743 acres, 34 percent of the inventoried roadless area on the Forest to roaded development. The potential for human intrusion will increase, and there will be a greater need for coordination between timber harvest and habitat management. However, 330,419 acres would remain unroaded, and would minimize the probability of conflict.

(3) Cultural Resources

This alternative maintains the area considered for cultural resource inventory at 837,000 acres, approximately the current situation, and would maintain the thoroughness of the existing analysis of cultural sites. However, the average annual inventory program for the first 5 decades would be 7,486 acres, 66 percent above the current level. This increase is the ninth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the second highest opportunity for semiprimitive recreation; 36 percent (316,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This results from emphasizing fishery, wildlife, and recreation opportunities in specific inventoried roadless areas. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative C would eventually open 172,743 acres, 34 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 330,419 acres would remain unroaded, which minimizes the probability of conflict.

(7) Visuals

Thirty-two percent, or 114,000 acres, of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 84 percent of biological potential under this alternative, the second highest level of all alternatives. This is a result of individual drainage objectives and land allocations to protect key fishery habitat. This level of fishery exceeds the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 36 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the fifth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No additional wilderness is recommended in this alternative.

c. Alternative D

PNV: $1,113 million
Opportunity Cost: $6 million

Alternative D has the lowest opportunity cost of any alternative at $6 million. This is a result of maximizing market outputs while managing other resources at economically and environmentally feasible levels.

Market values are emphasized by maximizing timber outputs.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be increased by 799 jobs in the first decade above the base year (1980) level, a 39-percent increase. This is the largest increase in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels in the second decade show substantial increase primarily as a result of increases in timber harvest levels and Forest Service expenditures, but these increases are offset by long range stability in timber harvest levels (242 MMBF) by the third decade.

(2) T&E Species

This alternative opens all of the inventoried roadless areas on the Forest to roaded development. The potential for human intrusion in T&E species habitat will definitely increase, and the highest need for coordination between timber harvesting and habitat management will be required.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 1,056,000 acres, a 26-percent change. This is the largest increase of all alternatives and would provide for more thorough analysis of cultural sites than the current program. The average annual inventory program for the first 5 decades would be 9,489 acres, 111 percent above the current level. This increase is the second highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the seventh highest opportunity for semiprimitive recreation; 13 percent (111,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative D would eventually open all of the inventoried roadless areas to roaded development, and would have the greatest impact on big game of any alternative. An intense program of timber harvest and habitat management coordination would be needed.

(7) Visuals

All of the inventoried sensitive VQO areas that have prescriptions for timber harvest with retention or partial retention VQOs are harvested in this alternative. This is the most significant impact of all alternatives. However, this alternative does meet the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 72 percent of biological potential, the lowest level of all alternatives. This is a result of maximizing market outputs Forestwide, although habitat is still protected by using individual drainage objectives to protect key fishery. This level of fishery meets the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, only 16 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the second lowest level of all alternatives, and will require the highest level of coordination between timber harvest and habitat management activities. It is questionable whether this alternative will protect suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No additional wilderness is recommended in this alternative.

d. Alternative E

PNV: $923 million
Opportunity Cost: $196 million

Alternative E has an opportunity cost of $196 million. This is due to an objective of trying to simultaneously achieve the Forest's RPA targets outlined in the Regional Guide. Under this alternative, neither market nor nonmarket values are emphasized as a result of trying to achieve assigned resource outputs.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be increased by 432 jobs in the first decade above the base year (1980) level, a 21-percent increase. This is the third largest increase in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels in the second and third decades show a substantial increase primarily as a result of increases in timber harvest levels and Forest Service expenditures, but these increases are offset by long-range stability in timber harvest levels (228 MMBF) by the fourth decade.

(2) T&E Species

This alternative opens all of the inventoried roadless areas on the Forest to roaded development. The potential for human intrusion in T&E species habitat will definitely increase, and the highest need for coordination between timber harvesting and habitat management will be required.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 974,000 acres, a 17-percent change. This is the second largest increase of all alternatives and would provide for more thorough analysis of cultural sites than the current program. The average annual inventory program for the first 5 decades would be 10,324 acres, 129 percent above the current level. This increase is the highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the fifth highest opportunity for semiprimitive recreation; 21 percent (185,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative E would eventually open all of the inventoried roadless areas to roaded development, and would have the most substantial impact on big game of any alternative. A more thorough program of timber harvest and habitat management coordination would be needed.

(7) Visuals

Thirty-five percent, or 128,000 acres of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 81 percent of biological potential under this alternative, the third highest level of all alternatives. This is a result of individual drainage objectives to protect key fishery habitat at levels which exceed minimum harvestable populations.

(9) Old-Growth Habitat

Under this alternative, 26 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the ninth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No new wilderness is recommended in this alternative.

e. Alternative F

PNV: $1,005 million
Opportunity Cost: $114 million

Alternative F has an opportunity cost of $114 million, which is a result of emphasizing fishery, wildlife, and recreation resources while maintaining a minimum level of timber production.

Under this alternative, nonmarket benefits are emphasized and PNV is reduced as a result of restricting timber harvest in specific roadless areas.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would increase by 323 jobs in the first decade above the base year (1980) level, a 16 percent increase. This is the fifth largest increase in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels stabilize in the second decade along with timber harvest levels (206 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 252,643 acres, 50 percent of the inventoried roadless area on the Forest, to roaded development. The potential for human intrusion in T&E species habitat will increase, and there will be a greater need for coordination between timber harvest and habitat management. However, 250,519 acres would remain unroaded. These areas would require only limited coordination.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 896,000 acres, a 7-percent change. This is the fourth largest increase of all alternatives and would provide for a more thorough analysis of cultural sites than the current program. The average annual inventory program for the first five decades would be 8,015 acres, 78 percent above the current level. This increase is the fifth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the third highest opportunity for semiprimitive recreation; 30 percent (257,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is a result of emphasizing fishery, wildlife, and recreation opportunities in specific inventoried roadless areas. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative F would eventually open 252,643 acres, 50 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 250,519 acres would remain unroaded, requiring only limited coordination.

(7) Visuals

Thirty-five percent, or 128,000 acres of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 76 percent of biological potential under this alternative, the fifth highest level of all alternatives. This is a result of individual drainage objectives to protect key fishery habitat. This level of fishery meets the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 27 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the eighth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No new wilderness is recommended in this alternative.

f. Alternative G (Preferred Alternative)

PNV: $986 million
Opportunity Cost: $133 million

Alternative G has an opportunity cost of $133 million which is a result of emphasizing fishery and wildlife resources while still providing a high level of market resources.

Under this alternative, PNV is reduced as a result of restricting timber harvest in specific roadless areas and implementing high fishery and wildlife objectives.

Following is a summary of the major nonpriced outputs in this alternative.

(1) Community Stability

Potential employment in the regional area would increase by 159 jobs in the first decade above the base year (1980) level, an 8-percent increase. This represents little change from the present situation and is within the parameter for rapid change. Employment levels stabilize in the fourth decade along with timber harvest levels (210 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 376,316 acres, 75 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvest and habitat management because of the increase of human intrusion in T&E species habitat. However, 126,846 acres would remain unroaded and would minimize the conflict.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 925,000 acres, an 11-percent change. This is the third largest increase of all alternatives and would provide for a more thorough analysis of cultural sites than the current program. The average annual inventory program for the first five decades would be 7,712 acres, 71 percent above the current level. This increase is the seventh highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the fourth highest opportunity for semiprimitive recreation; 27 percent (238,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is a result of emphasizing fishery, wildlife, and recreation opportunities in specific inventoried roadless areas. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative G would eventually open 376,316 acres, 75 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 126,846 acres would remain unroaded, requiring only limited coordination.

(7) Visuals

Thirty-five percent, or 127,000 acres of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification

and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is managed at 87 percent of biological potential under this alternative, the highest level of all alternatives. This is a result of individual drainage objectives to protect key fishery habitat. This level of fishery exceeds the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 35 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the sixth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No new wilderness is recommended in this alternative.

g. Alternative G1

PNV: $1,067 million
Opportunity Cost: $52 million

Alternative G1 has an opportunity cost of $52 million which is a result of emphasizing fishery and wildlife resources while still providing a high level of market resources.

Under this alternative, PNV is reduced as a result of restricting timber harvest in specific roadless areas and implementing high fishery and wildlife objectives. However, market outputs are increased over alternative G by allowing timber harvest to depart from the long-term sustained yield capacity level between the fifth and tenth decades.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be increased by 195 jobs in the first decade above the base year (1980) level, a 9-percent increase. This represents little change from the present situation, and is within the parameter for rapid change. Employment levels in subsequent decades show substantial increase, primarily as a result of increases in timber harvest levels and Forest Service expenditures, but they are all within the parameter for rapid change up to and including the long-term sustained yield capacity level of 210 MMBF.

(2) T&E Species

This alternative opens 376,316 acres, 75 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvesting and habitat management because of the increase of human intrusion in T&E species habitat. However, 126,846 acres would remain unroaded, and would minimize the conflict.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 925,000 acres, an 11-percent change. This is the third largest increase of all alternatives and would provide for more thorough analysis of cultural sites than the current program. The average annual inventory program for the first 5 decades would be 8,587 acres, 91 percent above the current level. This increase is the third highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the fourth highest opportunity for semiprimitive recreation; 27 percent (238,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is a result of emphasizing fishery, wildlife, and recreation opportunities outside wilderness. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative G1 would eventually open 376,316 acres, 75 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 126,846 acres would remain unroaded, requiring only limited coordination.

(7) Visuals

Thirty-five percent or 127,000 acres of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is managed at 87 percent of biological potential under this alternative, the highest level of all alternatives. This is the result of individual drainage objectives to protect key fishery habitat. This level of fishery exceeds the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 23 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the tenth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

No new wilderness is recommended in this alternative.

h. Alternative H

PNV: $822 million
Opportunity Cost: $298 million

Alternative H has an opportunity cost of $298 million, a result of maximizing the Forest's wilderness resource by proposing all inventoried roadless areas for wilderness classification.

Under this alternative, market benefits are emphasized outside of wilderness, but PNV is reduced as a result of excluding development in wilderness.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be reduced by 46 jobs in the first decade below the base year (1980) level, a 2-percent reduction. This represents little change from the current situation, and is within the parameter for rapid change. Employment levels stabilize in the second decade along with timber harvest levels (150 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative leaves all inventoried roadless areas unroaded, reducing the potential for human intrusion in T&E Species habitat.

(3) Cultural Resources

This alternative decreases the area considered for cultural resource inventory to 666,000 acres, a 20-percent change. This is the second largest decrease of all alternatives and would provide for less thorough analysis of cultural sites than the current program. However, the average annual inventory program for the first five decades would be 6,862 acres, 52 percent above the current level. This increase is the eleventh highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the eleventh highest opportunity for semiprimitive recreation; 6 percent (55,000 acres) of the current inventoried semiprimitive

acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness, and is an unavoidable consequence of expanding the wilderness acreage on the Forest.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative H would leave all inventoried roadless areas roadless, and would eliminate the need for coordination efforts in these areas.

(7) Visuals

All of the inventoried sensitive VQO areas that have prescriptions for timber harvest with retention or partial retention VQOs are harvested in this alternative. However, this alternative does meet the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 76 percent of biological potential under this alternative, the fifth highest level of all alternatives. This is a result of individual drainage objectives and wilderness recommendations which protect key fishery habitat. This level of fishery meets the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 48 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the second highest level of all alternatives, will require little coordination between timber harvest and habitat management activities, and will provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends all 503,162 acres in the roadless inventory for wilderness. If approved by Congress, the wilderness resource on the Forest would total 1,429,350 acres.

i. Alternative H1

PNV: $878 million
Opportunity Cost: $242 million

Alternative H1 has an opportunity cost of $242 million which is due to the objective of maximizing the Forest's wilderness resource by proposing all roadless areas for wilderness classification.

Under this alternative, market benefits are emphasized outside the wilderness, but PNV is reduced as a result of excluding development in wilderness. However, market outputs are increased over Alternative H by allowing timber harvest to depart from the long-term sustained yield capacity level between the fifth and tenth decades.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be reduced by 85 jobs in the first decade below the base year (1980) level, a 4-percent reduction. This represents little change from the current situation, and is within the parameter for rapid change. Employment levels in subsequent decades show substantial increase primarily as a result of increases in timber harvest levels and Forest Service expenditures. These changes are within the parameter for rapid change, but long-range stability is not attained until the tenth decade.

(2) T&E Species

This alternative leaves all inventoried roadless areas unroaded, reducing the potential for human intrusion in T&E Species habitat.

(3) Cultural Resources

This alternative decreases the area considered for cultural resource inventory to 666,000 acres, a 20-percent change. This is the second largest decrease of all alternatives and would provide for less thorough analysis of cultural sites than the current program. However, the average annual inventory program for the first 5 decades would be 7,983 acres, 77 percent above the current level. This increase is the sixth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the eleventh highest opportunity for semiprimitive recreation; 6 percent (55,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness, and is an unavoidable consequence of expanding the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative H1 would leave all inventoried roadless areas roadless and would eliminate the need for coordination efforts in these areas.

(7) Visuals

All of the inventoried sensitive VQO areas that have allocations for timber harvest with retention or partial retention VQOs are harvested in this alternative. However, the alternative does meet the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 75 percent of biological potential under this alternative, the sixth highest level of all alternatives. This is a result of individual drainage objectives and wilderness recommendations which protect key fishery habitat. This level of fishery meets the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 40 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the third highest level of all alternatives, will require little coordination between timber harvest and habitat management activities, and will provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends all 503,162 acres in the roadless inventory for wilderness classification. If approved by Congress, the wilderness resource on the Forest would total 1,429,350 acres.

j. Alternative I

PNV: $916 million
Opportunity Cost: $204 million

Alternative I has an opportunity cost of $204 million which is a result of proposing 326,617 acres of roadless areas for wilderness classification.

Under this alternative, market benefits are emphasized outside wilderness but PNV is reduced as a result of excluding development in wilderness.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would increase by 336 jobs in the first decade above the base year (1980) level, a 16-percent increase. This is the fourth largest increase in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels stabilize in the second decade along with timber harvest levels (176 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 176,545 acres, 35 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvest and habitat management. However, 326,617 acres would remain unroaded. These areas would require only limited coordination.

(3) Cultural Resources

This alternative decreases the area considered for cultural resource inventory to 764,000 acres, a 9-percent change. This is the third largest decrease of all alternatives and would provide for a less thorough analysis of cultural sites than the current program. However, the average annual inventory program for the first five decades would be 7,681 acres, 71 percent above the current level. This increase is the eighth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the tenth highest opportunity for semiprimitive recreation; 8 percent (68,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness, and is an unavoidable consequence of expanding the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative I would eventually open 176,545 acres, 35 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 326,617 acres would be allocated to wilderness, requiring only limited coordination.

(7) Visuals

All of the inventoried sensitive VQO areas that have prescriptions for timber harvest with retention or partial retention VQOs are harvested in this alternative. However, this alternative does meet the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 75 percent of biological potential under this alternative, the sixth highest level of all alternatives. This is a result of individual drainage objectives and wilderness recommendations which protect key fishery habitat. This level of fishery meets the management objective

of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 37 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the fourth highest level of all alternatives, will require little coordination between timber harvest and habitat management activities, and will provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends 326,617 acres of the roadless inventory for wilderness classification. If approved by Congress, the wilderness resource on the Forest would total 1,252,805 acres.

k. Alternative J

PNV: $1,014 million
Opportunity Cost: $106 million

Alternative J has an opportunity cost of $106 million which is the result of proposing 219,105 acres of roadless areas for wilderness classification and maximizing market outputs outside the classified area.

Under this alternative, market benefits are emphasized outside wilderness and PNV is reduced as a result of excluding development in wilderness.

Following is a summary of the nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be increased by 527 jobs in the first decade above the base year (1980) level, a 26-percent increase. This is the second largest increase in potential employment in the first decade of all alternatives, although it is still within the parameter for rapid change. Employment levels in the second decade show substantial increase primarily as a result of increases in timber harvest levels and Forest Service expenditures, but these increases are offset by long-range stability in timber harvest levels (205 MMBF) by the third decade.

(2) T&E Species

This alternative opens 284,057 acres, 56 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvest and habitat management. However, 219,105 acres would remain unroaded. These areas would require only limited coordination.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 896,000 acres, a 7-percent change. This is the fourth largest increase of all

alternatives and would provide for more thorough analysis of cultural sites than the current program. The average annual inventory program for the first five decades would be 8,258 acres, 84 percent above the current level. This increase is the fourth highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the ninth highest opportunity for semiprimitive recreation; 9 percent (74,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness, and is an unavoidable consequence of expanding the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative J would eventually open 284,057 acres, 56 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 219,105 acres would be allocated to wilderness, requiring only limited coordination.

(7) Visuals

All of the inventoried sensitive VQO areas that have prescriptions for timber harvest with retention or partial retention VQOs are harvested in this alternative. However, this alternative does meet the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 74 percent of biological potential under this alternative, the second lowest level of all alternatives. This is a result of individual drainage objectives and wilderness recommendations which protect key fishery habitat. This level of fishery meets the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 28 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the seventh highest level of all alternatives, will require little coordination between timber harvest and habitat management activities, and will provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends 219,105 acres of the roadless inventory for wilderness classification. If approved by Congress, the wilderness resource on the Forest would total 1,145,293 acres.

1. Alternative K

PNV: $980 million
Opportunity Cost: $140 million

Alternative K has an opportunity cost of $140 million which results from proposing 172,966 acres of inventoried roadless areas for wilderness classification and emphasizing fish and wildlife resources outside of these classified areas.

Under this alternative, PNV is reduced as a result of excluding development in wilderness and implementing high fishery and wildlife goals.

Following is a summary of the major nonpriced outputs in this alternative:

(1) Community Stability

Potential employment in the regional area would be increased by 90 jobs in the first decade above the base year (1980) level, a 4-percent increase. This represents little change from the present situation and is within the parameter for rapid change. Employment levels stabilize in the fourth decade along with timber harvest levels (206 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 330,196 acres, 66 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvest and habitat management. However, 172,966 acres would remain unroaded, requiring only limited coordination.

(3) Cultural Resources

This alternative increases the area considered for cultural resource inventory to 925,000 acres, an 11-percent change. This is the third largest increase of all alternatives and would provide for more thorough analysis of cultural sites than the current program. The average annual inventory program for the first five decades would be 7,712 acres, 71 percent above the current level. This increase is the seventh highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the eighth highest opportunity for semiprimitive recreation; 12 percent (100,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is a result of emphasizing fishery, wildlife, and recreation opportunities outside wilderness. As road systems are developed in

areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative K would eventually open 330,196 acres, 66 percent of the inventoried roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 172,966 acres would be allocated to wilderness, requiring only limited coordination.

(7) Visuals

Thirty-five percent, or 128,000 acres, of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 87 percent of biological potential under this alternative, the highest level of all alternatives. This is a result of individual drainage objectives and wilderness recommendations which protect key fishery habitat. This level of fishery exceeds the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 27 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the eighth highest level of all alternatives. While coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends 172,966 acres of the roadless inventory for wilderness classification. If approved by Congress, the wilderness resource on the Forest would total 1,099,054 acres.

m. Alternative L

PNV: $977 million
Opportunity Cost: $143 million

Alternative L has an opportunity cost of $143 million and is a result of recommending 94,203 acres for wilderness classification and continued roadless management for 78,763 acres. Fishery, wildlife, and recreation resources outside of classified areas are emphasized. Under this alternative, PNV is reduced as a result of excluding development in wilderness, restricting timber harvest in specific roadless areas, and implementing high fishery and wildlife goals.

Following is a summary of the major nonpriced outputs in this alternative.

(1) Community Stability

Potential employment in the regional area would be increased by 90 jobs in the first decade above the base year (1980) level, a 4-percent increase. This represents little change from the present situation and is within the parameter for rapid change. Employment levels stabilize in the fourth decade along with timber harvest levels (206 MMBF) and Forest Service expenditures.

(2) T&E Species

This alternative opens 330,196 acres, 66 percent of the inventoried roadless area on the Forest, to roaded development. This will increase the need for coordination between timber harvest and habitat management. However, 172,966 acres would remain unroaded, requiring only limited coordination.

(3) Cultural Resources

This alternative increases the area considered for cultural inventory to 925,000 acres, an 11-percent change. This is the third largest increase of all alternatives and would provide for a more thorough analysis of cultural sites than the current program. The average annual inventory program for the first five decades would be 7,712 acres, 71 percent above the current level. This increase is the seventh highest overall and would enable a more rapid inventory of potential sites.

(4) Semiprimitive Recreation

This alternative provides the sixth highest opportunity for semiprimitive recreation; 18 percent (158,000 acres) of the current inventoried semiprimitive acres would be assigned to prescriptions which allow semiprimitive recreation opportunities. This is in response to emphasizing fishery, wildlife, and recreation opportunities outside wilderness. As road systems are developed in areas adjacent to wilderness, an increase in access to the wilderness could occur. This could reduce the opportunity for experiencing solitude within the wilderness.

(5) Lifestyles

Traditional lifestyles would be maintained under this alternative.

(6) Big-Game (Elk) Habitat

Alternative L would eventually open 330,196 acres, 66 percent of the roadless area, to roaded development. This would require a more thorough program of timber harvest and habitat management coordination for big game. However, 172,966 acres would remain unroaded or in wilderness, requiring only limited coordination.

(7) Visuals

Thirty-five percent or 128,000 acres of the inventoried sensitive VQO areas have prescriptions for timber harvest in areas that would achieve retention or partial retention VQOs. This is in addition to meeting the objectives for modification and maximum modification in other unclassified areas, as well as preservation in wilderness.

(8) Anadromous Fishery

Anadromous fishery habitat is maintained at 87 percent of biological potential under this alternative, the highest level of all alternatives. This is a result of individual drainage objectives to protect key fishery habitat. This level of fishery exceeds the management objective of maintaining habitat to support a harvestable population of anadromous fish Forestwide.

(9) Old-Growth Habitat

Under this alternative, 27 percent of the Forest is projected to be maintained in old-growth habitat by the end of the planning horizon. This is the eighth highest level of all alternatives, and while coordination between timber harvest and habitat management activities must increase, this alternative does provide for suitable habitat to maintain old-growth-dependent species.

(10) Wilderness

This alternative recommends 94,203 acres of the roadless inventory for wilderness classification. If approved by Congress, the wilderness resource on the Forest would total 1,020,391 acres.

3. Opportunity Costs

The following discussion relates the tradeoffs in resource outputs and appropriate opportunity costs among alternatives.

a. Maximum Present Net Value Benchmark (Max PNV)

PNV: $1,119 million
Opportunity Cost: 0

This benchmark maximizes PNV for the Forest while meeting minimum management requirements for resource protection, precluding timber management from existing wilderness, and harvesting a nondeclining flow of timber. A high level of timber harvest is projected to be scheduled over the 150 years (243 MMBF per year). A moderate amount of elk and livestock forage is produced, no additional wilderness is proposed, and all areas presently roadless would be opened to development.

b. Alternative A (Current Direction)

PNV: $807 million
Opportunity Cost: $313 million

The opportunity cost of Alternative A is $313 million and represents a 28- percent reduction from the maximum PNV benchmark. The foregone value is a result of increasing fishery habitat requirements from minimum viable to minimum harvestable levels and continuing current management direction ($194 million), as well as the impact of constraining the appropriated funding level to $10.1 million annually. As a result of these factors, net timber revenues are reduced 38 percent to $119 million because of the decrease in the long-term sustained yield capacity (LTSYC) to 150 MMBF. This is the lowest level of any alternative because lands suitable for timber harvest are reduced to only 657,000 acres. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $357 million, a 6-percent increase. The increase in these benefits is due to an emphasis on enhancing big-game (elk) habitat through winter range burning of 550 acres per year, and an increase in anadromous fishery habitat potential to levels which would assure minimum harvestable populations (78 percent of habitat potential). While recreation benefits are not significantly affected in this alternative, the capacity for semiprimitive recreation is projected to be reduced to 54 percent of current capacity over the planning horizon. Actual use is expected to increase.

c. Alternative C

PNV: $944 million
Opportunity Cost: $176 million

The opportunity cost of Alternative C is $176 million and represents a 16- percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber harvest on 330,419 acres of roadless areas to provide for high quality fishery, wildlife, and recreation benefits ($157 million), and an increase in anadromous fishery habitat requirements from minimum viable to those which exceed minimum harvestable levels ($13 million). As a result of these factors, net timber revenues are reduced 24 percent to $665 million because of the decrease in LTSYC to 197 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $368 million, a 10 percent increase, the third highest of any alternative. The increase in these benefits is due to an emphasis on enhancing big game (elk) habitat through winter range burning of 2,690 acres per year, protection of summer elk habitat, an increase in anadromous fishery habitat potential to levels which exceed minimum harvestable levels (84 percent of habitat potential), and protection of both wildlife and fishery habitat in areas proposed for roadless management. While recreation benefits are not significantly affected, the capacity for semiprimitive recreation is maintained at 36 percent of the current level over the planning horizon. However, actual use is expected to increase.

d. Alternative D

PNV: $1,113 million
Opportunity Cost: $6 million

The opportunity cost of Alternative D is $6 million and represents a 1-percent reduction from the maximum PNV benchmark. This alternative has the lowest opportunity cost of any alternative because the objective is to maximize market outputs. Large capital investments in the early decades are offset by high timber returns over the planning horizon. Also, the low level of nonmarket resource objectives allows timber activities to be concentrated in the most valuable timber types. The foregone value is a result of an increase in anadromous fishery habitat requirements Forestwide from those which would assure habitat for minimum viable populations to those which assure habitat for minimum harvestable populations . As a result of these factors, net timber revenues are reduced only 2 percent to $853 million because the LTSYC is maintained at 242 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $350 million, a 4-percent increase. The increase is due to an increase in anadromous fishery habitat potential to levels which assure habitat for minimum harvestable populations (72 percent of habitat potential). While recreation benefits are not significantly affected in this alternative, the opportunity for semi-primitive recreation is reduced to 13 percent of current capacity over the planning horizon. Actual use is expected to increase.

e. Alternative E

PNV: $923 million
Opportunity Cost: $196 million

The opportunity cost of Alternative E is $196 million and represents an 18-percent reduction from the maximum PNV benchmark. The foregone value is a result of inefficiencies generated by an attempt to simultaneously achieve Resource Planning Act targets for timber, fish, wildlife, and range, as outlined in the 1980 Regional Guide. This reduction occurs because timber harvests are shifted to less valuable areas. Net timber revenues are reduced 23 percent to $673 million because of the decrease in LTSYC to 228 MMBF. Net range benefits remain the same ($7 million) as in other alternatives. Net benefits for recreation, wildlife, and fishery are $340 million, a 1-percent increase. The minor increase in these benefits is due to an emphasis on providing only moderate increases in habitat for fishery and wildlife. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 21 percent of current capacity over the planning horizon. Actual use is expected to increase.

f. Alternative F

PNV: $1,005 million
Opportunity Cost: $114 million

The opportunity cost of Alternative F is $114 million and represents a 10- percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber harvest on 250,519 acres of roadless areas to provide for high

quality fishery, wildlife, and recreation benefits ($104 million), and an increase in anadromous fishery habitat requirements Forestwide from those which would assure habitat for minimum viable populations to those which would assure habitat for minimum harvestable populations ($6 million). As a result of these factors, net timber revenues are reduced 16 percent to $732 million because of the decrease in LTSYC to 206 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $363 million, an 8 percent increase. The increase in these benefits is due to an emphasis on enhancing big game (elk) habitat through winter range burning of 2,690 acres per year plus protection of summer range habitat, an increase in anadromous fishery habitat potential from minimum viable to levels which meet minimum harvestable populations (76 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed roadless areas. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 30 percent of current capacity over the planning horizon. However, actual use is expected to increase.

g. Alternative G (Preferred Alternative)

PNV: $986 million
Opportunity Cost: $133 million

The opportunity cost of Alternative G is $133 million and represents a 12- percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber harvest on 126,846 acres of roadless areas for high quality fishery, recreation, and wildlife benefits ($82 million) and an increase in anadromous fishery habitat requirements Forestwide from those which would assure habitat for minimum viable populations to those which exceed minimum harvestable levels ($51 million). As a result of these factors, net timber revenues are reduced 21 percent to $694 million because of the decrease in LTSYC to 210 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $380 million, a 13-percent increase and one of the highest level of any alternative. The increase in these benefits is due to an emphasis on enhancing big-game (elk) habitat through winter range burning of 5,000 acres per year plus protection of summer range habitat, an increase in anadromous fishery habitat potential to levels which exceed minimum harvestable (87 percent of habitat potential), and protection of both wildlife and fishery habitat in areas proposed for roadless management. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 27 percent of current capacity over the planning horizon. Actual use is expected to increase.

h. Alternative G1

PNV: $1,067 million
Opportunity Cost: $52 million

The opportunity cost of Alternative G1 is $52 million and represents a 5-percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber harvest on 126,846 acres of roadless areas for high quality

fishery, recreation, and wildlife benefits and an increase in anadromous fishery habitat requirements Forestwide from those which would assure habitat for minimum viable populations to those which exceed minimum harvestable levels. The opportunity cost of this alternative is less than Alternative G because the timber harvest departs from the long-term sustained yield beginning in the fifth decade, which results in higher net timber benefits. As a result of meeting non-market objectives, net timber revenues are reduced 12 percent to $776 million because of the decrease in LTSYC to 210 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $380 million, a 13-percent increase which is one of the highest levels. The increase in these benefits is due to an emphasis on enhancing big-game (elk) habitat through winter range burning of 5,000 acres per year plus protection of summer range habitat, an increase in anadromous fishery habitat potential to levels which exceed minimum harvestable (87 percent of habitat potential), and protection of both wildlife and fishery habitat in areas proposed for roadless management. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 27 percent of current capacity over the planning horizon. Actual use is expected to increase.

i. Alternative H

PNV: $822 million
Opportunity Cost: $298 million

The opportunity cost of Alternative H is $298 million and represents a 27-percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber management on 503,162 acres of roadless lands that are proposed for wilderness classification, and maintaining anadromous fishery habitat potential Forestwide at levels which would assure habitat for minimum harvestable populations. As a result of these factors, net timber revenues are reduced 34 percent to $565 million because of the decrease in LTSYC. This is the second lowest level of any alternative because lands suitable for timber management are reduced to only 655,000 acres. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $346 million, a 3-percent increase. The increase in these benefits is due to an increase in anadromous fishery habitat potential from minimum viable to levels which meet minimum harvestable (76 percent of habitat potential) and protection of both wildlife and fishery habitat in proposed wilderness. These benefits are not higher because market benefits are emphasized on all acres outside wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 6 percent of current capacity over the planning horizon. Actual use is expected to increase.

j. Alternative H1

PNV: $878 million
Opportunity Cost: $242 million

The opportunity cost of Alternative H1 is $242 million and represents a 21-percent reduction from the maximum PNV benchmark. The foregone value is a result of

excluding timber management on 503,162 acres of roadless areas that are proposed for wilderness classification, and maintaining anadromous fishery habitat potential Forestwide at levels which would assure habitat for minimum harvestable populations. The opportunity cost of this alternative is $56 million less than that of Alternative H because the timber harvest departs from the long-term sustained yield capacity beginning in the fifth decade, which results in higher net timber benefits. As a result of these factors, net timber revenues are reduced only 30 percent to $621 million although the LTSYC is the same as Alternative H and is a result of decreasing lands suitable for timber management to 655,000 acres. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $346 million, a 3-percent increase. The increase in these benefits is due to an increase in anadromous fishery habitat potential from minimum viable to levels which meet minimum harvestable (75 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed wilderness. These benefits are not higher because market benefits are emphasized on all acres outside wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 6 percent of current capacity over the planning horizon. Actual use is expected to increase.

k. Alternative I

PNV: $916 million
Opportunity Cost: $204 million

The opportunity cost of Alternative I is $204 million and represents an 18-percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber management on 326,617 acres of roadless lands that are proposed for wilderness classification ($187 million), and maintaining anadromous fishery habitat potential Forestwide at levels that would assure habitat for minimum harvestable populations ($17 million). As a result of these factors, net timber revenues are reduced 26 percent to $645 million because of the decrease in LTSYC to 176 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $360 million, a 7-percent increase. The increase in these benefits is due to an increase in anadromous fishery habitat potential from minimum viable to levels which meet minimum harvestable (75 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed wilderness. These benefits are not higher because market benefits are emphasized on all acres outside wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 8 percent of current capacity over the planning horizon. Actual use is expected to increase.

l. Alternative J

PNV: $1,014 million
Opportunity Cost: $106 million

The opportunity cost of Alternative J is $106 million and represents a 9-percent reduction from the maximum PNV benchmark. The foregone value is a result of

excluding timber management on 219,105 acres of roadless areas that are proposed for wilderness classification ($101 million), and maintaining anadromous fishery habitat potential Forestwide at levels that would assure habitat for minimum harvestable populations ($5 million). As a result of these factors, net timber revenues are reduced 14 percent to $748 million because of the decrease in LTSYC to 205 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUM) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $354 million, a 5-percent increase. The increase in these benefits is due to an increase in anadromous fishery habitat potential from minimum viable to levels which meet minimum harvestable (74 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed wilderness. These benefits are not higher because market benefits are emphasized on all acres outside wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 9 percent of current capacity over the planning horizon. However, actual use is expected to increase.

m. Alternative K

PNV: $980 million
Opportunity Cost: $140 million

The opportunity cost of Alternative K is $140 million and represents a 12- percent reduction from the maximum PNV benchmark. The foregone value is a result of excluding timber management on 172,966 acres of roadless lands that are proposed for wilderness classification ($89 million), and an increase in anadromous fishery habitat potential Forestwide from levels that would assure habitat for minimum viable populations to those which exceed habitat requirements for minimum harvestable levels ($51 million). The increase in fishery habitat potential is consistent with the objective of this alternative to emphasize fish and wildlife resources outside wilderness. As a result of these factors, net timber revenues are reduced 22 percent to $692 million because of the decrease in LTSYC to 206 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $377 million, a 12-percent increase and the largest increase of any alternative. The increase in these benefits is due to an emphasis on enhancing big-game (elk) habitat through winter range burning of 2,650 acres per year plus protection of summer range habitat, an increase in anadromous fishery habitat potential to levels which exceed minimum harvestable (87 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 12 percent of current capacity over the planning horizon. Actual use is expected to increase.

n. Alternative L

PNV: $977 million
Opportunity Cost: $143 million

The opportunity cost of Alternative L is $143 million and represents a 13- percent reduction from the maximum PNV benchmark. The foregone value is a result of

excluding timber management on 172,966 acres of roadless lands that are proposed for wilderness and continued roadless management ($89 million), and an increase in anadromous fishery habitat potential Forestwide from levels that would assure habitat for minimum viable populations to those which exceed habitat requirements for minimum harvestable levels ($54 million). The increase in fishery habitat potential is consistent with the objective of this alternative to emphasize fish and wildlife resources outside wilderness. As a result of these factors, net timber revenues are reduced 22 percent to $692 million because of the decrease in LTSYC to 206 MMBF. Net range benefits remain the same ($7 million) although resource outputs (AUMs) are increased over present levels. Net benefits for recreation, wildlife, and fishery are $374 million, an 11-percent increase, and the second largest increase of any alternative. The increase in these benefits is due to an emphasis on enhancing big game (elk) habitat through winter range burning plus protection of summer range habitat, an increase in anadromous fishery habitat potential to levels which exceed minimum harvestable (87 percent of habitat potential), and protection of both wildlife and fishery habitat in proposed roadless lands and wilderness. While recreation benefits are not significantly affected in this alternative, the opportunity for semiprimitive recreation is reduced to 18 percent of current capacity over the planning horizon. Actual use is expected to increase.

APPENDIX C

ROADLESS AREA EVALUATION

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I. INTRODUCTION

The Nez Perce National Forest presently contains parts of three wildernesses and all of another one, as displayed in Table C-1. The Gospel-Hump Wilderness is completely within the Forest boundaries. Administration of the Selway-Bitterroot Wilderness is shared with three other Forests, and five other Forests contain parts of the Frank Church-River of No Return Wilderness. Those parts of the Hells Canyon Wilderness within Nez Perce Forest boundaries are administered by the Wallowa-Whitman National Forest, as directed by the Chief of the Forest Service.

Table C-1
Classified Wilderness-Nez Perce National Forest (Acres)

Wilderness	Total Acreage	Nez Perce NF Acreage
Selway-Bitterroot	1,340,681	560,088
Gospel-Hump	200,464	200,464
Frank Church-River of No Return	2,361,767	105,736
Hells Canyon	194,132	59,900
Total	4,097,044	926,188

The larger cities within one day's drive of the Nez Perce National Forest are shown in Table C-2.

Table C-2
Regional Population Centers (Number of People)

City	1980 Population	City	1980 Population
Spokane	171,300	Moscow	16,513
Lewiston	27,986	Pullman	23,579
Missoula	33,388	Boise	102,451

Of course, the Forest's wildernesses and four rivers classified under the National Wild and Scenic Rivers Act are of national as well as regional significance, and visitors come to these areas from all parts of the world.

In addition to these classified areas, the Nez Perce National Forest contains 503,162 acres of inventoried roadless areas, all of which are eligible for wilderness classification. These areas have all been considered by Congress in the past; some of them have been considered more than once. Under the provisions of 36 CFR 219.17, all roadless areas on the Forest are again being evaluated and reconsidered for wilderness classification in the current Forest planning process.

Changes were made to the boundaries of two roadless areas between the Draft and Final EIS. The boundaries of the Gospel-Hump and Mallard roadless areas used in the Draft EIS excluded land that contained proposed timber sales and roads. These areas were never developed, so in response to public comments, the

original RARE II boundaries were used and the land analyzed for roadless and wilderness classification in the Final EIS.

Alternatives G and G1 were changed between the Draft and Final EIS with respect to the Silver Creek-Pilot Knob and Rackliff-Gedney roadless areas. In these two alternatives, 13,300 acres of Silver Creek-Pilot Knob will be managed without roads for high quality fisheries, wildlife, water quality, dispersed recreation, and protection of Native American religious values. Approximately 10,600 acres of Rackliff-Gedney (Nez Perce portion) will be managed for timber production with an emphasis on enhancing wildlife habitat. The remaining 44,900 acres will remain undeveloped.

This appendix contains supporting and site-specific information on individual Nez Perce National Forest roadless areas. It is intended to supplement the roadless area descriptions in Chapter III and the roadless area analysis in Chapters II and IV of the Environmental Impact Statement. Each roadless area is discussed as follows:

- An overview of the physical characteristics is given;
- Capability for wilderness is described;
- Resource potentials other than wilderness are listed;
- Need for the area in the National Wilderness System is discussed; and
- Alternatives and environmental consequences are displayed.

The first four discussions are straightforward and need little explanation. Some of the relationships between management decisions affecting the wilderness characteristics of roadless areas and Forest management prescription assignments are summarized here. A detailed discussion of management prescriptions can be found in Appendix B.

In Section E of each individual roadless area analysis in this appendix, a management emphasis table displays acreages for five possible management emphases. These are summaries of management prescriptions applied to roadless areas to meet various management objectives.

The wilderness emphasis excludes any kind of roaded development, and allows ecosystems in the area to be affected by natural processes only. Timber management possibilities are foregone, but wilderness values are enhanced.

The roaded development emphasis is somewhat more complex. All timber prescriptions are included, along with deer-elk winter range prescriptions which allow timber harvest and road construction. Since specific prescriptions for visual quality objectives of retention and partial retention are applied only to areas scheduled for timber harvest in the FORPLAN computer model, these prescriptions are included, along with those for management of riparian areas and those for existing primary range.

Environmental effects of roaded development are shown in the main body of this document. Forestwide minimum management requirements for resource protection are met in each alternative, along with Forestwide mitigation standards. At

least 60 percent mitigation of predicted sediment resulting from road construction will be achieved, and roads will be subject to closures to mitigate effects on big-game habitat.

The portion of each roadless area assigned to roaded development prescriptions under this management emphasis depends on the capability of the lands within the area and the objectives of each alternative. These objectives make different lands available for roaded development in different alternatives; that is, lands where timber harvest may be feasible are assigned to prescriptions that preclude timber harvest and road construction in some alternatives in order to accomplish other objectives, such as maintenance of high quality fish and wildlife habitat and establishment of wilderness. Thus, future wilderness possibilities for each roadless area vary directly with the amount of roaded development in that area in each decade. The management emphasis table shows the extent, but not the location, of the roaded development.

In the unroaded management emphasis, existing roadless acreage is assigned to continued roadless management. Fish, wildlife, and dispersed recreation objectives are highlighted. No new roads are anticipated, but reconstruction of existing roads is permitted where these roads are necessary to meet overall multiple use objectives.

Minimum level management prescriptions are for the most part assigned to lands unsuitable for timber production and/or lands that are not needed or are not cost-efficient in meeting the goals of a particular alternative. These areas are small, usually not contiguous, and not mapped. Fish and wildlife objectives are not specifically addressed. Timber harvest may occur to accomplish objectives other than timber production, such as public safety, control of insect and disease epidemics, and salvage of fire-killed trees.

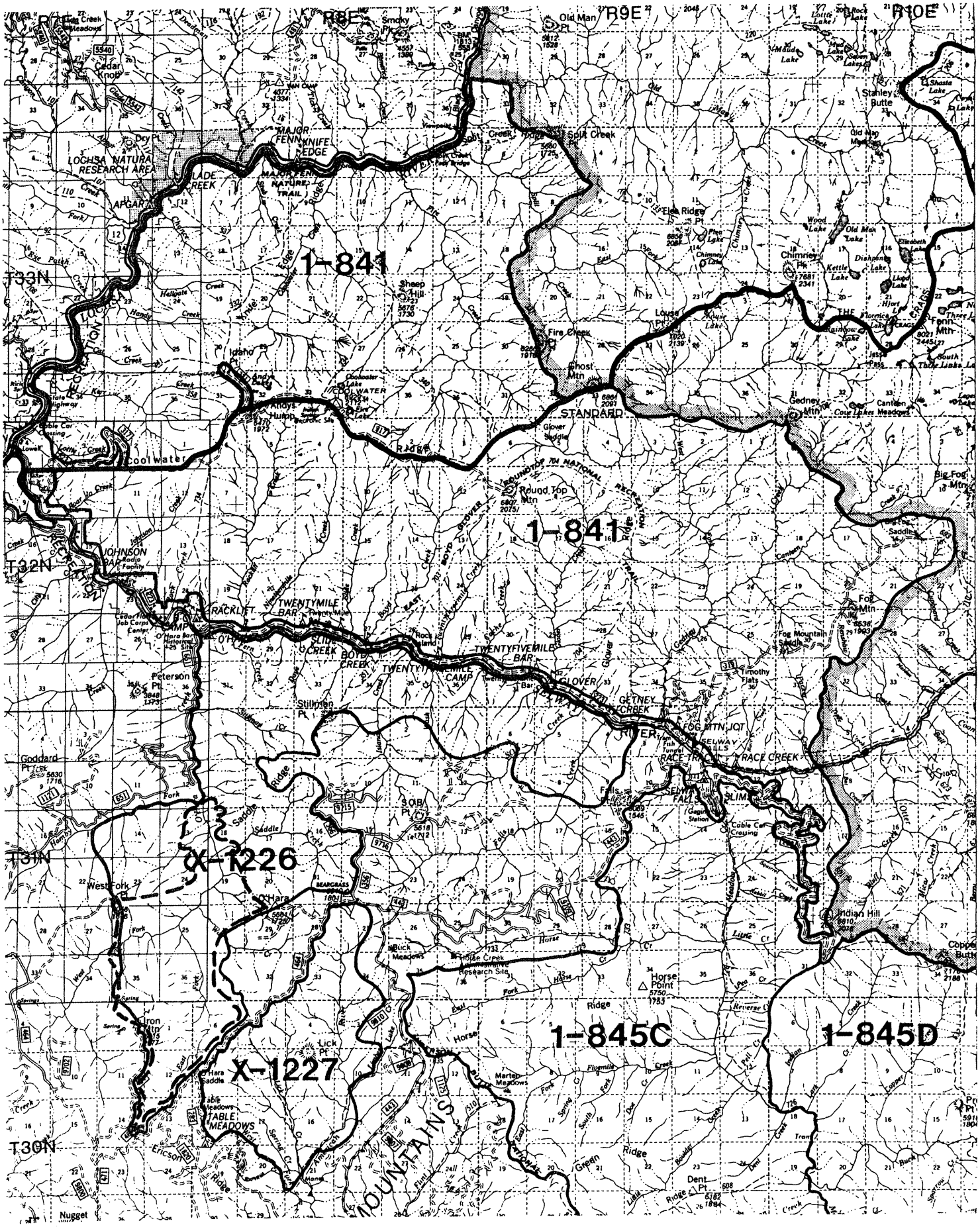
Road construction is permissible for the above objectives and in cases where roads are necessary to meet multiple use objectives on adjacent lands. Since roads may or may not be built, wilderness possibilities may or may not change.

Research Natural Area prescriptions exclude activities which directly or indirectly modify ecological processes. Logging is prohibited, and fire suppression is accomplished by manual means. In effect, wilderness characteristics are retained.

All roadless lands, regardless of acreage, which adjoin existing established wilderness are eligible for wilderness classification. Roadless lands which do not adjoin existing established wilderness must total 5,000 contiguous acres to be considered for wilderness. In the discussions that follow, any roadless area that has large acreages assigned to the roaded development management emphasis and less than 5,000 contiguous acres to unroaded management will be considered fully roaded after 50 years; however, unroaded acreage in any amount that adjoins an existing established wilderness can be added to that wilderness at any time.

II. ROADLESS AREAS

A detailed description and map of each Nez Perce National Forest roadless area follows.


