

PART ONE FINAL ENVIRONMENTAL IMPACT STATEMENT

PART ONE - THE FINAL ENVIRONMENTAL STATEMENT FOR THE
DETERMINATION OF THE WILDERNESS STUDY AREA ALTERNATIVE
AND THE LAND MANAGEMENT PLAN FOR GOSPEL-HUMP



I. INTRODUCTION

During the past year, controversy surrounding management of the Gospel Hump area of the Nezperce National Forest became intense. A short background is included here to provide the reader with the sequence of events that led us to where we are today.

Planning Background

In 1962, the Nezperce National Forest began its first multiple use plan, wherein all uses were coordinated, one with another. Prior to that time, demands upon resources were not intense enough to require this coordination, and all planning had been on a functional (timber, range, etc.) basis. Early multiple use planning stratified the Forest into zones based partly upon existing transportation systems, but mostly upon landforms. These zones were titled Riverbreak Zone, Lower Slope Foothills, General Forest Zone, High Area Zone, Travel Influence Zone, and Water Influence Zone. The demand for uses varied from zone to zone, and the ability of the land to support a mixture of uses varied among zones. In recognition of differing demands and land capabilities, the functional plans that allocated yields (such as in timber and grazing) had to be responsive to all demands and land capabilities throughout the Forest. Some of the competition between demands was reduced in this way.

However, conflicting resource demands were intensifying, and this required more detailed planning. A new land use planning system was initiated in 1971, which called for Region-wide area guides, Forest-wide Multiple Use Plans, and unit plans which would speak to specific land areas within the Forest. The Forest-wide Multiple Use Plan was to be a document setting overall Forest policy and direction. As such, it would specify where planning unit boundaries would be located and in what priority this specific planning would be done.

On the Nezperce National Forest, a "Multiple Use Review Team" (MURT) was set up to critique and advise on the planning process. When selecting persons for the MURT, an attempt was made to have representatives of all the major user groups of the Nezperce. Timber industry, wilderness enthusiasts, ranchers, outfitters, local businessmen, and others were included on the team. One of the major contributions of this team was to decide where and in what order land use planning would proceed. The Forest was subdivided into smaller units, and unanimous agreement was reached on the planning unit boundary locations and the priority for planning. Map 1 depicts those original units. A large portion of the Forest, involving many of the planning units, was considered to be roadless and, therefore, had to be studied for wilderness suitability along with the other potential uses for that land.



The Buffalo Hump is viewed looking east across the head of Taylor Creek.

Most persons on the team felt that the primary values in the almost totally roadless Gospel Mountain - Buffalo Hump area were most compatible with uses requiring no development such as watershed protection, back-country recreation, and wildlife habitat consideration. This core area was set aside as a separate planning unit and labeled Gospel-Hump.

However, much of the area outside the Gospel-Hump Planning Unit appeared to be suitable for developed uses such as timber harvesting, mining, and developed recreation. Planning began on those peripheral units and on February 14, 1974, the Management Plan and Environmental Statement on the Little Slate Planning Unit was filed with the Council on Environmental Quality. Kelly-Bullion, Rainy Day, and Mill Creek plans then followed, with their environmental statements being filed in July 1975, September 1975, and April 1976, respectively. Each of the four completed plans took a similar tact as far as wilderness analysis was concerned. Each plan made specific land use allocations for the roadless area within its borders, but arrived at these allocations only after considering the effect of such allocations on the total contiguous roadless area north of the Salmon River. This planning procedure followed the Forest Multiple Use Plan direction to which all interested parties had given input.

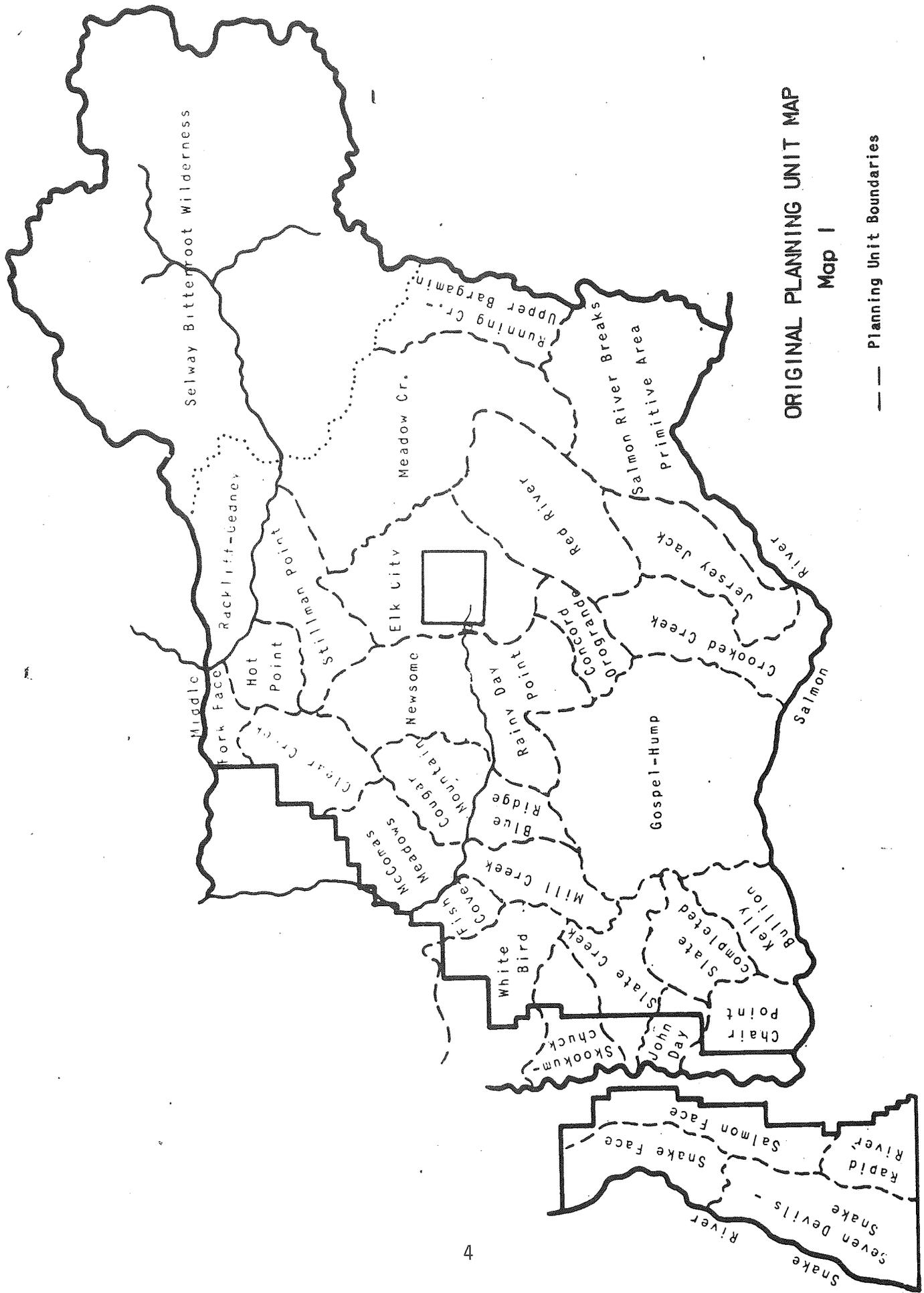
Soon after those management plans were completed, however, various interest groups challenged their validity and appealed to the Regional Forester not to accept those unit plans. Little Slate and Kelly-Bullion Unit Plans were not challenged, but the Rainy Day and Mill Creek Plans were both appealed. The appeals were broadly based, but seemed to have in common the fact that the entire Forest roadless area, where contiguous, should have been considered at one time, and not separately plan by plan. These appeals were very threatening to local concerns, as local economies were geared to timber and grazing yields made and confirmed by all Forest planning dating back to 1962.