R8E
R9E
R10E
T33N
T32N
T31N
T30N
1-841
1-841
X-1226
X-1227
1-845C
1-845D
LOCHSA NATURAL RESEARCH AREA
MAJOR FENN KNIFE EDGE
MAJOR FENN NATURE TRAIL
LADE CREEK
APGAR
Cedar Knob
Smoky Pk
Old Man Pt
Split Creek
Stanley Butte
Elea Ridge Pt
Chimney Pk
Sheep Hill
Fire Creek Pt
Ghost Mtn
Louse Pt
Fenn Mtn
Gedney Mtn
Idaho Pt
Andys Hump
COOLWATER
Coolwater
STANDARD
Glover Saddle
Round Top Mtn
Big Fog Mtn
JOHNSON BAR
RACKLIFT
TWENTYMILE BAR
SLIDE CREEK
BOYD CREEK
TWENTYFIVEMILE BAR
TWENTYFIVEMILE CAMP
GLOVER
GETNEY CREEK
FOG MTN JCT
RACE CREEK
SELWAY FALLS
SLIM
Fog Mtn
Timothy Flats
Peterson Pt
Stillman Pt
Goddard Pt
West Fork
O'Hara
Buck Meadows
Horse Creek Research Site
Horse Point
Indian Hill
Iron Mtn
Lick Pt
Hara Saddle
TABLE MEADOWS
Marten Meadows
Dent Pt
Nugget
MOUNTAINS

ROADLESS AREA 1226 -- O'HARA-FALLS CREEK

25,326 Acres

A. DESCRIPTION

This area contains all of the O'Hara Creek drainage and the southside breaks of the Selway River for about 10 miles upstream from the mouth of O'Hara Creek. The name of this area is somewhat misleading, since the major part of Falls Creek is no longer included in it.

The area is almost completely surrounded by roads. Principal access is by Road 651, Road 464, and Road 356.

Topography is fairly typical of the lower Selway country -- steep slopes, but not highly dissected. Elevations range from about 1,600 feet on the Selway River to 6,056 feet at West Fork Point and 6,185 feet at Iron Mountain. Vegetation over most of the area is heavy, but the country opens up near the top of Iron Mountain. The west side of O'Hara Creek is heavily timbered with mixed species. Cedar is common in the Creek bottom and lodgepole pine prevails on the ridge tops. On the east side of the area, Saddle Ridge has dense brushfields which are the result of past fires.

A walk up the trail along O'Hara Creek reveals a constantly changing water-course. Small clearings or meadows are found along the first few miles. Large, blackened cedar snags, the result of past fires, are also found in the area. From Saddle Creek on, the trail becomes difficult to find. The tread is almost gone and in some of the wet, shady draws, the ferns are often over the hiker's head. The middle section of the Creek cascades through a steep, rocky gorge, with waterfalls and pools. The canyon opens up in the upper section of the Creek where there are meadows and beaver ponds. If one attempts to walk up the West Fork from its confluence with the main Creek, it is necessary to climb over tall bluffs.

Key attractions of this area include Iron Mountain, a water falls on Island Creek, the Selway Wild and Scenic River, the RNA, and two Threatened and Endangered wildlife species--the gray wolf and bald eagle. All of the 7,000-acre O'Hara Research Natural Area, established in 1980, is contained within this Roadless Area. Three rare plant species and one threatened specie have been located in this RNA.

Major current uses of this area include hiking, hunting, big-game winter range, and Outfitter and Guide businesses.

B. CAPABILITY

This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the Area's availability or need.

1. Natural Integrity and Appearance

Long-term ecological processes are operating with only low impacts from development activities on lands surrounding the area. The trails are generally so bad that in another 10 years without maintenance, natural processes will take over. A few nonindigenous plants will probably remain, however, as the result of heavy stock use on the trails in past years.

In the creek bottom, Area 1226 appears almost completely natural, except for the trail and a few sections of old telephone wire that were never picked up. In the Iron Mountain vicinity, there are some old mining sink holes which are now almost completely grown over. Most people would not notice them.

2. Opportunities for Solitude

At 25,326 acres, Area 1226 offers a moderate potential for solitude. Topographic and vegetative screening range from moderate to high. The area includes almost all of the O'Hara Creek drainage, one of the largest on the lower Selway, and opportunities for solitude are highest in and near the stream bottoms.

The Selway River Road is visible from about half of the Selway Face portion of the area, and the Hamby Road is visible from other parts. A telephone microwave relay and a Forest Service radio remote station atop Iron Mountain are visible from some parts of the area.

3. Primitive Recreation Opportunities

Potential for primitive recreation opportunity is limited. Although the area is very diverse in plants, it is less so in fish, wildlife, and terrain. There are no lakes.

Following the trails is often a challenge, as is wading O'Hara Creek in high water. There are few dominant visual features.

4. Manageability and Boundaries

About half of the boundary of Area 1226 follows roads, trails, and the Selway River. Some of the remainder, drawn around existing and past timber sale areas, would be difficult to establish on the ground.

The portion of this area that is most unique is already being managed as a Research Natural Area and, as such, must be protected against activities which modify ecological processes. Logging is prohibited, and recreation is discouraged. Roads are not permitted unless they contribute to RNA objectives. Unique scenic qualities of the Selway Face are protected under the Wild and Scenic Rivers Act.

No adjustments in acreage or boundaries have been made since 1979. There are no existing uses that would conflict with wilderness designation.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1226 are shown in Table C-3. Current uses of the area are also discussed in this section.

Table C-3
Selected Resource Values-O'Hara-Falls Creek Roadless Area 1226
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	25326	Wildlife - Big Game		
Net Acres	Acres	25326	Summer Habitat	Acres	13329
			Winter Habitat	Acres	11997
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	13329
Semiprim.Nonmotor	Acres	25326	Winter Hab.	Acres	11997
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	13329
			Winter Hab.	Acres	11997
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	0	Stream Miles	Miles	31
Allotments	No.	0			
AUMs	AUMs	0	Stream Habitat	Hab.ac	30
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	23778	High	Acres	0
Standing Volume	MMBF	309MM	Moderate	Acres	0
			Low	Acres	25326
Corridors			Mining Claims	No.	12
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	3200	Low	Acres	25326
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	25326	Leases	No.	0
			Leased Area	Acres	0

a. Recreation

The O'Hara Creek trailhead is located 4 miles up Road 651. This trail, once a mainline route, is now in very poor condition, but a few hunters and fishermen use it each year. The other trails in the area get even less use.

A full-service, 34-unit campground is located at O'Hara Bar, just outside of the roadless area, but visitors here seldom venture far inside the area. There are many fishermen and floaters on the Selway River in the summer, but these people also never get very far into the roadless area.

b. Fish and Wildlife

The usual big-game species -- deer, elk, bear, moose -- inhabit Area 1226. Hunting pressure is light because of difficult access over existing trails. The O'Hara Creek fishery is typical of Selway tributaries, with anadromous fish throughout and a few natives in the head of the creek. Like many other streams in the Selway country, O'Hara Creek contains eastern brook trout in the headwaters. These were planted long ago.

The U.S. Fish and Wildlife Service has identified the area as potential habitat for gray wolves and bald eagles.

c. Livestock

A grazing allotment in the Iron Mountain vicinity was discontinued in 1970 due to overuse, and natural processes are slowly being restored.

d. Timber

Estimated standing volume is 309 MMBF, but part of this is in the Research Natural Area, as are approximately 6,500 of the 23,778 tentatively suitable acres.

e. Minerals

Iron Mountain, the highest point in the area, is evidently composed of some kind of magnetic iron, because lightning strikes there often during thunderstorms. There has been some past mining activity in the Iron Mountain vicinity and there are currently 12 unpatented claims in the area. Current mineral potential is low.

2. Other Management Considerations

The O'Hara drainage is unique. This fact was recognized when the Chief of the Forest Service established a 7,000-acre Research Natural Area there in 1980, the first such area established on the Nez Perce National Forest.

According to the RNA establishment report, "O'Hara Creek has been selected because it has the best known representation of several characteristics of the lower Lochsa-Selway area, is accessible, and presents minimal conflicts with other uses. The nearby Selway-Bitterroot Wilderness includes some of the individual values found in O'Hara Creek; however, a comparable area within the wilderness has not been found and access is very limited."

At the time the RNA was established, three rare plant species and one threatened species had been located in O'Hara Creek, and it is very likely there are more.

A protected 1/4-mile corridor immediately adjacent to the Selway River has been established under the National Wild and Scenic Rivers Act, and everything that can be seen from the river is managed to retain the present visual qualities.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this Appendix.

2. Contribution to National Wilderness Preservation System

The area has unique ecological features that are not duplicated in existing nearby wilderness. However, these values have been protected for scientific purposes through administrative classification of a Research Natural Area.

3. Public Interest, Concern, and Comment Summary

No individuals or groups have recommended wilderness.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-4, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1226 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 250 MMBF of standing volume now present in the area, would be foregone. Approximately 1 percent of the tentatively suitable timberland on the Forest would not be available.

Table C-4
Management Emphasis-O'Hara-Falls Creek Roadless Area 1226 - 25,326 Acres
(Thousand Acres)

Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Nonwilderness											
Roaded Development	18.1	17.2	17.2	17.2	17.2	17.2	0	17.2	17.2	17.2	17.2
Unroaded Mgmt.	0	0	0	0	0	0	0	0	0	0	0
Minimum Level	.2	1.1	1.1	1.1	1.1	1.1	0	1.1	1.1	1.1	1.1
Research Natural Area	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Wilderness											
Wilderness	0	0	0	0	0	0	25.3	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	5.1	4.4	5.4	7.4	5.0	4.3	0	6.2	5.8	5.3	5.3
Developed-Decade 5	18.3	18.3	18.3	18.3	18.3	18.3	0	18.3	18.3	18.3	18.3
Roadless-Decade 1	20.2	20.9	19.9	17.9	20.3	21.0	0	19.1	19.5	20.0	20.0
Roadless-Decade 5	7.0	7.0	7.0	7.0	7.0	7.0	0	7.0	7.0	7.0	7.0
Wilderness	0	0	0	0	0	0	25.3	0	0	0	0

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing and mineral development on existing valid claims could be allowed.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Gray wolf and bald eagle habitat would be maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness provides full habitat potential. High water quality would be maintained in all streams.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased. Almost all of the O'Hara drainage would be maintained in its natural condition.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 68 and 71 percent of Roadless Area 1226 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Approximately 250 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Visual constraints would also be imposed on areas that can be seen from the Selway recreation river corridor.

Between 4,300 and 7,400 acres would be opened to roaded development in the first decade. The higher acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with large acreages of proposed wilderness which maximize outputs outside of the wilderness. The lower acreages are contained in alternatives with high fish/water quality objectives (F, G, K, and L).

Area 1226 would be entered in four places in the first decade. The amount of actual road constructed would depend on the timber objectives of each alternative. In the overall road design, one spur would enter the area in Section 9, T31N, R8E, run down Saddle Ridge to within 1 mile of O'Hara Creek, go north across the heads of two small tributaries of the Creek, cross the heads of Stillman Creek and Daye Creek, and deadend under the north side of Stillman Point. Another spur in Section 1, T31N, R8E would be an extension of the road down the ridge to the northwest of SOB Creek, which would run westward across several tributaries of the Selway River and into the head of Wash Creek. A road would enter Area 1226 in Section 7, T31N, R9E and run down the ridge between SOB and Falls Creeks, and another road would open the area north of O'Hara Point in Saddle Creek. Timber harvest areas would be adjacent to these roads.

Alternative G, the Preferred Alternative, would open approximately 4,300 acres to roaded development in the first decade.

None of this activity would affect the most unique features of the area, which are the O'Hara Research Natural Area, the Selway Recreational River corridor, and the bottom of O'Hara Creek.

The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber and mining industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, so project-level coordination among timber harvest, road construction, and habitat management would be required. Bald eagle habitat in the Selway River corridor would be unaffected. Area 1226 is potential gray wolf habitat, which could be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

- Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production, and natural tree generation is utilized. Removing trees from a site would increase the production in forbs, grasses, and shrubs that provide forage for wintering big-game animals. Therefore, carrying capacity of big-game winter ranges would increase in proportion to the number of acres of winter range harvested each year.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--At least 5 percent of the O'Hara watershed would remain in old growth in all alternatives. This would be exceeded in Area 1226 because of the Research Natural Area. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 19,000 acres of Area 1226 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

None of Area 1226 would be assigned to these prescriptions in any alternative.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management. Less than 1 percent of Area 1226 would be affected in any alternative.

Effects on nonpriced resource values would depend on whether or not roads are built. If they are, effects would be similar to those of roaded development. If they are not, effects would resemble those of unroaded management; however, from the standpoint of potential wilderness possibilities, it should be assumed that areas with a minimum level management emphasis located within areas scheduled for roaded development would eventually be roaded.

e. Designation: Nonwilderness
Management Emphasis: Research Natural Area (RNA)

This prescription is assigned to 7,000 acres of Area 1226 in all alternatives. Management of Research Natural Areas excludes activities which directly or indirectly modify ecological processes. Logging is prohibited, and no roads are planned. Fire suppression is accomplished by manual means. In effect, wilderness characteristics are retained. The Research Natural Area is the most unique part of the roadless area.

Since this RNA is already established and is not being re-evaluated in the planning process, no further environmental consequences are listed.

ROADLESS AREA 1227 -- LICK POINT

8,006 Acres

A. DESCRIPTION

This area contains Lick Creek and the head of American River. It is between 5,000 and 6,000 feet in elevation, and is completely surrounded by roads.

Meadows are found along the creek bottoms. The rest of the area is rolling and homogeneous. Over half of the area is covered with brushfields. The remaining portions are covered by either patches of old growth mixed with alder glades or stands comprised of various age classes. Lodgepole pine is the main species.

Cattle, horses, elk, and deer use all of the area, especially the meadows. Grazing by these animals causes most of the impacts which are especially heavy near the salt lick at Lick Point and on the trails. About five acres at the lick have been fenced to reduce impacts. There are also semipermanent exclosures on this range, as well as a number of drift fences. Trails cover the area. Some are not on the Forest Service trail system, but have resulted from game and stock use over the years.

The American River is an anadromous fishery and supports steelhead trout and chinook salmon. Rainbow, cutthroat, brook trout, and whitefish are also present. The area is excellent moose range, potential elk summer range, and potential wolf habitat. The meadows along Lick Creek and the American River are very heavily used for calving and calf rearing.

Current major uses include hunting and grazing.

One hundred forty-five acres of private land adjoin Area 1227 on the south.

B. CAPABILITY

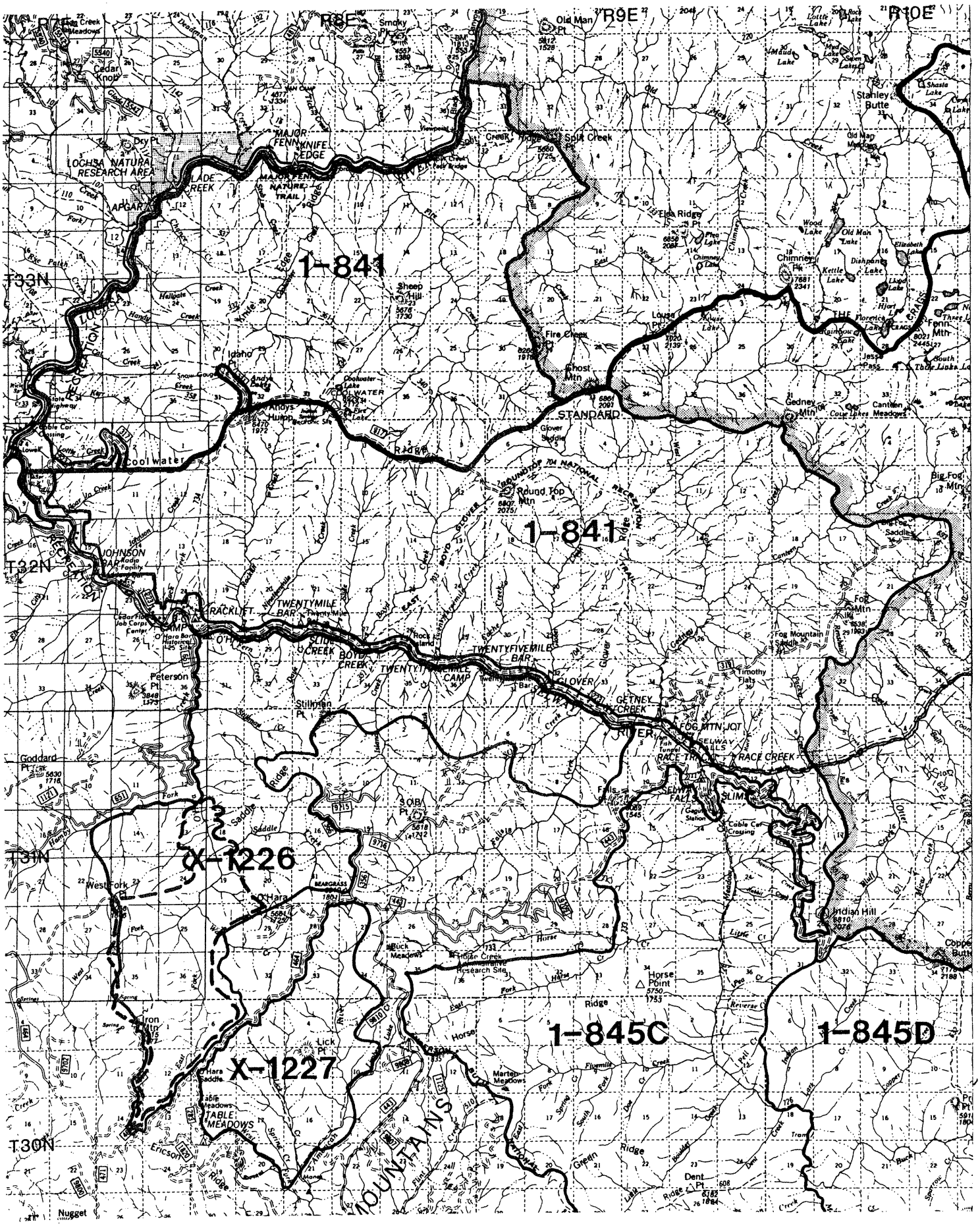
This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Impacts on natural processes are moderate. Trails and streambanks in the area are used by stock and game. Thistles and other nonindigenous plants are present.

2. Natural Appearance

Sights, sounds, and smells of grazing animals are present. Fences and exclosures are noticeable. Noise by vehicles on roads is apparent near the edges of the area.


R8E
R9E
R10E
T33N
T32N
T31N
T30N
1-841
1-841
X-1226
X-1227
1-845C
1-845D
LOCHSA NATURAL RESEARCH AREA
MAJOR FENN KNIFE EDGE
MAJOR FENN NATURE TRAIL
LADE CREEK
APGAR
Cedar Knob
Smoky Pk
Old Man Pt
Split Creek
Elea Ridge Pt
Chimney Pk
Stanley Butte
Sheep Hill
Fire Creek
Ghost Mtn
STANDARD
Glover Saddle
Round Top Mtn
Idaho Pt
Andys Hump
COOLWATER
Coolwater
Gedney Mtn
Canteen Meadows
Big Fog Mtn
Fog Mtn
Fog Mountain Saddle
Timothy Flats
JOHNSON BAR
RACKLIFT
TWENTYMILE BAR
SLIDE CREEK
BOYD CREEK
TWENTYFIVEMILE BAR
TWENTYFIVEMILE CAMP
GLOVER
GETNEY CREEK
FOG MTN JCT
SELWAY FALLS
RACE CREEK
SLIM
Peterson Pt
Stillman Pt
Goddard Pt
West Fork
O'Hara
Buck Meadows
Horse Creek Research Site
Horse Point
Indian Hill
Iron Mtn
Lick Pt
Marten Meadows
TABLE MEADOWS
Ericson
Nugget
Dent Pt
MOUNTAINS

3. Solitude

This is the smallest roadless area on the Nez Perce National Forest. Although vegetation is sometimes dense, both on-site and off-site intrusions seriously restrict the isolation required for a feeling of solitude.

4. Primitive Recreation Opportunity

There is little diversity in the area, and few challenges are present. Even if one became lost because of the absence of prominent landmarks, roads are located within a few miles in any direction.

5. Wilderness Manageability and Boundaries

Roads form a natural boundary around this area. Administrative costs per acre would be high, however, due to the small size of the area and the fact that it does not share a boundary with any other wilderness or roadless area. Due to the relatively narrow shape, the majority of the area is influenced by the surrounding roads. No adjustments in acreage or boundaries have been made since 1979.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1227 are shown in Table C-5. Current uses of the area are also discussed in this section.

a. Recreation

Area 1227 is popular as a place to hunt big game.

b. Fish and Wildlife

Elk, deer, and moose are the principal big-game species. There is little big-game winter range mostly because of the elevations. Native and anadromous fish are found in American River and its tributaries.

c. Livestock

The meadows in this area have been grazed for many years. There are currently two allotments with a combined total of 753 AUMs.

d. Timber

The 105.3 MMBF in the area is predominantly lodgepole pine.

Table C-5
Selected Resource Values - Lick Point Roadless Area 1227
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	8006	Wildlife - Big Game		
Net Acres	Acres	8006	Summer Habitat	Acres	7966
			Winter Habitat	Acres	40
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	7966
Semiprim.Nonmotor	Acres	7879	Winter Hab.	Acres	40
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	7966
			Winter Hab.	Acres	40
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	4700	Stream Miles	Miles	22
Allotments	No.	2			
AUMs	AUMs	753	Stream Habitat	Hab.ac	21
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	70			
AUMs	AUMs	50	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	6939	High	Acres	0
Standing Volume	MBF	~105318	Moderate	Acres	0
			Low	Acres	7879
Corridors			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	7879
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	8006	Leases	No.	0
			Leased Area	Acres	0

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The area is representative of ecosystems which are common in nearby existing wildernesses. It has a long history of grazing, which could continue under wilderness designation.

3. Public Interest, Concern, and Comment Summary

Little interest has been shown toward making this area a wilderness or keeping it roadless. The U.S. Fish and Wildlife Service has identified it as potential habitat for threatened and endangered species. Local public opinion does not support wilderness, nor does the wood products industry.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-6, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1227 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest. Wilderness characteristics would be enhanced.

Timber management possibilities, including harvest of approximately 105.3 MMBF now present in the area, would be foregone. Less than 1 percent of the tentatively suitable timberland on the Forest would not be available.

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing at existing levels could continue.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low inside the area, but not in the roaded areas surrounding it. Management activities would by localized and limited. Gray wolf potential habitat would be maintained.

Table C-6
Management Emphasis-Lick Point Roadless Area 1227 - 8,006 Acres
(Thousand Acres)

Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Nonwilderness											
Roaded Development	7.0	6.8	7.0	7.0	6.8	6.8	0	7.0	7.0	6.8	6.8
Unroaded Mgmt.	0	0.2	0	0	0.2	0.2	0	0	0	0.2	0.2
Minimum Level	1.0	1.0	1.0	1.0	1.0	1.0	0	1.0	1.0	1.0	1.0
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	8.0	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	0	0	0	0	0	0	0	0	0	0	0
Developed-Decade 5	8.0	8.0	8.0	8.0	8.0	8.0	0	8.0	8.0	8.0	8.0
Roadless-Decade 1	8.0	8.0	8.0	8.0	8.0	8.0	0	8.0	8.0	8.0	8.0
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	8.0	0	0	0	0

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential. Moose habitat would be maintained.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in the headwaters of American River.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 85 and 88 percent of Roadless Area 1227 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Approximately 105.3 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Roaded development would not be scheduled in the first decade in any alternative, but the area would be opened to timber management in the second decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Area 1227 is potential gray wolf habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Moose winter range would be maintained.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction. However, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices.

- Old-Growth Habitat--At least 5 percent of the American River watershed would remain in old growth in all alternatives. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities would remain intact in the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

This management emphasis is assigned to 163 acres in Roadless Area 1227 under alternatives C, F, G, G1, K, and L. These areas are mostly riparian areas. Continued roadless management of these small acreages would have effects similar to nearby roaded development.

Economic and social effects of unroaded management in Area 1235 would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would depend on the location of roaded development within the area. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat, and easy access would raise the possibility of site disturbance.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would depend on the location and extent of adjacent roaded development. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above natural rates would not originate in these areas.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact in these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management. About 1,000 acres, or 12 percent, of Area 1227 is assigned this management emphasis in all alternatives except H and H1. These acres are not contiguous.

Since roads may or may not be constructed in these areas, wilderness possibilities may or may not change; however, since Area 1227 is small and is completely surrounded by roads, extensive road construction is unlikely.

Effects on nonpriced resource values would depend on whether or not roads are constructed, but since this area is already near the existing road system, effects would be similar to those of roaded development.

ROADLESS AREA 1235 -- DIXIE SUMMIT-NUT HILL

11,943 Acres

A. DESCRIPTION

The name of this area is somewhat misleading as Dixie Summit and Nut Hill are no longer included within Area boundaries. Moose Butte, at 7,100 feet, is the most prominent topographical feature. A ridge runs south from Moose Butte through the Area. The east side of this ridge drains into Red River, a part of the Clearwater drainage and the west side runs into Big Creek and then Crooked Creek, in the Salmon drainage.

The Area can be reached by Road 311, which parallels the area on the west, and Roads 9535 and 9531, which approach from the east.

The elevation ranges from 5,400 feet at West Fork to 7,100 feet at Moose Butte. Although some of the slopes are steep, much of the country is relatively gentle. Quite a lot of this area is a mountain meadow environment. Big Creek Meadows cover most of the western portion of the Area and extend up the tributaries. They are grazed by both cattle and wildlife. The rest of the Area ranges from pure lodgepole pine stands on southern slopes at moderate elevations to alpine fir and Engelmann spruce in draws and higher elevations. The predominant species is mature lodgepole pine. As in other lodgepole stands in this locality, mountain pine beetles are causing increasing damage, threatening both the Research Natural Area and the adjoining timber resource.

There is a passable road from Badger Summit, in the extreme northwest corner of the Area, to an old cabin about a mile and a half within the area. This cabin, about 10x15 feet with a metal roof, dates back to the 1940s.

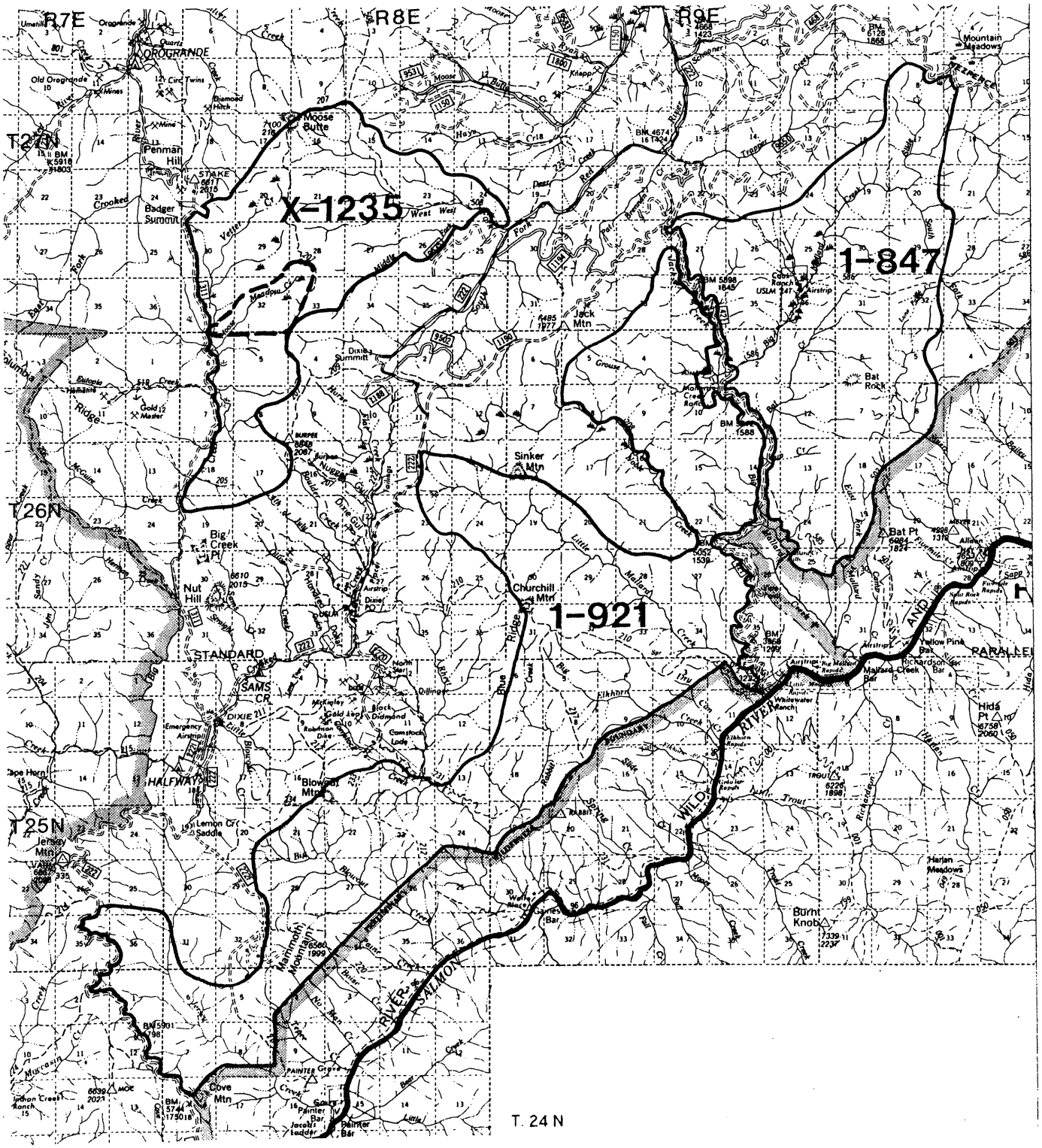
Trail 207 runs south from Moose Butte to Burpee. It is not heavily used. Other manmade features include drift fences near Vetter Creek and Eutopia Creek, and mining relics from the earliest days of mining in the area.

Traditional recreation uses include fishing, hunting, camping, horseback riding, and snowmobiling. Now that the Burpee road has been built through the middle of the Area, motorcycles and ATVs are becoming prevalent. One outfitter operates in this Area.

A 1,015-acre Research Natural Area (RNA) in Moose Meadow Creek, a tributary of Big Creek, was approved by the Chief of the Forest Service in 1982. This RNA is completely within Area 1235. Although vegetation there has not been studied thoroughly, no known threatened or endangered plant species occur in the Area; however, it does contain a few species that are uncommon in Idaho.

The features that led to the establishment of this Research Natural Area are the wet meadows along Moose Meadow Creek and its tributaries, the stream network itself, and the nearby forest of lodgepole pine, subalpine fir, and Engelmann spruce.

This area does not adjoin any existing wilderness.


R7E
R8E
R9E
T27N
T26N
T25N
X-1235
1-847
1-921
OROGRANDE
Penman Hill
Badger Summit
Moose Butte
Jack Mtn
Sinker Mtn
Churchill Mtn
Big Creek Pt
Nut Hill
STANDARD
HALFWAY
Blowout Mtn
Jersey Mtn
Cove Mtn
Mammoth Mountain
Bat Rock
Bat Pt
Yellow Pine Bar
Richardson Bar
Mallard Creek Bar
Hida Pt
Burnt Knob
Harlan Meadows
Mountain Meadows
Cape Horn
Lemon Cr Saddle
Painter Bar
Jacobs Ladder
Gaines Bar
Blue Ridge
WILD AND SCENIC RIVER
SALMON RIVER
T. 24 N

B. CAPABILITY

This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Natural processes have been little impacted, except for a long history of grazing and some placer mining which occurred years ago. Evidence of grazing is most apparent in Big Creek Meadows. Current mining is being carefully regulated.

2. Natural Appearance

It is possible to see cattle grazing in some parts of the area, and there is mining activity along the western boundary.

3. Solitude

The small size of this area, together with nearby roads and logging activity, restricts isolation. Off-site intrusions are apparent in many places. Roads and cattle are found along the western edge. Clearcuts and ranches in Red River Valley are visible from the ridge top.

4. Primitive Recreation Opportunities

Primitive recreation opportunities are also limited. The area is small, and evidence of man's activities is not far away. The topography is not challenging, and there is little diversity.

5. Wilderness Manageability

This area is small, and the boundary is highly irregular. No existing wilderness adjoins this Area. Administrative costs per acre would be high. Constant monitoring would almost certainly be required, and a permit system for use would be likely.

Since 1979, the boundary of this area has been adjusted to exclude timber sales and miscellaneous mining activity. The acreage has been recalculated, reducing the acreage from 17,746 to the present 11,943.

Existing grazing and mining in the area could be permitted to continue under wilderness designation.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1235 are shown in Table C-7. Current uses of the area are also discussed in this section.

a. Recreation

Most users are hunters and fishermen.

b. Fish and Wildlife

Species include elk, moose, deer, bear, and cougar. The endangered Rocky Mountain Gray Wolf may inhabit the Area based on suitability of habitat and unconfirmed sightings. The fish in Big Creek and tributaries are not anadromous, but those in Red River are.

c. Minerals

There is currently some mining activity along the western boundary of the area, in which exploratory holes are dug with a backhoe, then are refilled and seeded. This operation involves about 100 acres. Presently there are 52 other unpatented claims in the area.

d. Grazing

This Area contains approximately 720 acres of of primary range in the Big Creek grazing allotment, and 500 acres of transitory range in the Moose Butte allotment for a total of 160 AUMs.

e. Cultural Resources

There are no known cultural resource sites in the area.

f. Non-Federal Lands

The area is completely within National Forest boundaries.

2. Other Management Considerations

The most unique features of the area are managed as a Research Natural Area.

The West Fork portion of the Area has considerable lodgepole pine in high risk class for Mountain Pine Beetle infestation. The Big Creek side of the Area has overmature lodgepole pine, Engelmann spruce, and alpine fir which are dying from old age.

Table C-7
Selected Resource Values - Dixie Summit-Nut Hill Roadless Area 1235
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	11943	Wildlife - Big Game		
Net Acres	Acres	11943	Summer Habitat	Acres	11943
			Winter Habitat	Acres	0
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	11943
Semiprim.Nonmotor	Acres	11943	Winter Hab.	Acres	0
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	11943
			Winter Hab.	Acres	0
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	1220	Stream Miles	Miles	30
Allotments	No.	2			
AUMs	AUMs	160	Stream Habitat	Hab.ac	29
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	500			
AUMs	AUMs	50	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	10440	High	Acres	2723
Standing Volume	MBF	103108	Moderate	Acres	9220
			Low	Acres	
Corridors			Mining Claims	No.	53
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	11943
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	11943	Leases	No.	0
			Leased Area	Acres	0

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The area has unique ecological features that are not duplicated in existing nearby wilderness. However, these values have been protected for scientific purposes through administrative classification of a Research Natural Area.

3. Public Interest, Concern, and Comment Summary

There is no public desire to make this area a wilderness. Interests center on grazing, mining, and semiprimitive recreation.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-8, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1235 is recommended for wilderness classification in Alternatives H and H1. This recommendation, if approved by Congress, would increase opportunities for primitive recreation on the Forest. Wilderness characteristics would be enhanced.

Timber management possibilities, including harvest of approximately 103.1 MMBF now present in the area, would be foregone. Less than 1 percent of the tentatively suitable timberland on the Forest would not be available. Most of the timber is mature lodgepole pine.

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing at existing levels and mineral exploration of existing valid claims and leases could be allowed to continue, although access would be limited.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Individuals and groups advocating increased

wilderness acreage would be supported; those advocating roaded development would not be supported.

Table C-8
Management Emphasis-Dixie Summit/Nut Hill Roadless Area 1235 - 11,943 Acres (Thousand Acres)

Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative											
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	9.2	8.4	9.2	9.2	8.4	8.4	0	9.2	9.2	8.4	8.4
Unroaded Mgmt.	0	0.8	0	0	0.8	0.8	0	0	0	0.8	0.8
Minimum Level	1.7	1.7	1.7	1.7	1.7	1.7	0	1.7	1.7	1.7	1.7
Research Natural Area	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Wilderness											
Wilderness	0	0	0	0	0	0	11.9	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	2.6	2.1	2.7	3.8	2.3	2.1	0	3.3	3.0	2.6	2.6
Developed-Decade 5	10.9	10.9	10.9	10.9	10.9	10.9	0	10.9	10.9	10.9	10.9
Roadless-Decade 1	9.3	9.8	9.2	8.1	9.6	9.8	0	8.6	8.9	9.3	9.3
Roadless-Decade 5	1.0	1.0	1.0	1.0	1.0	1.0	0	1.0	1.0	1.0	1.0
Wilderness	0	0	0	0	0	0	11.9	0	0	0	0

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low although roaded areas are present on all sides. Management activities would by localized and limited. Gray wolf habitat would be maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area. Hunting and fishing opportunities would remain largely unchanged.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams that support anadromous fish.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 71 and 77 percent of Roadless Area 1235 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Approximately 103.1 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Between 2,100 and 3,800 acres would be opened to roaded development in the first decade. The higher acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with

large acreages of proposed wilderness which maximize outputs outside of the wilderness. The lower acreages are contained in alternatives with high fish/water quality objectives (F, G, K, and L).

Area 1235 would be entered in two places in the first decade. Actual road construction would depend on the timber objectives of each alternative. One road would enter the area in Section 24, T27N, R8E. This road would be on the ridge between the West Fork of Red River and Hays Creek and would cross that ridge into the West Fork. The other road would cross the area at its narrowest point, enter in Section 8, and leave in Section 6, T26N, R8E. Timber harvest areas would be adjacent to these roads.

Alternative G, the Preferred Alternative, would open about 2,100 acres to roaded development in the first decade, and, with the exception of the Research Natural Area, this area would be fully roaded in 50 years. No action under any alternative would affect the most unique feature of the area, the Moose Meadow Research Natural Area.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Hunters and fishermen would be afforded easier access. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Area 1235 is potential gray wolf habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements,

distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in the Red River drainage; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Minimum management requirements would be exceeded in all alternatives. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone, but over 8,100 acres of Area 1235 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

Alternatives C, F, G, G1, K, and L assign 775 acres of Roadless Area 1235 to this management emphasis. These are mostly riparian areas.

Continued roadless management of roadless areas or parts of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management if the acreages are large and similar to effects of roaded development if they are small, as is the case in Area 1235.

Economic and social effects of unroaded management in Area 1235 would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would depend on the proximity of nearby roaded development. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat due to access, but nearby roaded development could cause sites to be disturbed.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would depend on the location and extent of roaded development. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--The unroaded acres would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation originating on these lands would be minimal.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact on these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management. About 7 percent of Area 1235 is assigned to this management emphasis. Acreages are not contiguous.

Since roads may or may not be built, wilderness possibilities may or may not change. Since most of Area 1235, except for the Research Natural Area, will be roaded, effects would resemble those of roaded development.

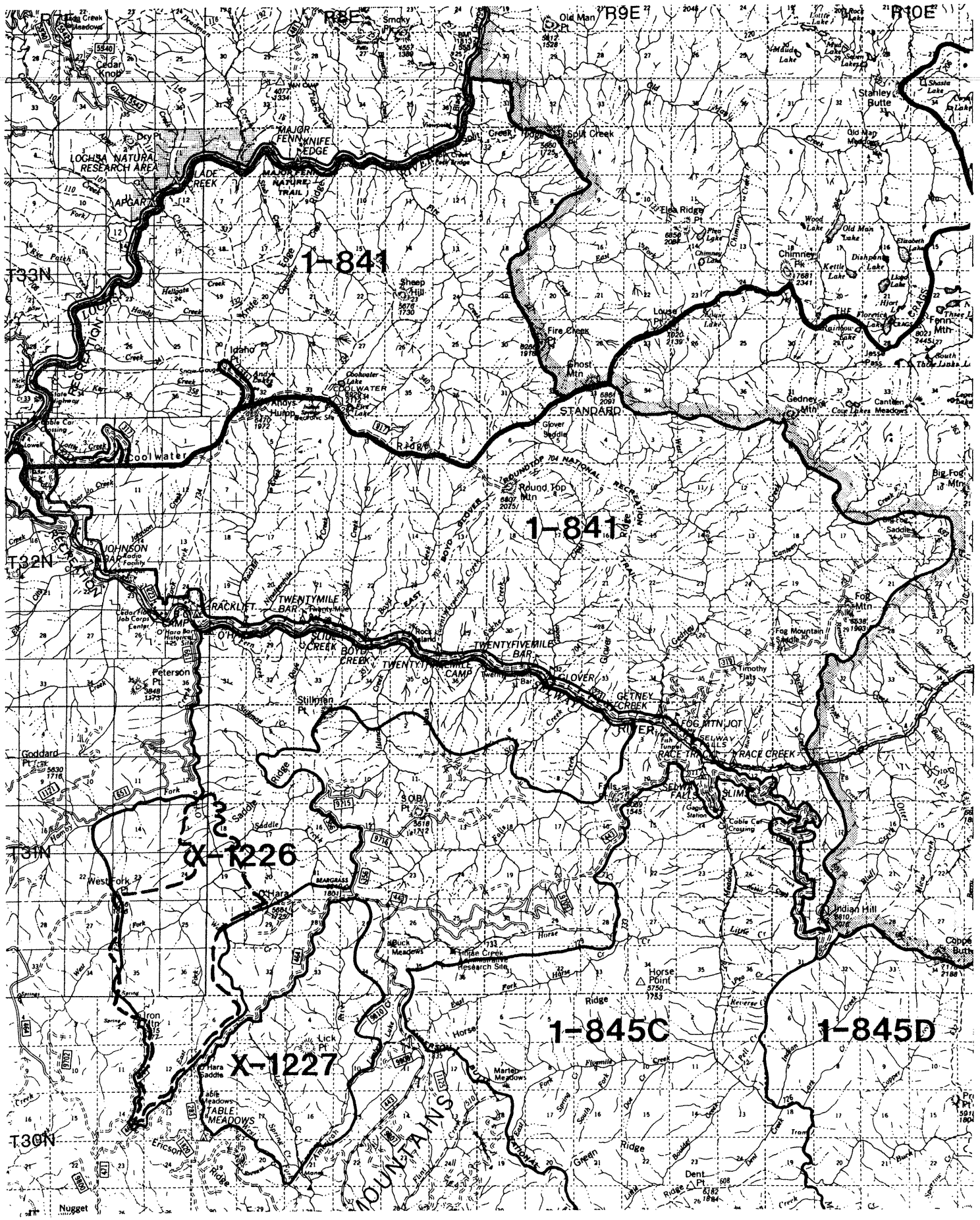
Effects on nonpriced resource values would depend on whether or not roads are constructed. If they are, effects would be similar to those of roaded development. If they are not, effects would resemble those of unroaded management; however, from the standpoint of wilderness potential, it should be assumed that areas with a minimum level management emphasis would eventually be roaded.

e. Designation: Nonwilderness
Management Emphasis: Research Natural Area (RNA)

This prescription is assigned to 1,015 acres of Area 1235 in all alternatives.

Management of Research Natural Areas excludes activities which directly or indirectly modify ecological processes. Logging is prohibited, and no roads are planned. Fire suppression is accomplished by manual means. In effect, wilderness characteristics are retained.

Since this RNA is already established and is not being re-evaluated in the planning process, no further environmental consequences are listed.


R8E
R9E
R10E
T33N
T32N
T31N
T30N
1-841
1-841
X-1226
X-1227
1-845C
1-845D
LOCHSA NATURAL RESEARCH AREA
MAJOR FENN KNIFE EDGE
MAJOR FENN NATURE TRAIL
APGAR
LADE CREEK
Cedar Knob
Smoky Pt
Old Man Pt
Split Creek
Elea Ridge Pt
Chimney Pk
Stanley Butte
Sheep Hill
Fire Creek
Ghost Mtn
Louse Pt
Idaho Pt
Andys Hump
COOLWATER
STANDARD
Gedney Mtn
Canteen Meadows
Round Top Mtn
Big Fog Mtn
Fog Mtn
Fog Mountain Saddle
Timothy Flats
JOHNSON BAR
RACKLIFT
TWENTYMILE BAR
SLIDE CREEK
BOYD CREEK
TWENTYFIVEMILE BAR
TWENTYFIVEMILE CAMP
GLOVER
GETNEY CREEK
FOG MTN JOT
RACE TRACK
RACE CREEK
SELWAY FALLS
SLIMS
Peterson Pt
Stillman Pt
Goddard Pt
SOB Pt
West Fork
O'Hara
Buck Meadows
Horse Creek Research Site
Horse Point
Indian Hill
Coppe Butte
Lick Pt
Hara Saddle
TABLE MEADOWS
Marten Meadows
Ericson Ridge
Green Ridge
Dent Pt
Nugget
MOUNTAINS

ROADLESS AREA 1841 -- RACKLIFF-GEDNEY

90,173 Acres

Part of the Rackliff-Gedney roadless area is on the Nez Perce National Forest (55,463 acres) and part is on the Clearwater National Forest (34,710 acres). However, National Forest boundaries do not affect the wilderness capabilities of any roadless area, and the area is considered as a whole. As stated in Chapter 1, the Nez Perce is the lead Forest in consideration of this roadless area for wilderness. The following discussion includes the entire area.

A. DESCRIPTION

Area 1841 is generally the lands between the Lochsa and Selway Rivers from their confluence eastward to the Selway-Bitterroot Wilderness boundary. The ridgetop that separates the drainages is also the boundary between the Nez Perce and Clearwater National Forests.

The Area's northern boundary is the Lochsa River, and the southern boundary is located 1/4 mile above the Selway River. This river corridor, established under the National Wild and Scenic Rivers Act, contains the Selway River road, several parcels of private property, Forest Service facilities, and numerous recreational developments. Although both the Lochsa and Selway are classified rivers, only the Lochsa corridor is included in the roadless area because there is very little development there.