The Chief of the Forest Service, however, agreed with the appellants on their point that the entire contiguous roadless area should have been included in one planning effort. He found the completed unit plans adequate in all other respects; however, his direction was to hold all actions proposed in roadless areas in abeyance until a new roadless area analysis could be completed. The new analysis was to consider all contiguous roadless areas, including those lands south of the Salmon River (Map 2).

The Gospel-Hump Study Area - The geographic area to be covered by the new analysis was called the Gospel-Hump Study Area. The Study Area includes the entire contiguous roadless area in addition to other portions of the planning units as described in the narrative for Map 3. (Refer to Appendix 12, Wilderness Evaluation, for more specific information on the formation of the Study Area boundaries.)

The Original MURT Planning Units - Map 1

In 1971 a land use planning system was initiated which required the formation of planning units in order to plan for specific land areas within the Forest. On the Nezperce National Forest, a Multiple Use Review Team (MURT) was set up to critique and advise on this process. Representatives of all the major user groups of the Nezperce were included on the MURT. This team, then, decided where and in what order land use planning would proceed. The Forest was subdivided into smaller units and unanimous agreement was reached by the MURT on these planning unit boundaries. Map 1 illustrates those original units.



ORIGINAL PLANNING UNIT MAP
Map 1

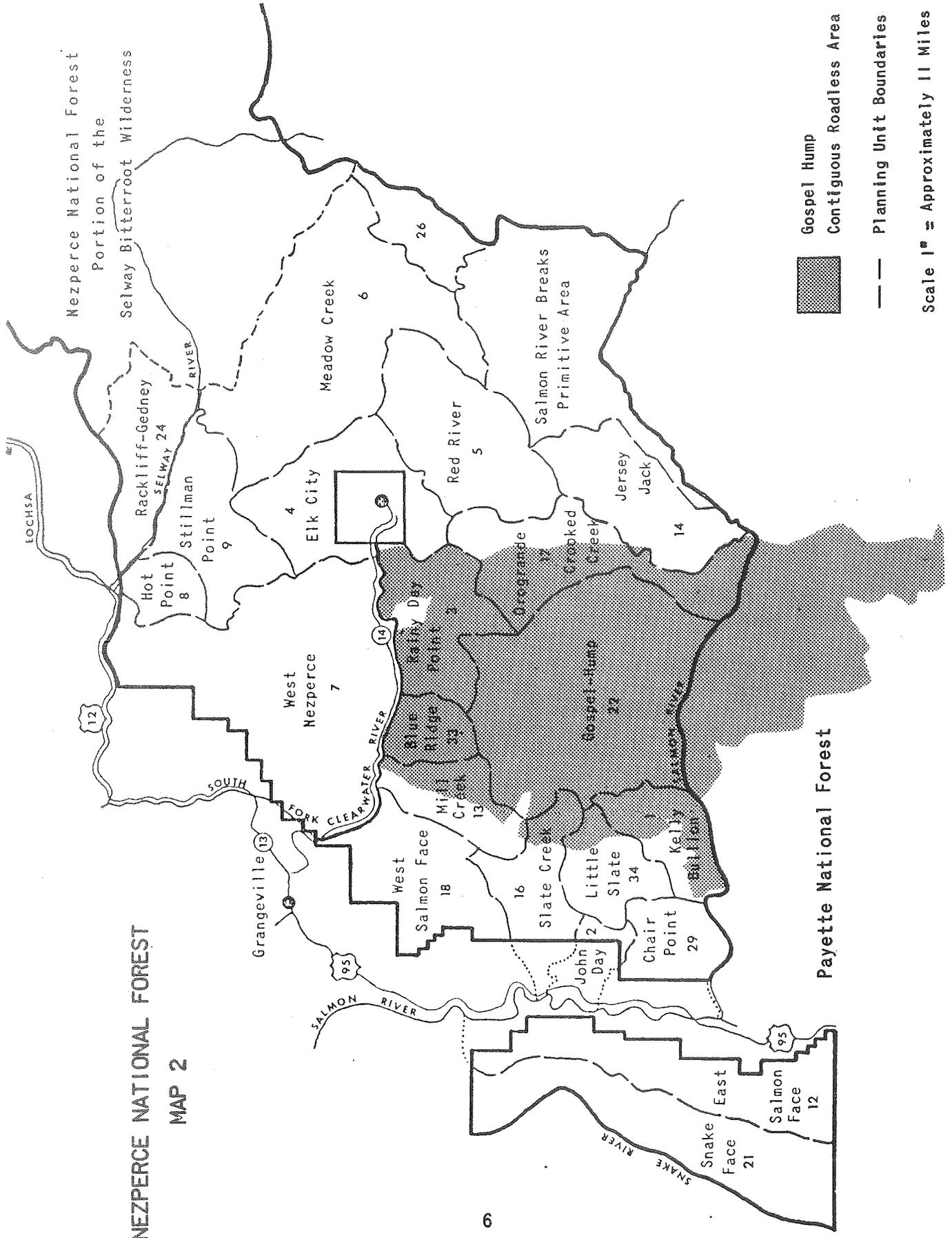
The Contiguous Roadless Area - Map 2

Planning efforts began for the units established by the MURT. Land Management Plans and Environmental Impact Statements were filed for Little Slate, Kelly-Bullion, Rainy Day and Mill Creek Planning Units between February 1974 and April 1975. Each of these units contained roadless areas and although the plans were drawn up separately the land allocations for these roadless areas were determined through a consideration of the effect upon the entire contiguous roadless area north of the Salmon River.