Coolwater Road 317, an unsurfaced, primitive road built in the 1930s, traverses about two-thirds of the boundary between the Forests, and deadends at Roundtop Mountain -- 16 miles from the Selway River. This road furnishes access from the west. Fog Mountain Road 319 enters the area from the south and deadends at Big Fog Saddle, 13 miles from the Selway River. Both are routes to Selway-Bitterroot Wilderness trailheads. U.S. Highway 12 parallels the northern boundary of the area across the Lochsa River. A pack bridge at Split Creek furnishes access from the North.

Slopes are steep throughout and the country is rugged. Such topographical features as Knife Edge Ridge are appropriately named. The river canyons range from 1,500 to 1,900 feet in elevation, and the highest point in the area, Coolwater Lookout, is 6,926 feet.

Vegetation on the area is largely a result of past wildfires. Although trees have reestablished themselves on some sites, much of the area consists of extensive brushfields with islands of unburned trees and snags. Mixed conifer species occupy the lower elevations, and brush and meadows the upper elevations.

Uses of the Area include hunting, fishing, hiking, sightseeing, horseback riding, berry picking, Outfitter and Guide services, and grazing.

There are many other special features of the Area including Native American religious sites and trails, a sheep drive trail, a grave site, the Boyd Glover Roundtop National Recreation Trail, high mountain lakes, bald eagle and osprey in the River corridors, and brushfields from the 1934 Pete King fire with

excellent elk habitat (both elk summer and winter range) and an elk herd. Scenic landmarks include Coolwater Ridge and Big Fog Saddle.

The parts of the Area near Andy's Lake, Coolwater Lake, and Fire Lake have been glaciated, and contain landforms and cirque basins commonly found in the adjoining wilderness.

B. CAPABILITY

This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Except for the roads and a few trails, man's activities have had small impact on natural processes in Area 1841. Most of the trails are little used and receive little maintenance. Some, however, are heavily used by stock during the hunting seasons and erosion is locally severe.

Parts of the brushfields have been broadcast burned in order to improve big-game forage. Although these projects were begun in the 1960s, only the most recent burns would show effects apparent to untrained observers.

Some physical evidence of placer mining around the turn of the century can be found at China Flat on the Lochsa River near the mouth of Kerr Creek.

There is evidence of past logging activity in almost all major drainages on the Lochsa side of the area, and some on the Selway side. This logging was mostly for cedar products - poles, posts, and shakes. Remnants of old flumes still exist along the Lochsa.

In the early 1960s, erosion became a major problem on the steep southern slopes just below Coolwater Lookout. All grazing allotments were closed, and a bulldozer was brought in to terrace the hillside. These trenches are now revegetated.

Other impacts are located near the roads, and are not extensive. Overall, less than 15 percent of the area is impacted.

2. Apparent Naturalness

Although the appearance of the area has been altered by 20th century wildfires, this is probably not an impact that is apparent to most visitors -- there is little recent evidence of fire. Impacts on apparent naturalness are caused mainly by facilities and activities along the roads.

A short spur road leads from Coolwater Road to Idaho Point. A snow-measuring installation owned by the U.S. Army Corps of Engineers is located along this road.

A television receiving installation with antennas and a small block house is located near the Idaho Point junction.

There is a short spur road at Remount that leads to an outfitter camp, which is occupied during the summer and fall.

Coolwater Lookout is located on the highest pinnacle in the area, and is visible from most of the higher elevations.

Trenches dug by bulldozers in the early 1960s to control erosion below the lookout are still visible.

3. Solitude

Opportunities for solitude vary throughout the area.

Traffic noise from U.S. Highway 12 is apparent in many parts of the Lochsa face, and the highway is visible from much of it.

The view from the Coolwater ridgetop gives one an impression of vastness, especially on a clear day or clear night, but there are also intrusions. Although the Coolwater Road receives light use much of the year, traffic is heavy during the hunting season.

The mid-slope areas, especially those in the larger drainages, offer the highest opportunities for solitude. Topographic and vegetative screening are highest here, and few off-site intrusions are visible, especially in the stream bottoms, away from the ridgetop trails.

4. Primitive Recreation Opportunities

Overall, these are somewhat limited because of the roads entering the area, but they exist nonetheless. Topographic and vegetative cover are significant over much of the area, and trails tend to concentrate visitors on ridgetops. The area is not without challenge and risk: there are cliffs and very steep slopes. Cross-country travel is often difficult; and it is sometimes a challenge to follow the trails. Hunters are injured or die in this area and in the nearby wilderness nearly every year.

The area is moderately diverse. Lakes are present as well as one of the larger tributaries of the Selway River. Vegetation is a diverse mix of trees, brush and grass. The weather is changeable; snow is possible any month of the year.

Trails are about the only recreational facility present, and they are of low standard.

Area 1841 adjoins the Selway-Bitterroot Wilderness on the east, offering an additional million acres of solitude and primitive recreation opportunity.

5. Wilderness Manageability and Boundaries

Boundaries of this area have not been adjusted since 1979, but an acreage recalculation has added 2,463 acres to the Nez Perce Forest portion of the area. For the most part, the boundaries follow well-defined topographical features. Some surveying and marking might be necessary to establish a wilderness boundary along the private property on the west and south sides.

Boundaries would probably have to be adjusted near the roads in this area to allow for some activities using motorized equipment. The roads could be closed or converted to trails, but the costs in adverse public reaction would be great.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1841 are shown in Tables C-9 and C-10. Current uses of the area are also discussed in this section.

a. Recreation

Travelers driving U.S. Highway 12 consider the part of the area visible from the highway as pleasant scenery. The highway is a major recreational route.

Hunting, berry picking, and sightseeing are the principal uses of the area; hunting is the most important. Commercial outfitters have base camps and stock facilities in the area, and many hunters bring in their own pack and saddle stock during the hunting seasons.

Access from U.S. Highway 12 is limited to several foot and horse trails crossing the river. There is a pack bridge at the Split Creek trailhead, but other river crossings are limited to low-water fords.

A road also follows the southern boundary of the area. Although at one time or another trails were built up almost every southside ridge from the river to the ridgetop, only a few are now maintained, and use is light. A National Recreation Trail has been established on the south side, but it is steep and hard to find in places, and is thus suitable only for the most hardy.

The main access route is Coolwater Road 317, which enters the area from the West and bisects it for 16 miles. It is not surfaced and becomes difficult to traverse in years of heavy rain and snow during hunting seasons. It is usually impossible to drive to the end of this road before July 4 because of snow.

b. Fish and Wildlife

The brushfields in the area supply browse for elk and other big-game species. Elk populations have declined from those once found; one reason is that much of the vegetation has grown too high to furnish quality browse for the animals. In recent years, a modest program of prescribed burning has been conducted in an attempt to encourage new vegetation.

Area 1841 provides habitat for elk, mule and whitetail deer, black bear, moose, mountain goat, and cougar. High-quality elk summer range is found at the mid and high elevations, and the lower elevations are important winter range.

Glover Ridge, a flat, open ridge on the east side of the area, is a major elk-calving site. The only active grazing allotment in Rackliff-Gedney is also located on and around Glover Ridge.

Although bald eagle and osprey are found mainly in the River corridor, they are active in lower parts of the Area as well. The entire Area is potential wolf and grizzly bear habitat.

The Area contains several streams on both the Lochsa and Selway sides of the divide that are potential spawning and rearing habitat for anadromous and native fish. These streams contain populations of both. All of the smaller streams contain fish, but few are important fisheries.

Table C-9
Selected Resource Values - Rackliff-Gedney Roadless Area 1841 - Nez Perce Forest Portion
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	55463	Wildlife - Big Game		
Net Acres	Acres	55463	Summer Habitat	Acres	27085
			Winter Habitat	Acres	28378
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	27085
Semiprim.Nonmotor	Acres	55463	Winter Hab.	Acres	28378
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	27085
			Winter Hab.	Acres	28378
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	2362	Stream Miles	Miles	48
Allotments	No.	1			
AUMs	AUMs	158	Stream Habitat	Hab.ac	46
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	2004			
AUMs	AUMs	158	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	49160	High	Acres	0
Standing Volume	MBF	311508	Moderate	Acres	0
			Low	Acres	55463
Corridors			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	4160	Low	Acres	55463
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	55463	Leases	No.	0
Grizzly Bear			Leased Area	Acres	0
Habitat	Acres	55463			

Table C-10
Selected Resource Values - Rackliff-Gedney Roadless Area 1841 - Clearwater Forest Portion
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	34710	Wildlife - Big Game		
Net Acres	Acres	34710	Summer Habitat	Acres	19051
			Winter Habitat	Acres	13048
Recreation			Specific-Elk		
Primitive	RVDs	27	Summer Hab.	Acres	19051
Semiprim.Nonmotor	RVDs	2040	Winter Hab.	Acres	13048
Semiprim.Motor.	RVDs	0	Specific-Deer		
Roaded Natural	RVDs	11419	Summer Hab.	Acres	19051
			Winter Hab.	Acres	19051
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	0	Stream Miles	Miles	149
Allotments	No.	0			
AUMs	AUMs	0	Stream Habitat	Hab.ac	301
Existing Vacant			Lakes	No.	0
Suitable	Acres	2090	Lake Habitat	Hab.ac	0
Allotments	No.	1			
AUMs	AUMs	190	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
			Very High	Acres	0
Timber			High	Acres	0
Tentative Suitable	Acres	31112	Moderate	Acres	0
Standing Volume	MBF	460000	Low	Acres	34710
			Mining Claims	No.	1
Corridors			Oil & Gas Potential		
Exist.& Potential	No.	0	Very High	Acres	0
			High	Acres	0
Wildlife - T&E			Moderate	Acres	0
Bald Eagle			Low	Acres	34710
Habitat	Acres	0	Oil & Gas Leases		
Gray Wolf			Leases	No.	0
Habitat	Acres	0	Leased Area	Acres	0

c. Livestock

There is one cattle grazing allotment in the area, on Glover Ridge. In addition, some grazing is allowed to commercial outfitters.

d. Timber

Tree species in the area include western redcedar, larch, Douglas-fir, grand fir, ponderosa pine, and western white pine. At the higher elevations, lodgepole pine, subalpine fir, and Engelmann spruce are found. Scattered whitebark pine stands are located along the ridgetop.

e. Minerals

There is one mining claim in the area, on an alluvial terrace near the mouth of Kerr Creek, known as China Flat. Some minor handtool exploration has been undertaken there in recent years.

f. Cultural Resources

Coolwater Ridge, Knife Edge Ridge, and Ridgetop Trail 3A into the wilderness were used by both prehistoric peoples and by Native Americans during historic times. Artifacts have been found on the ridgetops, and historic records have established the Coolwater Ridge route as a major avenue into the high country to the east.

There is at least one marked grave in the area.

g. Non-Federal Lands

There are no non-Federal lands in this roadless area.

2. Other Management Considerations

The Chance Creek drainage in the Clearwater National Forest portion of the Area contains a small part of the Lochsa Research Natural Area, established by the Chief of the Forest Service in 1977. The RNA was established to protect and study the unique Pacific Coast vegetation types (coastal disjunct species) that occur along the lower Lochsa and lower Selway. Flowering dogwood and 14 other plant species that are normally found west of the Cascade Range occur in the RNA and are not found further east in the continental U.S.

Approximately 2,000 acres per year are planned for prescribed burning to improve wildlife habitat.

The Selway and Lochsa Rivers will be managed according to the Wild and Scenic Rivers Act and individual river management plans.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See Section 1 of this appendix. The Clearwater National Forest contains 259,165 acres of the Selway-Bitterroot Wilderness.

2. Contribution to National Wilderness Preservation System

This area is similar to the Selway-Bitterroot Wilderness in topography and vegetation.

3. Public Interest, Concern, and Comment Summary

Although there has been very little interest in making this area a wilderness, there has been considerable interest in keeping part or all of it roadless. The Idaho Department of Fish and Game recommends continued roadless management as elk winter range, and the U.S. Fish and Wildlife Service has identified Area 1841 as one that has potential for promoting gray wolf recovery. The Inland Forest Resource Council, a forest products industry organization, acknowledges the importance of key elk winter range, but suggests that timber harvest may have an important role in intensive management of winter ranges.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-11, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

For the purposes of this evaluation, the Clearwater Forest alternatives have been fitted to the Nez Perce Forest alternatives on the basis of goals and objectives common to both alternative sets. The relationship between the two Forests' alternatives is shown in Table C-12.

Management emphasis by alternative for the Clearwater Forest is displayed in Table C-13. Roaded development prescriptions are elk winter; timber/wildlife-watershed; timber/visual-riparian; and timber/special. The special emphasis shown is for the Wild and Scenic River corridor and the Research Natural Area, which are unroaded.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1841 is recommended for wilderness classification in Alternatives H and H1. Alternatives I and J recommend the Nez Perce portion only. This recommendation would increase opportunities for primitive recreation, and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 771 MMBF (311 MMBF from Nez Perce portion) now present in the area, would be foregone.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development could be allowed to continue on valid existing claims.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness. The Clearwater Forest considers all of these, and, in addition, special areas (Wild and Scenic River Corridors and Research Natural Areas), and coldwater fish habitat.

Table C-11
Management Emphasis - Rackliff-Gedney Roadless Area 1841 - 90,173 Acres
Nez Perce and Clearwater National Forests
(Thousand Acres)

Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative											
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development:											
Nez Perce	0	0	51.5	51.5	0	10.6	0	0	0	0	0
Clearwater	25.6	25.2	24.0	25.1	25.2	25.2	0	28.1	25.5	25.2	25.2
	25.6	25.2	75.5	76.6	25.2	35.8	0	28.1	25.5	25.2	25.2
Unroaded Management:											
Nez Perce	55.5	55.5	0	0	55.5	44.9	0	0	0	0	55.5
Clearwater	3.5	8.0	3.5	8.0	8.0	8.0	0	3.5	3.5	8.0	8.0
	59.0	63.5	3.5	8.0	63.5	52.9	0	3.5	3.5	8.0	63.5
Minimum Level:											
Nez Perce	0	0	4.0	4.0	0	0	0	0	0	0	0
Clearwater	5.6	1.5	7.1	1.5	1.5	1.5	0	3.1	5.7	1.5	1.5
	5.6	1.5	11.1	5.5	1.5	1.5	0	3.1	5.7	1.5	1.5
Wilderness											
Wilderness:											
Nez Perce	0	0	0	0	0	0	55.5	55.5	55.5	55.5	0
Clearwater	0	0	0	0	0	0	34.7	0	0	0	0
	0	0	0	0	0	0	90.2	55.5	55.5	55.5	0

Table C-11 (continued)
Management Emphasis-Rackliff-Gedney Roadless Area 1841 - 90,173 Acres
Nez Perce and Clearwater National Forests
(Thousand Acres)

Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative

	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Summary of Management Emphasis											
Developed-Decade 1:											
Nez Perce	0	0	1.0	1.0	0	0.5	0	0	0	0	0
Clearwater	0.5	0.5	0.5	0.5	0.5	0.5	0	0.5	0.5	0.5	0.5
	0.5	0.5	1.5	1.5	0.5	1.0	0	0.5	0.5	0.5	0.5
Developed-Decade 5:											
Nez Perce	0	0	55.5	55.5	0	10.6	0	0	0	0	0
Clearwater	34.7	30.2	34.7	30.2	30.2	30.2	0	34.7	34.7	30.2	30.2
	34.7	30.2	90.2	85.7	30.2	40.8	0	34.7	34.7	30.2	30.2
Roadless-Decade 1:											
Nez Perce	55.5	55.5	54.5	54.5	55.5	55.0	0	0	0	0	55.5
Clearwater	34.2	34.2	34.2	34.2	34.2	34.2	0	34.2	34.2	34.2	34.2
	89.7	89.7	88.7	88.7	89.7	89.2	0	34.2	34.2	34.2	89.7
Roadless-Decade 5:											
Nez Perce	55.5	55.5	0	0	55.5	44.9	0	0	0	0	55.5
Clearwater	0	4.5	0	4.5	4.5	4.5	0	0	0	4.5	4.5
	55.5	60.0	0	4.5	60.0	49.4	0	0	0	4.5	60.0
Wilderness:											
Nez Perce	0	0	0	0	0	0	55.5	55.5	55.5	55.5	0
Clearwater	0	0	0	0	0	0	34.7	0	0	0	0
							90.2	55.5	55.5	55.5	0

Table C-12
Alignment of Alternatives
Nez Perce and Clearwater National Forests

Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative											
Nez Perce	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Clearwater	A	F	B	C	D	E	I	H	G	F	J

Table C-13
Management Emphasis - Rackliff-Gedney Roadless Area 1841
Clearwater National Forest
(Thousand Acres)

Management Emphasis	Alternative										
	A	B	C	D	E	E1	F	G	H	I	J
Wilderness	0	0	0	0	0	0	0	0	0	34.7	0
Nonwilderness											
Unroaded	0	0	4.5	4.5	4.5	4.5	4.5	0	0	0	4.5
Elk Winter	1.9	1.4	1.4	1.9	1.9	1.9	1.9	1.4	1.9	0	1.9
Timber/ Wldlf-Wtshd	14.1	20.7	20.3	19.9	19.9	19.9	19.9	22.2	7.3	0	19.9
Timber/ Visual-Rip	9.6	1.9	3.4	3.4	3.4	3.4	3.4	1.9	1.9	0	3.4
Timber/Special	0	0	0	0	0	0	0	0	17.0	0	0
Special	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0	3.5
Min Level	5.6	7.1	1.5	1.5	1.5	1.5	1.5	5.6	3.1	0	1.5
TOTAL	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7
Summary of Management Emphasis											
Wilderness	0	0	0	0	0	0	0	0	0	34.7	0
Developed											
Decade 1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0.5
Decade 5	34.7	34.7	30.2	30.2	30.2	30.2	30.2	34.7	34.7	0	30.2
Roadless											
Decade 1	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.7	34.2
Decade 5	0	0	4.5	4.5	4.5	4.5	4.5	0	0	34.7	4.5

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Possible gray wolf, grizzly bear, and bald eagle habitat would be enhanced.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low, especially if restrictions were put on Road 317. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. However, unplanned ignitions may not be sufficient to maintain or enhance winter range. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained, especially the viewshed from U.S. Highway 12.

- Anadromous Fish Habitat--Wilderness provides full habitat potential. High water quality would be maintained in all streams.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource in north-central Idaho would be increased.

- Special Areas--Maximum protection would be afforded these areas.

- Coldwater Fish Habitat--Present habitat would be maintained.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 25,200 acres (28 percent of the area) and 76,600 acres (85 percent of the area) are assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Approximately 771 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Between 500 and 1,500 acres, less than 2 percent of the area, would be opened to roaded development in the first decade. Entries would be made from Road 317, which would require substantial reconstruction for use as a log haul road. The Clearwater Forest would enter Area 1841 in Section 4, T32N, R7E, opening the Lottie Creek drainage. The Nez Perce Forest would depart from Road 317 in Section 2, T32N, R7E, to open the head of Johnson Creek.

Alternative G, the Preferred Alternative, would open approximately 1000 acres to roaded development during the first decade; 500 acres from the Nez Perce National Forest and 500 acres from the Clearwater National Forest.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness. In addition, the Clearwater Forest lists outputs for special areas (Wild and Scenic River Corridors and Research Natural Areas), and coldwater fish habitat.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Bald eagle habitat in the Lochsa and Selway River corridors would be unaffected. Area 1841 is potential gray wolf and grizzly bear habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase, and hunter access would also increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area and possibly from U.S. Highway 12, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction. However, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Old growth would be reduced, but not below minimum management requirements. Vegetative diversity would tend toward seral successional stages in the timber harvest areas. Snags along the ridgetop used by cavity-dependent species would be undisturbed.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 88,000 acres of Area 1841 would remain unroaded at the end of the first decade.

- Special Areas--Wild and Scenic River Corridors and the Lochsa Research Natural Area would be unaffected.

- Coldwater Fish Habitat--Habitat would be lowered by sedimentation resulting from road construction, but not below minimum management requirements.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

Between 4 and 70 percent of Roadless Area 1841 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. All of the Nez Perce portion of the area is assigned to continued roadless management in Alternatives A, C, F, and L; and 44,900 acres in Alternative G and G1. Since the Lochsa Wild and Scenic River Corridor is inside of the roadless area (the Selway corridor is not), 3,500 acres will remain roadless in all alternatives except H and H1. In Alternatives C, E, F, G, G1, K, and L, 4,500 acres will remain roadless along the ridgetop in the vicinity of Coolwater, Fire, and Andy's Lakes on the Clearwater Forest.

Continued roadless management of large roadless acreage has effects on nonpriced resource values that are similar to those of wilderness management. The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness. In addition, the Clearwater Forest lists outputs for special areas (Wild and Scenic River corridors and Research Natural Areas), and coldwater fish habitat.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber and mining industries would not be supported under this management emphasis since no development is planned. Wilderness advocates also would not be supported, since no part of the area is recommended for classification.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low. Animals would be secure. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation could be held to natural rates.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact.

- Special Areas--The values of Wild and Scenic River corridors and the Lochsa Research Natural Area would be enhanced.

- Coldwater Fish Habitat--Stream sedimentation would not exceed natural rates.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management. The minimum level emphasis is assigned from 1,500 to 11,100 noncontiguous acres in alternatives which contain roaded development prescriptions.

Since roads may or may not be built, opportunities for wilderness assignment may or may not change; however, unique qualities of these areas should be retained or only moderately impacted.

Effects on nonpriced resource values would depend on whether or not roads are built. If they are, effects would be similar to those of roaded development. If they are not, effects would resemble those of unroaded management. From the standpoint of potential wilderness possibilities, it should be assumed that areas with a minimum level management emphasis would eventually be roaded.

ROADLESS AREA 1842 -- MIDDLE FORK FACE

10,170 Acres

A. DESCRIPTION

Generally speaking, this area is the southside breaks of the Middle Fork of the Clearwater River from Lowell downstream to the National Forest boundary.

Access from the north is by boat. Roads 286, 653, 470, and their spurs come near the southern boundary.

The elevation ranges from 1,400 feet at the Forest boundary to 4,670 feet at Lodge Point. This hillside is almost entirely a northern exposure, and is steep and brushy. Most of it burned in 1919 and 1934, and timber recovery has been spotty. Vegetation consists of mixed conifers intermingled with brushfields.

Four trails cross the Area from north to south, but they have all been abandoned by the Forest Service and can be found only in places.

All developments are contained in the 1/4-mile Wild and Scenic River corridor on the northern boundary. Several parcels of private property, totaling 392 acres, are located along the River, and they are covered under scenic easements. Bald eagles and osprey are found in the River corridor, and potential gray wolf habitat is found throughout the Area. Camps used by prehistoric peoples are also located within 1/4-mile of the River.

Much of this area is visible from U.S. Highway 12, a major recreational route.

Current uses of the Area include hunting, agriculture, and scenic drive.

B. CAPABILITY

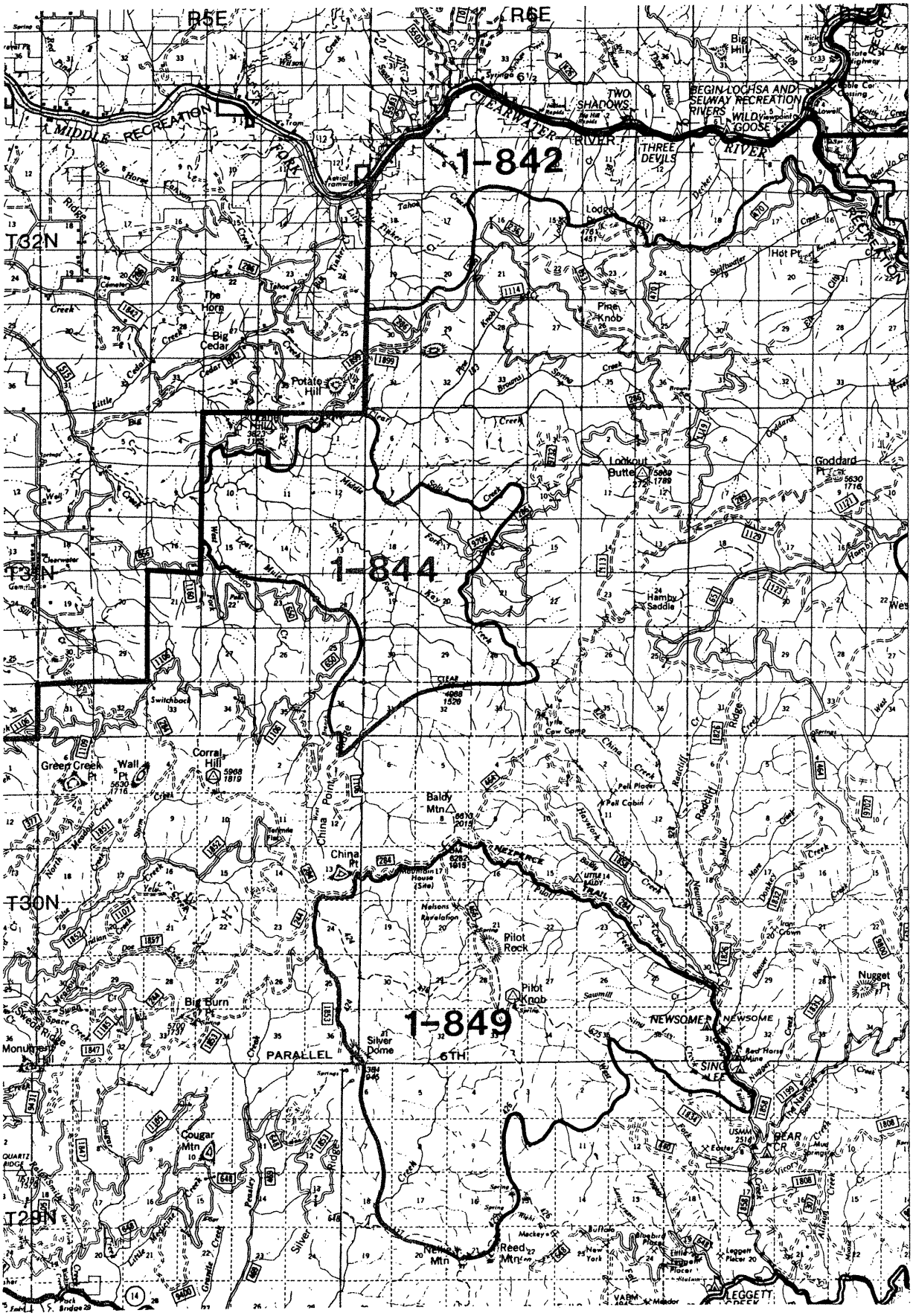
This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

There was some logging in this Area many years ago, mainly for cedar which was dragged to the river and floated to Kooskia. Some old logging roads are visible from U.S. Highway 12. Otherwise, the Area has been little disturbed since the 1934 fires, except for the top (south) side, which offers a few opportunities for small timber sales.

2. Natural Appearance

There are several private landownerships along the River, but only three of these have buildings on them. The largest also has a privately owned suspension bridge across the River which is not open to the public. There is a powerline right-of-way across private property at the confluence of the Lochsa


R5E
R6E
T32N
T31N
T30N
T29N
1-842
1-844
1-849
MIDDLE FORK RECREATION
CLEARWATER RIVER
TWO SHADOWS
BEGIN LOCHSA AND SELWAY RECREATION RIVERS
WILD GOOSE
THREE DEVILS
Big Hill
Lodge
Hot Pt
Pine Knob
The Horn
Big Cedar
Potato Hill
Lookout Butte
Goddard Pt
Hamby Saddle
Green Creek Pt
Wall Pt
Corral Hill
Baldy Mtn
China Pt
Pilot Rock
Pilot Knob
Nugget Pt
Big Burn
Silver Dome
NEWSOME
Cougar Mtn
Reed Mtn
PARALLEL
6TH

and Selway Rivers, and an old cabin about a mile downstream on an abandoned mining claim. Except for these and a few segments of old logging roads, the area above the River corridor would appear natural to most people.

3. Solitude

U.S. Highway 12 is visible from many parts of the Area, along with the Syringa commercial-residential district. Smoke can be seen from the Syringa sawmill. Truck traffic from the road is audible. These external developments are an integral part of the Area.

4. Primitive Recreation Opportunities

In addition to the lack of solitude, Area 1842 offers little diversity and few challenges. Although there are no recreation facilities, there is little other opportunity for primitive recreation.

5. Manageability and Boundaries

Acreage of this Area has been reduced by 1,030 since 1979 because of timber sale activity and acreage recalculations. The western boundary, which is also the Forest boundary, is fixed, as is the northern boundary, the Middle Fork of the Clearwater River. The southern and eastern boundaries are drawn to avoid the existing road system.

Per-acre costs of administering this Area as a wilderness would be high because of its isolation and small size.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1842 are shown in Table C-14. Current uses of the area are also discussed in this section.

a. Recreation

Use is very light, almost non-existent.

b. Fish and Wildlife

The streams in the area are too small to add up to a significant fishery. Lodge Creek may furnish anadromous fish spawning habitat.

This Area is big-game winter range. Very little hunting takes place. There is also wolf and bald eagle habitat.

c. Timber

The timber in this area is for the most part small and non-uniform, the result of past wildfires.

Table C-14
Selected Resource Values - Middle Fork Face Roadless Area 1842
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	10562	Wildlife - Big Game		
Net Acres	Acres	10170	Summer Habitat	Acres	1427
			Winter Habitat	Acres	8743
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	1427
Semiprim.Nonmotor	Acres	10170	Winter Hab.	Acres	8743
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	1427
			Winter Hab.	Acres	8743
Range			Significant Fisheries		
Existing Obligated			Stream Miles	Miles	14
Suitable	Acres	0	Stream Habitat	Hab.ac	13
Allotments	No.	0	Lakes	No.	0
AUMs	AUMs	0	Lake Habitat	Hab.ac	0
Existing Vacant					
Suitable	Acres	0			
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	10120	High	Acres	0
Standing Volume	MBF	128007	Moderate	Acres	0
			Low	Acres	10170
Corridors			Mining Claims	No.	2
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	2720	Low	Acres	10170
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

d. Cultural Resources

There are no known cultural resource sites in this area outside the river corridor.

e. Non-Federal Land

The boundary of this area has been drawn to exclude most private property along the Middle Fork of the Clearwater River; however, some private property still exists within the boundary (392 acres).

2. Other Management Considerations

The Middle Fork of the Clearwater River will be managed according to the Wild and Scenic Rivers Act and the River Management Plan.

Prescribed burns will take place to improve wildlife habitat.

Several parcels of private property are covered under scenic easements.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See Section 1 of this appendix.

2. Contribution to National Wilderness Preservation System

Unique features are already protected under the National Wild and Scenic Rivers Act.

3. Public Interest, Concern, and Summary of Public Comment

Little interest has been shown by individuals or groups and organizations in making this area a wilderness.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-15, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1842 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 128 MMBF of standing volume now present in the area, would be foregone.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

Table C-15
Management Emphasis-Middlefork Face Roadless Area 1842 - 10,170 Acres
(Thousand Acres)

Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Nonwilderness											
Roaded Development	8.7	8.4	8.7	8.7	8.4	8.4	0	8.7	8.7	8.4	8.4
Unroaded Mgmt.	0	0.4	0	0	0.4	0.4	0	0	0	0.4	0.4
Minimum Level	1.5	1.4	1.5	1.5	1.4	1.4	0	1.5	1.5	1.4	1.4
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	10.2	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	2.5	2.1	2.8	3.8	2.4	2.1	0	3.2	3.0	2.6	2.6
Developed-Decade 5	10.2	10.2	10.2	10.2	10.2	10.2	0	10.2	10.2	10.2	10.2
Roadless-Decade 1	7.7	8.1	7.4	6.4	7.8	8.1	0	7.0	7.2	7.6	7.6
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	10.2	0	0	0	0

All unique qualities of the area would be preserved, possibilities for altering the viewshed from U.S. Highway 12 would be minimized, and Wild and Scenic River values would be enhanced.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources,

semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Bald eagle habitat would be undisturbed.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams draining into the Middle Fork of the Clearwater River.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained, although much of Area 1842 is brush and reproduction.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 82 and 85 percent of Roadless Area 1842 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Approximately 128 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives.

Between 2,100 and 3,800 acres would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with large acreages of proposed wilderness elsewhere on the Forest which maximize outputs outside of the wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (F, G, K, and L).

Area 1842 would be entered in Section 20, T32N, R6E, and Section 8, T32N, R7E in the first decade. Actual mileage would depend on timber harvest objectives of each alternative. Timber harvest areas would be adjacent to these roads. The planned roads would open the Number One and Decker Creek drainages.

Alternative G, the Preferred Alternative, would open about 2,100 acres to roaded development in the first decade. No action under any alternative would affect the Middle Fork recreation river corridor.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. The timber industry would benefit from this management emphasis. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction and habitat management would be required. Bald eagle habitat in and near the Middle Fork Clearwater River corridor would be unaffected. Area 1842 is potential gray wolf habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely. However, most known sites are in the River corridor and are not affected by this emphasis.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized. Removing trees from a site increases the production in forbs, grasses, and shrubs that provide forage for wintering big-game animals. Therefore, carrying capacity of big-game winter ranges would increase in proportion to the number of acres of winter range that are harvested each year.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. The area proposed for development would not be visible from U.S. Highway 12.

- Anadromous Fish Habitat--Although the streams in Area 1842 are not in themselves important anadromous fish habitat, they drain into the Middle Fork of the Clearwater River, which is. Increased sedimentation would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Forest minimum management requirements for old-growth would be met. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone by the fifth decade; however, over 6,300 acres of Area 1842 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
   Management Emphasis: Unroaded Management

Alternatives C, F, G, G1, K, and L assign 400 acres of Area 1842 to this management emphasis. These acres are not contiguous, but are scattered throughout the area. Most are in riparian zones.

Continued roadless management of roadless areas or parts of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management if the acreage is large, and similar to roaded development if they are small.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat and wilderness.

Economic and social effects would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Habitat would be maintained, but would be affected by nearby roaded development.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat because of access, and sites may be disturbed.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would depend on the location and extent of roaded development. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--The unroaded area would retain present visual qualities, but would be affected by adjacent management activities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above natural rate would not originate in these areas.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth, which would help balance out the overall vegetative mosaic in this area.

- Wilderness--Wilderness qualities such as naturalness would remain intact in these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management; 1,400 to 1,500 acres of Area 1842 are assigned to it. These acres are not contiguous, but are scattered parcels along ridge tops and in areas of low timber values.

Since roads may or may not be built, opportunities for wilderness may or may not change; however, unique qualities of these areas should be retained or only moderately impacted.

ROADLESS AREA 1844 -- CLEAR CREEK

11,876 Acres

A. DESCRIPTION

This area is located in the head of Clear Creek along the western boundary of the Forest. Private property adjoins this Area on the northwestern boundary. The nearest roads are spurs of Road 1842 on the north, Road 650 on the west, and Road 286 on the east, but some of these roads are closed during the general hunting season as a means of mitigating impacts on big game.

Elevation ranges from 2,000 feet on Clear Creek at the Forest boundary to 4,600 feet at China Point Ridge and the headwaters of Solo and Kay Creeks. Topography is mountainous with steep slopes, commonly over 70 percent, paralleling the drainages. Ridgetops are relatively flat.

The Clear Creek drainage has been a significant part of the Nez Perce Forest timber sale program since the late 1950s. Most of the acreage remaining in Area 1844 burned twice, once in 1870 and again in 1931, leaving about 7,000 acres covered with brushfields in the South Fork and Middle Fork of Clear Creek drainages. Previous conifer forests have never reestablished themselves.

Vegetation in this Area ranges from very moist, warm cedar habitat types, to drier, warm Douglas-fir habitat types. Shrub coverage in the brushfields is primarily maple, willow, serviceberry, and various other shrubs. Bordering the brushfields are patches of young (approximately 50-year old) timber, a mix of grand fir, Douglas-fir, and western redcedar. Understories are sparse, but contain a variety of moist-site plants. There are also some natural meadows in upper Kay Creek in Section 28.

The brushfields have been important big-game (elk and moose) winter range, but the preferred browse species--redstem, willow, mountain maple, and serviceberry -- have in recent years grown out of reach of the animals. Some use of prescribed fire has been made in attempt to increase the value of the range.

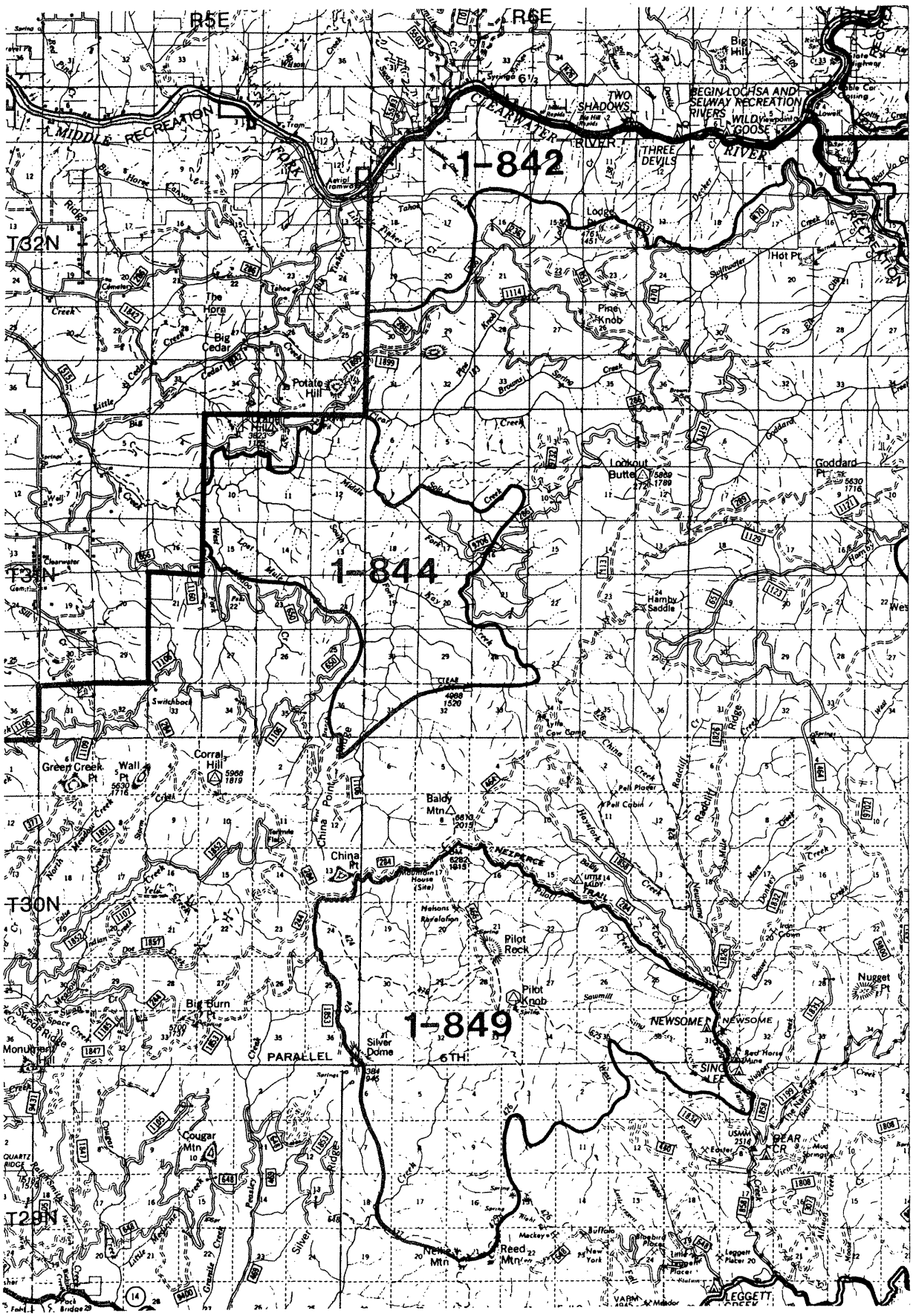
Current uses of the Area include livestock grazing, big-game winter and summer range, fishing, hunting, and mining.

B. CAPABILITY

This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Past wildfires in Clear Creek and the resulting vegetative succession are some of the natural processes that have occurred. These processes have been modified to some degree on about 200 acres which have been reburned in an attempt to improve wildlife browse. More such habitat improvement is planned.


R5E
R6E
T32N
T31N
T30N
T29N
1-842
1-844
1-849
MIDDLE FORK RECREATION
CLEARWATER RIVER
TWO SHADOWS
BEGIN LOCHSA AND SELWAY RECREATION RIVERS
WILD GOOSE
THREE DEVILS
Big Hill
Lodge Pole
Hot Pt
Pine Knob
The Horn
Big Cedar
Potato Hill
Lookout Butte
Goddard Pt
Hamby Saddle
Corral Hill
Green Creek Pt
Wall Pt
Baldy Mtn
China Pt
Pilot Rock
Pilot Knob
Nugget Pt
Big Burn Pt
Silver Dome
PARALLEL
6TH
NEWSOME
Cougar Mtn
Nellie Mtn
Reed Mtn
LEGGETT

2. Natural Appearance

The brushfields are a natural and not uncommon result of past wildfires.

3. Solitude

This small area, with nearby logging activity, offers limited opportunity for solitude. Vegetative screening is high, however.

4. Primitive Recreation Opportunity

The main opportunity here is bushwhacking and following game trails through dense brushfields. It is easy to get turned around in this country.

5. Wilderness Manageability & Boundaries

This area has been reduced by 14,824 acres since 1979, almost entirely because of timber sales. The area boundary is imprecise except where it coincides with the Forest boundary. It has been drawn to exclude existing roads from the remainder of the area.

The small size of this Area and its nearness to adjacent roads will probably result in more than normal use by recreationists, especially once it has been publicly identified as a "roadless area" in the Plan.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1844 are shown in Table C-16. Current uses of the area are also discussed in this section.

a. Timber

Timber in the Clear Creek country is predominantly old-growth grand fir. Cedar is also present.

b. Recreation

Recreation use is mostly big-game hunting. There are several low-standard trails in the area, which have not been maintained in recent years.

c. Fish and Wildlife

Elk, moose, deer, bear, and cougar are found in Area 1844. The brushfields are important winter range.

Steelhead, rainbow trout, brook trout, and whitefish are found in Clear Creek. Although the drainage has been impacted by past timber sale activity and road building, the aquatic habitat remains in fair condition on National Forest land. Significant habitat degradation has occurred in that part of the creek between the Forest boundary and the mouth, since activities on private property

are not restricted. There is a chinook salmon hatchery near the mouth of the creek, although returning spring fish are not allowed to go upstream.

This area, taken together with Area 1849 to the south, is potential yearlong gray wolf habitat.

Table C-16
Selected Resource Values - Clear Creek Roadless Area 1844
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	11926	Wildlife - Big Game		
Net Acres	Acres	11876	Summer Habitat	Acres	3884
			Winter Habitat	Acres	7992
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	3884
Semiprim.Nonmotor	Acres	11876	Winter Hab.	Acres	7992
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	3884
			Winter Hab.	Acres	7992
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	3150	Stream Miles	Miles	25
Allotments	No.	3			
AUMs	AUMs	140	Stream Habitat	Hab.ac	28
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	
Tentative Suitable	Acres	11865	High	Acres	
Standing Volume	MBF	104860	Moderate	Acres	
			Low	Acres	11876
Corridors			Mining Claims	No.	1
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	11876
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

d. Grazing and Range

Parts of three allotments are in this Area. The majority of the available forage is transitory, being generated from the large brushfields in the South Fork and Middle Fork drainages. The remainder of the Area is covered with old-growth cedar/grand fir stands with little available forage underneath except in the natural meadows and stream bottoms.

e. Cultural Resources

There are no known cultural resource sites in the area.

f. Non-Federal Lands

There is private land in the northwest corner of the Area - SW1/4, section 3, T 31 N, R 5 E.

2. Other Management Considerations

The old-growth grand fir and western redcedar stands are decadent. Heartrot, caused by Indianpaint fungus, is prevalent in the grand fir. Butt rot extending into the upper bole of the tree is common in the western redcedar. Other damaging agents are also present, but are minor problems. Fire frequency is very low in the Clear Creek drainage.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to the National Wilderness Preservation System

This area is representative of ecosystems common in nearby wilderness.

3. Public Interest, Concern, and Comment Summary

Public interest in the area has focused on timber management and big-game habitat management.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-17, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

Table C-17
Management Emphasis-Clear Creek Roadless Area 1844 - 11,876 Acres
(Thousand Acres)

Management Emphasis	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	11.8	11.4	11.8	11.8	11.4	11.4	0	11.8	11.8	11.4	11.4
Unroaded Mgmt.	0	0.4	0	0	0.4	0.4	0	0	0	0.4	0.4
Minimum Level	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	11.9	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	3.4	2.9	3.8	5.1	3.3	2.9	0	4.3	4.0	3.5	3.5
Developed-Decade 5	11.9	11.9	11.9	11.9	11.9	11.9	0	11.9	11.9	11.9	11.9
Roadless-Decade 1	8.5	9.0	8.1	6.8	8.6	9.0	0	7.6	7.9	8.4	8.4
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	11.9	0	0	0	0

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1844 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 104.8 MMBF now present in the area, would be foregone. However, a large part of the area is in brushfields, and has little significant timber volume.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed. Maintenance of winter range is important in this area. Reliance on unplanned ignitions may not be sufficient, since much of the brushfield should be reburned soon to maintain quality winter range.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Hunters would not benefit if the winter range is allowed to deteriorate. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Gray wolf habitat would be maintained if the prey base is maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within

three miles of motorized use and to primitive for the rest of the area. Hunter access would be limited under wilderness classification.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in those parts of Clear Creek within the wilderness.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 96 and 100 percent of Roadless Area 1844 is assigned to this management emphasis in all alternatives except H and H1, which recommend the entire area for wilderness. General environmental effects would be those described in Chapter IV.

Between 2,900 acres (24 percent) and 5,100 acres (43 percent) would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and those alternatives (I and J) with large acreages of proposed wilderness elsewhere on the Forest which maximize outputs outside the wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (F, G, K, and L).