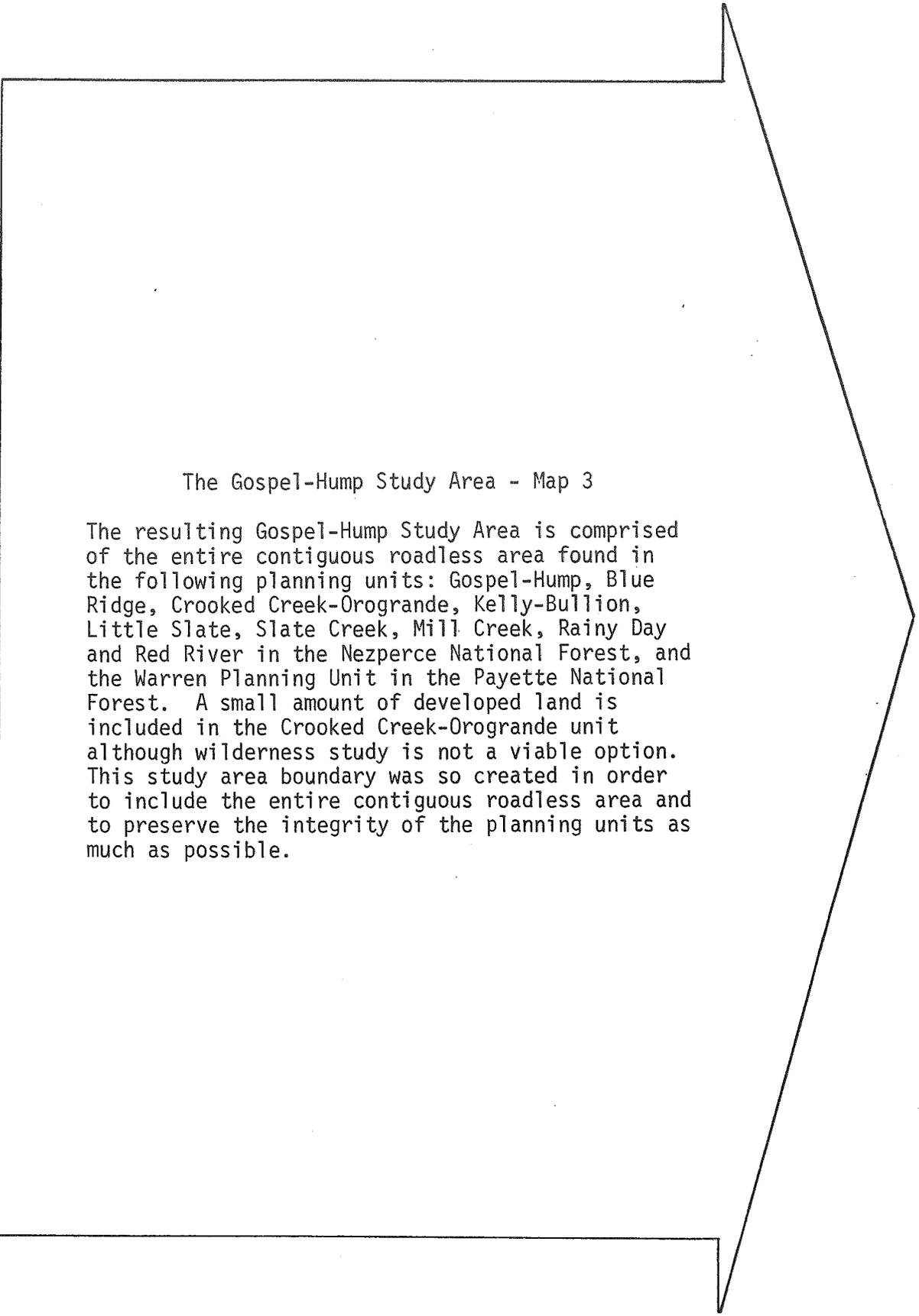
A portion of the public, however, became concerned over the fact that each plan studied only a small portion of the total roadless area. This public felt that all roadless areas that were contiguous should be studied together.

The Chief of the Forest Service agreed with this viewpoint in remanding land management plans for Rainy Day and Mill Creek, and directed that all actions proposed in the contiguous roadless areas be held in abeyance until a total roadless area analysis could be completed. Those areas considered to be roadless and contiguous, including the area south of the Salmon River, were identified in March 1977 in the Chief's decision on the Rainy Day and Mill Creek Plans appeal. In determining what land management actions should be planned for the roadless area, one alternative that had to be considered was that of wilderness classification. A study area for the roadless area analysis and determination of the appropriate wilderness alternative had to be established.

NEZPERCE NATIONAL FOREST MAP 2

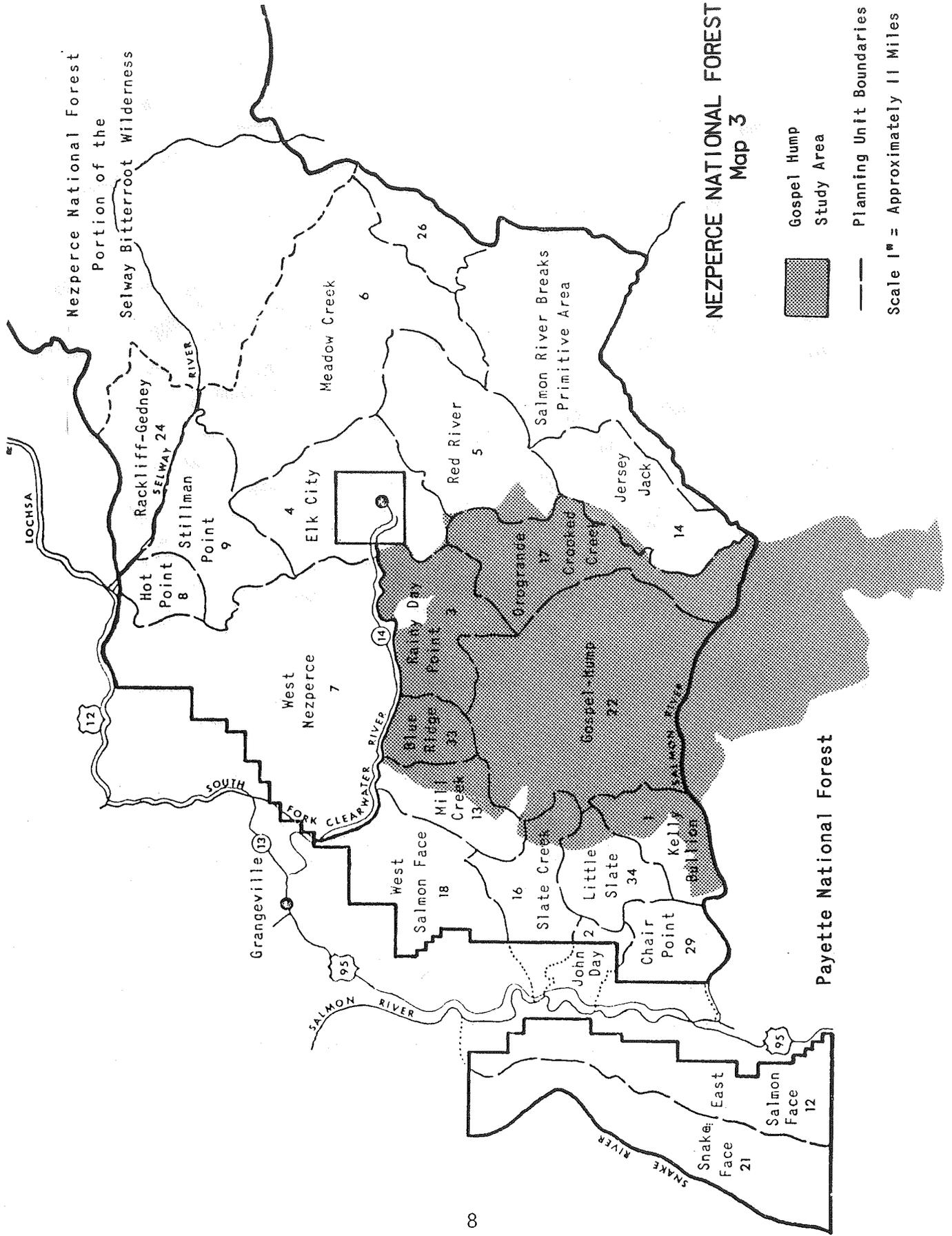


Gospel Hump
 Contiguous Roadless Area
 Planning Unit Boundaries
 Scale 1" = Approximately 11 Miles



The Gospel-Hump Study Area - Map 3

The resulting Gospel-Hump Study Area is comprised of the entire contiguous roadless area found in the following planning units: Gospel-Hump, Blue Ridge, Crooked Creek-Orogrande, Kelly-Bullion, Little Slate, Slate Creek, Mill Creek, Rainy Day and Red River in the Nezperce National Forest, and the Warren Planning Unit in the Payette National Forest. A small amount of developed land is included in the Crooked Creek-Orogrande unit although wilderness study is not a viable option. This study area boundary was so created in order to include the entire contiguous roadless area and to preserve the integrity of the planning units as much as possible.