Area 1844 would be entered in five places in the first decade. These roads would be located in Sections 32, 28, 21, and 16, T31N, R6E, and Section 15, T31N, R5E. Actual mileages would depend on timber harvest objectives of each alternative. These roads would all be located in the head of Clear Creek and its tributaries, and timber harvest would be adjacent to them.

Alternative G, the Preferred Alternative, would open about 2,900 acres, or 24 percent of the area, to roaded development in the first decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Area 1844 is potential gray wolf habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development provides for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase. Hunter access would be improved.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--At least 5 percent of the Clear Creek watershed would remain in old growth in all alternatives. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone by the fifth decade; however, over 6,700 acres of Area 1844 would remain unroaded at the end of the first decade in any alternative.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

Alternatives C, F, G, G1, K, and L assign 440 acres of Area 1844 to this management emphasis. On-the-ground assessments may result in larger assignments. This acreage is mainly in riparian areas.

Continued roadless management of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management. The riparian areas are maintained in their natural condition.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Economic and social effects of unroaded management in Area 1235 would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would increase, since 440 acres remain unroaded. Coordination with activities on nearby roaded lands would be necessary.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat because of difficult access. Potential for disturbance of sites would increase due to nearby roads.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would resemble that of the adjacent roaded development area.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, these areas would not contribute to stream sedimentation over natural rates.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact in these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management on an insignificant acreage. Only about 100 acres are assigned this management emphasis in any alternative.

Since roads may or may not be built, opportunities for wilderness may or may not change. However, because of the adjacent roaded development, the indirect impacts would be similar to the roaded development emphasis.

Effects on nonpriced resource values would depend on whether or not roads are built. If they are, effects would be similar to those of roaded development. If they are not, effects would resemble those of unroaded management. However, from the standpoint of potential wilderness, it should be assumed that areas with a minimum level management emphasis would eventually be roaded.

ROADLESS AREA 1845 - MEADOW CREEK

201,715 Acres

This is the largest roadless area on the Nez Perce National Forest, encompassing almost all of the Meadow Creek drainage. It joins the Selway-Bitterroot Wilderness on the north and east, and is separated from the Frank Church-River of No Return Wilderness by a road on the south.

Area 1845 was evaluated in detail during previous wilderness studies as two subareas, 1845C and 1845D. That format is continued here. The wilderness recommendations for Area 1845 in the alternatives are done by subareas, but in at least one alternative both subareas are assigned to wilderness, and in at least one other both are assigned to nonwilderness. Thus, the entire area is considered for wilderness classification.

As a whole, this area contains nearly all features of the two adjacent wildernesses except low-elevation river break country. Meadow Creek is one of the largest streams in the Selway drainage, and it divides Area 1845 into two nearly equal parts. The Creek runs north and south for approximately 15 miles, then runs east and west for about 8 miles before turning north and south again to its source. Thus, a full range of aspects, elevations, and vegetative types is represented; and opportunities for solitude and primitive recreation are outstanding.

ROADLESS AREA 1845C -- Meadow Creek West

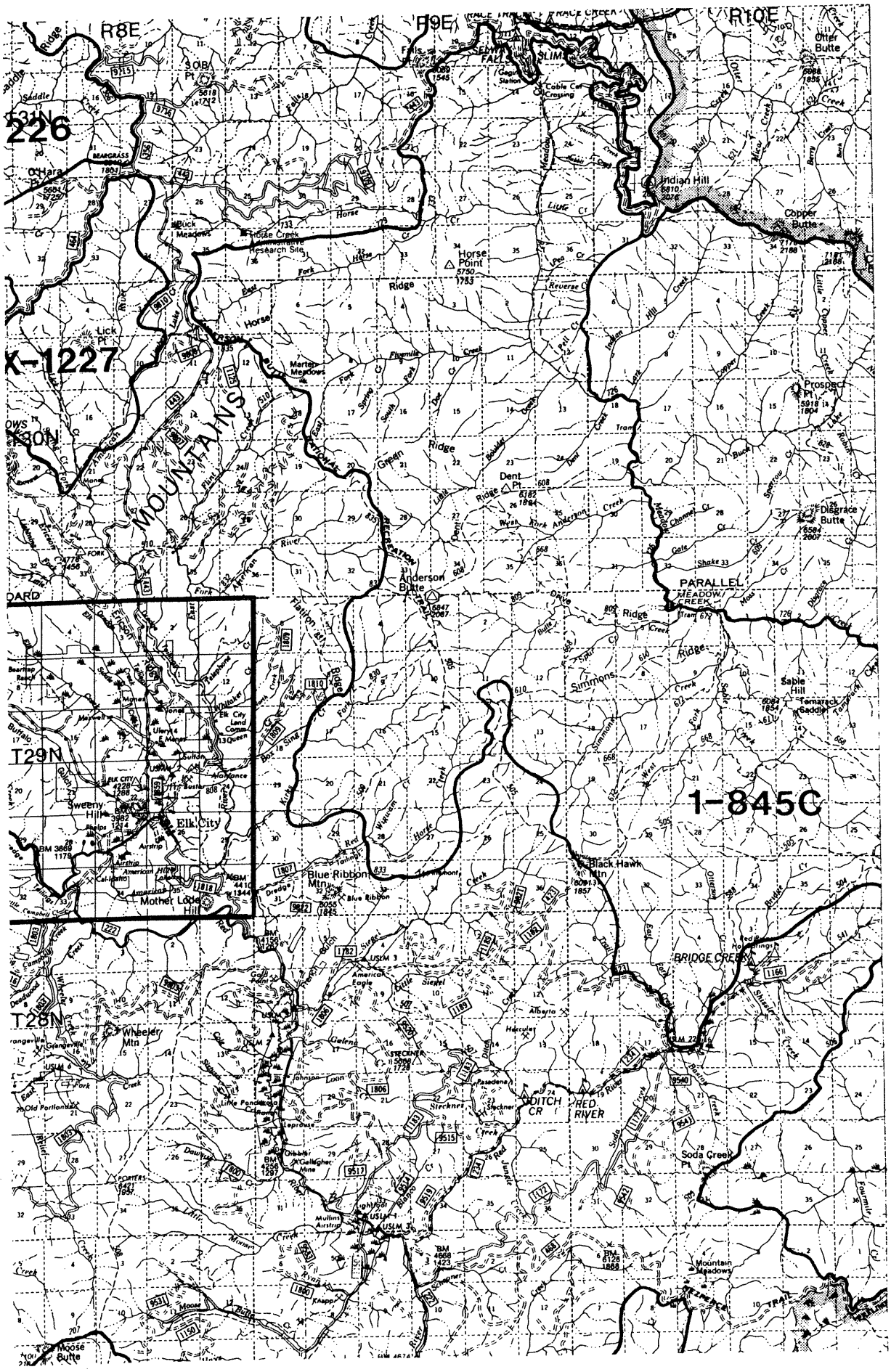
107,512 Acres

A. DESCRIPTION

Meadow Creek is a principal tributary of the Selway River which enters about a mile above Selway Falls. Area 1845C is essentially the west side of the Meadow Creek drainage, although a few small streams drain into American River, a tributary of the South Fork of the Clearwater.

This area joins Roadless Area 1845D on the east and is separated by a road corridor from the Frank Church-River of No Return Wilderness on the south. The western boundary is, for the most part, the divide that separates the Selway and South Fork of the Clearwater drainages. Road access is by way of Road 443 on the north and west sides, and Roads 468 and 285 on the south.

The entire main stem of Meadow Creek above the junction with the East Fork is included in this area. Elevations range from about 1,800 feet at the trailhead on the northern boundary to 7,232 feet at Granite Peak. Slopes are steep, mostly facing east and north. As is characteristic of north and east exposures, vegetation in most parts of the area is dense, especially in the stream bottoms. Pacific yew is common, and thick. The head of Meadow Creek is open, however, with the meadows that give the Creek its name.


R8E
R9E
R10E
T31N
T30N
T29N
T28N
226
X-1227
1-845C
MOUNTAINS
Elk City
Sweeny Hill
Mother Lode Hill
Blue Ribbon Mtn
Black Hawk Mtn
Indian Hill
Copper Butte
Otter Butte
Horse Point
Dent Pt
Anderson Butte
Disgrace Butte
Prospect Pt
Sable Hill
Tamarack Saddle
Wheeler Mtn
Moose Butte
Soda Creek Pt
Mountain Meadows
PARALLEL
BRIDGE CREEK
DITCH CR
RED RIVER
Green Ridge
Simmons Ridge
Horse Ridge
Lick Pt
Buck Meadows
Marter Meadows
Cable Car Crossing
Gauging Station
Research Site
Airstrip
Cal-Idaho
American Eagle
Alberta
Hercules
Pasadena
Steckner
Galena
Johnson
Gallagher Mine
Mullins Airstrip
Knapp
Moose
Old Portland
Grangeville
Dent
Anderson
Meadow Creek
Sweeny
Elk City
Mother Lode
Blue Ribbon
Black Hawk
Bridge Creek
Ditch Cr
Red River
Soda Creek
Mountain Meadows
Indian Hill
Copper Butte
Otter Butte
Disgrace Butte
Prospect Pt
Sable Hill
Tamarack Saddle
Wheeler Mtn
Moose Butte
Horse Point
Dent Pt
Anderson Butte
Lick Pt
Buck Meadows
Marter Meadows
Cable Car Crossing
Research Site
Airstrip
Cal-Idaho
American Eagle
Alberta
Hercules
Pasadena
Steckner
Galena
Johnson
Gallagher Mine
Mullins Airstrip
Knapp
Moose
Old Portland
Grangeville
Dent
Anderson
Meadow Creek
Sweeny
Elk City
Mother Lode
Blue Ribbon
Black Hawk
Bridge Creek
Ditch Cr
Red River
Soda Creek
Mountain Meadows
Indian Hill
Copper Butte
Otter Butte
Disgrace Butte
Prospect Pt
Sable Hill
Tamarack Saddle
Wheeler Mtn
Moose Butte
Horse Point
Dent Pt
Anderson Butte
Lick Pt
Buck Meadows
Marter Meadows
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Indian Hill
Copper Butte
Otter Butte
Disgrace Butte
Prospect Pt
Sable Hill
Tamarack Saddle
Wheeler Mtn
Moose Butte
Horse Point
Dent Pt
Anderson Butte
Lick Pt
Buck Meadows
Marter Meadows
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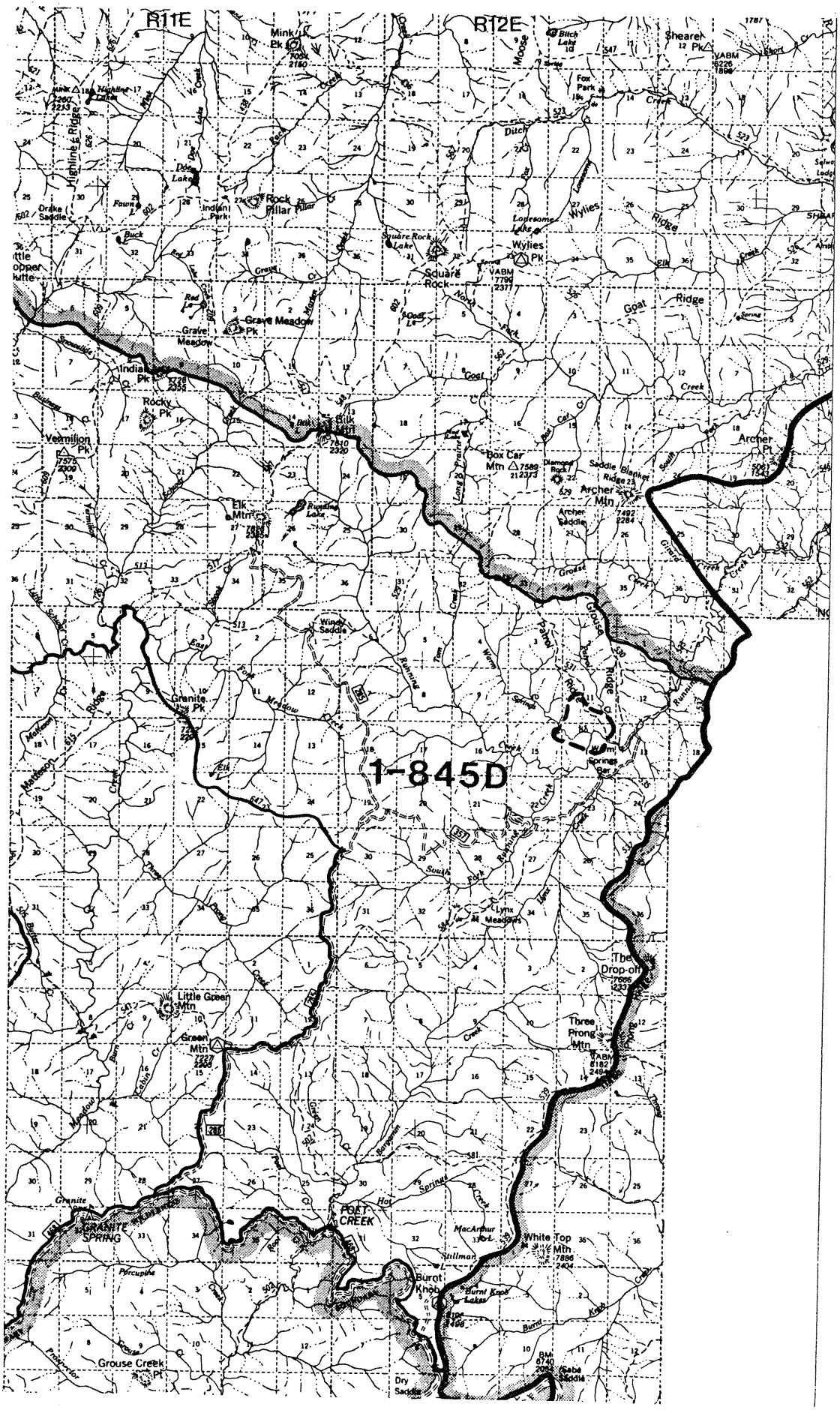
Ditch Cr
Red River
Soda Creek
Mountain Meadows


R11E
R12E
1-845D
Mink Pk
Shearer Pk
Highline Ridge
Rock Pillar
Square Rock
Wylies Pk
Wylies Ridge
Goat Ridge
Grave Meadow Pk
Indian Pk
Rocky Pk
Vermilion Pk
Bilk Mtn
Box Car Mtn
Archer Mtn
Archer Pt
Elk Mtn
Grouse Ridge
Granite Pk
Warm Springs Bar
Lynx Meadows
The Drop-off
Little Green Mtn
Green Mtn
Three Prong Mtn
POET CREEK
GRANITE SPRING
White Top Mtn
Burnt Knob
Grouse Creek Pt
Dry Saddle

Virtually all of the upper Meadow Creek drainage burned in 1919, and much of it is now covered with thick reproduction. There are some stands of fir and spruce on lands that escaped this and other fires. Lodgepole pine and subalpine species are common at higher elevations.

Scenic areas include Anderson Butte and Meadow Creek. Sensitive wildlife occurring in the Area include gray wolves, elk, bald eagle, steelhead trout, chinook salmon, and possibly grizzly bears. One of the key attractions of this Area is the extremely high water quality of Meadow Creek. It is one of the very few streams left on the Forest with very excellent water quality and a productive anadromous fishery. Other special features are Green Mountain Lookout which is one of the older lookout locations on the Forest, Horse Point Lookout Site, Meadow Creek cabin, old sheep driveways, evidence of glaciation in the upper Meadow-Fourmile area, Meadow Creek and Anderson Butte National Recreation Trails, and the Nez Perce Trail.

Current uses include grazing, hiking, motorcycle riding, hunting, fishing, backpacking, camping, horseback riding, snowmobiling, and sightseeing along the Montana Road. One outfitter operates in the Area.

Under 36 CFR 219.17, roadless areas evaluated in previous unit plans, but not included in the last nationwide roadless area review and evaluation, must be reconsidered for wilderness classification. Two such areas, 1228 and 1229, share common boundaries with Area 1845C, and have been included in it.

B. CAPABILITY

This section describes the basic characteristics which make the Area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Long-term ecological processes have been only slightly impacted in Area 1845C.

The area has a history of grazing. At one time, there were many sheep grazing allotments in Areas 1845C and 1845D. Stock driveways are shown on Forest maps as early as 1911, and large sheep allotments first appeared on Forest maps in 1920. Most likely, they were both established before these maps came out.

Although the effects of past sheep grazing have largely vanished, the effects of the stock driveways have not. They can be identified in the Meadow Creek Area and in the adjoining Selway-Bitterroot Wilderness because they go almost straight down one side of a hill and straight up the other side, and are cleared to a width of 50 feet. Erosion has left its mark on these sites, despite reconstruction of many of the driveways into graded trails.

Grazing today is much less extensive, concentrated mostly along the western boundary and around the meadows in the head of Meadow Creek.

2. Natural Appearance

The area as a whole is not heavily impacted, although some sites obviously are. The most noticeable sites are described below.

- Anderson Butte and Green Mountain Lookouts are both noticeable from parts of the area. Several other lookouts were present, but they have been removed.

- There are a few drift fences in the upper end of Meadow Creek.

- Trails, especially the old stock driveways and an old jeep trail from Blackhawk Mountain to Anderson Butte, have caused impacts. A few of these trails are heavily used, especially during hunting season. Motorcycle use is also common on some of the better trails.

- Past mining activity on the ridge between Three Prong Creek and the East Fork of Meadow Creek has resulted in about 100 acres of roads and pits. There are currently no claims in this area, and no activity.

  Human-caused developments are very obvious in Section 4, T 29 N, R 10 E, in the form of a complete custodial-era Forest Service ranger Station. This building was constructed in 1923 and has recently been restored. In addition to the small main cabin, there are three other buildings and a corral.

These are localized impacts. Overall, the area would appear natural to most visitors.

3. Solitude

This area, along with Roadless Area 1845D, the Selway-Bitterroot Wilderness on the east and north, and the Frank Church-River of No Return Wilderness on the south, offers excellent opportunity for solitude. Topographic and vegetative screening are also significant.

4. Primitive Recreation Opportunity

This area is not as diverse as Area 1845D across the creek. For example, there are no lakes. Challenges, too, are probably fewer than those found on the east side of the creek, but land navigation would be more difficult in some parts of this Area due to heavy vegetation and lack of recognizable landmarks. A person who broke a leg or suffered a similar mishap in this area might not be rescued, especially since some of the draws are too damp to build much of a fire.

The old Meadow Creek Ranger Station built in 1923 is accessible only by trail or helicopter. To some visitors, these buildings may seem an intrusion, an invasion of solitude; to others, they may seem to fit in perfectly with the surrounding area.

5. Wilderness Manageability and Boundaries

Since 1979, timber sales, roads, and acreage recalculations have accounted for an 8,918-acre reduction in this area. However, 21,050 acres were added when two smaller roadless areas not included in the last roadless area review and evaluation were combined with Area 1845C. Boundaries for the most part follow definite topographic features. The majority of the area is relatively uninfluenced by roads and other factors that would decrease the wilderness attributes. Manageability as wilderness would depend in part on the classification of Area 1845D to the east; that is, whether this area would be managed as a part of the Selway-Bitterroot Wilderness, or as an isolated, independent wilderness. Costs per acre would, of course, be higher for a separate wilderness.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1845C are shown in Table C-18. Current uses of the area are also discussed in this section.

a. Timber

Timber harvest in this area is for the most part confined to areas which escaped earlier wildfires. Thick reproduction is common.

b. Recreation

Trails 830 and 835 together make up the Anderson Butte National Recreation Trail, and furnish access from the west side of the area. Trail 809 from Anderson Butte to Meadow Creek is heavily used in hunting season. These trails receive minimum maintenance. A 55-foot native timber bridge was built across Meadow Creek at the end of Trail 809 in 1975 and 1976, replacing an unsafe tram and a ford that was impossible in high water and dangerous all of the time. This is the only trail bridge across Meadow Creek.

Other than hunting, recreation use is generally light.

c. Fish and Wildlife

Meadow Creek is a significant fishery. Both chinook salmon and steelhead trout inhabit Meadow Creek, while most of the tributaries to Meadow Creek support steelhead. Some of the side drainages on the west side have obstacles that prevent passage of anadromous fish. Meadow Creek gets little fishing pressure, and the west side tributaries get even less.

Mule and whitetail deer, elk, black bear, and moose inhabit Area 1845C. Pacific yew thickets furnish winter browse for moose. Sensitive wildlife occurring in the Area include gray wolves, elk, bald eagles, and grizzly bears. The potential for wolf recovery is excellent due to the roadless state, and high quality wolf habitat. The Area contains some very productive elk summer range. The elk winter rage is low in productivity and is in need of logging and/or prescribed burning to regenerate winter forage. Other

threatened and endangered plant and animal species may be found although a thorough search has not been made.

Table C-18
Selected Resource Values - West Meadow Creek Roadless Area 1845C
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	107512	Wildlife - Big Game		
Net Acres	Acres	107512	Summer Habitat	Acres	97490
			Winter Habitat	Acres	10022
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	97490
Semiprim.Nonmotor	Acres	107512	Winter Hab.	Acres	10022
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	97490
			Winter Hab.	Acres	10022
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	3450	Stream Miles	Miles	116
Allotments	No.	6			
AUMs	AUMs	292	Stream Habitat	Hab.ac	112
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	1000			
AUMs	AUMs	100	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	
Tentative Suitable	Acres	90225	High	Acres	
Standing Volume	MBF	1260000	Moderate	Acres	23040
			Low	Acres	84482
Corridors			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	107512
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	95068	Leases	No.	0
Grizzly Bear			Leased Area	Acres	0
Habitat	Acres	95068			

d. Range and Grazing

There are parts of six grazing allotments in this Area with a mix of primary and transitory range consisting of 3,450 suitable acres and 292 AUMs.

e. Cultural Resources

There are no known cultural resource sites in the area except Meadow Creek Ranger Station, although the existence of old cabins is suspected.

f. Non-Federal Lands

There are no non-Federal lands in the area.

g. Facilities

Meadow Creek Ranger Station is located on the east side of Meadow Creek adjacent to Roadless Area 1845D.

There are four buildings on the site: the station itself, a 22x28-foot log structure with a kitchen, two bedrooms and a small office; a 15x20-foot bunkhouse with a loft; a log tack room of about the same dimensions; and a small pole and shake woodshed. The station was built in 1923, the tack room in 1925, and the bunkhouse in 1930. The main building was completely renovated in 1983, and the other buildings were repaired in 1984.

Facilities of the Horse Creek Administrative-Research project are present in the East Fork of Horse Creek. This project, begun in the late 1960s, will furnish better data on stream sedimentation caused by road construction. Although the major part of this activity is in the Main Fork and not in the roadless area, the East Fork is the control drainage for the research activities. Climatic, streamflow, and sediment-measuring instruments are installed in the East Fork near the confluence with the Main Fork. The control drainage will not be disturbed until the completion of the research project.

2. Other Management Considerations

There is a large root rot complex in the upper Meadow-Fourmile area. Large expanses of younger lodgepole pine are in need of thinning to maintain stand health. Otterson Creek area has jumbled topography which would make road building expensive and difficult. Brushfields in the Sable Hill area are starting to regenerate to tree cover.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See Introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The ecosystems in this area are well represented in other wilderness on the Nez Perce National Forest.

3. Public Interest, Concern, and Comment Summary

This area was split away from the East Meadow Creek Roadless Area (1845D) in 1979, and recommended for nonwilderness. Some environmental groups who then advocated wilderness for East Meadow Creek now want to add all lands in 1845C east of the main fork of Meadow Creek to proposed wilderness, although this is not a formal recommendation. Others would like to see all of West Meadow Creek classified as wilderness. Proposals for activities scheduled in Area 1845C have been carefully studied by environmental groups, especially those activities in the head of Meadow Creek.

The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association recommend wilderness classification. The Idaho Department of Fish and Game recommends "semi-roadless" management. Local public opinion remains heavily against any more wilderness on the Nez Perce.

The U.S. Fish and Wildlife Service (USFWS) has identified the area as potential gray wolf habitat. They want to manage this area with a threatened and endangered species emphasis. They want part of the area managed without additional roads for the first decade. Part of the area can be managed with roads, but the USFWS wants them permanently closed at completion of the project.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-19, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

Area 1845C is recommended for wilderness classification in Alternatives H, H1 and I. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only. This large expanse of land with high opportunities for solitude would be maintained in its natural condition.

Timber management possibilities on about 90,225 tentatively suitable acres, including harvest of approximately 1,260 MMBF now present in the area, would be foregone.

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed. However, much of the winter habitat in Meadow Creek is on the east side of the creek and not in Area 1845C.

Table C-19
Management Emphasis-Meadow Creek West Roadless Area 1845C - 107,512 Acres (Thousand Acres)

Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative											
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	101.7	0	101.7	101.7	98.2	98.2	0	0	101.7	98.2	98.2
Unroaded Mgmt.	0	107.5	0	0	3.5	3.5	0	0	0	3.5	3.5
Minimum Level	5.8	0	5.8	5.8	5.8	5.8	0	0	5.8	5.8	5.8
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	107.5	107.5	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	29.2	0	32.8	44.3	28.8	0	0	0	34.6	30.5	30.5
Developed-Decade 5	107.5	0	107.5	107.5	107.5	107.5	0	0	107.5	107.5	107.5
Roadless-Decade 1	78.3	107.5	74.7	63.2	78.7	107.5	0	0	72.9	77.0	77.0
Roadless-Decade 5	0	107.5	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	107.5	107.5	0	0	0

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability,

threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Gray wolf and grizzly bear habitat would be maintained or enhanced.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area. Hunter access would be similar to that presently available.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 90 and 100 percent of Roadless Area 1845C is assigned to this management emphasis in all alternatives except H, H1, I, and C. General environmental effects would be those described in Chapter IV.

Approximately 1,260 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives, although the landforms in Area 1845C are steep, and sufficient volume is not present in some places. Range developments could be constructed, and motorized equipment used.

Between 28,800 acres and 44,300 acres would be opened to roaded development in the first decade except in Alternatives G and G1. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in that alternative (J) with a large acreage of proposed wilderness elsewhere on the Forest which maximizes outputs outside of the wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (F, K, and L).

Area 1845C would be entered in six places in the first decade except in Alternatives G and G1. Two of these entries would be on the north side of Horse Creek in Section 21, T31N, R9E.

An extensive entry would be made in Section 18, T30N, R9E. This system would open up the Fivemile drainage, and would cross the head of the West Fork and end in Spring Creek. Another fork would cross Green Ridge and the head of Little Boulder Creek and end on Dent Ridge.

Three entries would be made in T29N, R9E; these are in Sections 11, 14, and 23. One fork would run into the head of Butte Creek and would extend out Simmons Ridge; the others would open up the head of Simmons Creek.

Actual mileage would depend on timber harvest objectives of each alternative. Under Alternatives D and E, which maximize timber harvest Forestwide, additional entries would be necessary in Section 33, T28N, R10E, which would run down the ridge between the Red River and Meadow Creek drainages.

In Alternative G, the Preferred Alternative, roaded development would not be scheduled during the first decade, but the area would be opened to timber management in the second decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Area 1845C is

potential gray wolf and grizzly bear habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase. The Anderson Butte National Recreation Trail would not be affected.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized. Removing trees from a site would increase the production of forbs, grasses, and shrubs that provide forage for wintering big-game animals. Therefore, carrying capacity of big-game winter ranges would increase in proportion to the number of acres of winter range that are harvested each year.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction and in Meadow Creek. However, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Old growth would be reduced, but not below minimum management requirements. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone by the fifth decade; however, about 63,200 acres of Area 1845C would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

All of Roadless Area 1845C is assigned to this management emphasis in Alternative C; and 3,500 acres, 3 percent of the area, are assigned to it in Alternatives F, G, G1, K, and L. This acreage is mostly in riparian areas.

All present uses could continue. Big-game habitat improvement using planned ignitions of prescribed fire could be carried out. Mechanical equipment could be used.

Continued roadless management of roadless areas or parts of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management if the unroaded acreage is large, and similar to roaded development if the acreage is small and scattered.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber and mining industries would not be supported under this management emphasis, since no development is planned. Wilderness advocates also would not be supported, since no part of the area is recommended for classification. However, the area would be maintained in natural condition under Alternative C.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels without coordination if the entire area remains roadless. Habitat would be maintained, but coordination would be necessary if roaded development areas are nearby.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access and disturbance of sites would be minimal if the entire area remains roadless. If it does not, the reverse would be true.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained on roadless acreage.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low in a large unroaded area. Animals would be secure. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential. Coordination would be required if the roadless acreages are located adjacent to roaded development.

- Visual Quality--The roadless area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above natural rates could not occur.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact. Large roadless acreages maintain wilderness qualities.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management; 5,800 acres, 5 percent of the area, are assigned this management emphasis in all alternatives except C, H, H1, and I. These areas are not contiguous.

Since roads may or may not be built, opportunities for wilderness may or may not change. However, unique qualities of these areas should be retained or only moderately impacted.

Effects on nonpriced resource values would depend on whether or not roads are built. If they are, effects would be similar to those of roaded development. If they are not, effects would resemble to those of unroaded management. However, from the standpoint of potential wilderness, it should be assumed that areas with a minimum level management emphasis would eventually be roaded.

ROADLESS AREA 1845D -- Meadow Creek East

94,203 Acres

A. DESCRIPTION

This area joins the Selway-Bitterroot Wilderness on the east and is separated from the Frank Church-River of No Return Wilderness by a road corridor on the south. It is located on the east side of Meadow Creek, a principal tributary of the Selway River, and includes the headwaters of Running Creek, which flows into the Selway-Bitterroot Wilderness, and Bargamin Creek, which flows into the Frank Church-River of No Return Wilderness.

The area can be reached by Indian Hill Road 290, which ends at the northern boundary; Running Creek Road 257 and Elk Mountain Road 285, which enter the area from the west; and the "Montana" Road 468, which is the southern boundary. These roads are not surfaced, and can be hazardous when wet. The Elk Mountain road forks within the area. One fork runs 17 miles and deadends near Elk Mountain. The other deadends at Warm Springs Bar, 12 miles from the junction. Driving time from Grangeville to most trailheads is 3 to 4 hours.

Elevation ranges from 2,420 feet on Meadow Creek to 8,200 feet at Burnt Knob. This area is similar in topography and vegetation to the adjacent wildernesses.

Slopes are characteristically steep throughout the area, especially toward the lower end of Meadow Creek, but there are exceptions. For example, the country opens up in the heads of some of the larger side drainages such as Schwar Creek; and Disgrace Ridge, between Buck Lake Creek and Schwar Creek, is almost flat for over 5 miles.

This area contains lakes, talus slopes, avalanche chutes, hot springs, rocky peaks, open alpine meadows, varied stream bottoms, and other features commonly associated with wilderness. Vegetation runs from cedar and grand fir in the creek bottoms to ponderosa pine and Douglas-fir on mid-slopes to lodgepole pine and subalpine fir at higher elevations. Threatened and endangered plant species may exist; a thorough survey has not been made.

Burnt Knob and 3 Prong Ridge are scenic features (alpine glaciation) visible from most points in the area. Other scenic or special features in this area include areas along meadow creek, alpine larch stands, and the Meadow Creek National Recreation Trail. Threatened and Endangered wildlife species include the gray wolf and grizzly bear.

Current uses of the area include fishing, motorcycle riding, horseback riding, hunting, backpacking, camping, hiking, snowmobiling, and sightseeing. Three outfitters operate in the area.

B. CAPABILITY

This section describes the basic characteristics which make the area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Human impacts on this area have been very light. A few sections of trail are heavily eroded, but most are not. Overall, long-term ecological processes are intact and operating naturally.

2. Natural Appearance

Since there have been so few human impacts, the area appears natural by almost any criterion. A few trails are noticeable. Although many lookout towers were built in the area, they are all gone now. The only remains are a few burned nails and pieces of melted glass on some mountain tops. Spans of telephone wire that have never been rolled up and packed out can be found along some trails. Distant roads and clearcuts can be seen from the highest elevations in the area.

3. Solitude

Area 1845D joins the Selway-Bitterroot and Frank Church-River of No Return Wildernesses and, together, offers an opportunity for solitude possibly unmatched in the lower 48 states. Although other people can be encountered on trails and at popular camping spots, there are many places where the probability of encountering others is almost zero.

4. Primitive Recreation Opportunities

There are no comfort and convenience facilities in Area 1845D except a few undeveloped campsites and the already-mentioned substandard trails. This area and the neighboring wilderness make up an undeveloped roadless expanse of over three million acres. There is plenty of diversity of opportunity and challenge once the visitor leaves the established trails. Vegetation, terrain, lakes, streams, and climate vary markedly. Meadow Creek and some of the larger tributaries are difficult and hazardous to cross except when the water is very low. Throughout, the opportunity for risk-taking is significant.

5. Wilderness Manageability and Boundaries

Boundaries are well-defined, and follow major topographical features such as streams and ridges. With few exceptions, boundaries would be fairly easy to locate on the ground. Many are trails.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1845D are shown in Table C-20. Current uses of the area are also discussed in this section.

a. Timber

The middle elevation zones contain stands of ponderosa pine on southern and western exposures. Cedar is present in the lower creek bottoms, and lodgepole and subalpine species prevail at the higher elevations.

b. Recreation

A trail network built in the 1920s and 1930s exists in the area. Some of these trails are reconstructed stock driveways dating back to 1900-1915. Fifteen miles of Trail 726, which follow Meadow Creek upstream from the mouth, have been designated a National Recreation Trail. It is an easy trail compared to those that climb out of the creek bottom, and receives somewhat more maintenance work than the other trails in the area. Several bridges have been built on this trail in recent years, but major reconstruction will be required to bring it to standard. It is popular with backpackers early in the season when high country trails are still blocked with snow. It is often used by fishermen and is sometimes used by motorcyclists in the summer, and is heavily used during the fall hunting season. A few cougar hunters use it in the winter.

Table C-20
Selected Resource Values - East Meadow Creek Roadless Area 1845D
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	94203	Wildlife - Big Game		
Net Acres	Acres	94203	Summer Habitat	Acres	88039
			Winter Habitat	Acres	6164
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	88039
Semiprim.Nonmotor	Acres	94203	Winter Hab.	Acres	6164
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	88039
			Winter Hab.	Acres	6164
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	0	Stream Miles	Miles	94
Allotments	No.	0			
AUMs	AUMs	0	Stream Habitat	Hab.ac	91
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	72033	High	Acres	0
Standing Volume	MBF	772048	Moderate	Acres	21510
			Low	Acres	72693
Corridors			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	94203
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	94203	Leases	No.	0
Grizzly Bear			Leased Area	Acres	0
Habitat	Acres	94203			

c. Fish and Wildlife

Meadow Creek is bigger than some streams that are called rivers on the Nez Perce Forest. In fact, on some of the original maps of the Forest it is called the South Fork of the Selway. Meadow Creek has more miles of significant fishery than any other roadless area on the Forest. The potential spawning and rearing habitat available for anadromous species in the drainage has been estimated at over 41 acres. Healthy populations of rainbow trout, steelhead trout, cutthroat trout, and Dolly Varden exist throughout the area. The fish are small, but plentiful. Water quality is very high.

Mule and whitetail deer, elk, black bear, and moose inhabit Area 1845D. The west-facing slopes along lower Meadow Creek are important winter range. Elk populations are not as large as they were 20 years ago, but recent winter counts by the Idaho Department of Fish and Game indicate numbers are increasing. The area is also possible grizzly bear habitat. The endangered Rocky Mountain Gray Wolf may inhabit the area based on suitability of habitat and unconfirmed sightings. Numerous species of birds and nongame animals are also found in the area, including some not often seen, such as varied thrushes and wolverines.

d. Minerals

There are no mining claims in the area, and there is no patented ground. About 160 acres in Section 23, T 29 N, R 11 E has been impacted by past mining activity.

e. Cultural Resources

There are no known cultural resource sites in the area.

f. Non-Federal Lands

All land is National Forest land.

2. Other Management Considerations

A Research Natural Area is proposed in Sections 11, 14, and 15, T29N, R12E. This 1,000-acre area, in the vicinity of Warm Springs near Running Creek, will meet Regional targets for including a representative hot spring and associated vegetation in the RNA network.

Wildlife habitat will be improved by prescribed burning.

There is a lack of potential commercial timber production.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

Almost all features of this roadless area are represented in other wildernesses on the Nez Perce National Forest. The chief contribution of wilderness classification would be to increase the size of either the Selway-Bitterroot or the Frank Church-River of No Return Wildernesses.

3. Public Interest, Concern, and Comment Summary

In the past, local, regional, and national groups have shown interest in this area. As a result of previous wilderness studies, Area 1845D was separated from lands on the west side of Meadow Creek and recommended for wilderness classification in 1979. The Administration proposed the area to Congress, but wilderness classification was rejected at the time the Central Idaho Wilderness Act was passed.

Area 1845D means different things to different people. To some individuals and members of wilderness groups, it means an addition to the Selway-Bitterroot Wilderness. To motorcyclists, it means a challenging, creek-bottom trail. To early season backpackers, it means a place to go when the high country is still snowed in. To commercial outfitters, it means a place that is pleasing to their clients, yet is a place where they use chainsaws to cut wood and open trails. To industry groups, it means commercial forest land. In short, these users, and others, see the area as a place where their special interests can be served.

Although wilderness designation was denied by Congress in 1980, environmental groups still view 1845D as an area of high wilderness values, and remain interested in how it is managed. They advocate at least continue roadless management. The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association recommend this area for wilderness classification.

The Idaho Department of Fish and Game recommends that Area 1845D remain roadless and fisheries be managed at 100 percent - the only such level recommended on the Forest.

The U.S. Fish and Wildlife Service has identified Area 1845 as important T&E species habitat.

Industry groups want all of Area 1845 included in the timber base.

Local public opinion is heavily against any more wilderness on the Nez Perce National Forest.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-21, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1845D is recommended for wilderness classification in Alternatives H, H1, I, J, K, and L. This recommendation would increase opportunities for

primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only. The lakes, talus slopes, avalanche chutes, hot springs, rocky peaks, and other wilderness features would be preserved in the natural condition.

Table C-21
Management Emphasis-Meadow Creek East Roadless Area 1845D - 94,203 Acres (Thousand Acres)

	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	71.3	0	71.3	71.3	0	0	0	0	0	0	0
Unroaded Mgmt.	0	93.2	0	0	93.2	93.2	0	0	0	0	0
Minimum Level	21.9	0	21.9	21.9	0	0	0	0	0	0	0
Research Natural Area	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Wilderness											
Wilderness	0	0	0	0	0	0	94.2	94.2	94.2	94.2	94.2
Summary of Management Emphasis											
Developed-Decade 1	20.7	0	23.1	31.3	0	0	0	0	0	0	0
Developed-Decade 5	93.2	0	93.2	93.2	0	0	0	0	0	0	0
Roadless-Decade 1	73.5	94.2	71.1	62.9	94.2	94.2	0	0	0	0	0
Roadless-Decade 5	1.0	94.2	1.0	1.0	94.2	94.2	0	0	0	0	0
Wilderness	0	0	0	0	0	0	94.2	94.2	94.2	94.2	94.2

Timber management possibilities, including harvest of approximately 772 MMBF now present in the area, would be foregone. The ponderosa pine stands are of high value.

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but mineral development could continue on existing valid claims and leases.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed. The east side of Meadow Creek is important winter range, and reliance on unplanned ignitions may not be sufficient to maintain it.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. However, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation, mainly the outfitters who operate in the area, would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Potential gray wolf and grizzly bear habitat would be maintained or enhanced.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--High water quality would be maintained in streams on the east side of Meadow Creek.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Approximately 75 percent, 71,300 acres, of Roadless Area 1845D is assigned to this management emphasis in Alternatives A, D, and E. General environmental effects would be those described in Chapter IV.

Between 20,700 acres, 22 percent of the area, and 31,300 acres, 33 percent of the area, would be opened to roaded development in the first decade.

Area 1845D would be entered from existing roads 468 and 285. One major harvest area would be in the head of Bargamin Creek off Road 468. New construction would depart from Road 285 in Section 1, T28N, R11E, and generally follow the divide between Running Creek and Lynx Creek to a junction with Road 257. Spurs would run from this arterial into the harvest areas.

Alternative G, the Preferred Alternative, assigns this area to be managed without additional roads.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber and mining industries would benefit from this management emphasis; industries relating to primitive recreation, mainly outfitters, would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction and habitat management would be required. Area 1845D is potential gray wolf and grizzly bear habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase; however, the Meadow Creek National Recreation Trail would not be affected.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Adequate old-growth would remain in Area 1845D. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone by the fifth decade; however, nearly 63,000 acres of Area 1845D would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
   Management Emphasis: Unroaded Management

All of Roadless Area 1845D is assigned to this management emphasis in Alternatives C, F, G, and G1.

All present uses of the area could continue. Big-game habitat improvement projects using planned ignitions of prescribed fire could be accomplished. Chainsaws and trail bikes could be used.

Continued roadless management of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management if large acreages are involved, as is the case with Area 1845D.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Individuals and groups advocating either wilderness or roaded development would be supported to a limited extent. The area would not be classified, but essential wilderness characteristics would be retained. Timber harvest would not be precluded, but it would have to be accomplished without roads. Outfitters would benefit.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low. Animals would be secure. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation could be held to present rates.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain nearly intact.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription calls for a maintenance-only level of management. Alternatives A, D, and E, the roaded development alternatives, assign 21,900 acres, or about 23 percent of the area, to this management emphasis. Much of this acreage is subalpine land not suitable for timber production.

Since roads may or may not be built, opportunities for wilderness may or may not change. However, it is unlikely that these acreages would be roaded.

Effects on nonpriced resource values would depend on whether or not roads are built. Since road construction is improbable, effects would remain similar to those now present.

e. Designation: Nonwilderness
Management Emphasis: Research Natural Area

This prescription is assigned to 1,000 acres of Area 1845D in all alternatives. Management of Research Natural Areas excludes activities which directly or indirectly modify ecological processes. Logging is prohibited, and no new roads are planned. Fire suppression is accomplished by manual means. In effect, wilderness characteristics are retained.

ROADLESS AREA 1847 -- MALLARD

23,232 Acres

A. DESCRIPTION

This area is immediately above the Salmon River breaks, and includes most of Big Mallard Creek. The Frank Church-River of No Return Wilderness borders this area on the south and east, the Nez Perce trail is part of the north boundary, and roads form most of the boundary on the west and north.

Access is via Roads 421, 468, and 9550. Road 468 follows the route of the Nez Perce Trail, which was used long before Lewis and Clark as a passage over the Bitterroot Range.

Area 1847 consists of rolling hills, lightly to moderately dissected, with fairly low stream gradients until nearing the Salmon River breaks. Big Mallard Creek is the principal drainage. Elevation ranges from 5,200 feet at the East Fork of Mallard Creek to 7,648 feet at Boston Mountain. There is evidence of glaciation in the northeast portion of the Area.

The ecosystem type ranges from Engelmann spruce-alpine fir in the wet areas and draws in the upper Slide and Mallard Creek areas to ponderosa pine-Douglas-fir in the lower Mallard and Cup Creek areas. Lodgepole pine dominates dryer ridges and exposed aspects across the entire Area, and high mountain meadows occupy sites along Big Mallard Creek.

This Area contains a lot of lodgepole pine over 80 years old and greater than 8 inches in diameter, growing at elevations under 6,200 feet. These trees are especially vulnerable to attacks by mountain pine beetles, a species that has already caused widespread damage to the timber resource in nearby drainages.

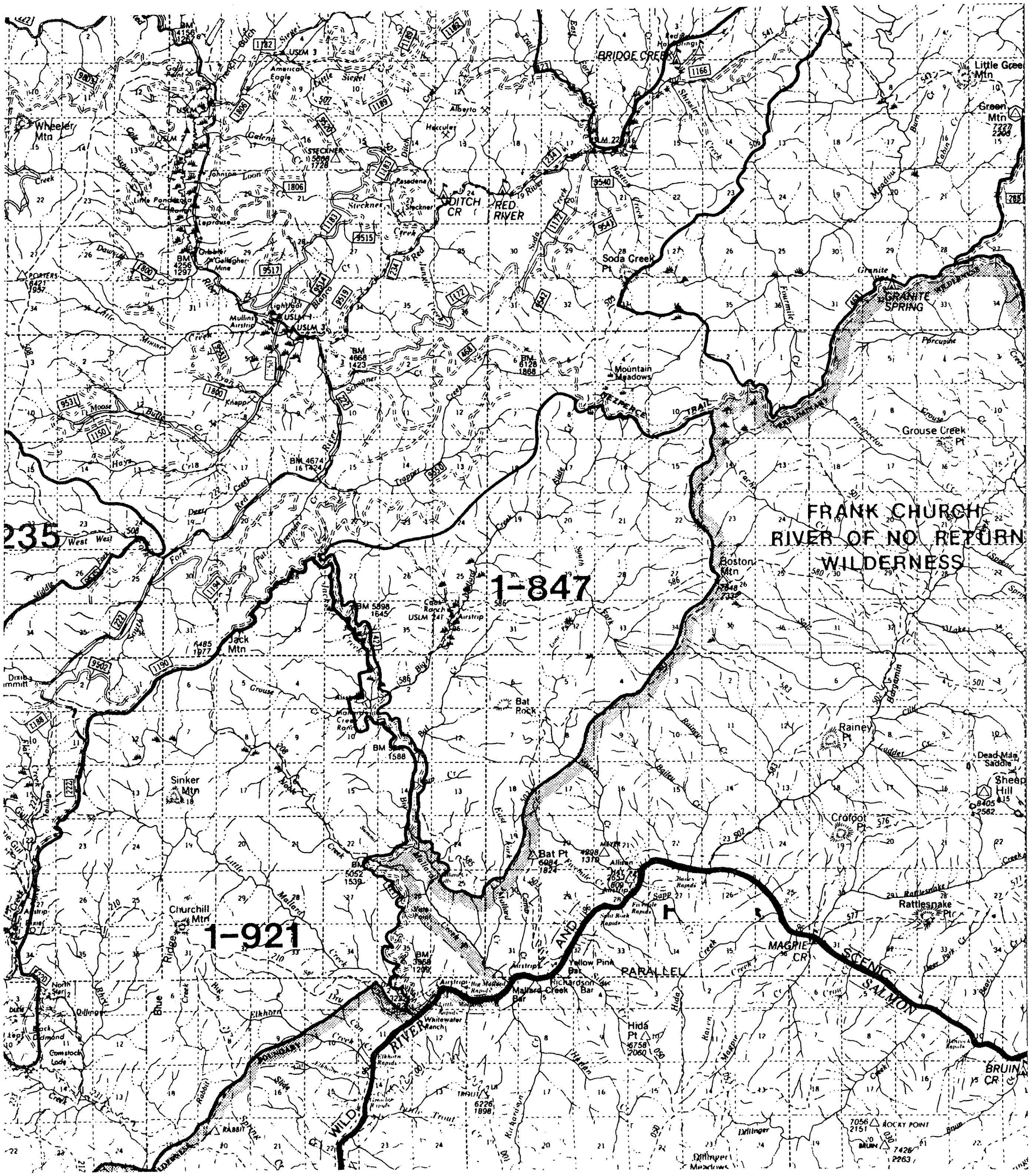
Recreation uses include fishing, hunting, camping, horseback riding, hiking, and snowmobiling. One outfitter operates in the Area. The Area is also used for grazing in the meadows.