NEZPERCE NATIONAL FOREST
Map 3

-  Gospel Hump Study Area
-  Planning Unit Boundaries
- Scale 1" = Approximately 11 Miles



Beargrass Ridge in the Gospel-Hump. This broad ridge has been widely used for jeep, bike, and snowmobile recreation. Opportunities for dispersed recreation abound.

Current Planning

Legislative Proposals - Local interests were upset with the delay caused by the abeyance order, the wilderness study requirement, anticipated court actions following resolution of the appeals, and possible further delays in the courts. Local groups, therefore, sought Congressional help in resolving the issues more quickly than they felt was possible through the Forest Service planning process.

Idaho's Senator Frank Church was the first to respond. Senator Church made an offer to amend the currently proposed Endangered Wilderness Act to reflect any agreement the contesting parties could reach. He arranged for representatives of the Grangeville Chamber of Commerce to meet with wilderness proponents and formed a coalition of citizens to investigate the opportunities. After several meetings, agreement was reached on the area north of the Salmon River, and Senator Church has since so amended the Endangered Wilderness Act. This then, is a legislative attempt to resolve the issues. It is separate from the administrative land use planning procedures reported in this publication.

The Gospel-Hump Planning Unit - Planning unit boundaries were adjusted to satisfy the Chief's remand of the Rainy Day and Mill Creek Plans. The original Gospel-Hump Planning Unit was redefined in April 1977 to include the Blue Ridge and Crooked Creek-Orogrande Planning Units. (Refer to the narrative and Map 4 for a more thorough explanation of the new boundary for the Planning Unit.)

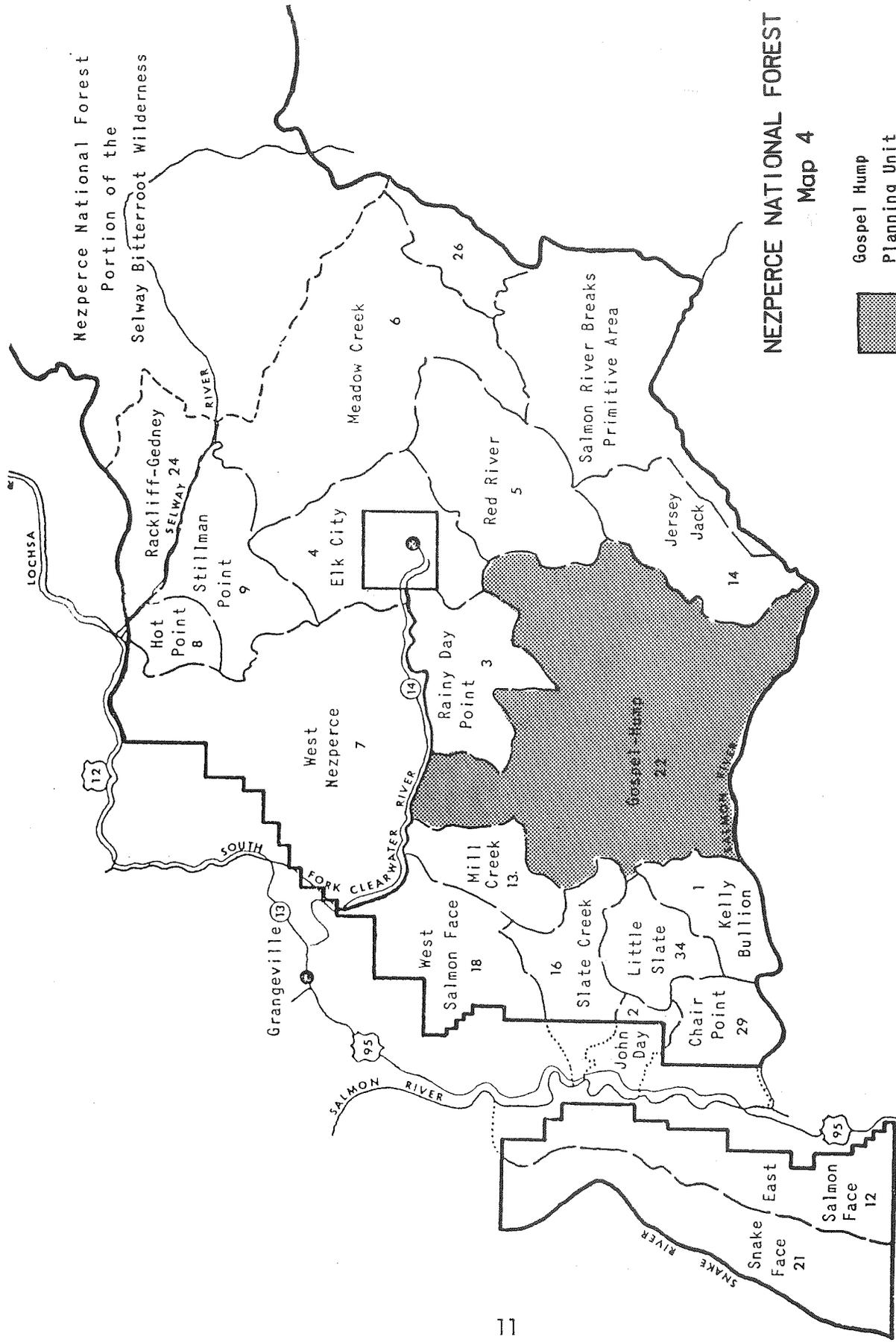
In reviewing various sections of this publication, readers should be aware that reference is made to both the Gospel-Hump Study Area and the Gospel-Hump Planning Unit. These are two distinct references. The Planning Unit is smaller and contained within the Study Area. The Study Area was defined for purposes of wilderness evaluation while the Planning Unit is that particular area for which this land management plan was written. Please refer to Maps 1 through 4 to better understand the different boundary determinations.

The Gospel-Hump Land Management Plan contained in this publication is designed for a planning period of 23 years. There will be annual review and updating, however, as all land management planning must be a dynamic and responsive process.

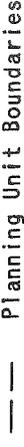
The Gospel-Hump Planning Unit - Map 4

The boundary of the Gospel-Hump Planning Unit itself was redefined in July 1977 in response to the Chief's decision to evaluate the wilderness and management alternatives for the Gospel-Hump Study Area. It was also decided to complete land management planning for the unplanned units within the Study Area. Therefore, the original Gospel-Hump Planning Unit was enlarged to include the Blue Ridge and Crooked Creek-Orogrande Planning Units,^{1/} and formed the major portion of the Gospel-Hump Study Area. A land management plan still had to be written for this Gospel-Hump Planning Unit. The plan could not be written, however, until the contiguous roadless area was studied and the boundary of the Wilderness Study Area within the Planning Unit determined.

^{1/} The Orogrande and Crooked Creek Planning Units were combined at an earlier date.



NEZPERCE NATIONAL FOREST
Map 4

 Gospel Hump
 Planning Unit Boundaries

Scale 1" = Approximately 11 Miles



The gentle terrain in the Florence Basin is displayed in this photo. The narrow clearing in the center is near the old townsite of Florence, where in excess of \$15,000,000 in gold was recovered in early days. The steep Salmon River breaklands provide the background.