The Cook Ranch consisting of two adjoining homesteads in Big Mallard Meadows patented in 1919 and 1924, is located about a mile inside the area. There are four buildings on this 141-acre site. An airport was built in the nearby meadow some years ago. An old jeep trail runs from Road 421 to the ranch, but no motorized traffic is allowed on it.

B. CAPABILITY

1. Natural Integrity

Natural processes operate to a high degree in this area. Except for the Cook Ranch and several trails, there are few impacts.


1-847
1-921
235
FRANK CHURCH
RIVER OF NO RETURN
WILDERNESS
BRIDGE CREEK
DITCH CR
RED RIVER
Wheeler Mtn
Little Green Mtn
Green Mtn
Soda Creek Pt
GRANITE SPRING
Mountain Meadows
NEZPERCE TRAIL
Grouse Creek Pt
Boston Mtn
Jack Mtn
Bat Rock
Rainey Pt
Dead Man Saddle
Sheep Hill
Crofoot Pt
Sinker Mtn
Bat Pt
Churchill Mtn
Rattlesnake Pt
MAGPIE CR
SCENIC
SALMON
PARALLEL
AND
RIVER
WILD
Yellow Pine Bar
Richardson Bar
Mallard Creek Bar
Whitewater Ranch
Hida Pt
BRUIN CR
Dillinger Meadows
Comstock Lode
Mullins Airstrip
Pasadena
Steckner
Alberta
Hercules
Galena
American Eagle
Little Ponderosa
Leprouse
Gribbler
Gallagher Mine
Knapp
Hays
Grouse
Elkhorn
Dillinger
Blue Ridge

2. Natural Appearance

Here again, except for the buildings, fences, and airport at the Cook Ranch, the area would appear natural to most people.

3. Solitude

When this area is taken together with the adjacent Frank Church-River of No Return Wilderness, opportunities for solitude are outstanding, even though there are off-site intrusions near the boundary in the forms of roads, and on-site intrusions caused by airplanes and other activities at the Cook Ranch.

4. Primitive Recreation Opportunity

Diversity and challenge are outstanding when this area is taken together with the adjoining existing wilderness. Developed recreation facilities are limited to the Cook Ranch, a private facility.

5. Wilderness Manageability and Boundaries

The boundary of this area was adjusted in 1983 to account for a proposed timber sale; however, this area was never logged or roaded. Because of this, the boundary of Area 1847 was adjusted back to the original RARE II boundary.

Area 1847 could be managed as a part of the Frank Church-River of No Return Wilderness at about the same cost per acre as that wilderness.

The Cook Ranch would present a problem in wilderness administration. If boundaries were adjusted to exclude it, the size of the area would be considerably reduced.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1847 are shown in Table C-22. Current uses of the area are also discussed in this section.

a. Timber

Timber in Area 1847 is predominantly lodgepole pine, except for areas adjacent to the wilderness boundary which contain ponderosa pine and Douglas-fir. Spruce is found in the Slide Creek area.

b. Recreation

Recreation activity in this area is associated mainly with big-game hunting, with some fishing in the summer.

Table C-22
Selected Resource Values - Mallard Roadless Area 1847
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	23373	Wildlife - Big Game		
Net Acres	Acres	23232	Summer Habitat	Acres	23189
			Winter Habitat	Acres	43
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	23189
Semiprim.Nonmotor	Acres	23232	Winter Hab.	Acres	43
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	23189
			Winter Hab.	Acres	43
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	485	Stream Miles	Miles	43
Allotments	No.	2			
AUMs	AUMs	175	Stream Habitat	Hab.ac	42
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	200			
AUMs	AUMs	20	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	21036	High	Acres	0
Standing Volume	MBF	234900	Moderate	Acres	0
			Low	Acres	23232
Corridor			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	23232
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	23232	Leases	No.	0
Grizzly Bear			Leased Area	Acres	0
Habitat	Acres	23232			

c. Fish and Wildlife

Big Mallard Creek does not contain anadromous fish: a waterfall in the lower part of the creek blocks fish passage. The creek does contain a population of cutthroat, rainbow, and brook trout. The area is elk, deer, and moose summer range, and potential gray wolf habitat. Based on suitability of habitat and unconfirmed sightings, it is felt that the endangered Rocky Mountain Gray Wolf and grizzly bear may inhabit the Area. It also contains potential nesting habitat for peregrine falcons.

d. Grazing

Parts of two allotments lie within this Area. Cattle are grazed in this Area under term permit.

e. Cultural Resources

There are no known cultural resource sites in the area.

f. Non-Federal Lands

The Cook Ranch, a private tract, is discussed in Sections A and B.

2. Other Management Considerations

The Cook Ranch (HES 241 & 242) located in the west central part of the Area could present a problem in wilderness administration.

Most of the Engelmann spruce-alpine fir component is mature to overmature, with increasing mortality rates.

The 80-year-old lodgepole pine is vulnerable to attacks by the mountain pine beetle. Widespread damage has already occurred to the timber resource in nearby drainages. There is also some root rot activity in the southern part of the Area.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The main contribution of this area would be to increase the size of the Frank Church-River of No Return Wilderness.

3. Public Interest, Concern, and Comment Summary

There has been interest in making this area a wilderness, and it was a part of the wilderness study which eventually led to establishment of the Frank Church-River of No Return Wilderness. This area was considered for wilderness and excluded by Congress when that Wilderness was created.

The Idaho Department of Fish and Game recommends roaded management with the northern parts managed at limited entry.

The Inland Forest Resource Council recommends management for the timber resource.

The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association recommend wilderness classification.

The U.S. Fish and Wildlife Service has identified the area as potential gray wolf and peregrine falcon habitat. They want to manage this area with a threatened and endangered species emphasis without additional roads for the first decade.

There has been considerable public interest in keeping this area roadless; however, local public opinion remains heavily against any more wilderness on the Forest.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-23, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1847 is recommended for wilderness classification in Alternatives H, H1, I, and J. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 234.9 MMBF now present in the area, would be foregone. Much of the timber is mature lodgepole pine.

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. However, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation, such as outfitting, would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Table C-23
Management Emphasis-Mallard Roadless Area 1847 - 23,232 Acres
(Thousand Acres)

Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Nonwilderness											
Roaded Development	23.1	22.3	23.1	23.1	0	22.3	0	6.0	6.0	22.3	22.3
Unroaded Mgmt.	0	0.8	0	0	23.2	0.8	0	0	0	0.8	0.8
Minimum Level	0.1	0.1	0.1	0.1	0	0.1	0	0	0	0.1	0.1
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	23.2	17.2	17.2	0	0
Summary of Management Emphasis											
Developed-Decade 1	4.9	4.0	5.5	1.4	0	4.1	0	0	0	5.0	5.0
Developed-Decade 5	23.2	23.2	23.2	23.2	0	23.2	0	6.0	6.0	23.2	23.2
Roadless-Decade 1	18.3	19.2	17.7	21.8	23.2	19.1	0	6.0	6.0	18.2	18.2
Roadless-Decade 5	0	0	0	0	23.2	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	23.2	17.2	17.2	0	0

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Gray wolf, grizzly bear, and peregrine falcon habitat would be maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at nearly 100 percent of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--The area is not an anadromous fishery; however, cutthroat, rainbow, and brook trout populations would be unimpacted.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 96 and 99 percent of Roadless Area 1847 is assigned to this management emphasis in all alternatives except F, H, H1, I, and J. Approximately 26 percent of Roadless Area 1847 is assigned to this management emphasis in Alternatives I and J. General environmental effects would be those described in Chapter IV.

Approximately 234.9 MMBF of standing timber volume would be available for harvest in all alternatives except F, H, H1, I, and J. Approximately 60.8 MMBF would be available for harvest in Alternatives I and J. Range developments could be constructed, and motorized equipment used.

Between 1,400 and 5,500 acres, 6 to 24 percent of the area, would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D) and which continue current direction (A).

Area 1847 would be entered in two places in the first decade. One entry would be in the head of Slide Creek in Section 8, T27N, R10E. The other entry would be in Section 14, T26N, R9E, near the Frank Church-River of No Return Wilderness boundary, which would open Cup Creek and several tributaries of Big

Mallard Creek. Actual mileages would depend on the timber harvest objectives of each alternative.

Alternative G, the Preferred Alternative, would open about 4,100 acres, 18 percent of the area, to roaded development in the first decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Any nearby timber harvest could detract from the Cook Ranch's value as a recreation facility. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded development management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction and habitat management would be required. Area 1847 is potential gray wolf and grizzly bear habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase. Hunting access would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms. Only about 3 miles of Big Mallard Creek is spawning and rearing habitat for anadromous fish.

- Old-Growth Habitat--Habitat would remain adequate for old-growth-dependent species. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 17,000 acres of Area 1847 would remain unroaded at the end of the first decade. Some of this acreage would adjoin the Frank Church-River of No Return Wilderness and could be added to it.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

All of Roadless Area 1847 is assigned to this management emphasis in Alternative F and 800 acres of it are so assigned in Alternatives C, G, G1, K, and L.

All present uses could continue. Timber harvest would be allowed, but without roads. The smaller acreages are generally located in riparian areas.

Continued roadless management of roadless areas or parts of roadless areas has effects on nonpriced resource values that are similar to those of wilderness management if the acreages are large. If they are small, effects are similar to those of roaded development.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. If management of the entire area is accomplished without roads, industries relating to primitive recreation would benefit, but timber and mining industries would not benefit.

Economic and social effects of unroaded management of the lesser acreages would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels and habitat would be maintained if the entire area remains roadless.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access, and disturbance of sites would be minimal if the entire area is unroaded. If it is not, the reverse would be true.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--If the entire area is unroaded, the need for coordination between habitat management and other management activities would be low. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at nearly 100 percent of potential. If the roadless acreages are small and dispersed, increased coordination would be necessary.

- Visual Quality--The unroaded area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above natural rates would not originate in unroaded areas.

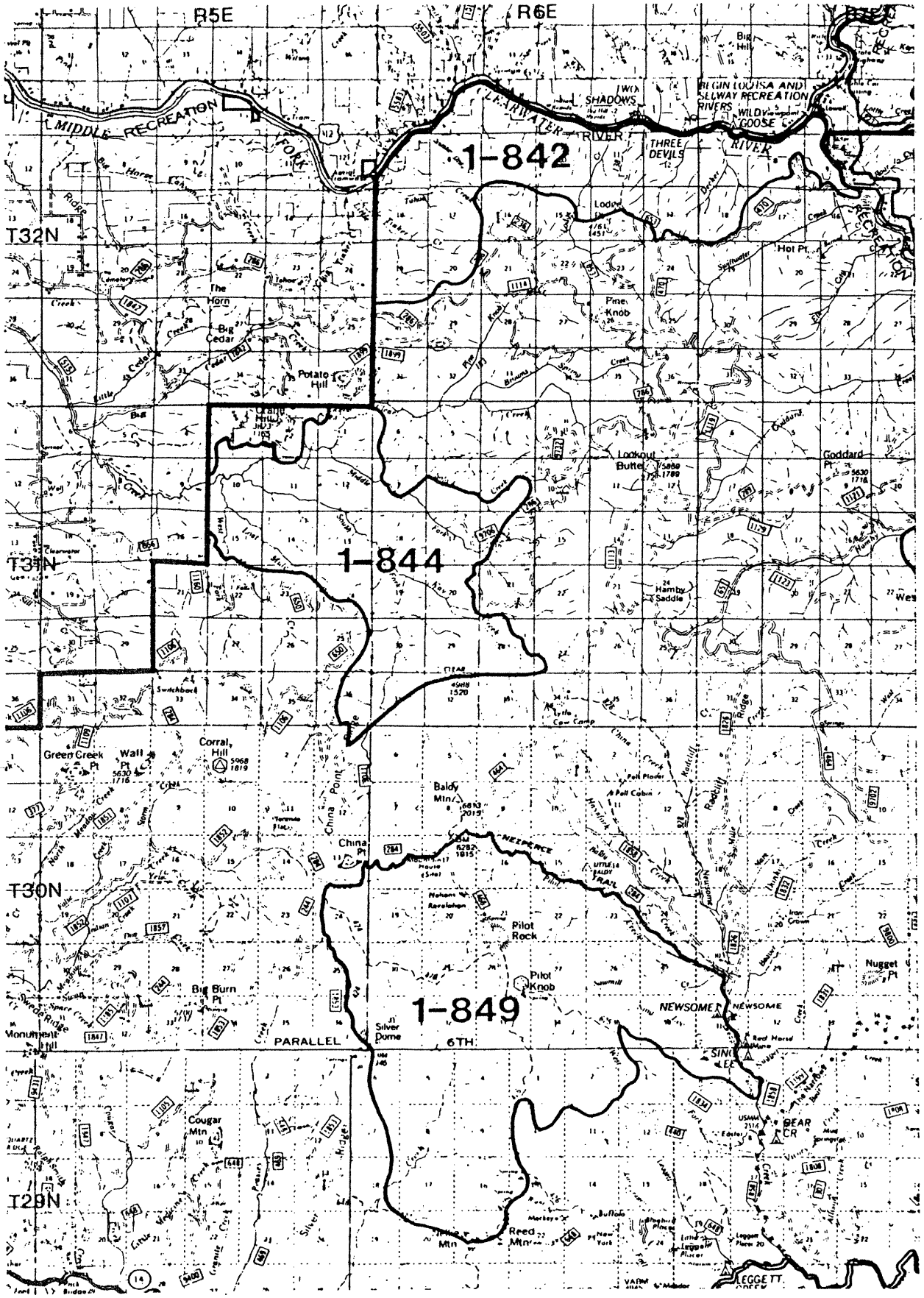
- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact if the entire area is unroaded. Roadless acres adjoining the Wilderness could be added to it.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management on an insignificant acreage in all alternatives except F, H, H1, I, and J.

Since roads may or may not be constructed, opportunities for wilderness may or may not change; however, these acreages are so small few effects would result in any event.


R5E
R6E
T32N
T31N
T30N
T29N
1-842
1-844
1-849
MIDDLE RECREATION
FORK
CLEARWATER RIVER
SHADOWS
THREE DEVILS
BEGIN LOCHSA AND SELWAY RECREATION RIVERS
WILDY GOOSE
The Horn
Big Cedar
Potato Hill
Pine Knob
Hot Pt.
Lookout Butte
Goddard Pt.
Hamby Saddle
Green Creek Pt
Wall Pt
Corral Hill
China Point
China Pt
Baldy Mtn
NEZPERCE TRAIL
Pilot Rock
Pilot Knob
Big Burn Pt
Silver Dome
PARALLEL
6TH
NEWSOME
Nugget Pt
Cougar Mtn
Reed Mtn
LEGGETT

ROADLESS AREA 1849 -- SILVER CREEK-PILOT KNOB

21,034 Acres

A. DESCRIPTION

This area includes the upper two-thirds of Silver Creek and several small tributaries of Newsome Creek. Roads 1853, 244, 284, 1858, and 1834 border this Area on all of the north side and parts of the east and west sides. Road 466 enters the area from the north and runs 4.5 miles to Pilot Knob Lookout. Two short spurs extend from this road, one to an old mine.

The elevation ranges from approximately 4,000 feet at the lowest point in Newsome Creek to 7,000 feet at Pilot Rock. Topography is uniformly rolling with uniform forest cover. The Pilot Knob/Pilot Rock ridge is a highly visible landmark in the center of the Area with rock outcrops, meadows, and timber providing a visually pleasing mosaic. Drainages form a dendritic pattern.

Vegetation types are diverse. Old-growth grand fir stands are prevalent next to Newsome Creek. Subalpine fir habitat types, currently dominated by lodgepole pine, are found near Nellie Mountain and Reed Mountain. Moist grand fir and subalpine fir types cover the majority of the Area. Small, wet openings dominated by Sitka spruce and alder are scattered throughout the Silver Creek drainage.

A key visual attraction in this Area is Pilot Rock, a massive, bare rock formation almost in the center of the Area. There is easy walking access from the lookout to the top of this formation. Pilot Rock is reported to be an ancient "vision quest" site for the Nez Perce Indian Tribe. Other attractions include several large, natural meadows below China Point and at Mountain House site. There are also a few remnants of early day mining along Newsome Creek, but nothing that would require special considerations.

The mining frontier arrived in this area in 1861, only a year after the first gold discoveries in Idaho. John Newsome's company started panning about the same time that gold fever hit Elk City. By August 1861, over 300 miners were staked out along Newsome Creek, but by fall 1864, only 21 people were left at Newsome townsite, which is adjacent to Area 1849.

Mining here followed the same trend as other mining camps in Idaho County: a boom of initial placer discoveries in the 1860's, a decline followed by placer mining by the Chinese, a quartz (hardrock) boom in the 1880's, decline, stream-dredging activities, then final collapse.

Between 1870 and 1890, Chinese miners lived and mined in and near this roadless area. The Chinese arrived after the claims began to decline by white standards, and those miners were willing to sell out.

When the properties became valuable again in the quartz boom of the 1880's, courts ruled that Chinese could not legally own mining property. There were few Chinese left in the area by 1900. A memento of their presence in Area 1849

is Sing Lee Creek, named after a miner who was especially friendly to white men, and who reputedly lived over 100 years.

Current uses include livestock grazing, mining, big-game hunting, sightseeing, special use electronics sites, and fishing.

B. CAPABILITY

This section describes the basic characteristics which make the area appropriate and valuable for wilderness regardless of the area's availability or need.

1. Natural Integrity

Overall, natural processes are intact and operating. Although the area has been impacted by fire, mining, and grazing, the sum of these impacts is moderate. Most are sharply localized.

2. Natural Appearance

A road enters the area from the north, and climbs the ridge to Pilot Knob, where a lookout and electronic site are located. These are apparent to most observers. Elsewhere in the area, there are signs of grazing and past mining activity.

3. Solitude

The size of this area does not offer an outstanding opportunity for solitude. The road to Pilot Knob almost divides the Area in half. Topographic and vegetative screening are both moderate, and there are off-site intrusions in the form of visible clearcuts, roads, and sounds from logging activity.

4. Primitive Recreation Opportunity

Opportunities for primitive recreation is moderate. Challenges are limited to the rocks and cliffs around Pilot Rock and Pilot Knob. Manmade facilities are present in the center of the area (Pilot Knob Lookout) and on the edges (roads, timber sale areas). There is small opportunity for isolation.

5. Wilderness Manageability and Boundaries

Since 1979, the size of this area has been reduced by 14,695 acres to allow for existing and proposed timber sales.

Some parts of the boundary would be difficult to locate on the ground. Since the south side of the area shares a boundary with roaded development, trespass with motorized equipment would be likely. Administrative costs per acre would be high, due to the small size and isolation of this area from other wildernesses.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1849 are shown in Table C-24. Current uses of the area are also discussed in this section.

Table C-24
Selected Resource Values - Silver Creek-Pilot Knob Roadless Area 1849
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	21255	Wildlife - Big Game		
Net Acres	Acres	21034	Summer Habitat	Acres	20562
			Winter Habitat	Acres	472
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	20562
Semiprim.Nonmotor	Acres	21034	Winter Hab.	Acres	472
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	20562
			Winter Hab.	Acres	472
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	4720	Stream Miles	Miles	34
Allotments	No.	2			
AUMs	AUMs	412	Stream Habitat	Hab.ac	33
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	20091	High	Acres	0
Standing Volume	MBF	285367	Moderate	Acres	4480
			Low	Acres	16554
Corridors			Mining Claims	No.	12
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	21034
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	21255	Leases	No.	0
			Leased Area	Acres	0

a. Timber

The Pilot Rock/Pilot Knob ridge is not heavily forested. The rest of the area is covered with mixed species.

b. Recreation

Recreation use is light except for fall hunting. A couple of trails cross the Area, but receive only very light use.

c. Minerals

Mining activity is not widespread, but in view of the area's mining history, interest continues. There are currently 12 unpatented mining claims.

d. Fish and Wildlife

Anadromous fish are not present in Silver Creek, but the upper portion contains a reproducing population of eastern brook trout. Newsome Creek and its tributaries do contain anadromous fish as well as native species. The area also supports elk, deer, moose, and bear populations. Controlled hunts are made each year for a few moose. Area 1849 is a major elk summer range and security area. In addition, when taken together with Area 1844 to the north, it is a possible yearlong gray wolf habitat.

e. Grazing and Range

This Area contains parts of two allotments. The majority of the available forage is from low brush and forbs found under the overstory and along stream courses. There are a few small natural meadows along the streams and some small open grass areas along the ridges.

f. Cultural Resources

The area may contain undiscovered historic and prehistoric cultural resources. In addition to past mining, the northeastern boundary of Area 1849 is the historic Nez Perce Trail, which was used by Indians long before the time of mountain men and miners. This trail was the main access route to Idaho County mines of the 19th century, later became the Elk City Wagon Road, and still later was improved to accommodate motor vehicles.

g. Non-Federal Land

A 160-acre homestead patented in 1923 and an adjoining patented mining claim of 31 acres are located at the mouth of Pilot Creek on the northeast edge of the area. This land has been partially subdivided and is the site of several summer homes.

2. Other Management Considerations

Pilot Rock is reported to be an ancient "vision quest" site for the Nez Perce Indian Tribe. The Tribe is presently negotiating with the Forest Service to establish an undisturbed area around Pilot Rock that encompasses nearly the same acreage and boundaries as the proposed roadless area.

Silver Ridge, on the west edge of the Area, and the entire Silver Creek drainage are hotspots for lightning strikes and resultant fires.

Heartrot caused by Indianpaint fungus is predominant in the old-growth grand fir. Lodgepole pine stands are currently 70 to 75 years old. Stands which are 80 years old are considered moderately susceptible to mountain pine beetle attack. Other factors, such as large size and low elevation can compound the susceptibility, creating high risk of a mountain pine beetle attack.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The most unique feature of the area is Pilot Rock-Pilot Knob ridge, although a road runs its full length. Other features are represented in other wildernesses on the Forest.

3. Public Interest, Concern, and Comment Summary

There is no record of any proposal that this area be given wilderness classification, but some would like to see it remain roadless for wildlife. The Nez Perce Indian tribe wants this area to remain roadless to protect the religious and historical significance of the area. Other interests center around timber management, roaded recreation, and big-game hunting.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-25, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1849 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 285.4 MMBF now present in the area, would be foregone.

Table C-25
Management Emphasis-Silver Creek-Pilot Knob Roadless Area 1849 - 21,034 Acres
(Thousand Acres)

Management Emphasis	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	20.6	0	20.6	20.6	19.9	6.6	0	20.6	20.6	19.9	19.9
Unroaded Mgmt.	0	21.0	0	0	0.7	14.0	0	0	0	0.7	0.7
Minimum Level	0.4	0	0.4	0.4	0.4	0.4	0	0.4	0.4	0.4	0.4
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	21.0	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	5.9	0	6.6	9.0	5.8	0	0	7.6	7.0	6.2	6.2
Developed-Decade 5	21.0	0	21.0	21.0	21.0	7.7	0	21.0	21.0	21.0	21.0
Roadless-Decade 1	15.1	21.0	14.4	12.0	15.2	21.0	0	13.4	14.0	14.8	14.8
Roadless-Decade 5	0	21.0	0	0	0	13.3	0	0	0	0	0
Wilderness	0	0	0	0	0	0	21.0	0	0	0	0

Some existing uses, such as use of trail bikes and chainsaws, would have to be terminated, but grazing at existing levels and mineral exploration could be allowed to continue.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would be localized and limited. Gray wolf habitat would be maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within 3 miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness provides full habitat potential. High water quality would be maintained in Newsome Creek.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 95 and 98 percent of Roadless Area 1849 is assigned to this management emphasis in all alternatives except C, G, G1, H, and H1. Approximately 35 percent of Area 1849 is assigned to this management emphasis in Alternatives G and G1. General environmental effects would be those described in Chapter IV.

Approximately 285.4 MMBF of standing timber volume would be available for harvest in all alternatives except C, G, G1, H, and H1. Approximately 99.2 MMBF of timber would be available for harvest in Alternatives G and G1. Range developments could be constructed, and motorized equipment used.

Roads would enter the Silver Creek drainage in the southwest part of the area in the first decade except in Alternatives G and G1. Timber harvest would be adjacent to these roads. Between 5,800 and 9,000 acres would be opened to roaded development, except in Alternatives G and G1, depending on the timber objectives of a particular alternative.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Area 1849 is potential gray wolf habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely. This area holds potential for discovering new sites.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase, as would hunter access.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized. Removing trees from a site would increase the production of forbs, grasses, and shrubs that provide

forage for wintering big-game animals. Therefore, carrying capacity of big-game winter ranges would increase in proportion to the number of acres of winter range harvested each year.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Old-growth habitat would remain adequate. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone by the fifth decade. Pilot Rock/Pilot Knob would be unaffected.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

All of Roadless Area 1849 is assigned to this management emphasis in Alternative C, 13,300 acres of it in Alternatives G and G1, and 700 acres of it in Alternatives F, K, and L. These smaller acreages are mostly in riparian areas.

Continued roadless management of roadless areas or parts of roadless areas would have effects on nonpriced resource values that are similar to those of wilderness management if the acreages are large, and similar to roaded development if the areas are small.

All present uses could continue on roadless acreages. Timber harvest would be allowed, but from existing roads.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Area 1849 would remain unroaded in one alternative, with effects that would resemble those of wilderness. In the other alternatives, economic and social effects would be small. Generally, timber and mining industries would not be supported, since

no development is planned. On the other hand, wilderness advocates would not be supported because of the small size and dispersion of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels and habitat would be maintained if the entire area is unroaded. Coordination would be required in the case of small areas and nearby roaded development.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would be minimal if the entire area is unroaded; however, site disturbance would be more likely on small areas near roaded development.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained on the unroaded acreage.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low if the entire area is unroaded. Coordination would be required if the roadless acreage is adjacent to roaded development areas. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at near its highest potential.

- Visual Quality--The unroaded area would retain present visual qualities.

- Anadromous Fish Habitat--Stream sedimentation above natural rates would not originate in unroaded lands.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old-growth.

- Wilderness--Wilderness qualities would remain intact if the entire area is assigned to roadless management.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription assigns a maintenance-only level of management to 400 acres of Area 1849 in all alternatives except C, H, and H1. These acres are not contiguous.

Since roads may or may not be built, opportunities for wilderness may or may not change; however, all alternatives except C, H, and H1 assign large acreages to roaded development, and effects will be similar to those of roaded development.

ROADLESS AREA 1850 -- NORTH FORK SLATE CREEK

12,783 Acres

A. DESCRIPTION

Slate Creek and Road 354 from the Forest boundary upstream to the North Fork of Slate Creek Campground make up the southern boundary of this Area. The National Forest boundary is the Area's western boundary. Approximately 2/3 of the northern and eastern sides are bordered by Roads 463, 243, and 398. The remaining boundary is drawn to eliminate existing and proposed roads and timber harvest sites. Principal streams are the head of McKenzie Creek which drains into the Salmon River, and the North Fork of Slate Creek. Exposures are west, south, and southwest. Road access is principally by way of Roads 354 and 463.

The elevation ranges from 2,100 at Slate Creek where it meets the Forest boundary to 6,480 feet at Dairy Mountain. The Area contains very steep side slopes and tributary draws with some flat benches in the northeastern portion. The western and southern portions are open grass slopes with sparse timber, the northern portion below Dairy Mountain is typical rimrock, and the remainder is timbered hillsides.

Grasslands, scattered timber, and rimrock covers the steep south and west slopes in the western half of this Area. The east half of the Area has more timber cover, with scattered grassy openings.

Area 1850 was important in early Idaho history. In the fall of 1811, 11 members of the Wilson Price Hunt expedition, led by Donald McKenzie, passed the mouth of what is now McKenzie Creek. The river route was also used by miners in the 1860s.

The major current uses are grazing and mining. The area is generally too steep for hunting. This Area is also winter range for deer and elk.

Private property of 110 acres is located in the southwest portion of the Area next to Hurley Creek. A road runs about 1 mile into the Area.

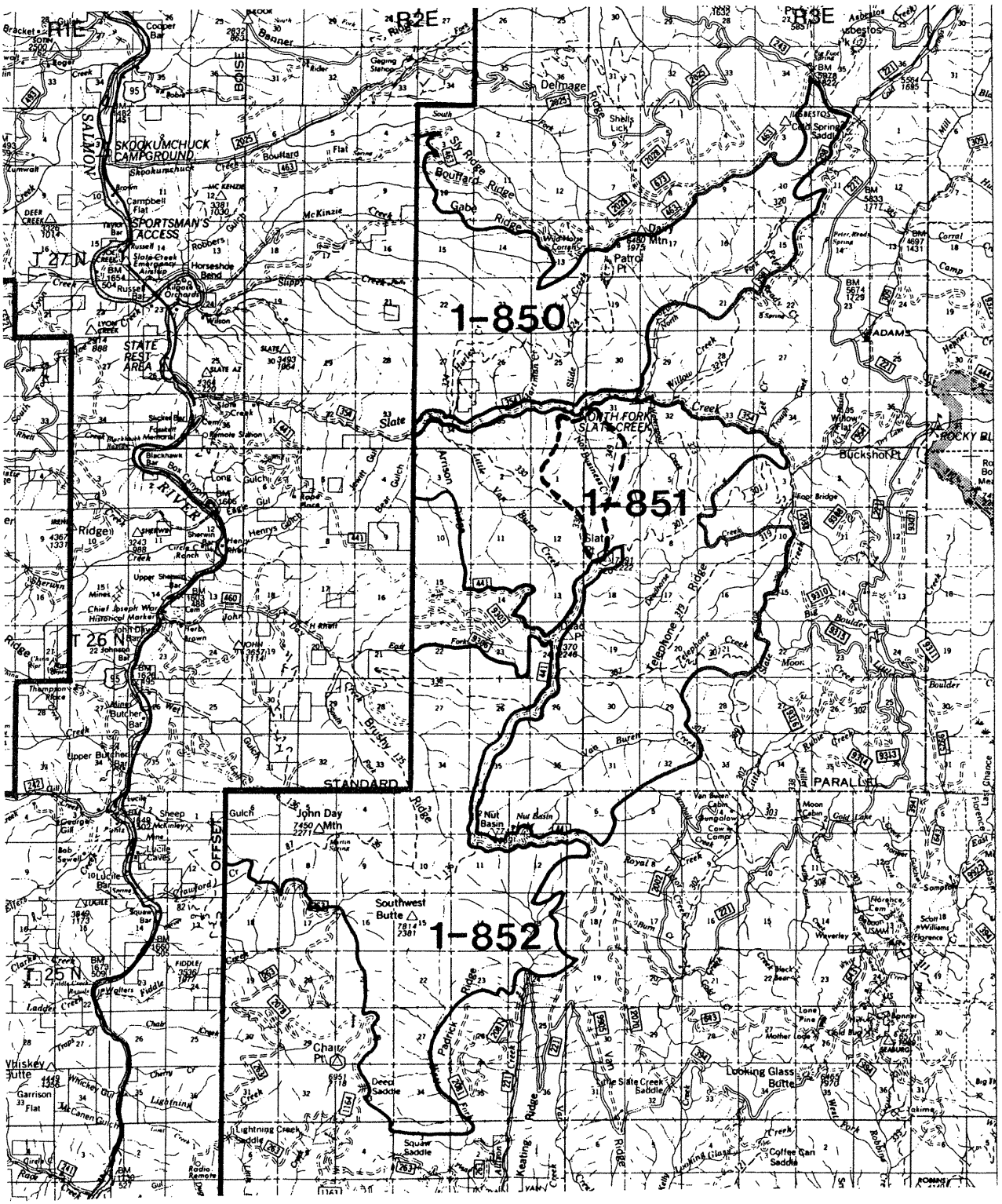
B. CAPABILITY

1. Natural Integrity

Other than the private property, the road to the private property, and a logged area near it, the area has not been significantly impacted.

2. Natural Appearance

Except for the above impacts, the area would appear natural to most people.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SALMON
RIVER
SKOOKUMCHUCK CAMPGROUND
SPORTSMAN'S ACCESS
STATE REST AREA
Horseshoe Bend
NORTH FORK SLATE CREEK
Slate
Buckshot Pt
ADAMS
ROCKY
PARALLEL
STANDARD
OFFSET
John Day Mtn
Southwest Butte
Looking Glass Butte
Patrol Pt
Chair Pt
Deed Saddle
Squaw Saddle
Lightning Creek Saddle
Coffee Can Saddle
Nut Basin
Van Buren
Moon Cabin
Gold Lake
Florence
Waverley
Sampson
Scott
Williams
Lone Pine
Mother Lode
Gold Bug
Keating Ridge
Patrick Ridge
Van Buren Ridge
Telephone Ridge
Gabe Ridge
Sly Ridge
Bouffard Ridge
Delmage Ridge
Arnson Ridge
Little Van Buren Creek
Telephone Creek
Little Boulder Creek
Big Boulder Creek
Moon Creek
Royal Creek
Willow Creek
Slate Creek
Brushy Creek
Bouffard Creek
McKinzie Creek
Slippy Creek
Henry's Gulch
Long Gulch
Eagle Gulch
Upper Butcher Bar
Butcher Bar
Lucile Bar
Sheep Gulch
Fiddle Creek
Whiskey Butte
Garrison Flat
Lightning Creek
Cherry Cr
Ladder Creek
Clover Creek
Chab Creek
Trout Creek
Asbestos Creek
Asbestos Cabin
Asbestos Saddle
Cold Spring Saddle
Shells Lick
Copper Bar
Banner
Gaging Station
Campbell Flat
Russell Bar
Slate Creek Emergency Airstrip
Lyon Creek
Blackhawk Bar
Sherwin Ranch
Upper Sheepeye Bar
Chief Joseph War Historical Marker
John Day Bar
Johnson Bar
Thompson's Place
Radio Remote
Van Buren Cabin
Bungalow
Cow Camp
Florence Cem
Sampson USMM
Scott USMM
Williams USMM
Florence USMM
Coffee Can Saddle
Looking Glass Saddle
Squaw Saddle
Lightning Creek Saddle
Deed Saddle
Chair Pt
Southwest Butte
John Day Mtn
Nut Basin
Patrol Pt
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Copper Bar
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Blackhawk Bar
Sherwin Ranch
Upper Sheepeye Bar
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Florence Cem
Sampson USMM
Scott USMM
Williams USMM
Florence USMM
Coffee Can Saddle
Looking Glass Saddle
Squaw Saddle
Lightning Creek Saddle
Deed Saddle
Chair Pt
Southwest Butte
John Day Mtn
Nut Basin
Patrol Pt
Buckshot Pt
ADAMS
ROCKY

3. Solitude

Topographic and vegetative screening are moderate. There are few drainages and few miles of trail available for extensive travel. Management activities are present on almost every side.

4. Primitive Recreation Opportunity

Primitive recreation opportunity is moderate. Although there is some diversity in the Slate Creek and Salmon River breaks and the ridge tops around the North Fork of Slate Creek, the area is too small for a significant range of opportunity. Cliffs and bluffs on the breaks would be challenges.

5. Wilderness Manageability and Boundaries

The boundary is well defined by roads on every side except the west, which borders private land. If this area is designated wilderness, then the small tract of private land would have to be purchased and the road closed.

Since 1979, 1,717 acres have been removed from this area to account for timber sales.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1850 are shown in Table C-26. Current uses are also discussed in this section.

a. Timber

Most of the timber in this area is in the North Fork of Slate Creek.

b. Recreation

The trail network in the area is little used except by hunters and grazing permittees.

c. Fish and Wildlife

Slate Creek is an anadromous stream. Some of the creeks contain steelhead and rainbow trout. The usual big-game species, including moose, are present. This Area is both summer and winter range for deer and elk. Introduced bird species such as turkeys and chukars are also present.

d. Grazing

One grazing allotment exists. The impacts are light.

Table C-26
Selected Resource Values - North Fork Slate Creek Roadless Area 1850
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	12893	Wildlife - Big Game		
Net Acres	Acres	12783	Summer Habitat	Acres	9401
			Winter Habitat	Acres	3382
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	9401
Semiprim.Nonmotor	Acres	12783	Winter Hab.	Acres	3382
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	9401
			Winter Hab.	Acres	3382
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	11190	Stream Miles	Miles	3
Allotments	No.	1			
AUMs	AUMs	1239	Stream Habitat	Hab.ac	10
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	1200			
AUMs	AUMs	124	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	8681	High	Acres	0
Standing Volume	MBF	99810	Moderate	Acres	0
			Low	Acres	12783
Corridors			Mining Claims	No.	12
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	12783
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

e. Cultural Resources

Significant prehistoric sites have been located in the Patrol Point area, and more are undoubtedly present. These are upland Native American campsites, probably late summer to early fall occupations. Various chipped and ground stone artifacts have been found.

f. Non-Federal Land

A private landholding of 110 acres patented in 1920 is located in Sections 26, 27, 34, and 35, Township 27 North, Range 2 East. About a mile of road leads into the property, which is fenced. It was lightly logged years ago and was heavily logged in 1984.

2. Other Management Considerations

A problem currently exists with Douglas-fir Bark Beetles to the north of this Area. A problem could exist in the future from the Mountain Pine Beetle in the north and eastern portions of this Area. There is also mistletoe in the Douglas-fir as well as small pockets of root rot.

The private property on Hurley Creek could cause some management problems. The road would have to be closed.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

Ecosystems in this area are found in established wildernesses on the Forest.

3. Public Interest, Concern, and Comment Summary

There is little interest in making this area a wilderness. Interest centers around timber production, big-game hunting, and protection of cultural resources.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-27, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1850 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes.

Table C-27
Management Emphasis-North Fork Slate Creek Roadless Area 1850 - 12,783 Acres (Thousand Acres)

Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Nonwilderness											
Roaded Development	10.7	10.3	10.7	10.7	10.3	10.3	0	10.7	10.7	10.3	10.3
Unroaded Mgmt.	0	0.4	0	0	0.4	0.4	0	0	0	0.4	0.4
Minimum Level	2.1	2.1	2.1	2.1	2.1	2.1	0	2.1	2.1	2.1	2.1
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	12.8	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	3.1	2.6	3.4	4.7	2.9	2.7	0	3.9	3.6	3.2	3.0
Developed-Decade 5	12.8	12.8	12.8	12.8	12.8	12.8	0	12.8	12.8	12.8	12.8
Roadless-Decade 1	9.7	10.2	9.4	8.1	9.9	10.1	0	8.9	9.2	9.6	9.8
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	12.8	0	0	0	0

Timber management possibilities, including harvest of approximately 99.8 MMBF now present in the area, would be foregone.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would be localized and limited.

- Cultural Resources--Known cultural resource sites would be afforded maximum protection. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would not change from semiprimitive nonmotorized since no part of the area is more than 3 miles from a road.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--Visual quality would be maintained in the area.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams, but opportunities to correct fish migration problems would be limited.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 80 and 84 percent of Roadless Area 1850 is assigned to this management emphasis in all alternatives except H and H1.

Approximately 99.8 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used. General environmental effects are shown in Chapter IV.

Between 2,600 and 4,700 acres would be opened to roaded development in the first decade, from 20 to 37 percent of the area. The highest acreages are contained in the alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with large acreages of wilderness elsewhere on the Forest which maximize outputs outside the wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (F, G, K, and L).

Roads would enter the area in Sections 2 and 27, T27N, R3E in the first decade. Actual mileage would depend on the timber harvest objectives of each alternative. Planned roads would parallel the North Fork of Slate Creek on both sides of the drainage as far southwest as Slide Creek. Timber harvest areas would be adjacent to these roads.

Alternative G, the Preferred Alternative, would open about 2,700 acres to roaded development in the first decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites would be likely. The Forest Archaeologist will survey all proposed ground-disturbing activities prior to their initiation.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase, as would hunter access.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Area 1850 is almost entirely modification and maximum modification. More roads and harvest activity would be visible from high points in the area and from Slate Point, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Old-growth habitat would remain adequate. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 8,000 acres of Area 1850 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
   Management Emphasis: Unroaded Management

About 400 acres of Roadless Area 1850 are assigned to this management emphasis in Alternatives C, F, G, G1, K, and L. These acres are mostly in riparian areas.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Economic and social effects of unroaded management in Area 1850 would be small and would vary little among alternatives. Generally, timber and mining industries would not be supported under this alternative, since no development is planned. Wilderness advocates would not be supported because of the small size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would depend on proximity of roaded development.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat due to access, but nearby roaded development would make site disturbance more likely.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be related to nearby roaded development. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above natural rates would not originate in unroaded lands.

- Old-Growth Habitat--Roadless management provides more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact in these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription assigns a maintenance-only level of management for about 2,100 noncontiguous acres, or 16 percent, of Area 1850. These lands consist for the most part of steep, rocky breaklands with few trees.

Since roads may or may not be constructed, opportunities for wilderness may or may not change. Road construction is unlikely on these lands, but since the rest of the area would be roaded, effects would resemble those of roaded development.

ROADLESS AREA 1851 -- LITTLE SLATE CREEK

19,588 Acres

A. DESCRIPTION

This roadless area and Roadless Area 1852, which are separated by a road corridor, are both located on the divide between the Salmon River and Little Slate Creek. Principal drainages are Van Buren Creek, Little Van Buren Creek, No Business Creek, Waterspout Creek, and Deadhorse Creek. All are part of the Slate Creek drainage. This Area is bordered by Slate Creek and road 354 on the north, and road 441, which traverses the Slate Point-Nut Basin ridge, on the south and west.

The elevation ranges from 2,100 feet where Slate Creek crosses the National Forest boundary to 7,370 feet just below Nut Basin. This Area has very steep side slopes and tributary draws, with some flat benches along the mid-elevations. Deadhorse Creek is hidden in the middle of the Area and has solitude qualities. The Area contains many springs and intermittent streams.

There is one small lake, Nut Basin, at the head of Van Buren Creek beneath Nut Basin. It is unique in that one would hardly expect to find a lake there. It is about 2 acres, and deep enough to support a large population of eastern brook trout. Marsh vegetation is present on the shoreline, making the lake hard to fish.

This Area is almost completely forested. It lies on north to east slopes, or high enough south slopes for the climax vegetation to be trees. The major species is Douglas-fir.

Trail 307, which crosses the area from west to east, is a part of the old miners' route to Florence. Gold was discovered in Florence Basin in the summer of 1861, and by November there were 2,000 miners in the camp. The winter of 1861-62 was one of the coldest in Idaho history, and Van Buren Creek was named after a traveler who froze to death there.

The major current uses are grazing and hunting. This is a quality hunting area for elk and deer. This Area contains deer and elk summer and winter range.