II. THE ENVIRONMENTAL SETTING

General Description

The Gospel-Hump Study Area begins about 15 miles SE of Grangeville, Idaho, and continues for many miles in the same direction (Map 5). The area is large, variable in elevation, landform and vegetation, and is attractive in its setting of deep canyons and high peaks.

The dimensions of the Study Area are roughly 35 by 25 miles in north-south and east-west directions respectively. It encompasses 580,325 acres. The Study Area stretches south from the South Fork Clearwater River to the town of Warren south of the Salmon River, and west from the watershed divide between Crooked River and Red River to the western edge of the roadless area, including Round Top, Umbrella Butte, and Marten Hill.

The smaller Gospel-Hump Planning Unit is 289,034 acres, and is located within the same general boundaries, but north of the Salmon River. (Please refer to Map 4 for a more exact description and illustration of the Planning Unit).

The portion of the Study Area south of the Salmon River is within the Warren Planning Unit, Payette National Forest. Planning for the Warren Unit is being conducted concurrently on the Payette and that Draft Environmental Impact Statement will be published on or about June 1, 1978. A detailed description of the unit and its resources will be contained in that document.

In general, the Study Area south of the Salmon includes the rugged breaklands of the Salmon River and the more gentle terrain near Warren, Idaho. Warren was a focal point for minerals activity near the turn of the century, and the results of the mining have impacted the natural conditions of much of the area. The breaklands have been affected much less.

VICINITY MAP
Map 5

 GOSPEL-HUMP Study Area

Spokane

195

Washington
Idaho

Montana
Idaho

Missoula

Clearwater River

Orofino

Lewiston

95

12

Wahsa River

Grangeville

14

Elk City

Clearwater R.

Oregon
Idaho

Riggins

95

S. Ft. Salmon R.

Mc Call



The following brief descriptions explain more specific characteristics of the Study Area and Planning Unit. Additional, more detailed information is presented in the Appendices to this publication. An additional amount of background data was not reproduced for publication due to prohibitive costs, however, this data is on file for public review at the Forest Supervisors' offices in Grangeville and McCall, Idaho.

History

Prior to the coming of the white man, the Gospel-Hump area was within the territory claimed by the Nez Perce Indians. The Salmon River was the alleged dividing line between the Nez Perce and another distinct Indian group, the Northern Shoshones. Extensive archaeological surveys conducted by Idaho State University Museum in 1971 and 1972 located numerous sites on both sides of the river. Activities in the higher areas appear to have been intermittent, such as hunting or travel through the unit.

Early use by the white man was related to the mineral riches located near Florence, Buffalo Hump, Dixie, Orogrande, and Warren. Gold strikes in the late 1800's brought several thousand hopeful miners into the area to seek their fortunes. The initial boom ended by 1903, although a few mines kept operating beyond that. While souvenir collectors and time have removed much of the evidence of the previous activity, the mining period remains a significant chapter in the area's history.

Several interrelated regulations (i.e., National Historic Preservation Act of 1966; Executive Order 11593 of May 15, 1971; National Environmental Policy Act of 1969) require Federal agencies to give management consideration to cultural resources under their jurisdiction. E.O. 11593 requires Federal agencies, in cooperation with the State Historical Preservation Officer, to locate, inventory, and nominate for listing on the National Register of Historic Places all sites that appear to qualify for listing and, until that process is complete, to exercise caution to assure that any Federally-owned properties that might qualify for listing are not inadvertently transferred, sold, demolished, or substantially altered. An intensive archaeological reconnaissance will be conducted prior to the implementation of any ground disturbing projects or the inclusion of any area in the National Wilderness Preservation System.

Socio-Economic Description

The economic assessment area to be considered in this description includes Idaho, Lewis and Nezperce Counties. Idaho County is the largest county in land area and is dominated by National Forest lands. Lewis County is dominated by the Nez Perce Indian Reservation, although the reservation extends into the other two counties as well.

Current population trends differ among the three counties. Idaho and Lewis Counties are similar in that their populations are small in number (12,929 and 3,486 respectively in 1975 (see Appendix 1). Both of these counties tend to be rural in character with the people being land-centered for their livelihoods. The most urban county in the assessment area is Nez Perce County, with a 1975 population of 30,555, or nearly twice the size of the other two counties combined. Lewiston is the largest town in Nez Perce County and serves as a regional trade and service center for the surrounding area. In all three counties, the population level has remained about even since 1970. This contrasts with the previous declines in population seen in Idaho and Lewis Counties between 1960 and 1970, and the increase in Nez Perce County population during the same period.

For these changes to have occurred, Lewis and Idaho Counties had net outmigration of residents while Nez Perce County experienced a small amount of net immigration. Although projected population levels are shown in the Appendix, this projected rate of growth may not be realized. The projected population data all show increasing population between 1970 and 1975 while the estimated population actually declined in two of the three counties. Consequently, the projected population for the year 2000 may be somewhat higher than will actually occur.

The people in this area earn varied amounts of income (see Appendix 1). The income per capita ranged from \$3,968 in 1975 for Idaho County residents to \$5,731 per capita in the same year in Nez Perce County. Lewis County has a larger than average share of residents in the \$10,000 per year and above range. This is partly due to the successful agricultural sector there. The rate of employed persons as a percent of population is fairly high, ranging from 38 percent to 46 percent.

The 1974 data show higher proportions of both employment and income attributable to economic base sectors such as agriculture, Federal government, manufacturing, and construction, especially in Idaho and Lewis Counties. This characteristic is consistent with the more rural

nature of these counties which have a less well developed economic interdependency than Nez Perce County. Not only do the basic sectors dominate the economic makeup of the area, but the earnings per worker are noticeably higher in these sectors. The woods products sector accounts for a large share of the manufacturing sector. In the three counties it ranged from 47 percent of employment in Nez Perce County to 82 and 94 percent in Lewis and Idaho Counties, respectively. Consequently, wood products activity is a very important resource use. In 1972, Idaho County processed 178 million board feet of timber. Eighty-one percent of that timber was cut in Idaho County and 16 percent in Clearwater County. Of the timber harvested in Idaho County, 65 percent was from National Forest lands in 1972, with another 24 percent from nonindustrial private land.

During the 1969-1971 period, 84 percent of the timber harvested on the Nezperce Forest went to Idaho County and the balance to Lewis County. In addition, 16 percent of the timber harvested on the Clearwater National Forest went to Idaho County. Consequently, Idaho County is quite dependent on National Forest timber production. However, the relative importance of the resource based sectors of the economy (such as agriculture and wood processing) contribute to periodic unemployment as the seasons of harvest and processing levels are dependent on weather patterns and business cycles.

In addition, the large area of National Forest lands in Idaho County provide for a sizable distribution of National Forest funds to that county. This is the only county receiving these funds as there is no National Forest land in the other counties. The amount received in Idaho County in 1976 was \$938,182 or 32 percent of its gross receipts. Due to transfers of funds from the County to local, independent taxing districts, the County retained a sum equaling 13 percent of its net receipts.

The provisions of the National Forest Management Act of 1976 will significantly increase National Forest funds (in lieu of taxes). It has been estimated that Idaho County will receive \$2,288,304 from this source in 1978, or a 144 percent increase over 1976. There will also be additional Federal funds distributed based on this law. Consequently, the County may eventually receive a majority of its revenues from this source.

Current Resource Information

Landownership - The landownership pattern within the Study Area evolved from two main activities -- mining and ranching -- after the General Mining Laws of 1866 and 1872, the General Homestead Law of 1862, and the Forest Homestead Act of 1906 were passed. Discovery of gold in the Elk City, Florence, and Warren areas in the late 1860's led to considerable mining activity in these areas. A large concentration of mining patents is located in the Buffalo Hump area, and patented placer and quartz claims are scattered throughout the Gospel-Hump Unit.

Climate - Climate varies significantly from the steep, warm, dry Salmon River breaks to cool, moist subalpine areas. The Aleutian Low and the Pacific High exhibit a strong control on local climates. This maritime air is borne eastward on prevailing westerly winds. In winter, the maritime influence is noted by greater average cloudiness, greater frequency of precipitation and mean temperatures which are above those at the same latitude and altitude in midcontinent. The maritime influence is quite marked as air arrives via the Columbia River Gorge with a greater burden of moisture than at lower latitudes. The Aleutian Low predominates during winter months bringing periods of heavy precipitation in the form of snows and spring rains. The Pacific High dominates the summer, resulting in relatively hot and dry periods.

Mean annual precipitation ranges from about 18 inches on the Salmon River and 25 inches on the South Fork Clearwater River to 60 inches in the high country. The general average is approximately 35 inches. Winter snow depths range from light and discontinuous on the lower elevation southerly aspects to depths of 10-15 feet above 7000 feet.

Frontal storms, normally low-intensity, long-duration, occur commonly in fall, winter, and spring. Thunderstorms accompanied by locally high winds and lightning occur between May and October. Precipitation from these storms is quite variable from very little to high intensity, short duration storms, accompanied by hail.

Windstorms associated with cyclonic systems and other cold fronts do some damage to trees each year, often resulting in Forest road maintenance problems. Storms of this type may occur at any time, from October into June, while during the remaining three months of the year, strong winds invariably come with thunderstorms.

Temperature limits seasonal vegetational growth where soils and soil moisture are not limiting factors. Temperature is inversely related to elevation. The lower elevation lands of the Salmon River and Clearwater River drainages maintain some of the highest mean annual temperatures in the State. Riggins has no month in the year with mean temperatures 32° or lower. At higher elevations, frost may occur any day of the year.

Hydrology - Several major streams drain this area. Without exception, they are deep within their canyon walls, and are mostly fast, clear, and rocky. Usually the uplands will drain more gentle terrain and the first few miles above the confluence may allow migration of fish. The in-between areas are mostly cascades that effectively block fish migration and are so turbulent during spring runoff that crossings are impossible except by bridge.

Annual runoff is estimated at 900,000 acre feet. Peak flows result from snowmelt in May and June, accounting for 50-60 percent of the total annual runoff. Severe flooding is common to much of central Idaho resulting from midwinter warm rains or subtropical storms. Such winter floods occurred in 1955, 1957, 1958, 1964, and 1974. Flash floods on small streams or occasionally in ravines or dry gulches occur frequently resulting from high intensity convective (thunder) storms. Such a storm occurred in July 1975.

Land Systems Inventory (Topography & Soils) - Terrain features are sharp and well defined. Two major rivers, the South Fork of the Clearwater and the Salmon, carve deep canyons. The former, as mentioned, runs along the northern boundary and the latter passes through the heart of the area. Both canyons have very steep breaklands, with the Salmon River Breaks being the deeper and steeper of the two. Elevations at midpoints on these streams are 2000 ft. on the Salmon River, and approximately 3000 ft. on the South Fork of the Clearwater River. The divide between these rivers reaches elevations of nearly 9,000 ft. on Hump Mountain and 8,000 ft. on Gospel Mountain. Sharp peaks and ridges of similar heights are all along the same divide, and many spur promontories such as Black Butte maintain elevations of 6,000 to 7,000 ft. to within a few miles of the Salmon River where the slopes then drop precipitously for 4,000 to 5,000 feet. North of this divide, a series of cirques has been carved out of steep north faces by ancient glaciers. Many of the cirques contain mountain lakes. Over 40 such lakes can be counted in and around the divide. The divide drops steeply to the north for a few miles, and then the terrain can best be described as rolling, although it is still deeply divided by the drainages of Mill Creek, Johns Creek, and Ten-Mile Creek. Between the above named streams and their immediate breaks, the ridges are broad to flat and slopes average 30 to 40%.

The steep breaks of the Salmon River rise rapidly in elevation into a strongly glaciated area which forms the watershed divide between the Salmon River and South Fork Clearwater River. An east-west line of north-facing glacial cirques form the headwaters of numerous streams which flow to the South Fork. The areas immediately below the cirques are generally U-shaped glacial valleys, giving way to sharply incised, steep breaklands closer to the South Fork. Florence Basin borders the glaciated area on the west, and the east edge of recent glacial action is approximately on the ridge east of Lake Creek.

Soils in the northern portion of the area seem to be moderately productive of vegetation. The glaciated high areas tend to have shallow soils, and productivity is further limited by cold temperatures and short growing seasons. The high area is generally dominated by subalpine fir communities. Soil productivity along the Salmon River Breaks is limited by lack of soil moisture, and supports grasslands, with scattered or open canopied forest stands in those areas that will support trees. The Florence Basin soils have an ashy surface overlying granitic subsoils. The ashy material provides the major support of plant growth as it supplies nutrients and water. Subsoils are often impervious to both water and roots, hence the land is only moderately productive. Soils along the eastern margin of the Study Area are more fertile and have finer textured surfaces than interior soils, which results in better forest cover even though production is limited by cold temperatures and short growing seasons.

Wildlife - The Gospel-Hump Study Area supports a wide variety of animal and bird species. Large mammals include elk, moose, mule deer, whitetail deer, mountain goat, mountain sheep, black bear, and cougar. Smaller animals are too numerous to list here, but a complete listing may be found in Appendix 5.

Habitat conditions, as reflected by population trends, appear to be declining for elk and both species of deer. The frequent large wildfires in the early part of this century created relatively large areas of highly favorable habitat. The game herds flourished, and peaked approximately 20 years ago. The forest cover is now rapidly closing in on many areas and the browse is being lost and has less nutritional value. Hunter success, animal counts, and other factors point to a declining herd.

Moose appear to be increasing however. The forest cover that eliminates elk and deer browse favors the growth of Pacific yew, a winter moose staple. Also, the forest canopy helps reduce snow depths in moose wintering areas.

Mountain sheep along the Salmon River are maintaining at least a stable population, with possibly small segments increasing. The sheep are closely tied to the bunchgrass ranges. Periodic fires are necessary to keep the range in good condition. Otherwise, the ponderosa pine begin to invade the grass ranges and the nutrient content becomes depleted.

No animals listed as "Threatened or Endangered" are known to occur in the Study Area. The Salmon River Canyon historically has been considered suitable for peregrine falcons, but no documented sightings are on record. In general, because of the remoteness and poor accessibility of the area, there is much additional knowledge that could be gained concerning wildlife populations and relationships. However, no specific need has existed to date.

Fisheries Resource - The aquatic environment of the Gospel-Hump Study Area includes more than 250 miles of stream and over 40 high mountain lakes. The streams and lakes are habitat for anadromous spring and summer chinook salmon, steelhead trout, resident rainbow trout, eastern brook trout, westslope cutthroat trout, Dolly Varden and mountain whitefish. Also, there have been attempts to introduce Arctic grayling into two high mountain lakes. In addition to the game species listed, the following nongame species are known to inhabit the area: sculpins, longnose dace, mountain suckers, and the bridgelip sucker.