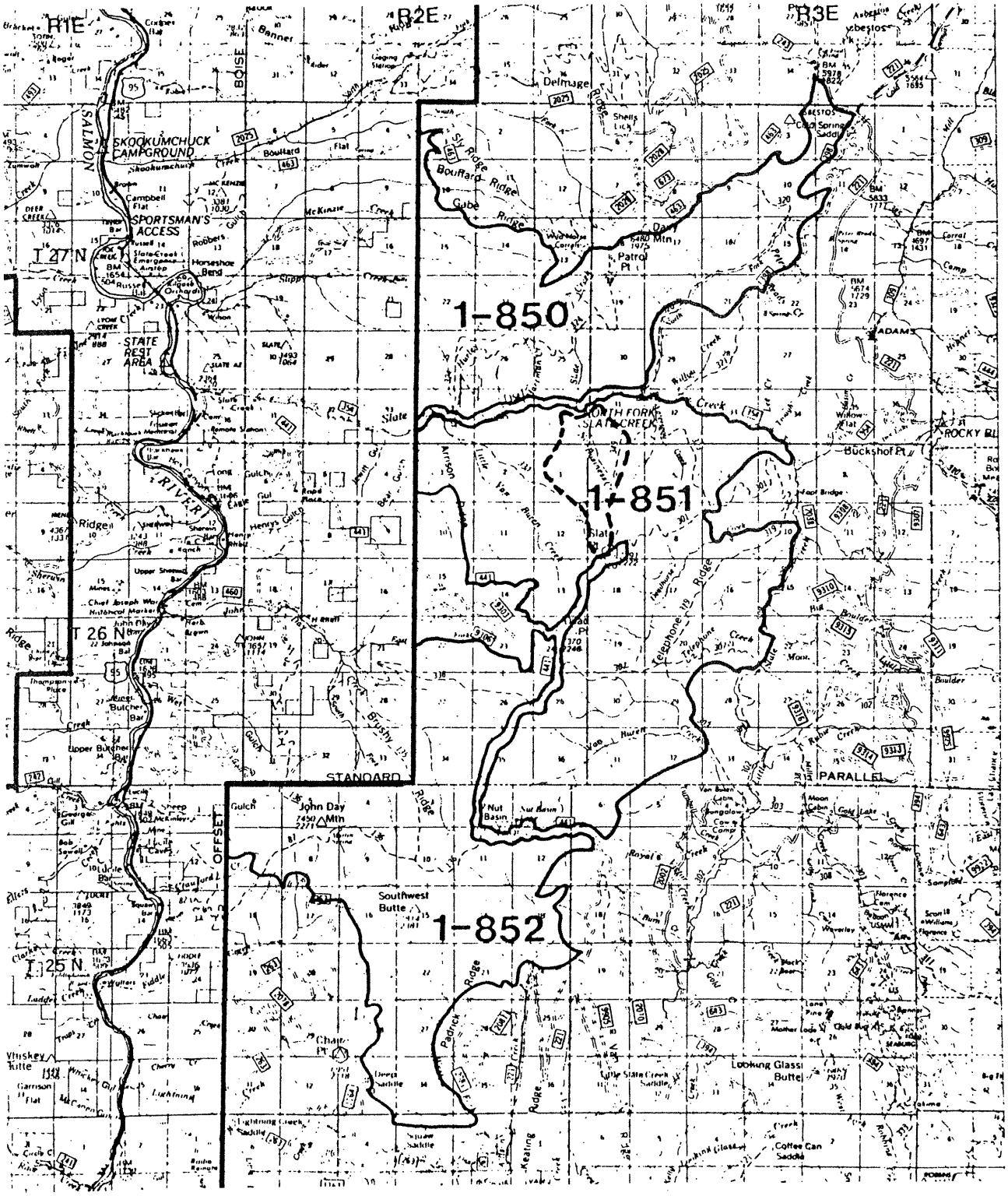
Scenic points include Slate Point, Dead Point, and Nut Point. There is also a proposed Research Natural Area.

As required under 36 CFR 219.17, Area 1243, a roadless area previously discussed in a Unit Plan, has been added to this area.

B. CAPABILITY

1. Natural Integrity

Other than trails and grazing, the area has been little impacted.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SPORTSMAN'S ACCESS
STATE REST AREA
SALMON
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Sly Ridge
Telephone Ridge
Padrick Ridge
Upper Butcher Bar
Butcher Bar
Whiskey Butte
Garrison Flat
Campbell Flat
Horseshoe Bend
Nut Basin
Coffee Can Saddle

2. Natural Appearance

The area itself appears natural. There are many off-site intrusions, however.

3. Solitude

The area offers little opportunity for solitude. It is almost impossible not to notice off-site intrusions such as lookout towers, roads, old clearcuts, and present logging activity from most parts of the area because these impacts are an integral part of it.

4. Primitive Recreation Opportunity

Although topographic and vegetative screening are moderate over most of the area, there is little diversity and challenge. One lake is present, but it is close to the road and can hardly be called isolated. There are few features that are commonly considered hazardous.

5. Wilderness Manageability and Boundaries

The northern boundary of this area is Slate Creek. The remaining boundary is irregular, drawn mostly to exclude existing roads and timber sale areas. Some parts of it would be hard to locate on the ground with any degree of accuracy. Costs per acre to administer this area as a wilderness would be high on account of its small size and isolation from existing wildernesses.

In 1983, a 10,000-acre roadless area not included in the last nationwide roadless area review and evaluation was combined with Area 1851. Other adjustments have added another 388 acres.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1851 are shown in Table C-28. Current uses of the area are also discussed in this section.

a. Timber

Almost all parts of the area are timbered with mixed species on steep slopes.

b. Range and Grazing

This area is grazed by both cattle and big-game. Primary range is on south slopes below 4,500 feet and on north slopes below 3,000 feet. Transition range is above 4,500 feet and on ridgetops. There are two grazing allotments with a total of 729 AUMs.

c. Recreation

Use is light except for hunting.

Table C-28
Selected Resource Values - Little Slate Creek Roadless Area 1851
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	19588	Wildlife - Big Game		
Net Acres	Acres	19588	Summer Habitat	Acres	17087
			Winter Habitat	Acres	2501
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	17087
Semiprim.Nonmotor	Acres	19588	Winter Hab.	Acres	2501
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	17087
			Winter Hab.	Acres	2501
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	6579	Stream Miles	Miles	22
Allotments	No.	2			
AUMs	AUMs	729	Stream Habitat	Hab.ac	22
Existing Vacant			Lakes	No.	1
Suitable	Acres	0	Lake Habitat	Hab.ac	2
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	3390			
AUMs	AUMs	220	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	18482	High	Acres	0
Standing Volume	MBF	226545	Moderate	Acres	0
			Low	Acres	19588
Corridors			Mining Claims	No.	1
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	19588
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

d. Fish and Wildlife

Slate Creek is used by chinook and steelhead for spawning and rearing, but cataracts 2 miles up Little Slate Creek stop passage of these fish. Rainbow, cutthroat, and brook trout are also found in these creeks and their tributaries. Fishing pressure is light.

Parts of the area are summer habitat for big game, and other parts are winter range. Impacts are light, except along the roaded parts of Slate Creek and Little Slate Creek.

e. Cultural Resources

Two upland Native American campsites have been discovered in this area. These sites are high on the ridgetop and were probably late summer to early fall occupations. Various chipped and ground stone artifacts have been found at these sites.

f. Non-Federal Land

There are no non-Federal lands in this roadless area.

2. Other Management Considerations

A Research Natural Area is scheduled to be established in No Business Creek under all alternatives. Maidenhair fern grows in this drainage, which is near the southern extreme of this plant's range.

There is a problem with Douglas-fir bark beetles, mistletoe, and small pockets of root rot in the Douglas-fir.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

With the exception of the proposed Research Natural Area, ecosystems in this area are found in established wildernesses on the Forest.

3. Public Interest, Concern, and Comment Summary

No interest has been expressed in making this roadless area a wilderness. Most interests and concerns are with timber management, grazing, and big-game management.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-29, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

Table C-29
Management Emphasis-Little Slate Roadless Area 1851 - 19,588 Acres (Thousand Acres)

Management Emphasis	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	17.4	16.7	17.4	17.4	16.7	16.7	0	17.4	17.4	16.7	16.7
Unroaded Mgmt.	0	.7	0	0	.7	.7	0	0	0	.7	.7
Minimum Level	.8	.8	.8	.8	.8	.8	0	.8	.8	.8	.8
Research Natural Area	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Wilderness											
Wilderness	0	0	0	0	0	0	19.6	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	5.0	4.2	5.6	7.6	4.9	4.3	0	6.4	5.9	5.2	5.1
Developed-Decade 5	18.2	18.2	18.2	18.2	18.2	18.2	0	18.2	18.2	18.2	18.2
Roadless-Decade 1	14.6	15.4	14.0	12.0	14.7	15.3	0	13.2	13.7	14.4	14.5
Roadless-Decade 5	1.4	1.4	1.4	1.4	1.4	1.4	0	1.4	1.4	1.4	1.4
Wilderness	0	0	0	0	0	0	19.6	0	0	0	0

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1851 is recommended for wilderness classification in Alternatives H and H1. This recommendation would allow ecosystems in the area to be affected by natural processes only, with the exception of grazing.

Timber management possibilities, including harvest of approximately 227 MMBF now present in the area, would be foregone.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would be localized and limited.

- Cultural Resources--The area has potential for prehistoric sites in addition to those already discovered. Under a wilderness management emphasis, disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized since no place in this area is more than 3 miles from a road.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams, but removal of fish migration barriers would become more difficult.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 85 and 89 percent of Roadless Area 1851 is assigned to this management emphasis in all alternatives except H and H1. General environmental effects would be those described in Chapter IV.

Approximately 227 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Between 4,200 acres (21 percent of the area) and 7,600 acres, (39 percent of the area) would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives with large acreages proposed for wilderness elsewhere on the Forest which maximize outputs outside the wilderness (I and J). The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (F, G, K, L, C).

Area 1851 would be entered in the first decade. Actual mileages would depend on timber harvest objectives of each alternative. Entries would be made into Little Van Buren Creek from the west, and other entries in Section 10, T26N, R2E would open up Waterspout Creek. The head of Van Buren Creek and Telephone Ridge would also be opened by roads.

Alternative G, the Preferred Alternative, would open about 4,300 acres (22 percent of the area), to roaded development in the first decade. No action under any alternative would affect the proposed No Business Research Natural Area, but the RNA, as proposed, does contain a road.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups

advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely. The Forest Archaeologist will survey all proposed ground-disturbing activities prior to their initiation.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized. Removing trees from a site would increase the production of forbs, grasses, and shrubs that provide forage for wintering big-game animals. Therefore, carrying capacity of big-game winter ranges would increase in proportion to the number of acres of winter range that are harvested each year.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Objectives for Area 1851 are modification and maximum modification under this management emphasis. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--This would exceed minimum management requirements. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, almost 12,000 acres of Area 1851 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

Alternatives C, F, G, G1, K, and L assign 700 acres of Area 1851 to this management emphasis. These acres are mostly in riparian areas and would remain roadless to protect these values.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Economic and social effects would be small and would vary little among alternatives. Generally, timber and mining industries would not be supported, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would depend on proximity to roaded development. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced somewhat because of difficult access, but since the area is small, disturbance of sites would be likely.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained on the unroaded acreage.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be in direct relation to the location of roaded development. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation originating in the unroaded area would not exceed natural rates.

- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact in these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

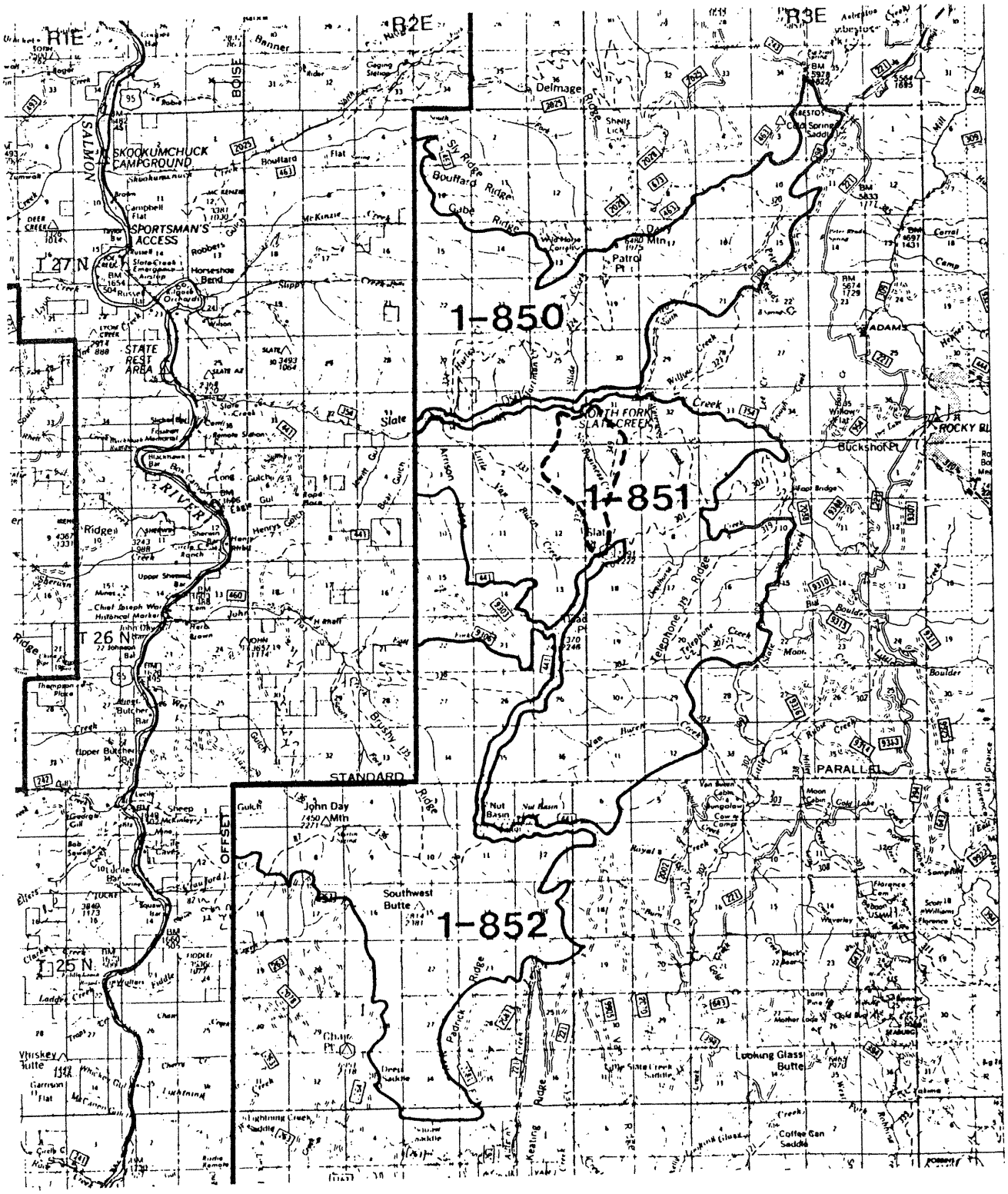
This prescription assigns a maintenance-only level of management to 800 acres in all alternatives except H and H1. These are mostly lands not suitable for timber production, and are not contiguous.

Since roads may or may not be built, opportunities for wilderness may or may not change; however, much of the area would be roaded in these alternatives, and effects would resemble those of roaded development.

e. Designation: Nonwilderness
Management Emphasis: Research Natural Area (RNA)

This prescription is assigned to 1,400 acres of Area 1851 in all alternatives.

Management of Research Natural Areas excludes activities which directly or indirectly modify ecological processes. Logging is prohibited, and no roads are planned. Fire suppression is accomplished by manual means. In effect, wilderness characteristics are retained. The Research Natural Area is the most unique part of the roadless area.


R1E
R2E
R3E
T 27 N
T 26 N
T 25 N
SALMON
RIVER
BOISE
STANDARD
OFFSET
SKOOKUMCHUCK CAMPGROUND
SPORTSMAN'S ACCESS
STATE REST AREA
Delmage
Bouffard Ridge
Gabe Ridge
Sly Ridge
Patrol Pt
1-850
1-851
1-852
NORTH FORK SLATE CREEK
Slate
Buckshot Pt
ADAMS
ROCKY
PARALLEL
Telephone Ridge
Van Buren Creek
Nut Basin
John Day Mtn
Southwest Butte
Padrick Ridge
Keating Ridge
Looking Glass Butte
Coffee Can Saddle
Whiskey Butte
Upper Butcher Bar
Chief Joseph Wars Historical Marker
Henrys Gulch
Ridge
Brushy Ridge

ROADLESS AREA 1852 -- JOHN DAY

14,991 Acres

A. DESCRIPTION

This area is located on a high ridge between the Salmon River and Little Slate Creek. The headwaters of Allison Creek and John Day Creek are located within this Area. A road corridor on the top of the ridge separates this roadless area from Area 1851 to the north. Access is from the north, south, and west on Roads 441, 221, and 263.

The elevation ranges from 3,800 feet at the National Forest boundary to 7,450 feet at John Day Mountain and 7,814 feet at Southwest Butte. Slopes are very steep with hardly any flat benches. This area contains a north-south ridge with perpendicular ridges and draws. On the slopes facing the Salmon River canyon, vegetation runs from nonforested land to an alpine zone. The east side of the main ridge is not as steep as the west, and vegetation is more uniform. South slopes contain mostly grasses with scattered trees at the higher elevations. The north slopes are timbered. The major species are white bark pine, Douglas-fir, and a small amount of ponderosa pine.

The principal topographic features are Southwest Butte and John Day Mountain. John Day, for whom the mountain and creek are named, operated a way station for miners near the mouth of the creek in 1862.

The current major use of this Area is grazing. The Area is also heavily hunted. Allison Creek and John Day Creek support anadromous fish.

There is a very scenic view from road 441 that runs next to the north boundary of this Area.

As required under 36 CFR 219.17, Area 1244, a roadless area previously discussed in a unit plan, has been added to this area.

B. CAPABILITY

This section describes the basic characteristics which make the area appropriate and valuable for wilderness regardless of the Area's availability or need.

1. Natural Integrity

On the whole, natural processes are intact and operating, although there are heavy impacts on some sites.

The thin soils around Southwest Butte and southwest of Nut Basin are locally damaged from off-road vehicle use. These areas still show soil and vegetative impacts from past grazing, although they are not grazed at the present.

2. Natural Appearance

Human activities are not far away from this area. The impacts noted above are noticeable, as are off-site intrusions listed below. Roads or logging areas are visible from nearly all high viewpoints within the area.

3. Solitude

Since the area is at or near the top of a ridge, one does not have the opportunity to experience the solitude of an enclosed drainage.

4. Primitive Recreation Opportunity

The main challenge is the steep slopes on the west side. Prominent landmarks are visible from most parts of the area to aid in orientation. There is some diversity in that the area consists of the east and west sides of a high ridge, but the area is too small for any significant diversity.

5. Wilderness Manageability and Boundaries

In 1983, a 4,900-acre roadless area not included in the last nationwide roadless area review and evaluation, was combined with Area 1852. Other adjustments have added 91 acres.

Other than the portion of the western boundary that is also the Forest boundary, avoidance of existing roads has been the guiding factor in establishing the perimeter of the area. Managing this area as a wilderness would be difficult due to irregular boundaries and small size. Administrative costs per acre would be high.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1852 are shown in Table C-30. Current uses of the area are also discussed in this section.

a. Timber

The standing volume of 138 MMBF is mixed species on steep slopes.

b. Range and Grazing

There are few trees below 4,500 feet on south slopes and below 3,000 feet on north slopes. This land is primary range. Transitory range is above these elevations. Parts of three grazing allotments are within this Area.

c. Recreation

A jeep trail runs from Nut Basin to Chair Point via Southwest Butte, causing locally heavy impacts. Off-road vehicles use other parts of the area as well. Hunter use during the season is moderate to heavy.

Table C-30
Selected Resource Values - John Day Roadless Area 1852
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	14991	Wildlife - Big Game		
Net Acres	Acres	14991	Summer Habitat	Acres	14685
			Winter Habitat	Acres	306
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	14685
Semiprim.Nonmotor	Acres	13000	Winter Hab.	Acres	306
Semiprim.Motor.	Acres	1991	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	14685
			Winter Hab.	Acres	306
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	7880	Stream Miles	Miles	3
Allotments	No.	3			
AUMs	AUMs	1013	Stream Habitat	Hab.ac	3
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	994			
AUMs	AUMs	112	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	7695	High	Acres	0
Standing Volume	MBF	137950	Moderate	Acres	0
			Low	Acres	14991
Corridors			Mining Claims	No.	0
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	14991
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

d. Fish and Wildlife

The larger streams support anadromous fish. Elk, deer, bear, and cougar inhabit the area. Potential peregrine falcon habitat exists in parts of the area.

e. Cultural Resources

An upland Native American campsite has been discovered in the area. It was probably a late summer or early fall occupation. Various cultural remains have been found at the site.

f. Non-Federal Land

There are no non-Federal lands in this area.

2. Other Management Considerations

There is a mistletoe problem in the Douglas-fir, but it is not as severe as on other parts of the Forest. Bark beetles are endemic in the East Fork of John Day Creek.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

Ecosystems in this area are found in established wildernesses on the Forest.

3. Public Interest, Concern, and Comment Summary

No interest has been shown toward making this area a wilderness. Concerns are with timber management, grazing, off-road vehicle use, and wildlife.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-31, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1852 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for semiprimitive nonmotorized recreation on the Forest and allow ecosystems in the area to be affected by natural processes only, with the exception of grazing.

Timber management possibilities, including harvest of approximately 137.9 MMBF now present in the area, would be foregone.

Table C-31
Management Emphasis-John Day Roadless Area 1852 - 14,991 Acres
(Thousand Acres)

Management Emphasis	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	13.4	13.1	13.4	13.4	13.1	13.1	0	13.4	13.4	13.1	13.1
Unroaded Mgmt.	0	0.3	0	0	0.3	0.3	0	0	0	0.3	0.3
Minimum Level	1.6	1.6	1.6	1.6	1.6	1.6	0	1.6	1.6	1.6	1.6
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	15.0	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	3.8	3.3	4.3	5.8	3.8	3.4	0	4.9	4.5	4.0	4.0
Developed-Decade 5	15.0	15.0	15.0	15.0	15.0	15.0	0	15.0	15.0	15.0	15.0
Roadless-Decade 1	11.2	11.7	10.7	9.2	11.2	11.6	0	10.1	10.5	11.0	11.0
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	15.0	0	0	0	0

Some existing uses, such as use of off-road vehicles, trail bikes, and chainsaws, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would be localized and limited. Maximum protection would be afforded peregrine falcon habitat.

- Cultural Resources--The area has potential for prehistoric sites in addition to those discovered. Under a wilderness management emphasis, disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--These would not change, since no place in the area is more than 3 miles from a road.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams, but habitat improvement would be more difficult to accomplish.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Between 87 and 89 percent of Roadless Area 1852 is assigned to this management emphasis in all alternatives except H and H1. General environmental effects would be those described in Chapter IV.

Approximately 137.9 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Between 3,300 acres (22 percent of the area) and 5,800 acres (37 percent of the area) would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with large acreages of proposed wilderness elsewhere on the Forest which maximize outputs outside of wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (C, F, K, and L).

Area 1852 would be entered in the first decade. Actual mileage would depend on the timber harvest objectives of each alternative. The area would be entered from the north in Section 23, T26N, R2E; this road would parallel the boundary and open up the head of John Day Creek. Another entry would be made near Fiddle Creek in Section 8, T25N, R2E.

Alternative G, the Preferred Alternative, would open about 3,400 acres, 23 percent of the area, to roaded development in the first decade.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required. Parts of Area 1852 have been identified as peregrine falcon habitat, but these are unlikely to be disturbed by roaded development, since they are in areas unsuitable for timber harvest. However, if conflicts occur, the Forest, in consultation with the U.S. Fish and Wildlife Service, would immediately reassess the potential impacts of management activities on the falcon and its habitat.

- Cultural Resources--Roaded development provides for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely. The Forest Archaeologist will survey all proposed ground-disturbing activities prior to their initiation.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase, as would hunter access.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

  Winter ranges would be improved through timber harvest where site preparation is designed to emphasize browse production and natural tree generation is utilized; however, the winter range acreage in Area 1852 is small.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Most of Area 1852 has objectives of modification and maximum modification. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction. However, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Suitable old-growth habitat would remain, especially on the ridgetops. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 9,000 acres of Area 1852 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
   Management Emphasis: Unroaded Management

Alternatives C, F, G, G1, K, and L assign approximately 314 acres of Area 1852 to this management emphasis. These acres are mostly in riparian zones, and remain roadless to protect those values.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Economic and social effects of unroaded management in Area 1852 would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned.

Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion on peregrine falcon habitat would be minimal.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would depend on the location of roads and timber harvest activity.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be in direct relation to the location and extent of roaded development.

- Visual Quality--The unroaded area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation above present natural rates would not originate in unroaded lands.

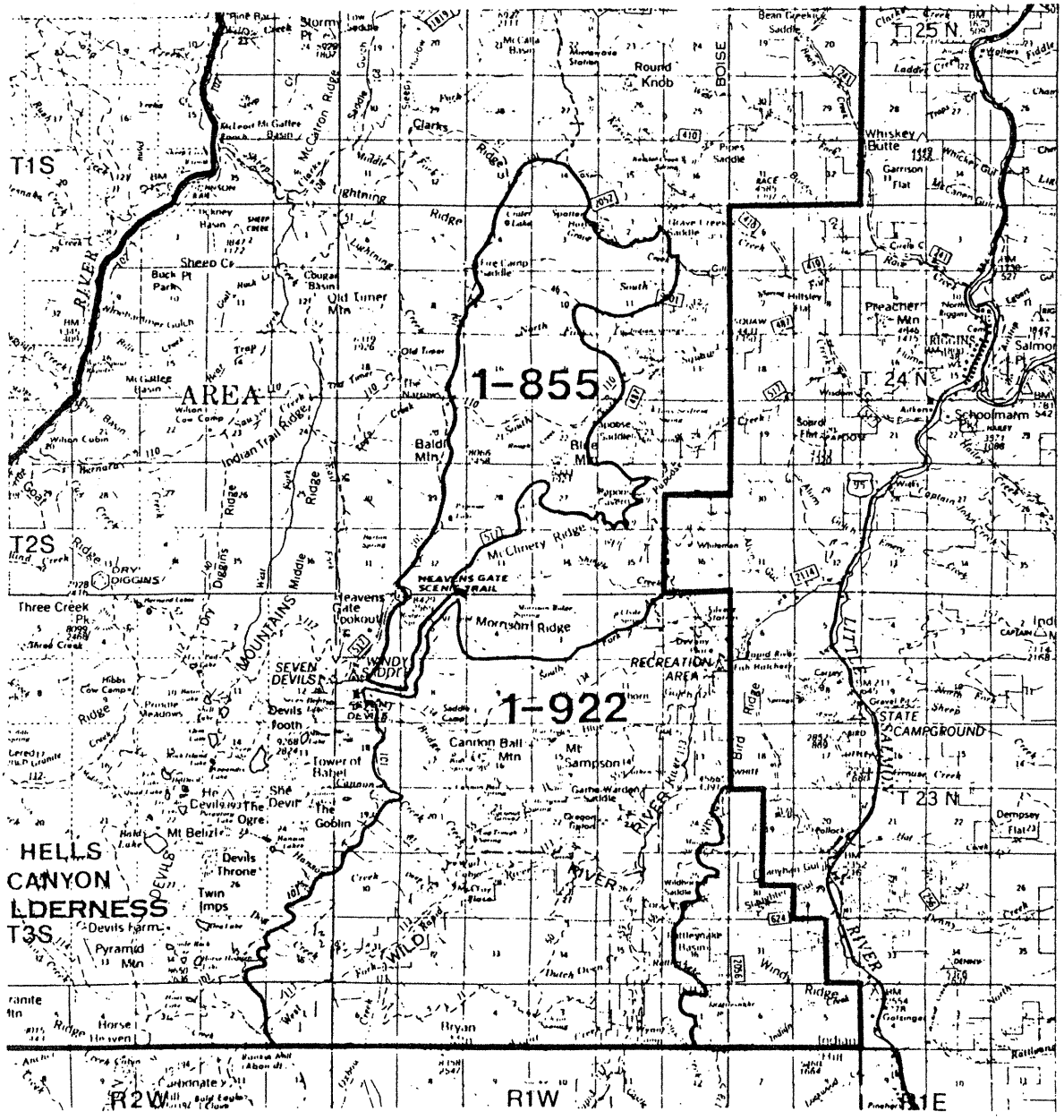
- Old-Growth Habitat--Roadless management provides more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact on these small areas.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription assigns a maintenance-only level of management to 1,600 acres, or 11 percent of the area. These lands are not suitable for timber production, and are also the most likely peregrine falcon nesting sites.

Since roads may or may not be constructed, opportunities for wilderness may or may not change. However, since road construction is unlikely, effects would resemble those of unroaded management.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AREA
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HELLS
CANYON
LDERNESS
BOISE
RIVER
Round Knob
Whiskey Butte
Preacher Mtn
Schoolmarm Pk
Old Timer Mtn
Baldy Mtn
Blue Mtn
McClinery Ridge
Morrison Ridge
HEAVENS GATE SCENIC TRAIL
Heavens Gate Lookout
WINDY RIDGE
SEVEN DEVILS
Devils Tooth
Tower of Babel
Cannon Ball Mtn
Mt Sampson
Devils Throne
Twin Imps
Pyramid Mtn
Mt Belizal
Three Creek Pk
Indian Trail Ridge
Sheep Cr
Buck Pt Park
Bryan
RECREATION AREA
STATE CAMPGROUND
Dempsey Flat

ROADLESS AREA 1855 -- SALMON FACE

9,414 Acres

A. DESCRIPTION

This area is high on the east side of the divide between the Snake and Salmon Rivers. It joins the Hells Canyon Wilderness at the ridge top on the west side. Squaw Creek, Race Creek, and Papoose Creek, which flow into the Salmon River, originate in the Area. Road 517 borders this Area on the south side. Other access roads are roads 487, 9901, 2052, and 205 on the east side.

The elevation ranges from 3,500 feet to 8,429 feet at Heavens Gate Lookout. The Area is made up of very steep side slopes and tributary draws with a few flat benches. This Area contains mostly heavy timber with underbrush. Less brush grows on the south slopes than on the north slopes. The major tree species are Douglas-fir and grand fir.

The current major uses include grazing, hunting, hiking, and spelunking. The Papoose grazing allotment is divided into four pastures which are rotated, and the area contains numerous developed springs, dams, corrals, and fences. Big game animals also use the area as summer range. The key grass species is bluebunch wheatgrass.

Two east-west trails cross the area and connect to Trail 101, the old Boise Trail. This trail, used since prehistoric times, follows the ridgetop which, for the most part coincides with the boundary of this roadless area. Two small lakes are also present high on the ridge, both support fish.

Scenery from within the Area is spectacular to those who hike or ride horseback on the trails. On clear days, one can see four states from the summit, and view the Snake River and canyon.

Papoose Cave, a large, deep, limestone cave, is one of the most important undeveloped caves of its type in Idaho, and perhaps the Pacific Northwest. An unusually deep and rugged cave, it has gained both national and international attention. It has been managed since 1971 under a cooperative agreement with the Gem State Grotto, National Speleological Society. This cave lies below Area 1852 with the entrance just within the Area.

There are 28 unpatented mining claims in the area. Potential exists for development of a mine just outside the boundary, and veins with good mineralization may extend into the northern part of the area.

B. CAPABILITY

1. Natural Integrity

The heaviest impact is that caused by grazing, and facilities such as stock tanks and fences associated with livestock management.

2. Natural Appearance

Much of the area contains on-site intrusions that result from grazing livestock and range-related, manmade structures. Parts of the area not grazed would appear natural.

3. Solitude

Solitude opportunities are good when the area is considered together with the Hells Canyon Wilderness. Topographic and vegetative screening are both moderate. There are roads, and noises associated with roads, on all sides, and cutting units are visible.

4. Primitive Recreation Opportunity

Papoose Cave presents a harsh environment, especially for the ill-prepared or improperly equipped. With more than 12 pits, most over 50 feet deep, the cave is noisy as icy water pours into the pits, creating thundering waterfalls.

Relative humidity is a constant 99 percent and the mean temperature is 37 degrees. A multi-level maze of tall, narrow, twisting passages, the cave can be somewhat confusing. Even veteran cavers have had close calls.

Papoose Cave is the only known extensive, undeveloped limestone cave available for "wild" caving in the Pacific Northwest. In spite of its reputation as one of the west's most "unfriendly" caves, Papoose remains popular with experienced explorers because of its rugged challenges and pristine conditions.

There are a few other small limestone caves in the area, none of which has attracted any particular attention from spelunkers.

5. Wilderness Manageability and Boundaries

Since 1979, 114 acres have been added to this area by an acreage recalculation.

The boundary is well defined by roads on every side except the west, which borders the Hells Canyon Wilderness. This Area could be added to the Hells Canyon Wilderness even though it was originally left out when Congress established the wilderness in 1975. If this Area is designated wilderness, then we would need to purchase the small tract of private land in the northeastern portion or delete if from the Area.

Established grazing use could continue under wilderness designation.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1855 are shown in Table C-32. Current uses of the area are also discussed in this section.

Table C-32
Selected Resource Values - Salmon Face Roadless Area 1855
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	9414	Wildlife - Big Game		
Net Acres	Acres	9414	Summer Habitat	Acres	9159
			Winter Habitat	Acres	255
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	9159
Semiprim.Nonmotor	Acres	9414	Winter Hab.	Acres	255
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	897
			Winter Hab.	Acres	255
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	4340	Stream Miles	Miles	3
Allotments	No.	3			
AUMs	AUMs	622	Stream Habitat	Hab.ac	3
Existing Vacant			Lakes	No.	2
Suitable	Acres	0	Lake Habitat	Hab.ac	4
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	5
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	5837	High	Acres	0
Standing Volume	MBF	70419	Moderate	Acres	400
			Low	Acres	9014
Corridors			Mining Claims	No.	28
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	9414
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
			Leased Area	Acres	0

a. Timber

The standing volume of 70.4 MMBF is mixed species on steep slopes.

b. Range

The area has a long history of grazing use, dating back to the late 1700s when the Indians acquired horses. Almost all of the area is presently grazed.

c. Minerals

Most of the interest shown has been in gold.

d. Recreation

The trails are used mainly by hunters and livestock. Other recreation activity such as berry picking and mushroom gathering occurs in season.

e. Fish and Wildlife

Elk, deer, bear, and cougar are the primary big-game species. Two lakes support fish populations. Almost all streams inside the Area drain into anadromous fisheries outside of the Area, such as Squaw Creek, Race Creek, and Papoose Creek. There are resident fish inside the boundary where there is enough water to support them, but no known anadromous fish within the Area. There are several hydro projects proposed for the drainages running out of this Area at or near the Forest boundary.

f. Cultural Resources

The old Boise Trail, which was used for centuries, runs through Area 1855. Although parts of the trail are now difficult to find, cultural resource sites may exist in the vicinity.

g. Non-Federal Lands

There is one small tract of private land in the northeastern portion of this Area.

2. Other Management Considerations

There is a minor problem with Douglas-fir bark beetles, mistletoe in the Douglas-fir, and small pockets of root rot.

The small tract of private land would have to be purchased or the boundaries changed to exclude it.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The most unique feature of the area, Papoose Cave, is managed under a cooperative agreement with the National Speleological Society.

3. Public Interest, Concern, and Comment Summary

Concerns have been with management of Papoose Cave and with grazing. The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association recommend the area for wilderness classification.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-33, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

Table C-33
Management Emphasis-Salmon Face Roadless Area 1855 - 9,414 Acres (Thousand Acres)

	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	8.5	8.4	8.5	8.5	8.4	8.4	0	8.5	8.5	8.4	8.4
Unroaded Mgmt.	0	0.1	0	0	0.1	0.1	0	0	0	0.1	0.1
Minimum Level	0.9	0.9	0.9	0.9	0.9	0.9	0	0.9	0.9	0.9	0.9
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	9.4	0	0	0	0
Summary of Management Emphasis											
Developed-Decade 1	2.4	2.1	2.8	3.7	2.5	2.1	0	3.1	2.9	2.6	2.6
Developed-Decade 5	9.4	9.4	9.4	9.4	9.4	9.4	0	9.4	9.4	9.4	9.4
Roadless-Decade 1	7.0	7.3	6.6	5.7	6.9	7.3	0	6.3	6.5	6.8	6.8
Roadless-Decade 5	0	0	0	0	0	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	9.4	0	0	0	0

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1855 is recommended for wilderness classification in Alternatives H and H1. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes other than grazing.

Timber management possibilities, including harvest of approximately 70.4 MMBF now present in the area, would be foregone.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on valid existing claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed. However, there is little winter range in Area 1855.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited.

- Cultural Resources--The old Boise Trail and sites associated with it would be afforded maximum protection.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Wildfire could play a natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full habitat potential. High water quality would be maintained in all streams.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

About 90 percent of Roadless Area 1855 is assigned to this management emphasis in all alternatives except H and H1. General environmental effects are described in Chapter IV.

Approximately 70.4 MMBF of standing timber volume would be available for harvest over the full range of nonwilderness alternatives. Range developments could be constructed, and motorized equipment used.

Between 2,100 acres (22 percent of the area) and 3,700 acres (39 percent of the area) would be opened to roaded development in the first decade. The highest acreages are contained in alternatives which maximize timber harvest Forestwide (D and E) and in those alternatives (I and J) with large acreages of proposed wilderness elsewhere on the Forest which maximize outputs outside of wilderness. The lower acreages are contained in alternatives with high Forestwide fish/water quality objectives (C, F, K, and L).

Area 1855 would be entered in Section 27, T24N R1W, and the road would cross the head of Squaw Creek. Actual mileage would depend on timber harvest objectives of each alternative.

Alternative G, the Preferred Alternative, would open about 2,100 acres to roaded development in the first decade. No action under any alternative would affect the most unique feature of the area, Papoose Cave.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction, and habitat management would be required if T&E species were determined to be present.

- Cultural Resources--Any action in the known or supposed vicinity of the Boise Trail would be reviewed by the Forest Archaeologist prior to any ground-disturbing activity.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Sufficient old growth would remain to meet minimum management requirements. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 5,000 acres of Area 1855 would remain unroaded at the end of the first decade. Acreage of any size adjoining the Hells Canyon Wilderness could be added to that Wilderness.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

About 100 acres of Area 1855 are assigned to this management emphasis in Alternatives C, F, G, G1, K, and L.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Economic and social effects of unroaded management in Area 1855 would be small and would vary little among alternatives. Generally speaking, timber and mining industries would not be supported under this emphasis, since no development is planned. Wilderness advocates would not be supported because of the size and spatial distribution of these areas.

Effects of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would increase due to nearby roaded development, but habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would depend on the proximity to roaded development.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would depend on roaded development elsewhere in the area. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--The unroaded acreage would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation could be held to present natural rates in unroaded areas.

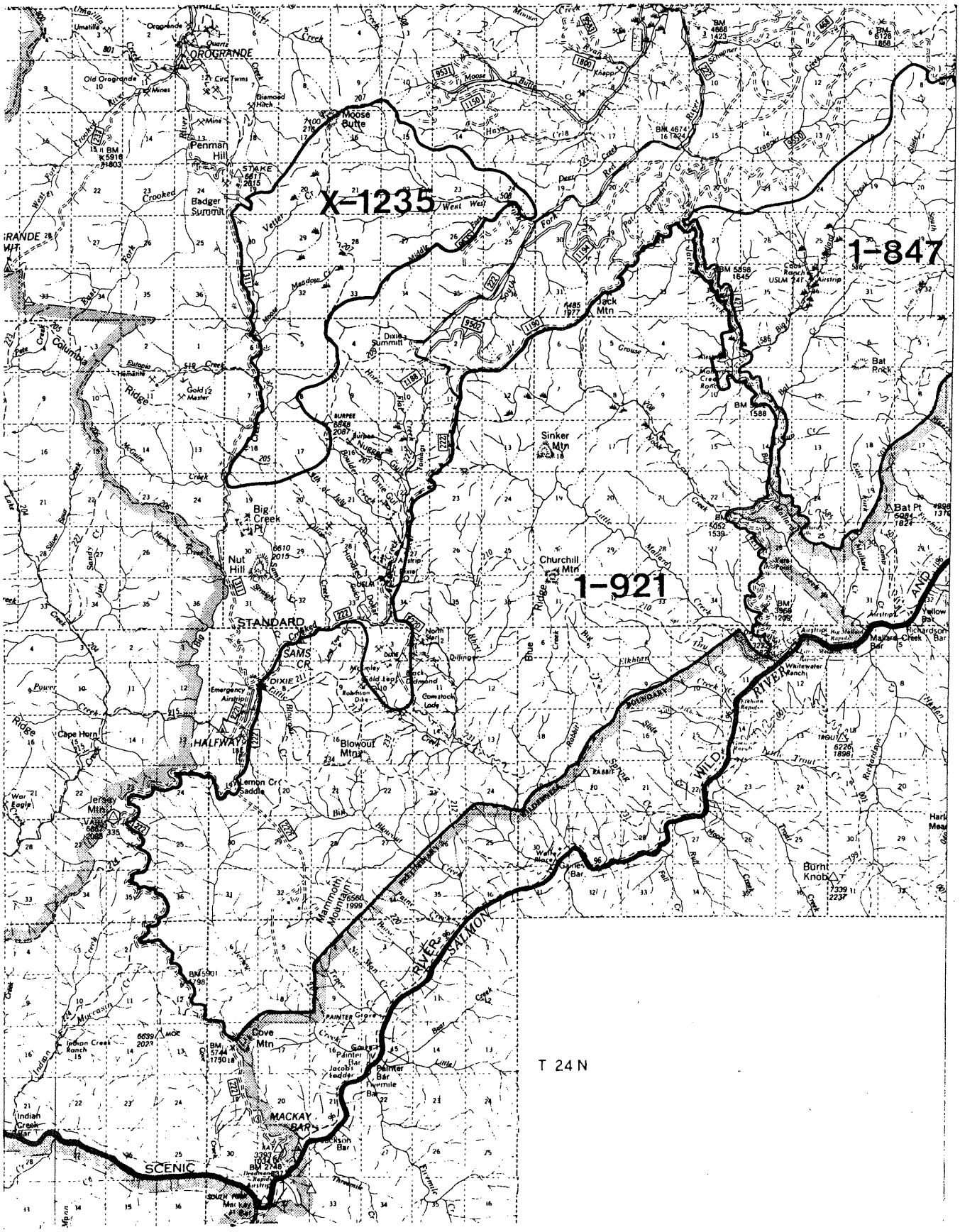
- Old-Growth Habitat--Roadless management would provide more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact on these small acreages.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management on 900 acres in all alternatives except H and H1. These acres are not contiguous.

Since roads may or may not be constructed, opportunities for wilderness may or may not change; however, since all alternatives except two call for significant roaded development, effects would resemble those of that management emphasis.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1-847
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OROGRANDE
Moose Butte
Penman Hill
Badger Summit
Jack Mtn
Dixie Summit
Sinker Mtn
Churchill Mtn
Big Creek Pt
Nut Hill
STANDARD
SAMS CR
HALFWAY
Blowout Mtn
Lemon Cr Saddle
Jersey Mtn
Cape Horn
Mammoth Mountain
Cove Mtn
MACKAY BAR
SCENIC
Indian Creek Bar
Burnt Knob
Bat Pt
Mallard Creek Bar
Richardson Bar
Yellow Bar
Bat Rock
Columbia Ridge
Blue Ridge
WILD RIVER
SALMON RIVER
T 24 N

ROADLESS AREA 1921 -- GOSPEL-HUMP (JERSEY-JACK)

54,321 Acres

A. DESCRIPTION

The Gospel-Hump Wilderness was created out of lands in Area 1921 and the acreage remaining still carries that name on Forest and Regional Office records. However, the area is probably now better known as "Jersey-Jack."

Roadless Area 1921 is immediately above the Salmon River breaks, and has a long common boundary (southeastern) with the Frank Church-River of No Return Wilderness along those breaks. Road 222 borders this Area on the southwest; Road 421, Jacks Creek, and Big Mallard Creek make up the northeastern boundary; and Roads 222 and 1190 border on the northwest. Generally, exposures are southeast, and all streams in the area flow into the Salmon River. Major creeks within the Area include all of Little Mallard Creek, Big Blowout Creek, Jersey Creek, and Noble Creek.

Access is by way of Road 222 and its spurs on the north and west, Road 421 on the east, and Road 1190 on the north. Road 222 ends at Mackay Bar and Road 421 ends at Whitewater Ranch, both on the Salmon River.

This Area includes such topographical features as Blowout Mountain, Blue Ridge, Sinker Mountain, and Cove Mountain. The elevation ranges from 2,402 feet at Whitewater Ranch to 6,680 feet at Sinker Mountain.

This is high, rolling, timbered country, with meadows along some of the larger creeks. The ecosystem type ranges from extensive lodgepole-pine-dominated stands in the Little Mallard Creek, lower Noble Creek, Jack Creek, Rhett Creek and Mammouth Mountain areas to climax ponderosa pine in the Vista Point and Whitewater areas to Engelmann spruce-alpine fir in the higher elevations and cold air drainages. Some larger meadows exist along Jacks Creek, Noble Creek, and Little Mallard Creek.

Area 1921 adjoins the small town of Dixie, which has a history of mining activity dating back to 1864. Early placer operations exploited creek gravels and high benches. The area's mining boom came with hardrock activity between 1890 and 1915. Many old mining relics still remain. Current mining activity is located in the Robinson Dike area and the Blowout Mountain area, both southeast of Dixie.

Recreation uses include fishing, hunting, camping, horseback riding, hiking, snowmobiling, motorcycling, sightseeing along the Dixie-Mackay Bar Road, and driving to the Salmon River via the two roads that border the roadless area to boat or to fish for steelhead and salmon. Four outfitters operate in the Area.

Vista Point has a scenic view of Mallard Creek Falls and the Salmon Breaks. The road from Vista Point to Whitewater Ranch goes through one of the few areas containing old-growth ponderosa pine on the Red River District.

B. CAPABILITY

1. Natural Integrity

Most impacts are confined to small areas. Overall, long-term ecological processes are intact and operating. The principal impacts come from Mallard Creek Ranch and mining activity in the head of Little Mallard Creek and the Robinson Creek area. The mining activity is on the perimeter of the area and could be excluded.

2. Natural Appearance

Present and proposed activities are located along the northern and eastern boundaries. Thus, the farther one travels into the area, the more natural the surroundings will appear. Less than 15 percent of the area is impacted.

3. Solitude

Area 1921 has a common boundary with the Frank Church-River of No Return Wilderness and at one point is separated from the Gospel-Hump Wilderness by a road corridor. When taken together with these wildernesses, Area 1921 offers very high opportunities for solitude. Vegetative screening is moderate to dense. Most off-site intrusions -- airplanes and other activity at Mallard Creek Ranch, timber harvest, and mining -- are located a mile or more from the Frank Church-River of No Return Wilderness.

4. Primitive Recreation Opportunity

Area 1921 by itself is not diverse, and offers few challenges. Topography is mostly rolling hills. The forest cover is uniform, almost monotonous, and the main challenge is a lack of topographical features for orientation. When the area is taken together with the Frank Church-River of No Return Wilderness, however, primitive recreation opportunity becomes very high.

5. Wilderness Manageability and Boundaries

Since 1979, this Area has been reduced by 27,239 acres. Proposed timber sales and roads account for 24,780 acres; the balance includes acreage recalculations, mining claims, and the Frank Church-River of No Return Wilderness boundary adjustments. However, since this area was neither logged nor roaded, the boundary has been adjusted to again include the 24,780 acres.