Eleven streams within the Gospel-Hump Study Area have been classified by the Idaho Department of Fish & Game as Class I streams. They are South Fork Clearwater River, Salmon River, South Fork Salmon River, Crooked River, Wind River, Mill Creek, Johns Creek, Ten Mile Creek, Sheep Creek, Crooked Creek, and Indian Creek. To be rated Class I, a stream must have (1) multistate value, and/or (2) contain or have reasonable habitat potential for anadromous fish, endangered species, unique populations of wild fish, or contain spawning area vital to perpetuation of a fish population, and/or (3) an "A" rating in three of the four rating factors (fisherman use, productivity, availability, and aesthetics) with no "D" rating.

Vegetation - Vegetation varies by terrain, soils, aspect, elevation, and other factors, but a general description can be made. Beginning at the Salmon River and proceeding north, the lower south and southwest slopes are open grass slopes of brome, bluebunch wheatgrass and Idaho fescue. Near 4000 ft. elevation, the grass types again phase into the open ponderosa pine types. Mountain mahogany and bitterbrush are common brush species found within both the grass slopes and open pine stands. The ponderosa pine is mixed with and phases into Douglas fir stands with increasing elevation, and brush types are more commonly found in the understory. Snowberry, ninebark, chokecherry, willow, and mountain maple begin to appear in the understory. Higher yet, at and around 6,000 feet, seral types of lodgepole pine again predominate. Approaching the Salmon River-South Fork Clearwater divide, alpine fir, spruce, and whitebark pine become the most common tree species and large open, wet meadows are common, with sedges, marsh marigold, and numerous high elevation forbs. Menziesia, Labrador tea, and spirea are commonly found brush species near the divide. Continuing north and dropping below the cirque basins common along the north slopes, again extensive stands of lodgepole pine with whortleberry and beargrass understories are the rule. Patches of old-growth spruce and alpine fir can be found. Western larch begins to appear. Stringer meadow types can be found along stream bottoms and basins. North of a line between Marble Point, Sourdough Peak and Nipple Mountain, grand fir overstories with queen cup bead lily and beargrass understories begin to appear and become the dominant types until the breaks of the South Fork of the Clearwater are approached. Just above and continuing into the breaks, all the west

slopes (and the few south slopes that appear) again have old-growth ponderosa pine and Douglas fir, with both grass and shrub understories. Grand fir series continue to the river on the north and east slopes.

On the south side of the Salmon River, grasslands and Douglas fir on the lower slopes blend into extensive areas of lodgepole pine near Warren.

Public Law 93-205, the Endangered Species Act of 1973, has provided for protection of endangered and threatened plants. A list of proposed species for endangered status was published in the Federal Register on June 16, 1976. A list recommended for threatened status was published July 1, 1975. The following list shows those species that are suspected to occur within the planning unit, although no documented occurrences were noted.

Endangered Plants

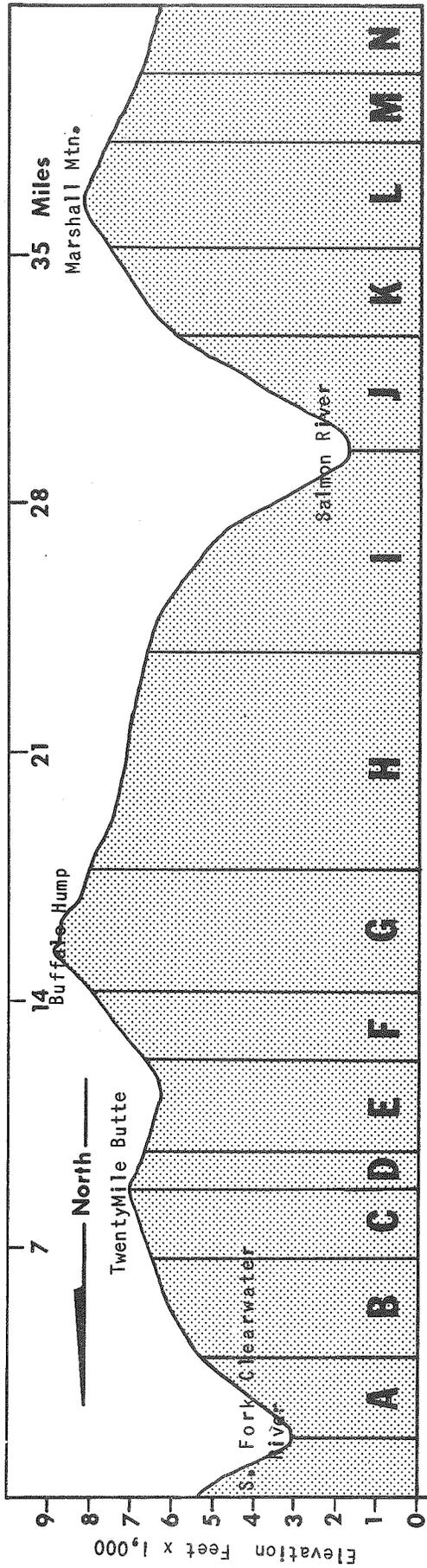
<u>Family</u>	<u>Species</u>
Carophyllaceae	<u>Silene spauldingii</u>
Nyctaginaceae	<u>Mirabilis macfarlanei</u>
Primulaceae	<u>Primula cusickiana</u>