Boundaries of this area are well defined by roads on the east, north, west, and southwest sides. The southeastern boundary is the Frank Church-River of No Return Wilderness. Administrative costs would be similar to those of the adjacent wildernesses. Boundaries may have to be adjusted to exclude existing mining activity.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1921 are shown in Table C-34. Current uses of the area are also discussed in this section.

Table C-34
Selected Resource Values - Gospel-Hump Roadless Area 1921
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	54587	Wildlife - Big Game		
Net Acres	Acres	54321	Summer Habitat	Acres	53008
			Winter Habitat	Acres	1313
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Hab.	Acres	53008
Semiprim.Nonmotor	Acres	54321	Winter Hab.	Acres	1313
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Hab.	Acres	53008
			Winter Hab.	Acres	1313
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	535	Stream Miles	Miles	65
Allotments	No.	2			
AUMs	AUMs	190	Stream Habitat	Hab.ac	64
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	2			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	2300			
AUMs	AUMs	230	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	4480
Tentative Suitable	Acres	52416	High	Acres	7040
Standing Volume	MBF	511528	Moderate	Acres	8780
			Low	Acres	34021
Corridors			Mining Claims	No.	50
Exist.& Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	0
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	36782	Leases	No.	0
Grizzly Bear			Leased Area	Acres	0
Habitat	Acres	36782			

a. Timber

Lodgepole pine is the principal species at the higher elevations, with mixed species near the Frank Church-River of No Return Wilderness boundary.

b. Recreation

Elk hunting is a major recreational activity in the fall. Four commercial outfitters operate in the area.

c. Fish and Wildlife

Based on suitability of habitat and unconfirmed sightings, it is possible that the endangered Rocky Mountain gray wolf may inhabit this Area. Area 1921 is big-game summer range, and possible gray wolf and grizzly bear habitat. The northern part of the area is potential spring and summer wolf range, and the southwestern part could also serve as a travel corridor between the Gospel-Hump and River of No Return Wildernesses. The terrain adjoining the River of No Return Wilderness is bighorn sheep and mountain goat range. The area is also potential habitat for the peregrine falcon.

Small fish are found in the streams, but they are not anadromous.

d. Range and Grazing

Meadows along Noble, Grouse, Jack, and Little Mallard Creeks are used by cattle, horses, and game. Impacts are light. There are a few fences, and stock trails follow the stream bottoms. There are currently two grazing allotments in this Area.

e. Minerals

There are now 50 unpatented mining claims in Area 1921. The Little Mallard Quartz Placer in Section 12, T26N, R8E, has a heavy impact on about 10 acres. Approximately 100 acres west of Mammouth Mountain have also been heavily impacted by past mining activity.

f. Cultural Resources

There are no known cultural resource sites in this area.

g. Non-Federal Lands

Approximately 266 acres of patented mining claims lie within this area. The claims were patented in 1906, 1925, 1926, and 1927.

2. **Other Management Considerations**

Mallard Creek Ranch (HES 727 & 742) and Whitewater Ranch (HES 726) are private property located adjacent to this Area.

Many patented and 50 unpatented mining claims are located within and near this Area southeast of Dixie.

The forest cover is predominantly lodgepole pine. It has been determined that mountain pine beetles cause the most damage to lodgepole trees that are over 80 years old and over 8 inches in diameter, growing at elevations under 6,200 feet. The high percentage of lodgepole growing at these elevations makes the Area highly vulnerable to attacks by these insects, a species which is currently causing extensive damage in nearby parts of the Forest. Spot infestations of mountain pine beetle have been detected in the lower elevations along the southern part of the Area and around the Dixie Guard Station in the western part of the Area. Since no effective countermeasures have been developed against large-scale infestations, such as the one now faced by the Nez Perce, the only courses of action are to harvest the trees while they are still merchantable, or accept large areas of mortality (and most probably subsequent fire).

Spotted Knapweed infestations have been found in the Whitewater Ranch area.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See the introduction to this appendix.

2. Contribution to National Wilderness Preservation System

The main contribution would be to increase the size of the Frank Church-River of No Return Wilderness. Most features of the area are found in either the Frank Church-River of No Return or the Gospel-Hump Wilderness.

3. Public Interest, Concern, and Comment Summary

Area 1921 was originally a part of a much larger Gospel-Hump roadless area and was twice considered by Congress for wilderness classification. The Endangered American Wilderness Act of 1978 created the Gospel-Hump Wilderness, a 45,000-acre immediate development area, and a 92,000-acre multipurpose resource development area, but did not speak to the Jersey-Jack portion of the roadless area. Area 1921 was again considered for wilderness when the Central Idaho Wilderness Act was passed in 1980, and was again eliminated.

Local public opinion and the forest products industry are strongly opposed to wilderness classification for this area. Their view is that Congress has already considered the question twice, and that Congressional intent has been established.

The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association advocate wilderness classification. The U.S. Fish and Wildlife Service (USFWS) wants to manage this area with a threatened and endangered species emphasis. They want part of the area managed without additional roads for the first decade. Part of the area can be managed with roads, but the USFWS wants them closed at completion of the project.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-35, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section.

Table C-35
Management Emphasis-Gospel-Hump(Jersey-Jack) Roadless Area 1921 - 54,321 Acres (Thousand Acres)

	Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative										
Management Emphasis	A (CD)	C	D	E	F	G(PA) &G1	H& H1	I	J	K	L
Nonwilderness											
Roaded Development	50.9	23.8	50.9	50.9	0	50.9	0	23.8	23.8	50.9	50.9
Unroaded Mgmt.	0	28.9	0	0	54.3	0	0	0	0	0	0
Minimum Level	3.4	1.6	3.4	3.4	0	3.4	0	1.6	1.6	3.4	3.4
Research Natural Area	0	0	0	0	0	0	0	0	0	0	0
Wilderness											
Wilderness	0	0	0	0	0	0	54.3	28.9	28.9	0	0
Summary of Management Emphasis											
Developed-Decade 1	14.8	25.4	17.1	22.4	0	13.7	0	25.4	25.4	17.1	17.1
Developed-Decade 5	54.3	25.4	54.3	54.3	0	54.3	0	25.4	25.4	54.3	54.3
Roadless-Decade 1	39.5	28.9	37.2	31.9	54.3	40.6	0	0	0	37.2	37.2
Roadless-Decade 5	0	28.9	0	0	54.3	0	0	0	0	0	0
Wilderness	0	0	0	0	0	0	54.3	28.9	28.9	0	0

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1921 is recommended for wilderness classification in Alternatives H, H1, I, and J. This recommendation would increase opportunities for primitive recreation on the Forest and allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 511.5 MMBF on 6 percent of the Forest's tentatively suitable timberlands, would be foregone. Much of this timber is mature lodgepole pine at high risk for a Mountain Pine Beetle infestation.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims could be allowed to continue.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation such as outfitters would benefit. Individuals and groups advocating increased wilderness acreage would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would by localized and limited. Gray wolf, grizzly bear, and peregrine falcon habitat would be maintained.

- Cultural Resources--Cultural resource surveys in wildernesses are performed only in response to specific requests, unless special legal requirements exist to do otherwise. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Recreation opportunities would change to semiprimitive nonmotorized for that part of the area within three miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis, and wildfire could play a more natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness provides full habitat potential. High water quality would be maintained in all streams draining into the Salmon River.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber harvest would occur. Present diversity would be maintained.

- Wilderness--The wilderness resource on the Forest would be increased, as would the size of the Frank Church-River of No Return Wilderness.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

About 94 percent of Roadless Area 1921 is assigned to this management emphasis in Alternatives A, D, E, G, G1, K, and L; and 44 percent in Alternatives C, I, and J. General environmental effects are described in Chapter IV.

Between 13,700 acres (25 percent of the area) and 25,400 acres (47 percent of the area) would be opened to roaded development in the first decade.

Area 1921 would be entered in three places in the first decade. Two of these entries, in Sections 11 and 14, T26N, R8E, would access Noble, Rhett, and the head of Blowout Creek. The third entry, in Section 22, T26N, R9E, would access Little Mallard and Summit Creek. Actual mileage would depend on timber harvest objectives of each alternative.

Alternative G, the Preferred Alternative, would open about 13,700 acres to roaded development in the first decade.

The major nonpriced outputs considered by the Nez Perce Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber and mining industries would benefit from this management emphasis; the outfitting industry would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

Effects of the roaded management emphasis on nonpriced resource values:

- T&E Habitat--Potential for human intrusion would increase with roaded development, and project-level coordination among timber harvest, road construction and habitat management would be required. Area 1921 is potential gray wolf, grizzly bear, and peregrine falcon habitat, which may be affected by management activities. Adequate security and an adequate prey base would be maintained for the wolf and grizzly bear; falcon habitat is outside areas likely to be roaded.

- Cultural Resources--Roaded development would provide for a more thorough inventory, but increased disturbance of sites caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These would decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Logging has the potential for altering the amount and distribution of cover and forage areas and changing elk movements, distribution, and habitat utilization. Effects of roaded development on elk summer habitat would be mitigated using the North Idaho Elk Coordinating Guidelines on a project-by-project basis.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to development. More roads and harvest activity would be visible from high points in the area, but stream bottoms would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on fish habitat would be likely in streams adjacent to road construction; however, at least 60 percent of potential sediment from roads would be mitigated, and greater mitigations would be possible with application of best management practices on favorable landforms.

- Old-Growth Habitat--Minimum management requirements would be met or exceeded. Vegetative diversity would tend toward seral successional stages in the timber harvest areas.

- Wilderness--Wilderness possibilities in the roaded part of the area would be foregone; however, over 28,000 acres of Area 1921 would remain unroaded at the end of the first decade.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

All of Roadless Area 1921 is assigned to this management emphasis in Alternative F, and 53 percent in Alternative C. All existing uses could continue. Projects for prescribed burning using planned ignitions could be implemented.

Wilderness possibilities should remain largely intact.

Continued roadless management of this roadless area would have effects on nonpriced resource values that are similar to those of wilderness management.

The major nonpriced outputs considered by the Nez Perce National Forest (Chapter II, Section 18) are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Individuals and groups advocating roadless management would be supported; those advocating either roaded development or wilderness classification would not be supported.

Effect of an unroaded management emphasis on other nonpriced resources:

- T&E Habitat--Potential for human intrusion would remain at present levels. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access. Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low. Animals would be secure. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation could be held to present natural rates.

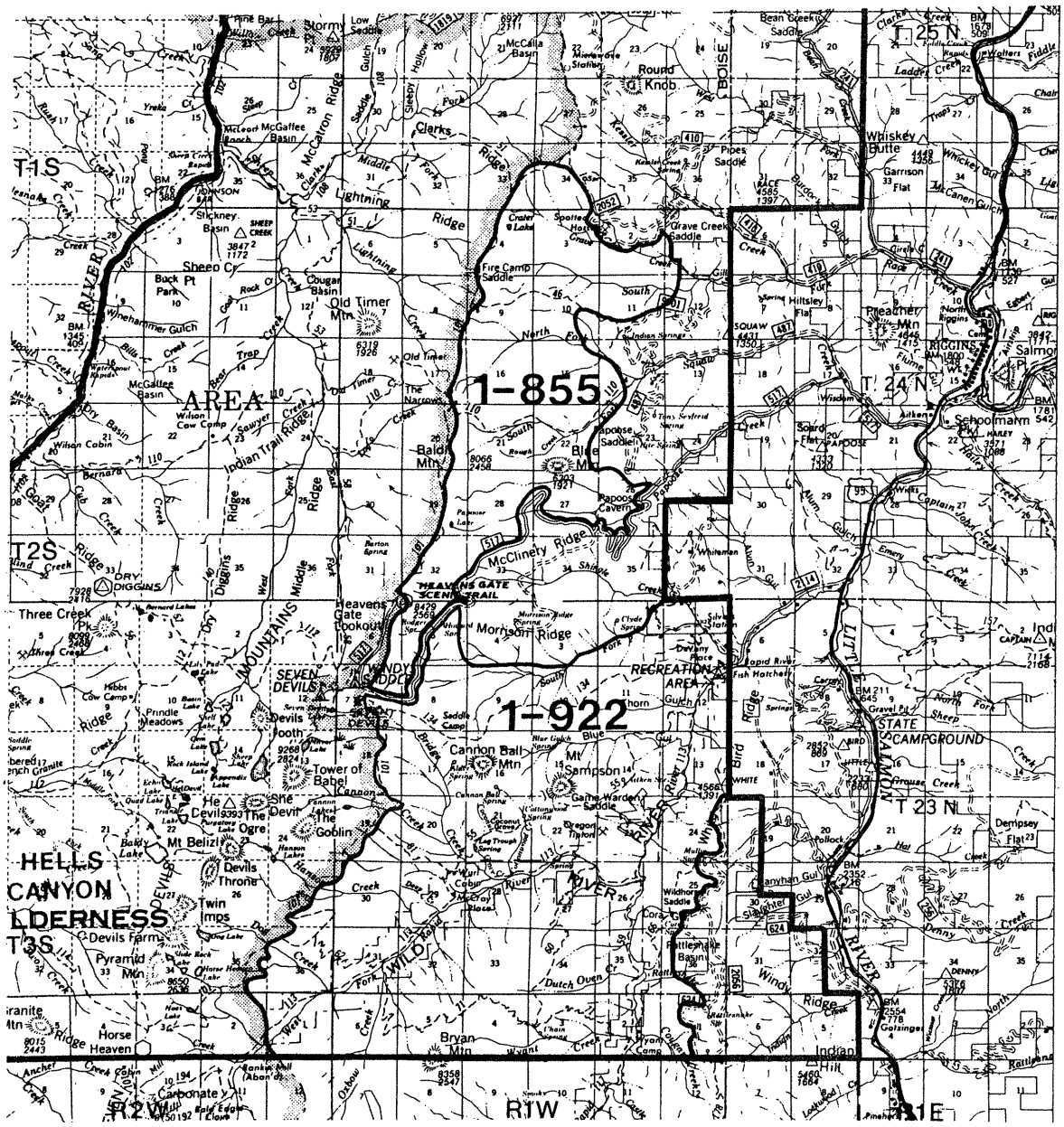
- Old-Growth Habitat--Roadless management provides more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management on 3,400 acres (6 percent of the area) in Alternatives A, D, E, G, G1, K, and L; and 1,600 acres (3 percent) in Alternatives C, I, and J. These are mostly lands not suitable for timber production.

Since roads may or may not be constructed, opportunities for wilderness may or may not change; however, in those alternatives which contain large acreages of roaded development, effects would resemble those of that management emphasis.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LDERNESS
Round Knob
Whiskey Butte
Preacher Mtn
Old Timer Mtn
Fire Camp Saddle
Grave Creek Saddle
Pipes Saddle
Lightning Ridge
Clarks Ridge
McCatron Ridge
McGaffee Basin
Buck Pt
Sheep Cr
Cougar Basin
Wilson Cow Camp
Sawyer Creek
Indian Trail Ridge
Baldy Mtn
Blue Mtn
Papoose Cavern
McClinety Ridge
HEAVENS GATE SCENIC TRAIL
Heavens Gate Lookout
Morrison Ridge
SEVEN DEVILS
WINDY SADDLE
Devils Tooth
Tower of Babel
Cannon Ball Mtn
Mt Sampson
Game Warden Saddle
RECREATION AREA
STATE CAMPGROUND
Mt Belizi
Devils Throne
Twin Imps
Devils Farm
Pyramid Mtn
Horse Heaven
Bryan Mtn
Indian Hill
Schoolmarm
Salmon
Dempsey Flat
Three Creek Pk
DRY DIGGINS
Prindle Meadows
Wildhorse Saddle
Rattlesnake Basin
Windy Ridge
Canyon Gulch
Bird Ridge
Dutch Oven
Chain Creek
Carbonate
Granite Mtn

ROADLESS AREA 1922 -- RAPID RIVER

76,036 Acres

Two-thirds of this Area, 52,736 acres, is on the Payette National Forest, and the remaining 23,300 acres are on the Nez Perce National Forest. However, National Forest boundaries do not affect the wilderness capabilities of any roadless area, and the entire area is considered as a whole. As stated in Chapter I, the Payette is the lead Forest in consideration of this area for wilderness, and discussion also appears in the Payette National Forest Environmental Impact Statement.

A. DESCRIPTION

The Nez Perce portion is in the southwest corner of the Forest. It is bordered by the Hells Canyon Wilderness on the west, the Payette National Forest on the south, road 624 and the National Forest boundary on the east, and road 517 and the South Fork of Shingle Creek on the north. This Area contains the Rapid Wild and Scenic River.

Access is via Road 517 on the north, and Roads 2114 and 624 on the east. The Black Lake road furnishes access to the Payette portion. Several trails also enter the area.

Slopes are steep and the topography is rugged. The elevation ranges from 2,180 feet where the Rapid River crosses the Forest boundary to 8,320 feet at Bryan Mountain. The area is drained entirely by Rapid River. Below the confluence of the main and west forks, a ponderosa pine and bunchgrass vegetation predominates. Above the confluence, the area is forested, and the slopes rise to an alpine environment. The area has western ponderosa forest, grand fir/Douglas-fir forest, and wheatgrass/bunchgrass ecosystems.

Rock types are mainly Seven Devils Volcanics, Columbia River Basalt, and Idaho Batholith granitics. The soils are mostly derived from volcanic parent materials and are dark colored, fine-textured, and rocky. Scattered areas of light, coarse textured, and rocky soils are also present.

The climate of the area is controlled primarily by the Aleutian Low and the Pacific High. The Aleutian Low is responsible for heavy precipitation, mostly snow in the winter and rain in the spring. The Pacific High causes hot and relatively dry summers.

Rapid River and the West Fork of Rapid River from the headwaters to the Forest boundary are part of the National Wild and Scenic Rivers System. The River received this designation in order to protect water quality for Salmon fisheries. A chinook salmon hatchery operated by the Idaho Department of Fish and Game is located just outside the Nez Perce Forest boundary on the northeast side of the roadless area. This hatchery was built by the Idaho Power Company as compensation for fishery losses involved with the construction of the Hells Canyon Dam complex, and it uses water from Rapid River.

The current major uses include grazing, hunting, hiking, fishing, and horseback riding. Elk and deer winter range exists at the lower elevations.

Riggins, with a permanent population of 500, is the nearest town. McCall, with a permanent population of 2,200 and a summer recreation population of 15,000, is the nearest large community.

B. CAPABILITY

1. Natural Integrity and Appearance

Except for a few localized impacts, long-term ecological processes are intact and operating. A long history of grazing has had little effect. Trails and mining sites are limited to less than 1 percent of the area.

The Rapid River drainage has largely escaped the wildfires that devastated entire drainages on both Forests in the past. Despite a history of human activity extending back to the earliest days of settlement in Idaho and Adams Counties, natural processes have been little disturbed.

2. Solitude

Total acreage of Area 1922 is 76,036, and the 194,132-acre Hells Canyon Wilderness adjoins it. Thus, from the standpoint of acreage, the potential for solitude is outstanding.

Topography is highly dissected and furnishes excellent screening, although the well-developed trail system tends to concentrate visitors along creek bottoms and on ridgetops. Vegetative cover ranges from dense over much of the area to minimal on some of the south slopes at lower elevations.

A few off-site intrusions are evident from the ridgetops, but they are not close-by. On-site intrusions include grazing cattle and range-related manmade structures in some parts of the area. Sounds originating outside of the area may carry up to a mile inside.

3. Primitive Recreation Opportunity

The area is diverse in everything except lakes, and these are found in the adjoining wilderness. Challenging terrain is present: much of the area is steep and rocky, with cliffs and bluffs. Temperatures range from cold to very hot; thunderstorms and snowstorms occur in season. Rattlesnakes are common in the lower elevations.

Although developed trails and trail bridges are present, developed camp facilities are not.

Area 1922, along with the Hells Canyon Wilderness, offers outstanding opportunity for primitive recreation.

4. Manageability and Boundaries

Area 1922 could be managed as a part of the Hells Canyon Wilderness. Administrative costs would probably rise since the Wilderness boundary would be very near the Forest boundaries; policing motorized trespass and other violations would probably be necessary.

If the area were to become wilderness, there would be no question of compliance with water quality standards specified in Public Law 94-199 and discussed below.

Under a wilderness classification, problems could arise with the private property inside the area. Purchases, trades, or easements may not be possible; routes of ingress and egress may be demanded by landowners.

Several boundary options are examined in the alternatives. Among them are a boundary that includes the entire area less existing developments, a boundary that follows the ridges defining the Rapid River drainage, and a boundary that excludes all of the area on the east side of Rapid River.

In addition, the northern and eastern boundaries could be modified to make the area more manageable. The South Fork of Shingle Creek, near the northern boundary, drains into Rapid River below the fish hatchery. Roads could be constructed and timber harvested there with applicable best management practices and sediment mitigation measures. The same is true of the area adjacent to Lockwood Point, which drains directly into the Little Salmon River.

Adjustments could also be made on the eastern boundary to eliminate signs of past activity and some of the private property located there.

Two proposed National Natural Landmarks exist in this Area.

C. AVAILABILITY

1. Nonwilderness Resource Potentials

Nonwilderness resource potentials for Area 1922 are shown in Table C-36. Current uses of the area are also discussed in this section.

a. Recreation

None of the River is suitable for canoes, kayaks, or rubber rafts because it is too shallow. Fishing is an important recreational use early in the season, before the weather gets hot and the water levels drop. Big-game hunting is done during the fall season. Commercial outfitters operate in the area. Black Lake and Pyramid Peak are popular recreation and scenic attractions.

For the most part, trails are well-constructed with bridges at major stream crossings, and run the full length of both the Main Fork and the West Fork of Rapid River and elsewhere. Some cuts and fills are large enough to create a moderate visual impact.

Trail 166, from Wildhorse Saddle to Wyant Camp, was built as a wagon road, but is now maintained as a trail and used by motorcyclists.

Table C-36
Selected Resource Values - Rapid River Roadless Area 1922 - 76,036 Acres
(Specified Units)

Category	Unit		Category	Unit	
Gross Acres	Acres	77116	Wildlife - Big Game		
Net Acres	Acres	76036	Summer Habitat	Acres	55895
			Winter Habitat	Acres	6663
Recreation			Specific-Elk		
Primitive	Acres	0	Summer Habitat	Acres	55895
Semiprim.Nonmotor	Acres	76036	Winter Habitat	Acres	6663
Semiprim.Motor.	Acres	0	Specific-Deer		
Roaded Natural	Acres	0	Summer Habitat	Acres	55895
			Winter Habitat	Acres	6663
Range					
Existing Obligated			Significant Fisheries		
Suitable	Acres	15415	Stream Miles	Miles	46
Allotments	No.	2			
AUMs	AUMs	1650	Stream Habitat	Hab.ac	60
Existing Vacant			Lakes	No.	0
Suitable	Acres	0	Lake Habitat	Hab.ac	0
Allotments	No.	0			
AUMs	AUMs	0	Water Developments		
Proposed			Existing	No.	0
Suitable	Acres	0			
AUMs	AUMs	0	Minerals		
			Hardrock Potential		
Timber			Very High	Acres	0
Tentative Suitable	Acres	54745	High	Acres	0
Standing Volume	MBF	638510	Moderate	Acres	0
			Low	Acres	76036
Corridors			Mining Claims	No.	30
Exist. & Potential	No.	0	Oil & Gas Potential		
			Very High	Acres	0
Wildlife - T&E			High	Acres	0
Bald Eagle			Moderate	Acres	0
Habitat	Acres	0	Low	Acres	76036
Gray Wolf			Oil & Gas Leases		
Habitat	Acres	0	Leases	No.	0
Peregrine Falcon			Leased Area	Acres	0
Habitat	Acres	8320			

b. Fish and Wildlife

The usual big-game species--elk, deer, bear, and cougar--inhabit Area 1922. Moose are scarce, owing to limited habitat. Cliffs and bluffs in the area offer potential habitat for peregrine falcons. Mountain goat and bighorn sheep are also found in the high country.

Spring and summer chinook salmon, steelhead, cutthroat, Dolly Varden, and rainbow are present in Rapid River. Spring chinook are intercepted at the hatchery; other anadromous fish are allowed to continue upstream.

c. Water Quality

Public Law 94-199, December 1975, designated Rapid River as a Wild River in the National Wild and Scenic Rivers System. The Act states that "the Secretary (of Agriculture) shall establish a corridor along the segments of Rapid River and may not undertake or permit to be undertaken any activities on adjacent public land which would impair the water quality of Rapid River."

In order to comply with the law, the Nez Perce and Payette National Forests have agreed that no activities will be permitted in the Rapid River drainage unless the Forest Service can guarantee that water quality will not be impaired. The Forests have also agreed that landforms, slopes, soil types, vegetative cover, proximity of streams, and rapidity of sediment delivery vary throughout the drainage and that activities which may be permitted in some parts of the drainage may be prohibited in others.

In addition, the two Forests have coordinated development of land management plans to insure compatible management of the Rapid River drainage.

d. Range and Grazing

Grazing has a long history in Area 1922; the earliest Forest Service maps show grazing allotments. This history is shown in the number of named springs in the area. A high percentage of the land is suitable range. Range-related developments are also present, such as water tanks, reservoirs, fences, and exclosures. Range rehabilitation projects such as seeding and fertilizing have been carried out in the past.

e. Timber

Standing volume is estimated at 638.5 MMBF on 54,745 acres of tentatively suitable lands. Dominant timber types are ponderosa pine, Douglas-fir, and spruce.

f. Minerals

Around the turn of the century, there was much local interest in possible gold and copper deposits in the Rapid River country, and some exploratory work was done. Evidence of this activity, mostly small tailing piles and adits, can be found in the area. According to geologists, copper mineralization is present, but economical mining today would be improbable. There are currently about 30 unpatented mining claims in Area 1922, and a small hydropower plant may be developed on Boulder Creek.

g. Cultural Resources

The first settlement occurred around the turn of the century. A few old cabins and at least two graves are known to exist, along with the remnants of past mining activity.

h. Non-Federal Lands

Three parcels of private land lie entirely within the Nez Perce portion of the roadless area, with others on or near the eastern boundary. Eighty acres of mining claims (the Oregon-Tipton) were patented in 1908. A 160-acre homestead on the main fork above the confluence with the west fork was patented in 1910, and another 80-acre homestead was patented in 1924. A fourth parcel of 130 acres (the McRae place) was acquired by the Government in 1979. There are buildings on some of these sites.

The Payette portion of Area 1922 contains 640 State grant acres and one 120-acre parcel of private property.

2. Other Management Considerations

This Area is managed as a roadless area with special consideration for livestock forage production and wildlife winter range including prescribed burning, range improvement installation, aerial grass seeding, etc.

If this Area is designated as wilderness, then the tracts of private land discussed above would need to be purchased, and the road that provides access to this land would have to be closed. The Area boundary could be adjusted to eliminate much of this private land.

D. NEED

1. Proximity to Other Designated Wildernesses and Population Centers

See Section 1 of this appendix.

2. Contribution to National Wilderness Preservation System

The main contribution would be to add a tributary of the little Salmon River to the Hells Canyon Wilderness. Most of the ecosystems present in Area 1922 are represented in other nearby wildernesses, but Rocky Mountain grand fir/Douglas-fir No. 3110-13 has been identified by the Payette Forest as a target ecosystem.

3. Public Interest, Concern, and Comment Summary

Congress looked at this area when the Hells Canyon National Recreation Area and Wilderness were established in 1975. Rapid River was named a Wild River, but the adjacent lands were not designated wilderness.

Many people would like to see this Area remain roadless.

The Idaho Wildlife Federation and the Idaho Outfitters and Guides Association both advocate wilderness classification for the area.

Management without roads is desired by the U.S. Fish and Wildlife Service and the Idaho Department of Fish and Game.

E. ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

1. Management Emphasis

Management emphasis by alternative is shown in Table C-37, and the effects of each management emphasis on the wilderness characteristics of the area are described in this section. Background information is located in the introduction to this appendix.

Table C-37
Management Emphasis-Rapid River Roadless Area 1922 - 76,036 Acres
Nez Perce and Payette National Forests
(Thousand Acres)

Payette NF Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative

Management Emphasis	A	B	C	E	F (CD)	I	N	O	P3	R2 (PA)
Nonwilderness										
Roaded Development:										
Payette	23.2	23.4	17.8	8.3	8.3	17.8	0	23.4	17.8	9.5
Nez Perce	0	18.1	0	0	0	0	0	18.1	0	3.9
	23.2	41.5	17.8	8.3	8.3	17.8	0	41.5	17.8	13.4
Unroaded Management:										
Payette	29.5	29.3	0	44.4	21.1	0	0	29.3	0	43.2
Nez Perce	23.3	0	0	23.3	23.3	0	0	0	0	19.4
	52.8	29.3	0	67.7	44.4	0	0	29.3	0	62.6
Minimum Level:										
Payette	0	0	0	0	0	0	0	0	0	0
Nez Perce	0	5.2	0	0	0	0	0	5.2	0	0
	0	5.2	0	0	0	0	0	5.2	0	0
Wilderness										
Wilderness:										
Payette	0	0	34.9	0	23.3	34.9	52.7	0	34.9	0
Nez Perce	0	0	23.3	0	0	23.3	23.3	0	23.3	0
	0	0	58.2	0	23.3	58.2	76.0	0	58.2	0

Table C-37 (continued)
Management Emphasis-Rapid River Roadless Area 1922 - 76,036 Acres
Nez Perce and Payette National Forests
(Thousand Acres)

Payette NF Alternatives -(CD)-Current Direction; (PA)-Preferred Alternative

	A	B	C	E	F(CD)	I	N	O	P3	R2(PA)
Summary of Management Emphasis										
Developed-Decade 1:										
Payette	23.2	23.4	17.8	8.3	8.3	17.8	0	23.4	17.8	9.5
Nez Perce	0	3.9	0	0	0	0	0	3.9	0	3.9
	23.2	27.3	17.8	8.3	8.3	17.8	0	27.3	17.8	13.4
Developed-Decade 5:										
Payette	23.2	23.4	17.8	8.3	8.3	17.8	0	23.4	17.8	9.5
Nez Perce	0	3.9	0	0	0	0	0	3.9	0	3.9
	23.2	27.3	17.8	8.3	8.3	17.8	0	27.3	17.8	13.4
Roadless-Decade 1:										
Payette	29.5	29.3	0	44.4	21.1	0	0	29.3	0	43.2
Nez Perce	23.3	19.4	0	23.3	23.3	0	0	19.4	0	19.4
	52.8	48.7	0	67.7	44.4	0	0	48.7	0	62.6
Roadless-Decade 5:										
Payette	29.5	29.3	0	44.4	21.1	0	0	29.3	0	43.2
Nez Perce	23.3	19.4	0	23.3	23.3	0	0	19.4	0	19.4
	52.8	48.7	0	67.7	44.4	0	0	48.7	0	62.6
Wilderness:										
Payette	0	0	34.9	0	23.3	34.9	52.7	0	34.9	0
Nez Perce	0	0	23.3	0	0	23.3	23.3	0	23.3	0
	0	0	58.2	0	23.3	58.2	76.0	0	58.2	0

For the purposes of this evaluation, the Nez Perce Forest alternatives have been fitted to the Payette Forest alternatives on the basis of goals, objectives and outputs common to both alternative sets. The relationship between the alternative sets of the two Forests is shown in Table C-38.

Table C-38
Alignment of Alternatives
Payette and Nez Perce National Forests

	Alternatives - (CD)-Current Direction; (PA)-Preferred Alternative									
Payette	A	B	C	E	F	I	N	O	P3	R2
Nez Perce	L	D	I	C	A	K	H	E	J	G

2. Impacts

a. Designation: Wilderness
Management Emphasis: Wilderness

All of Area 1922 is recommended for wilderness classification in Alternative N. From 23,285 to 34,936 acres of the Payette Forest portion is recommended in Alternatives C, F, I, and P3. In Alternatives C, I, and P3, all of the Nez Perce portion is recommended. Alternative R2, the proposed action, does not recommend wilderness classification for any part of Area 1922.

This management emphasis would increase opportunities for primitive recreation, and, with the exception of grazing, would allow ecosystems in the area to be affected by natural processes only.

Timber management possibilities, including harvest of approximately 638.5 MMBF in the area, would be foregone; however, much of this volume may not have been available in any event because of constraints imposed by water quality standards in Public Law 94-199, which would limit access road construction.

Some existing uses, such as use of motorized equipment, would have to be terminated, but grazing at existing levels and mineral development on existing valid claims and leases could be allowed to continue.

Big-game habitat improvement programs that involve prescribed burning on winter ranges would have to rely on unplanned ignitions unless current regulations are changed.

Maximum protection would be afforded the Rapid River Corridor, and there would be no question of compliance with Public Law 94-199.

In general, nonpriced resource values are enhanced by wilderness management. The major nonpriced outputs considered by the Payette and Nez Perce Forests are maintenance of traditional lifestyles, community stability, threatened and

endangered species (T&E) habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives; however, wilderness classification precludes timber harvest, and the wood products industry would not benefit under this emphasis. Industries relating to primitive recreation, such as outfitters, would benefit. Individuals and groups advocating increased wilderness would be supported; those advocating roaded development would not be supported.

Effects of wilderness management on other nonpriced resource values:

- T&E Habitat--The possibility of human intrusion would be low. Management activities would be localized and limited. Possible peregrine falcon habitat would be fully protected.

- Cultural Resources--Disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--These would change to semiprimitive nonmotorized for that part of the area within 3 miles of motorized use and to primitive for the rest of the area.

- Big-Game Habitat--The need for coordination between habitat management and other management would be low. Animals would be more secure than under any other management emphasis. Habitat improvement programs using prescribed fire would be limited to unplanned (lightning) ignitions, and wildfire could play a more natural role. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--When an area becomes wilderness, the visual quality objective becomes preservation. Visual quality would be maintained.

- Anadromous Fish Habitat--Wilderness would provide full natural habitat potential. High water quality would be maintained in Rapid River.

- Old-Growth Habitat--Percentages of old-growth habitat in wilderness would be the highest possible, since no timber is cut. Present diversity would be maintained.

- Wilderness--The wilderness resource in central Idaho would increase.

b. Designation: Nonwilderness
Management Emphasis: Roaded Development

Large parts of Area 1922 are assigned to this management emphasis in Alternatives B and O. In addition, parts of the Payette portion are assigned to prescriptions that require roads in Alternatives A, C, E, F, I, P3, and R2.

The Nez Perce assigns all of its portion to roaded development prescriptions in Alternatives B and O. In all other alternatives except R2, all of the Nez Perce portion is either recommended for wilderness classification or assigned to continued roadless management. In Alternative R2, 3,900 acres of the Nez

Perce portion are assigned to roaded development. The Preferred Alternative, assigns 13,442 acres, 18 percent of the area, to roaded development prescriptions.

Approximately 638.5 MMBF of standing timber volume would be available in the entire area if harvests are not constrained by legal water quality requirements -- 507 MMBF of this volume is on the Payette Forest, 131.5 MMBF is on the Nez Perce. The full Nez Perce volume would be available only in Alternatives B and O. In Alternative R2, 7 MMBF would be available from 3,900 acres not assigned to either wilderness or continued roadless management. These 3,900 acres drain into Rapid River below the fish hatchery and are exempt from water quality requirements of PL 94-199. Standard Forestwide water quality mitigation measures and best management practices would apply in this area.

On the Nez Perce, these 3,900 acres would be opened to roaded development in the first decade. They are located on the northern edge of the roadless area in the head of Shingle Creek, and would be entered from the existing road system. First decade roaded development activity on the Payette would involve about 4,000 acres in the Lockwood Point vicinity. These lands drain into the Little Salmon River, and access would be via the Whitebird Ridge Road, most of which is already in place and is on the Nez Perce Forest. In both cases, road mileage would depend on timber objectives of each alternative.

Major nonpriced benefits considered by both Forests are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, visual quality, anadromous fish habitat, old-growth-dependent species habitat, and wilderness.

Traditional lifestyles would be maintained and community stability would be within parameters for rapid change in all alternatives. Timber, mining, and livestock industries would benefit from this management emphasis; industries relating to primitive recreation would not benefit. Individuals and groups advocating roaded development would be supported; those advocating wilderness would not be supported.

- T&E Habitat--Potential for human intrusion would increase with roaded development, but areas likely to be occupied by peregrine falcons are unlikely to be roaded.

- Cultural Resources--Roaded development provides for a more thorough inventory, but increased disturbance caused by easier access would be likely.

- Semiprimitive Recreation Opportunities--These decrease as roadless areas are brought under roaded management. Roaded natural settings would increase.

- Big-Game Habitat--As roadless areas are brought under development, greater coordination would be needed between road construction and habitat management. Effects of roaded development on elk summer habitat would be mitigated on a project-by-project basis.

Most of the winter range in Area 1922 is on the Nez Perce Forest portion. These ranges would be improved when site preparation is designed to emphasize browse production and natural tree generation.

- Visual Quality--This would change in response to specific visual quality objectives, from retention to partial retention on some lands to modification and maximum modification on others. Visual quality would be lowered on all roadless lands opened to roaded development. More roads and harvest activity would be visible from high points in the area, but stream bottoms and the Rapid River Corridor would be largely unaffected.

- Anadromous Fish Habitat--Increased sedimentation and resultant adverse effects on water quality and fish habitat would be likely in streams adjacent to road construction. Since little if any stream sedimentation is permissible under the standards of PL 94-199, mitigations approaching 100 percent must be assured. This is not possible in most cases; thus, rigid constraints would be imposed on road construction in Area 1922.

- Old-Growth Habitat--This will exceed minimum management requirements in all alternatives.

- Wilderness--Wilderness possibilities in the roaded part of Area 1922 would be foregone; however, acreage of any size adjoining the Hells Canyon Wilderness could be added to that Wilderness at any time.

c. Designation: Nonwilderness
Management Emphasis: Unroaded Management

All of Area 1922 except 8,347 acres on the Payette Forest would be managed without roads in Alternative E. In Alternatives A, E, and F, all of the Nez Perce portion is assigned to roadless prescriptions, and parts of the Payette portion would be managed without roads in Alternatives A, B, F, O, and R2. Alternative R2, the proposed action, would leave 62,594 acres, 82 percent of the area, in roadless management.

Timber harvest and mining would not be precluded, but they would have to be accomplished without roads. All existing uses could continue.

Continued roadless management of large roadless acreages has effects on nonpriced resource values that are similar to those of wilderness management.

The major nonpriced outputs considered are maintenance of traditional lifestyles, community stability, threatened and endangered species (T&E) habitat, cultural resources, semiprimitive recreation opportunities, big-game habitat, old-growth-dependent species habitat, and wilderness.

- T&E Habitat--Potential for human intrusion would remain at present levels. Habitat would be maintained.

- Cultural Resources--Possibilities for a rapid inventory would be reduced because of difficult access, but disturbance of sites would be minimal.

- Semiprimitive Recreation Opportunities--Existing opportunities would be retained.

- Big-Game Habitat--The need for coordination between habitat management and other management activities would be low. Animals would be secure. Habitat improvement programs requiring planned fire ignitions could be accomplished. Elk summer habitat would be managed at a high percentage of potential.

- Visual Quality--The area would retain present visual qualities.

- Anadromous Fish Habitat--Since roads would not be constructed, stream sedimentation would be held to natural rates.

- Old-Growth Habitat--Roadless management provides more than adequate habitat for old-growth-dependent species. Overall vegetative diversity would tend toward old growth.

- Wilderness--Wilderness qualities would remain intact.

d. Designation: Nonwilderness
Management Emphasis: Minimum Level

This prescription emphasizes a maintenance-only level of management. Alternatives B and O assign 5,200 Nez Perce acres to these prescriptions.

Since roads may or may not be constructed, wilderness possibilities may or may not change. However, water quality constraints in Area 1922 make extensive road construction unlikely, so effects of this management emphasis would resemble those of unroaded management.

APPENDIX D

ADDITIONAL ANALYSIS ON THE PREFERRED ALTERNATIVE TIMBER VALUES, REAL PRICE INCREASE, AND WILDLIFE AND RECREATION VALUES

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I. INTRODUCTION

Of primary interest in National Forest Land and Resource Management Plans (Forest Plans) are the choices made about how land is to be managed: how much timber is to be harvested, how this will impact the potential timber supply and demand in Northern Idaho, how many miles of road will be constructed, and, on the other end of the spectrum, what lands are recommended for wilderness or will be managed with minimal human-caused disturbance. In part, the choices are analyzed through a linear programming model that selects lands for various uses to optimally meet the objective of an alternative. The model focuses on quantitative information. Using the outputs (harvest levels, etc.) generated from management activities assumed to occur on given portions of the land as a base, the valued (economic) benefits and costs are compared over time.

During the public review period for the Nez Perce National Forest Proposed Forest Plan and Draft Environmental Impact Statement (EIS), much concern was expressed, both in written comments and at public meetings, that the Forest Plan overestimated the present and future value of timber outputs, and underestimated the present and future value of wildlife and recreation opportunities.

The concern is that this perceived overvaluing of timber and undervaluing of wildlife and recreation opportunities was biasing the land assignments in the Preferred Alternative toward timber production at the expense of wildlife and recreation opportunities.

Value information consists of two parts. First, a base (starting) value is determined from prices of market commodities or current estimates derived for nonmarket commodities. The second part is a projection of real changes in these base values in the future. These projections are based on expected changes in supply and demand.

The timber prices used in the Forest Plan and EIS are based on bid prices for the years 1975-1980. The original real price projections of timber values are based on the 1980 Resource Planning Act (RPA) assessment.

Revised base timber values were calculated using actual receipt data for the years 1975-1984 (See discussion below on the methodology used to calculate the revised stumpage values for this analysis). Price projections used in this sensitivity analysis are from the draft 1985 RPA program (Alternative B).

After the Draft Environmental Impact Statement was released to the public, concerns by the timber industry were raised over limited supplies of timber in the State of Idaho and the potential impact of changes in demand. Also, there were questions as to the amount of lands in the suitable timber base and if there were opportunities to increase the planned harvest level should demand (price) for timber dramatically increase. In response to these concerns, the Forest completed a timber supply study for the State of Idaho. The results of this study as well as additional information on timber resource suitability and supply and demand analysis for this National Forest are included in this overall analysis of the Preferred Alternative.

II. SENSITIVITY ANALYSIS OF RESOURCE VALUES AND PROJECTIONS

The focus of the analysis summarized in this Appendix is on two sets of data in the model: (1) timber values; and (2) wildlife and recreation values. The Forest Plan alternatives were based on a particular base value projected into the future. The question analyzed here is: when different base and future values are used in the model, how much does the result change (e.g. present net value, suitable timber acres, allowable sale quantity, etc).

A. Calculation of timber stumpage values for the sensitivity analysis

The base stumpage values in FORPLAN were originally calculated from bid prices during the years 1975 to 1980. This time period included one complete cycle in the lumber market. Bid prices in that cycle were relatively higher than they were in the 1981 through 1984 cycle. Because of the current law which allowed purchasers to "buy-back" many of these sales, the bid prices for this period also overstate the actual prices that were received for stumpage. During the 4-year period from 1981 to 1984, bid prices have been relatively low. To adjust the prices in FORPLAN to a wider base period that includes both relatively high and low points in the lumber market, 10-year average prices (1975-1984) were calculated. The average prices are based on actual receipts (cut values) rather than reported high bids. The procedure used to calculate the average price is as follows:

- The total cut sawtimber volume and the net value received for that sawtimber was calculated for each calendar year using data from the Forest "cut and sold" report. The values were adjusted for inflation to constant (1978) dollars.

- The net value from the cut and sold reports does not include in-kind road payments made by timber purchasers to the Forest Service. The average amount of road credits per thousand board feet (MBF) were calculated for each Forest and calendar year using the Timber Appraisal (Transaction Evidence) data base. The amounts were then adjusted for inflation to constant dollars.

- The net receipts per MBF and the road credits per MBF were summed then multiplied by the sawtimber volume cut in each calendar year. This sum is the total gross receipts per calendar year.

- The total gross receipts were summed for the 10-year period then divided by the total volume cut. The result is a weighted average high bid price per MBF that is based on actual Forest Service receipts.

Table D-1 shows these calculations for the Nez Perce National Forest. To appraise the stumpage values associated with individual timber sales, Region 1 of the Forest Service has developed statistical models which predict price on the basis of physical sale characteristics. Because these models are based on data from past sales, the procedure is termed a "transaction-evidence" method of appraisal. The current models are based on sales sold during the 36-month period from January 1982 to December 1984. Separate models are used for the East Side and West Side appraisal zones.

Table D-1
Summary of Sawtimber Volume and Value by Year, Nez Perce National Forest

Year	Volume (MMBF)	Value Per MBF	Inflation Factor	Net Value	Road Credits	Gross Value	Total Value
1984	54.38	24.90	0.66	16.38	20.17	36.55	1,987.72
1983	53.03	46.33	0.68	31.60	12.86	44.46	2,357.47
1982	19.94	25.18	0.71	17.82	28.63	46.45	926.31
1981	50.99	27.19	0.75	20.48	53.98	74.46	3,796.51
1980	65.62	34.99	0.82	28.83	27.34	56.17	3,685.80
1979	97.39	45.91	0.90	41.36	37.98	79.34	7,727.34
1978	97.71	19.35	0.98	18.95	41.98	60.93	5,953.24
1977	78.59	20.54	1.05	21.62	38.00	59.62	4,685.83
1976	115.33	36.29	1.11	40.39	23.88	64.27	7,412.49
1975	82.20	19.16	1.17	22.42	33.91	56.33	4,630.32
Totals	715.18						43,163.05
				Base period price per MBF			60.35

The West Side zone consists of the Forests in Northern Idaho and Western Montana. These include the Bitterroot, Idaho Panhandle, Clearwater, Flathead, Kootenai, Lolo, and Nez Perce Forests. Stumpage prices in the West Side zone are highly dependent on the species being cut and the quality of the logs removed. Because stands are harvested using a variety of logging methods and silvicultural systems, logging costs are also highly variable in this zone.

Physical variables that reflect timber and site quality are included in the West Side model. The model predicts that the stumpage price per MBF increases as the "lumber price" (SPLT), average tree diameter (ADBH) and the harvest volume per acre increases. The lumber price is a measure of the value of the products that can be derived from the stumpage. By constructing FORPLAN economic tables that reflect the separate species value (lumber prices) of each timber yield table, value differences due to species are accounted for. Within each FORPLAN economic table, separate values are given for up to six diameter classes and five volume classes. The effects on value of both tree size and the harvest volume per acre are thus directly considered by the model.

The steepness of the land and the soil sensitivity affect the manner in which a timber stand can be logged. Areas of gentle slopes and stable soils are normally tractor logged. Steep slopes and unstable soil areas must be logged using more expensive cable systems. The West Side model predicts separate stumpage values for tractor and cable logging. The effect of yarding distance on value is also predicted for each method (costs increase as the yarding distance and road spacing increase). Although helicopter sales were not included when developing the West Side model, logging cost differences between cable and helicopter sales can also be estimated. The influence of the logging method on value is considered in FORPLAN by making separate sets of economic tables for each method.

The West Side model was developed for all Forests using sale data covering the period from January 1982 to December 1984. It must, therefore, be adjusted to

fit the average 10-year base price that was calculated for the Nez Perce National Forest. The procedure for adjusting the model is as follows:

- The average value of each physical variable is calculated for the 10-year period (1975-1984);

- The averages are then substituted into the model. This gives the average stumpage price per MBF predicted by the coefficients of the equation; and

- A plus or minus constant term is then inserted into the equation such that the average predicted price equals the average 10-year base price.

In summary, new base stumpage prices for this sensitivity analysis have been developed for the Nez Perce National Forest using actual receipt data covering the period 1975 to 1984. Variations in stumpage values due to physical characteristics of the stand and site are modeled using the latest research information available.

The results of applying the West Side regression coefficients to the mean variable values for the Nez Perce are shown in Table D-2. The coefficients and applicable variable values are adjusted for inflation to first-quarter 1978 dollars. The mean values were calculated using transaction-evidence sale data covering the period 1975 through 1984. In these calculations each sale was weighted according to its size in million board feet.

The mean stumpage price calculated by the regression coefficients is $92.17 per MBF. The actual mean stumpage price for the 10-year base period is $60.35 per MBF. The difference between these two numbers, i.e. -31.82, is added as a constant term to the predictive equation. The stumpage price model for the Nez Perce is thus:

$$Y = -31.82 + 0.383\ SPLT + 1.313\ ADBH + 4.179\ LNVPA - 6.760\ YDTRA - 14.646\ YDGDL - 13.036\ YDSKY - 0.1538\ PVSK$$

Where:

Y = the stumpage price per MBF in 1978 dollars
SPLT = the lumber price per MBF in 1978 dollars
ADBH = the average d.b.h. in inches
LNVPA = the natural log of the harvest volume per acre in MBF
YDTRA = the proportion of the volume tractor-logged times the mean external yarding distance in thousands of feet
YDGDL = the proportion groundlead times the yarding distance in thousands of feet
YDSKY = the proportion skyline times the yarding distance in thousands of feet
PVSK = the percent of the volume logged by skyline

Table D-2
Stumpage Price Model, (1978 Dollars)

Variable	Coefficient	Mean Value	Factor
SPLT	0.3830	187.170	71.69
ADBH	1.3130	14.302	18.78
LNVPA	4.1790	2.787	11.65
YDTRA	-6.7600	0.493	-3.33
YDGDL	-14.6460	0.046	-0.67
YDSKY	-13.036	0.216	-2.82
PVSK	-0.1538	20.348	-3.13
		Predicted Price	92.27
		10-Year Price	60.35
		Constant	-31.82

In most timber sales, brush disposal (BD) collections are taken directly from purchasers as they harvest timber. This money is then used by the Forest Service to do slash disposal and site preparation work. In the Nez Perce FORPLAN model, all Forest Service slash disposal costs, regardless of funding source, are included in the economic tables. To prevent the double counting of these costs, the average BD collection per MBF is added back to the base stumpage price for harvest cuts. During the period 1975 to 1984, BD collections averaged $3.83 per MBF.

In the Nez Perce Forest Plan, three different logging methods are analyzed. By substituting the assumed yarding distance for each logging method into the model, the relative cost applicable to each method can be calculated. The calculations are shown in Table D-3.

Table D-3
Comparison of Logging Methods, Nez Perce National Forest

Logging Method Tractor	Yarding Distance	Comparative Costs per MBF	Change From Tractor $
Tractor	700'	-4.73	0.00
Skyline	1500'	-34.93	-30.20
Aerial	NA	-90.67	-85.94

Helicopter sales were not included when developing the recent transaction-evidence regression models. A helicopter equation was developed from 18 sales sold in the Region from 1972 to 1979. This equation is:

$$Y = -246.89 + 0.5511 \text{ SPLT} + 46.37 \text{ LOG (DBH)}$$

Where:

Y = high bid price per MBF (1978 dollars)

Substituting the 10-year average values for SPLT and DBH the predicted stumpage price for helicopter logging is:

$$\begin{aligned} Y &= -246.89 + 0.5511\ (187.17) + 46.37 \text{ LOG } (14.30) \\ &= -246.89 + 103.15 + 123.36 \\ &= -\$20.38 \text{ per MBF} \end{aligned}$$

Helicopter logging only pays if you have both large diameter trees and high lumber prices. The average stumpage price for tractor-logged timber under the same circumstances is $65.56 per MBF. No adjustment is made to prices predicted by the helicopter equation.

The average base stumpage values and projections that apply to both the original and updated data are shown in Table D-4. Note that the average base stumpage price (1980 value) did not change significantly as a result of the revision; however, the price projections from the draft 1985 RPA program (i.e., future prices) are substantially lower than those used originally.

Table D-4
Average Stumpage Prices, Original verses Revised
(1978 dollars per MBF)

		Planned	Projected			
	1980 Base Value	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Original	59.44	$73.99	$97.88	$129.88	$180.14	$231.27
Revised	60.35	60.35	63.96	74.40	89.19	109.95
Percent Change	+2	-18	-35	-43	-50	-52

Revised Recreation/Wildlife Values from the Draft 1985 RPA

The wildlife and recreation values used in the original analysis were based on the 1980 RPA program; the updated wildlife and recreation values used in this sensitivity analysis are based on a combination of the 1985 RPA Program values and Idaho specific values for big-game hunting and anadromous sport fishing. These values are shown in Table D-5.

The Idaho specific values are from a recently completed study done by the Idaho Department of Fish and Game and the Rocky Mountain Forest and Range Experiment Station. (Donnelly, Dennis; John B. Loomis, Cindy Sorg, and Louis Nelson. "Net Economic Values of Recreational Steelhead Fishing in Idaho," Resource Bulletin RM-9, Rocky Mountain Forest and Range Experiment Station. 1985. Sorg, Cindy; Louis Nelson. "Net Economic Value of Elk Hunting in Idaho," Resource Bulletin RM-12, Rocky Mountain Forest and Range Experiment Station. 1985.)

Table D-5
Wildlife and Recreation Values, Original verses Revised
(1978 dollars per unit)

Outputs		Planned	Projected			
		1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Dispersed Recreation (RVDs)	Original	$4.45	$4.67	$5.30	$5.92	$6.68
	Revised	8.10	8.75	9.45	10.20	11.02
Wilderness (RVDs)	Original	8.00	8.00	9.12	9.84	11.20
	Revised	11.00	11.88	12.83	13.86	14.97
Elk Hunting (WFUD)	Original	21.00	22.05	24.99	27.93	31.50
	Revised	35.27	38.04	41.14	44.43	47.98
Anadromous Sport Fishing (WFUD)	Original	19.50	20.48	23.21	25.94	29.25
	Revised	21.16	23.28	25.15	27.16	29.33
Commercial Sport Fish (Pounds)	Original	1.61	1.69	1.92	2.14	2.42
	Revised	1.61	1.69	1.92	2.14	2.42

B. Revised Timber Base Price and Projections

1. Preferred Alternative

The first step in the analysis was to look at the Preferred Alternative (Alternative G) to see what effect different assumptions would have on the FORPLAN solution. Each variation and result is discussed below:

Run P1A

Purpose:

Evaluate the effects of using revised timber values.

Specifications:

- Revised timber values;
- Original real price increases for timber.

Results:

The first variation used the revised timber values with the original real price increases. Although the average base stumpage price did not change significantly, the values associated with the type of logging systems did change. For tractor logging (which is used extensively in the early decades), stumpage values were reduced significantly between the original and revised prices. This resulted in a 27-percent reduction in present net value. The present value of the timber benefits decreased by 29 percent. There was a slight increase in the first decade ASQ and the long-term sustained yield capacity (LTSYC). See Table D-6.

Table D-6
Preferred Alternative Modified to Evaluate REVISED BASE TIMBER VALUES for the period 1975-84, with ORIGINAL REAL PRICE INCREASES.

		Average Annual Units				
	Run ID	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Allowable Sale Quantity (MMBF)	G1U[a]	(102)	(139)	(196)	(206)	(206)
	P1A	105	137	205	205	205
Long-Term Sustained Yield Capacity (MMBF)	G1U	(206)	-	-	-	-
	P1A	205	-	-	-	-
Suitable Acres	G1U	(889,157)	-	-	-	-
	P1A	889,157	-	-	-	-
Present Net Value (Million Dollars)	G1U	(975)	-	-	-	-
	P1A	713	-	-	-	-
Discounted Values (Million Dollars)						
- Timber	G1U	(939)	-	-	-	-
	P1A	670	-	-	-	-
- Recreation & Wildlife	G1U	(388)	-	-	-	-
	P1A	388	-	-	-	-

a/ G1U was the Preferred Alternative in the Draft EIS.

Run P2A

Purpose:

Evaluate the significance of revised timber values with no real price increases.

Specifications:

- Revised base timber values;
- No real price increases for timber.

Results:

The most significant effect was that the present value of the timber benefits decreased by 72 percent; from $939 million to $261 million. This caused the acres suitable for timber management to decrease by 42,673 acres (5 percent), and the timber harvest levels and the LTSYC to decrease slightly (see Table D-7).

Table D-7
Preferred Alternative Modified to Evaluate REVISED BASE TIMBER VALUES for the period 1975-84; REAL PRICE INCREASES HAVE BEEN DELETED.

		Average Annual Units				
	Run ID	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Allowable Sale Quantity (MMBF)	G1U[a]	(102)	(139)	(196)	(206)	(206)
	P2A	100	133	196	196	196
Long Term Sustained Yield Capacity (MMBF)	G1U	(206)	-	-	-	-
	P2A	196	-	-	-	-
Suitable Acres	G1U	(889,157)	-	-	-	-
	P2A	846,484	-	-	-	-
Present Net Value (Million Dollars)	G1U	(975)				
	P2A	356				
Discounted Values (Million Dollars)						
- Timber	G1U	(939)	-	-	-	-
	P2A	261	-	-	-	-
- Recreation & Wildlife	G1U	(388)	-	-	-	-
	P2A	388	-	-	-	-

a/ G1U was the Preferred Alternative in the Draft EIS.

Run P3A

Purpose:

Evaluate the combined effects of the revised base timber values and draft 1985 RPA real price increases.

Specifications:

- Revised timber values;
- Draft 1985 RPA real price increases.

Results:

As shown in Table D-8, the most significant change in this run is that the present value of the timber benefits decreased by 61 percent. This slightly reduced the timber harvest level and the LTSYC, and slightly decreased the suitable acres (i.e., a 2.5 percent decrease). Other key outputs also showed a small decrease.

Table D-8
Preferred Alternative Modified to Evaluate REVISED BASE TIMBER VALUES for the period 1975-84 with DRAFT 1985 RPA REAL PRICE INCREASES.

		Average Annual Units				
	Run ID	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Allowable Sale Quantity (MMBF)	G1U[a]	(102)	(139)	(196)	(206)	(206)
	P3A	102	132	195	200	200
Long-Term Sustained Yield Capacity (MMBF)	G1U	(206)	-	-	-	-
	P3A	200	-	-	-	-
Suitable Acres	G1U	(889,157)	-	-	-	-
	P3A	866,776	-	-	-	-
Present Net Value (Million Dollars)	G1U	(975)				
	P3A	433				
Discounted Values (Million Dollars)						
- Timber	G1U	(939)	-	-	-	-
	P3A	363	-	-	-	-
- Recreation & Wildlife	G1U	(388)	-	-	-	-
	P3A	388	-	-	-	-

a/ G1U was the Preferred Alternative in the Draft EIS.

Due to a decrease in PNV, an additional 23,000 acres in productivity class 4 were sent to a minimum level (unsuitable) prescription. These acres represent nonstocked or understocked plantations that received either a backlog or maintenance reforestation prescription in run G1U (see Table D-9).

The acres of timber harvest on deer/elk winter range increased by approximately 1,000 acres (7.5 percent) in the first decade. These prescriptions provide extended periods of regeneration (20 years) to provide prolonged periods of browse and forage production for deer and elk.

There were no other major changes in land assignment or scheduling as a result of using the revised base timber values and draft 1985 RPA real price increases.

Table D-9
Minimum Level Assignments by Productivity Class.
(Thousand Acres)

Run ID	Productivity Class				
	3	4	5/6	7	8
G1U (Preferred Alternative)	91.7	26.4	4.6	40.7	30.3
P3A	92.5	49.4	4.6	40.7	29.8
Difference	.8	23.0[a]	0	0	.5
Percent Change	+.8	+87.0	0	0	+1.6

a/ All of these acres are in need of backlog reforestation.

2. Maximum Present Net Value (PNV) Benchmark (Run 06D)

Since the Maximum PNV benchmark is the benchmark to which all alternatives are compared, additional analysis was conducted to evaluate the effects of updated timber values and real price increases on this benchmark.

Run P5B

Purpose:

Evaluate the effects of using the revised base timber values and the draft 1985 RPA real price increases in the Maximum PNV benchmark.

Specifications:

- Revised base timber values;
- Draft 1985 RPA real price increases.

Results:

The present value of the timber benefits decreased by 62 percent. The resulting decrease in timber's contribution to PNV caused the timber harvest level to decrease slightly as well as a slight decrease in the LTSYC. Also, the acres suitable for timber management decreased by 21,853 acres, a 2 percent decrease (see Table D-10).

Table D-10
Max PNV Benchmark (06D) Modified to Evaluate the 1975-1984 TIMBER VALUES and the 1985 RPA REAL PRICE INCREASES.

		Average Annual Units				
	Run ID	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Allowable Sale Quantity (MMBF)	06D	(196)	(243)	(243)	(243)	(243)
	P5B	189	237	237	237	237
Long-Term Sustained Yield Capacity (MMBF)	06D	(243)	-	-	-	-
	P5B	237	-	-	-	-
Suitable Acres	06D	(1,056,136)	-	-	-	-
	P5B	1,034,283	-	-	-	-
Present Net Value (Million Dollars)	06D	(1,119)	-	-	-	-
	P5B	421	-	-	-	-
Discounted Values (Million Dollars)						
- Timber	06D	(1,586)	-	-	-	-
	P5B	476	-	-	-	-
- Recreation & Wildlife	06D	(352)	-	-	-	-
	P5B	349	-	-	-	-

Due to a decrease in PNV, an additional 21,000 acres in productivity class 4 were sent to a minimum level (unsuitable) prescription. These acres represent nonstocked or understocked plantations that received either a backlog or maintenance reforestation prescription in run 06D (see Table D-11).

One of the more significant changes was the acres assigned to prescriptions involving timber harvesting on deer/elk winter range. These prescriptions provide extended periods of regeneration (20 years) to provide prolonged periods of browse and forage production for deer and elk. This increase in harvesting on deer/elk winter range is because, at the margin, the increase in PNV due to increased harvesting on deer/elk winter range is greater than the loss in PNV due to the extended periods of regeneration. In the Max PNV benchmark (06D) 77,662 acres were assigned to winter range. In run P5B, with updated timber values and real price increases, 96,059 acres were assigned to winter range, an increase of 18,387 acres or 24 percent. In both of these runs, deer/elk winter range was not "hardwired" and the model had a choice of timber, minimum level, or deer/elk winter range prescriptions in the appropriate analysis areas.

Table D-11
Minimum Level Assignment by Productivity Class Using Revised Base Timber Values and Draft 1985 RPA Real Price Increases

	Productivity Class				
Run ID	3	4	5/6	7	8
06D (Max PNV Benchmark)	9.2	8.6	0	47	29.3
P5A	10.0	29.6	0	47	29.8
Difference	.8	21.0[a]	0	0	.5
Percent Change	8.7	40.0	0	0	1.7

a/ All of these acres are in need of backlog reforestation.

3. Maximum Commodity Alternative (Alternative D)

Alternative D is the maximum-level timber alternative, and the most unconstrained. This alternative has the most freedom to choose prescription/analysis area combinations to maximize the objective function: present net value.

The results of this run are similar to previous runs: a significant decrease in the present value of the timber benefits and slight decreases in the timber harvest level, the LTSYC, and the acres scheduled for timber harvest (see Table D-12).

Again, the major change in land assignment is an additional 21,000 acres of nonstocked or poorly stocked plantations in productivity class 4 being sent to a minimum level prescription.

There was also an increase in the acres assigned to deer/elk winter range; from 81,669 acres in D1B to 95,153 acres in run P6A, an increase of 17 percent.

Table D-12
Alternative D (D1B) Modified to Evaluate the 1975-1984 TIMBER VALUES, and the Draft 1985 RPA REAL PRICE INCREASES.

		Average Annual Units				
	Run ID	1988-1997	1998-2007	2008-2017	2018-2027	2028-2037
Allowable Sale Quantity (MMBF)	D1B	(157)	(198)	(242)	(242)	(242)
	P6B	151	193	242	242	242
Long-Term Sustained Yield Capacity (MMBF)	D1B	(242)	-	-	-	-
	P6B	242	-	-	-	-
Suitable Acres	D1B	(1,056,136)	-	-	-	-
	P6B	1,034,283	-	-	-	-
Present Net Value (Million Dollars)	D1B	(1,113)	-	-	-	-
	P6B	421	-	-	-	-
Discounted Values (Million Dollars)						
- Timber	D1B	(1,158)	-	-	-	-
	P6B	451	-	-	-	-
- Recreation & Wildlife	D1B	(362)	-	-	-	-
	P6B	363	-	-	-	-

C. Additional Analysis on the Preferred Alternative

Further sensitivity analysis was done on the Preferred Alternative to address concerns relating to how this alternative was modeled in FORPLAN. This analysis was done to determine the effect on land assignments and outputs by changing timing choices beyond decade 15, relaxing some timber constraints, and incorporating road construction costs within FORPLAN. The revised timber values and projections were also used for this analysis.

The first sensitivity run (W1A) modified the timber prescription timing choices to prevent the harvest of existing stands beyond decade 15. All prescription and scheduled output constraints used in the model were left as is.

The result of this run shows little change in suitable timberland, LTSYC, or in allowable sale quantity (ASQ). The small decline in suitable acres was due to a switch in the assignment of roaded backlog areas from a reforestation to a minimum management prescription.

The second sensitivity run (W3A) was built upon the changes in the first run. It was felt that some timber prescription constraints were applied in an economically inefficient manner. To give the FORPLAN model more choice in determining the acres that are suitable for timber management, the following changes were made for this run:

- Deer/elk winter range timber prescription constraints were changed from "equal to" to "less than or equal to."

- All constraints on the number of acres that would go to a minimum level management prescription were changed from "equal to" to "greater than or equal to."

- Visual timber and existing old growth (timber) prescription constraints were lifted from acres in the lower valued land type 61 and productivity classes 5 and 6.

- Ceilings were placed on the maximum number of acres that could be harvested per period from the most difficult land types and productivity classes.

The result of these changes shows little difference in suitable timber acres or in acres assigned to winter range timber prescriptions. The timber harvest level for the first 4 decades shows little change. The LTSYC is 6 percent less than in the Preferred Alternative.

The third sensitivity run (W5A) was built upon the changes from the last run. This run addresses the concern over how road construction costs were adjusted outside the FORPLAN model. In the Preferred Alternative model, road miles that are built and construction costs per period that are incurred are directly proportional to acres harvested. This results in an underestimation of total road costs in the early periods and an overestimation in later periods. For this run, road construction costs are modeled as a scheduled output. In the scheduled output tables, development costs were spread out over time based on the correct road assumptions, which should be considered in the assignment of lands for timber production. The cumulative road mile output (Schedule Output 9) tables in FORPLAN were also modified to reflect the actual road miles that would be constructed per period.

The results of this run show that the harvest volume does not change significantly from the Preferred Alternative in the first 4 decades. The LTSYC declines approximately 12 percent, as does the total suitable acres for timber harvest. This decline is primarily from the less productive, lower valued land types. The majority of acres switch from suitable to unsuitable from lands which are classified as roadless.

Tables D-13, D-14, and D-15 display the Allowable Sale Quantity, LTSYC, and timber acres assigned for the Preferred Alternative and the sensitivity runs.

Table D-13
Allowable Sale Quantity and LTSYC (MMBF) Planned in Decade 1, Projected in Later Decades

Decades	G1X (Pref.Alt.)	W1A	W3A	W5A
	FORPLAN Runs			
1	102.0	102.7	102.4	101.5
2	122.0	123.2	122.8	121.8
3	147.0	147.8	147.4	146.2
4	176.0	177.4	176.9	175.5
5	206.0	200.3	193.9	179.9
LTSY	206.0	200.3	193.9	179.9

Table D-14
Timber Acres Assigned by Land Class and Working Group for Each Run

	G1X (Pref.Alt.)	W1A[1]	W3A[1]	W5A[1]
	FORPLAN Runs			
Land Class-22				
PC-3	115,199	115,199(0)	115,200 (0)	115,199(0)
PC-4	133,649	125,049(-6%)	125,050(-6%)	124,756(-7%)
PC-5&6	71,252	65,714(-8%)	61,089(-14%)	51,036(-28%)
TOTAL	314,662	305,962(-3%)	301,339(-4%)	290,991(-7%)
Land Class-32				
PC-3	71,252	71,252(0)	71,253(0)	69,957(-2%)
PC-4	172,391	162,272(-6%)	162,272(-6%)	151,566(-12%)
PC-5&6	137,705	137,700(-0)	130,582(-5%)	104,111(-24%)
TOTAL	381,348	371,224(-3%)	364,107(-4%)	325,634(-15%)
Land Class-61				
PC-3	78,759	76,393(-3%)	73,364(-7%)	71,047(-10%)
PC-4	63,065	60,359(-4%)	60,911(-3%)	53,549(-15%)
PC-5&6	51,314	51,316(0)	41,009(-20%)	40,471(-21%)
TOTAL	193,138	188,068(-3%)	177,284(-8%)	165,067(-14%)
Forestwide Total	889,048	865,254(-3%)	842,730(-5%)	781,692(12%)

1/ Numbers in parentheses are the percentage differences in acres assigned between the sensitivity runs and G1X.

Table D-15
Suitable Timber Acres in Thousands for Roaded vs. Roadless

	FORPLAN Runs			
	G1X	W1A	W3A	W5A
Roaded	285.017	263.160	262.922	263.179
Roadless	604.031	502.094	579.808	518.513

D. Revised Values for Wildlife and Recreation Opportunities

When revised wildlife and recreation values are used, the present value of the wildlife and recreation benefits increases by 10 percent. Analysis area (land) assignments based on management prescriptions do not change significantly using the revised values because the FORPLAN model is already constrained to achieve desired levels of wildlife and recreation outputs as established by the overall objectives of Alternative G. Also, there was a demand ceiling placed on the recreational outputs (RVDs) so that there is a limit on the number of RVDs that can be valued in a given decade.

III. Timber Supply/Demand and Timber Resource Land Suitability

After the release of the Draft EIS to the public, concerns by the timber industry were raised over the timber supply and what impact changes in demand for timber would have on the Preferred Alternative. New information related to this concern became available from "A Report on Idaho's Timber Supply". In addition to the above concern, public review comments on the Draft EIS asked why lands in the suitable timber base were at the level stated in the Preferred Alternative. The timber industry and others asked about possible opportunities for increasing the allowable sale quantity (ASQ) in the Preferred Alternative if demand (price) for wood were to dramatically increase. Further analysis was done to incorporate the information from the Idaho Timber Supply Study and to respond to the public comments with additional information on the Preferred Alternative.

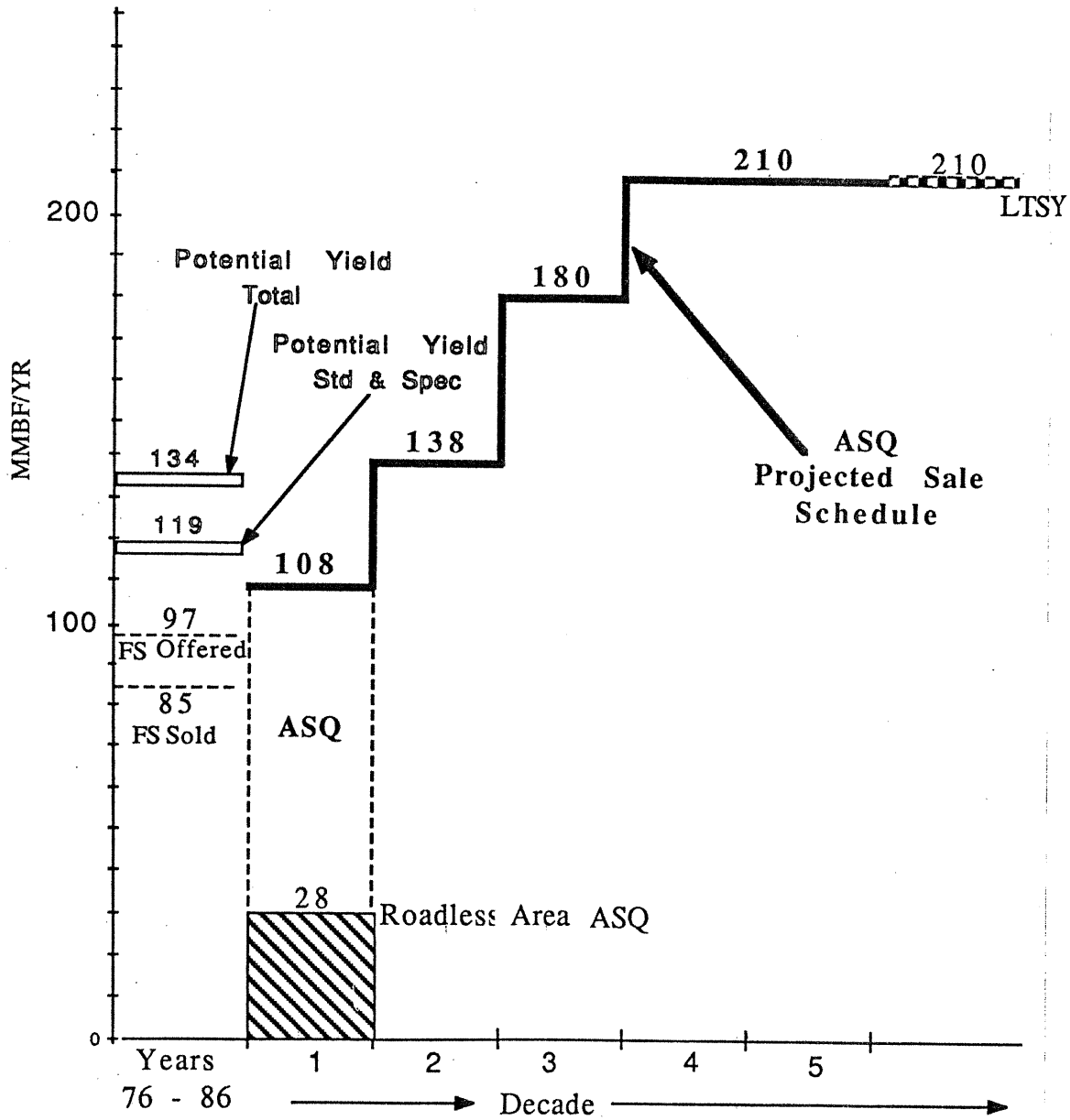
Timber Supply/Demand

A timber supply study (A Report on Idaho's Timber Supply) was completed in February 1987 to examine supply scenarios, by ownership, from 1985 through the year 2030. Findings for Northern Idaho indicate that the timber supply is adequate to maintain and even increase timber harvest levels above the historic annual median harvest level of 1.336 billion board feet (1975-1984) for the next 10 years. This is based on the planned harvest levels under the Preferred Alternatives in the Draft EISs for the three northern Idaho National Forests (Idaho Panhandle, Clearwater, and Nez Perce) in conjunction with the continuation of the historic harvest levels from other ownerships. Depending upon corporate objectives and policies, the harvest levels for private industrial lands may begin to decline during this period due to a shortage of

timber inventory volume on these lands. Other ownership (BLM, State, BIA, and private, non-industrial) harvest levels and National Forest Preferred Alternative harvest levels have sufficient timber inventory volumes to collectively offset this estimated future decline from private industrial lands to maintain the 1.336 billion board feet of historic annual harvest through the year 2030.

National Forest timber volume in Northern Idaho was expected to be 502 million board feet annually for the first decade, and would increase to 909 million board feet annually by 2030. The historic average timber volume, and the harvest levels for the Plan period and the projected four decades are displayed in Figure D-1.

Figure D-1
Historic and Projected Timber Volume from Nez Perce National Forest lands.
(MMBF)



The increase in potential demand for Nez Perce National Forest timber is a result of both increasing demand for stumpage and decreasing supply from private industrial lands. This would reflect the decline in harvest levels on industrial lands due to inventory depletion.

Due to concerns from the Idaho Congressional delegation, the timber industry, and other publics over the need for more available timber, this Forest performed additional analysis to identify more suitable acres and a higher harvest level. This analysis resulted in identifying 11,000 acres in the Rackliff-Gedney Roadless area which will be available for harvest. The average annual allowable sale quantity was increased from 102 MMBF to 108 MMBF. One MMBF is the result of an increase in suitable acres from Rackliff-Gedney and 5 MMBF comes from a non-interchangeable component. This non-interchangeable component is made up of live and salvageable dead material that can be utilized for pulp, lumber, and other merchantable products.

Figure D-1 displays the ASQ and the projected sale schedule for the Nez Perce National Forest. The supply of timber in the first five decades of the planning horizon is approximately within the range of potential demand projections. For the Plan period, the allowable sale quantity (ASQ) is 11 percent, or 11 MMBF per year above the timber volume historically offered. It is slightly above the upper level of demand projections for this period. Approximately 27 percent of the planned ASQ volume comes from current roadless areas.

Timber Resource Suitability

Additional analysis was done on the amount of suitable acres in the Preferred Alternative. The results of this analysis are displayed in Table D-16, Timber Resource Land Suitability Table. Table D-17 provides the definition for the terminology used in Table D-16. Tentatively suitable acres are identified in Appendix B, Section II. Table D-16 further classifies the tentatively suitable lands into "suitable" and "tentatively not appropriate".

Table D-16
Timber Resource Land Suitability

		ACRES	EFFECTS 1st Decade Acres	EFFECTS 1st Decade MMBF	EFFECTS LTSY MMBF
FORESTED and NON FORESTED	NOT SUITED				
	Not Capable & Non Forest	245,323			
	Irreversible Soil and Watershed Damage	0			
	No Assurance of Adequate Restocking	78,906			
	Withdrawn from Timber Production	823,397			
	Subtotal of Above	1,147,626			
TENTATIVELY SUITABLE	SUITABLE				
	* LANDS COST EFFICIENT				
	Direct Benefits Exceed Direct Costs	813,986	4,390	104.7	-
	Direct Costs Exceed Direct Benefits				
	Meet Non Timber M.U. Objective	22,524	150	3.3	-
	Local Jobs/Income	75,159		0	-
	Subtotal of Above	911,669	4,540	108	210
TENTATIVELY NOT SUITED			RESOURCE OPPORTUNITY 1st Decade Acres	RESOURCE OPPORTUNITY 1st Decade MMBF	RESOURCE OPPORTUNITY LTSY MMBF
	Lands Not Cost Efficient to Meet Objectives- Future Timber Production Possible	60,851	10	2	15
	Multiple-Use Objectives Preclude Timber Production				
	Other Uses	97,894	-	-	-
	Proposed Wilderness	0	-	-	-
	Subtotal of Above	158,745	10	2	15
TOTAL NATIONAL FOREST LANDS		2,218,040			

Definitions:
(See Attached Sheet Figure 1)

Note:
* Volume figures include:
~ Chargeable Volume Only
~ Non-Interchangeable Components to meet management objectives

Effective Period: from 1987 thru 1996

Table D-17
Timber Resource Land Suitability Definitions

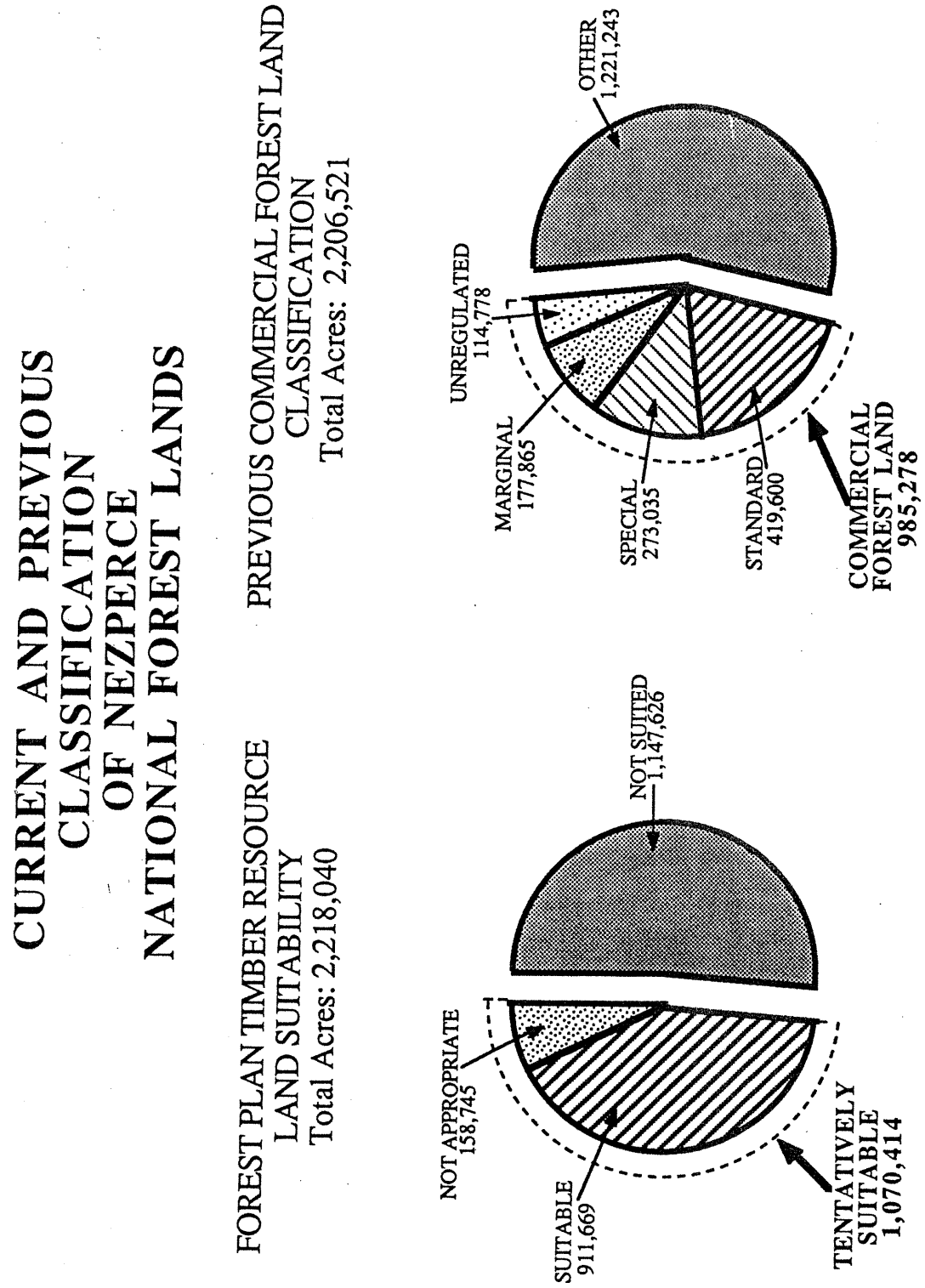
NOT SUITED LANDS	
Not Capable	Forest land not capable of producing industrial wood. Quantitatively defined as lands not capable of producing 20 cubic feet of wood per acre per year.
Non-Forest	Land that is not at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and currently developed for non-forest use. 36 CFR 219.14(a)(1).
Irreversible Soil & Watershed Damage	36 CFR 219.14(a)(2).
No Assurance of Adequate Restocking	36 CFR 219.14(a)(3).
Withdrawn from Timber Production	36 CFR 219.14(a)(4).
TENTATIVELY SUITABLE LANDS	
SUITABLE PORTION	
Direct Benefits Exceed Direct Costs	Direct benefits expressed as expected gross receipts to the government. Expected receipts are based upon expected stumpage prices and payments-in-kind from timber harvest considering future supply and demand situation for timber and upon timber production goals of the Regional Guide. 36 CFR 219.14(b)(1). Direct costs include the anticipated investments, maintenance, operating, management, and planning costs attributable to timber production activities, including mitigation measures necessitated by the impacts of timber production. 36 CFR 219.14(b)(2).
Meet Non-timber, Multiple-Use Objectives	Lands where timber production is necessary to achieve non-timber, multiple-use objectives even though direct timber production costs exceed expected gross receipts to the government. These objectives are not assigned monetary values but are achieved at specified levels in the least cost manner. See 36 CFR 219.14(c) and 36 CFR 219.3 (definition of cost efficiency)
Local Jobs/Income	Lands necessary for timber production in order to maintain an appropriate level of local employment and income. (No direct basis in the planning regulations; See 36 CFR 221.3(a)(3).
Non-Interchangeable Component	Non-Interchangeable Components (NICS) are defined increments of the suitable land base and their contribution to the allowable sale quantity (ASQ) that are established to meet Forest plan objectives. NICS are identified as parcels of land and the type of timber thereon which are differentiated for the purpose of Forest plan implementation. The total ASQ is derived from the sum of the timber volumes from all NICS. The NICS cannot be substituted for each other in the timber sale program. Some conditions which may characterize a particular NIC are: (1) species marketability; (2) dead or live timber; (3) timber size class; and (4) operability.
NOT SUITED PORTION	
Lands Not Cost Efficient to Meet Objectives-Future Timber Production Possible	Lands not currently cost efficient for timber production but which could be brought into production if conditions change. These lands represent additional opportunities within the preferred alternative.
Multiple-Use Objectives Preclude Timber Production	Based upon a consideration of multiple-use objectives for the aternative, the land is proposed for resource uses that preclude timber production. 36 CFR 219.14(c)(1).

The "suitable" category can be classified as cost efficient lands. These cost-efficient lands are broken down into four sub-categories: (1) direct benefits exceed direct costs; (2) direct costs exceed direct benefits; (3) meet multiple use objectives; and (4) local jobs and income. "Direct Benefits Exceed Direct Costs" represents those acres and volumes with a positive present net value over the planning horizon. On the Nez Perce National Forest, this represents 89 percent of the total suitable acres, and almost 100 percent of the acres harvested, with a volume of 108 MMBF during the Plan period. The remaining sub-categories make up 11 percent of the total suitable base and less than 1 percent of acres harvested in the Plan period. To meet multiple use objectives such as big-game winter range, it is necessary to schedule 154 acres and 3.3 MMBF of average annual harvest in the first decade on lands where direct costs exceed direct benefits. Although no timber harvest is scheduled in the first decade on lands identified as necessary to maintain jobs and income, 17.3 MMBF will be scheduled on these lands in future decades. This harvest is necessary to meet the objectives for jobs and income in the future.

Under the "Tentatively Not Appropriate" category, there are two subcategories: (1) Lands Not Cost Efficient to Meet Objectives -- Future Timber Production Possible, and (2) Preclude Timber Production -- Other Uses and Wilderness. For the subcategory of "Lands Not Cost Efficient", 60,851 acres within the East Meadow Creek Roadless area were identified as opportunity lands for future timber production. For the Plan period, approximately 100 acres were identified within these opportunity acres for timber production with approximately 2 MMBF harvested. While these acres have been identified as an opportunity to increase timber production, no change is proposed for the Preferred Alternative because of several factors which make these lands not cost efficient. These factors are: (1) current market conditions, haul distances to mills, and logging technology make potential timber sales infeasible, (2) need for a more site specific evaluation of the resource impacts to fish/water quality associated with road construction and logging, and (3) high cost of road construction for some of these opportunity lands. Any substantial change in the economic factors would be identified through the monitoring process. If information utilizing improved data, research findings from the adjacent Horse Creek study area, and the R-1/R-4 sediment prediction model indicates no significant impacts to fish/water quality, this would also be identified through monitoring. Given the results of the monitoring process on these opportunity acres, it would require an amendment to the Forest Plan and public involvement in order to allow these acres to be harvested.

Figure D-2 shows a comparison of the commercial National Forest land classification used in previous Forest timber management plans with the Forest Plan Preferred Alternative land suitability classification.

Figure D-2
Comparison of land suitability classification



IV. CONCLUSIONS FROM THE ANALYSIS

A. Revised Timber Values and Draft 1985 RPA Real Price Projections

By comparing the FORPLAN runs using the original and revised timber values and real price projections for the Maximum PNV benchmark, Alternative D, and Alternative G (Preferred Alternative), a significant change in present net value resulted. With revised timber values and real price projections, the contribution of timber to present net value declines significantly. In fact, wildlife/recreation outputs contribute more to present net value than timber when these values and projections are used.

The assignment of lands to different management prescriptions within the FORPLAN model is less significant. There are several reasons for this when the prescription/analysis area combinations for the original timber values and real price projections are compared with the revised timber base values and projections. The reasons are discussed below.

- The present net value of timber prescriptions for the Maximum PNV benchmark and Alternatives D and G is reduced by approximately 60 percent using the revised values, but most of the prescriptions are still positive.

- Analysis areas which represent low-valued timberland (nonstocked or understocked) were originally assigned maintenance reforestation prescriptions. Using the revised values, these areas were assigned to minimum level prescriptions resulting in a shift from positive PNV per acre to negative PNV per acre. This shift in land assignments from suitable to unsuitable timberland is relatively small (approximately a 2 percent change).

- Those prescription/analysis area combinations which originally had a negative PNV per acre either did not change or had a greater negative net value. This is particularly evident for the deer/elk winter range prescription which has timber harvesting activities associated with it.

B. Additional Analysis on the Preferred Alternative

The additional sensitivity analysis on the modeling aspects of the Preferred Alternative did not show a significant change in land assignments or in the Allowable Sale Quantity for the first 4 decades. The inclusion of road costs into the FORPLAN model did cause a shift of approximately 80,000 acres of suitable to nonsuitable timberlands. It was recognized that these lands are of marginal productivity and were included in the suitable landbase in order to meet the overall objectives of the alternative. This analysis tends to support the economic rational of most of the constraints used to model the Preferred Alternative. This is particularly evident in Chapter II of the EIS, Section 19, which discusses the tradeoffs between priced outputs (i.e. timber) versus nonpriced outputs (i.e. fish/water quality).

C. Revised Wildlife/Recreation Values

The use of the revised wildlife/recreation values increases the contribution of these outputs to present net value by 10 percent. The impact of using these values on land assignments in the alternatives analyzed was not significant because of the way the production of desired levels of many nonmarket outputs was insured.

Certain resource benefits (timber, dispersed recreation, wildlife [elk], and range) determine, in part, land assignments and scheduling of management prescriptions in the FORPLAN model. These resources were used because their production could be linked to the analysis area/management prescription format. The production of other resource outputs was achieved through the use of constraints determined by the objectives of each alternative. Management prescriptions designed to produce desired levels of nonpriced outputs, including deer/elk winter range, retention of old-growth timber, fish/water quality, and visual quality objectives, are directly assigned to specific analysis areas. Once these prescriptions are assigned, the production of priced nonmarket outputs such as anadromous fishing recreation are calculated and valued outside of the model. This value is added to determine the total PNV for the alternative or benchmark.

The total quantity of wildlife recreation outputs valued was dependent on projected demand levels. Levels of recreation opportunity provided in excess of the projected demand were not valued since such a surplus would not be utilized by recreationists. For example, Alternative G has a high level of fish/water quality for the Forest as an objective. FORPLAN management prescriptions are assigned to specific drainages to minimize sedimentation and to enhance fish habitat so that the objective can be met. Once this objective is achieved, numbers for pounds of anadromous fish and associated recreational activities (RVDs) can be estimated and valued for this alternative. The discounted value is added to the PNV calculated by FORPLAN to give a total PNV for that alternative. The total quantity of wildlife recreation outputs valued is limited by the projected demand ceiling.

As a result, the use of revised per unit values increases the total value for recreation/wildlife resources, but does not significantly change the analysis area (land) assignments. Derived levels of the recreation/wildlife outputs are achieved because the management prescriptions are constrained to achieve nonpriced output levels established by objectives of the alternatives.

D. Timber Supply/Demand and Timber Resource Land Suitability

Based on the information in this Appendix, and in Section 9 of Chapter II in the Final EIS, the Preferred Alternative should be able to provide enough timber volume to meet the projected range of demand for timber. This conclusion was based on information from the Idaho Timber Supply Study (A Report on Idaho's Timber Supply) and the supply and demand analysis for the Nez Perce National Forest covered in Chapter II.

The analysis on timber resource land suitability for the Preferred Alternative provided additional information on the classification of suitable and unsuitable acres and identified any additional acres which could be harvested.