Threatened Plants

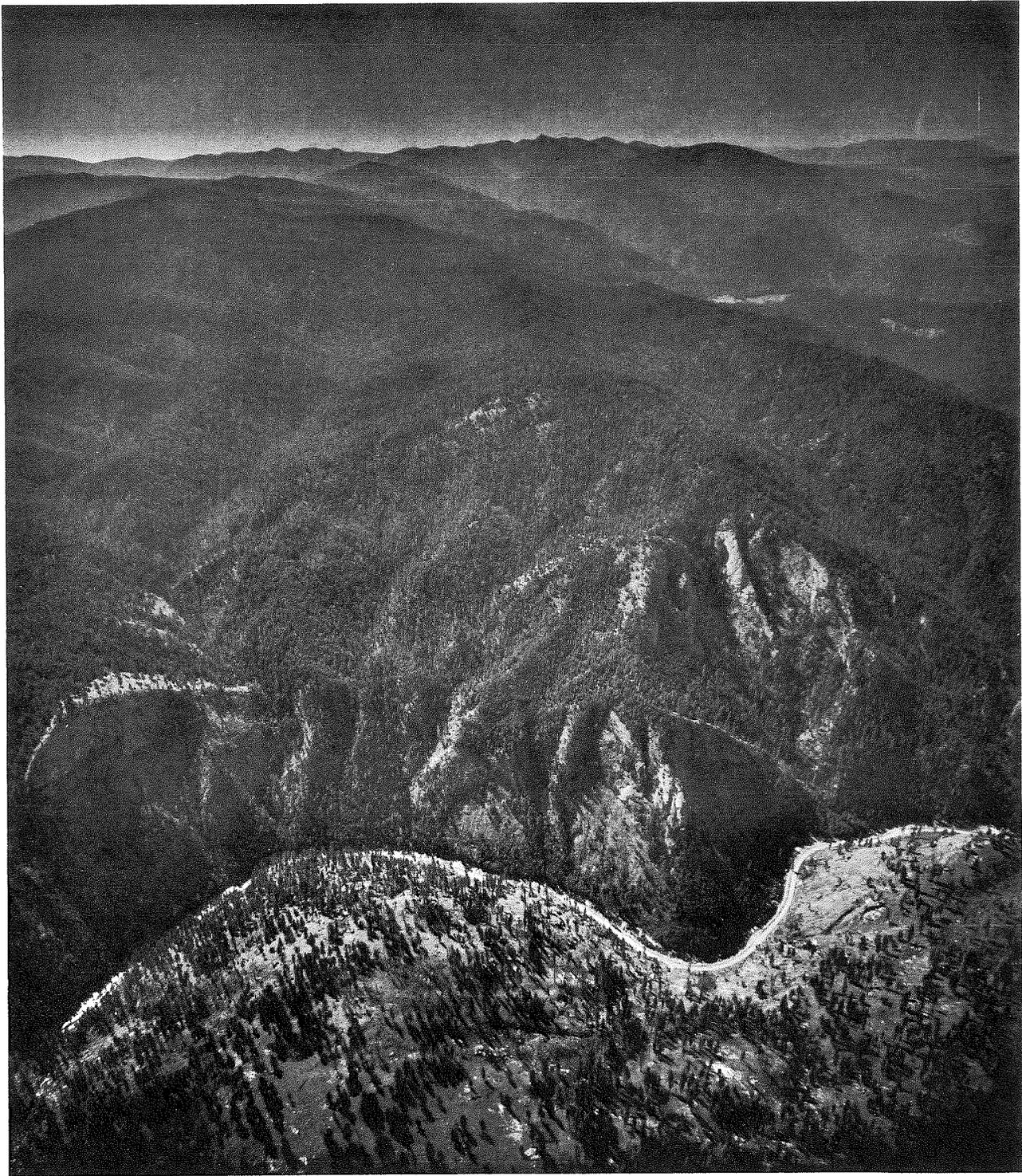
Boraginaceae	<u>Hackelia hispida</u>
Brassicaceae	<u>Halimolobos perplexa</u>
	var. <u>perplexa</u>
Portulacaceae	<u>Lewisia Columbiana</u>
	var. <u>wallowensis</u>
Rosaceae	<u>Rubus bartonianus</u>
"	<u>Waldsteinia idahoensis</u>
Scrophulariaceae	<u>Synthyris platycarpa</u>

Figure 0

ZONES OF VEGETATION



- A** Douglas-fir with ninebark and brush understory
- B** Douglas-fir with huckleberry understory
- C** Alpine fir with beargrass understory
- D** Alpine fir with forb and brush understory
- E** Grand fir with beargrass or forb understory
- F** Alpine fir with mountain forb understory
- G** Alpine fir with beargrass understory
- H** Grand fir with beargrass and forb understory
- I** Open ponderosa pine with grass understory
- J** Douglas-fir
- K** Alpine fir
- L** Alpine fir
- M** Alpine fir
- N** Lodgepole pine



Looking south across the South Fork Clearwater River towards Gospel Peak. Huddleson Bluff rises vertically from the South Fork at the left side of the photo.

Timber - The Gospel-Hump area contains 349,625 acres of commercial forest land (CFL). The remaining area is non-forested (NF) and/or non-commercial forest (NCF) land occurring on top of Buffalo Hump and the Gospels, and along the breaks of the Salmon River. The steep breaks along Wind River, Sheep Creek and Crooked Creek are generally non-commercial forest also.

The heavily-timbered basin of approximately 25-30,000 acres in the head of Johns Creek is productive CFL. The band of CFL south of the Gospel-Hump divide and above the Salmon River breaks is very inaccessible and of generally lower productivity. Prohibitively high road costs make it doubtful that timber can be managed at a reasonable cost; probably only 5 million board feet (MMBF) is economically accessible at this time from this area. The potential yield of the area's CFL is 68 MMBF. Ten conifer timber species and two hardwood species are present in the area.

Range - Portions of 16 livestock grazing allotments are contained within the Gospel-Hump Study Area. Within these allotments are grazed approximately 760 cattle, 68 horses, and 1595 sheep. Grazing seasons generally run from mid-June through September. The Allison Creek sheep allotment, 20 percent of which is within the Study Area, is a winter and spring grazing area close to the Salmon River.

Minerals - Mineral exploration and development have occurred since the 1860's when gold was first found in the Florence and Dixie areas. Production is continuing today in the Five Mile drainage of the Orogrande Mining District and the Bullion Mine in the Florence Mining District. Mining activities have quieted down since the 1940's with little exploration being conducted today. Production has been oriented around the minerals gold, silver, copper, lead, molybdenum and tungsten.

Speculation of large ore bodies exists in the Buffalo Hump, Orogrande and Florence Mining Districts due to the records of past production and favorable geologic environments. The source areas for the Buffalo Hump lode veins, the Orogrande low grade disseminated ore bodies, and the Florence placer deposits are the center of this speculation. The mineral potential will remain uncertain until extensive exploration is conducted.

Visual Resource - Viewing is an important resource in the Gospel-Hump Study Area due to the high amounts of recreational use this area receives.

Highway 14, the Salmon River, Square Mountain, Wildhorse Lake, Dixie-Mackay Bar and French Creek-Burgdorf Roads have high visual significance. Viewing significance from the Grangeville/Salmon, Crooked River, and Warren Wagon Roads is moderate. The Santiam and Hungry Ridge Roads have a low visual significance and were not inventoried.

The visual resource of the Gospel-Hump Study Area ranges from common and minimal variety to some very distinctive landscapes.

With the exceptions of the South Fork Clearwater Breaks and the Johns Creek drainage, the northern and western portions of the Area contain common to minimal landscape types. These areas have moderate slope gradients and low relief. There is little vegetative pattern variety and few distinctive water or geologic features.

Distinctive landscapes are found in the Gospel Mountain-Buffalo Hump region and along the South Fork Clearwater and Salmon River Breaks. The Gospel Mountain-Buffalo Hump area contains highly varied terrain with precipitous slopes, major geologic formations, high elevation meadows and lakes, and patches of old growth timber. The upper drainages of the California Creek watershed offer high scenic values. The South Fork Clearwater and Salmon River have cut deep gorges in the surrounding mountains and are spectacular geologic features. These two rivers are distinctive water features and support a wide variety of vegetation due to constantly changing exposures and soil and slope conditions.

Recreation - Recreational pursuits are in keeping with the essentially roadless nature of the Study Area. Several small developed campgrounds are located along roads which form the exterior boundaries of the unit, and a small developed site is present at Wildhorse Lake. The major uses, however, are in the dispersed areas, and include camping, hiking, hunting, fishing, and other backcountry uses.

Another important activity is the recreational use of off-road vehicles. Snowmobiling in winter, and the use of four-wheel drive vehicles and motorbikes in the summer are popular pursuits. The Gospel Mountain-Buffalo Hump area affords relatively easy access for this user group to high elevation, highly scenic lands. With the inclusion of the Seven Devils Scenic Area in the Hells Canyon Wilderness, the Gospel-Hump is one of the last such scenic areas available in northern Idaho to the ORV user.

Significant recreation attractions are also present along the Salmon River, which is nationally famous for its whitewater boating. Jet boaters, rafters, and kayakers enjoy a long season on the river, generally from March through November. Wintering wildlife are a key attraction for spring recreationists. Several commercial outfitters provide services on the river. The Salmon River has been recommended by the Forest Service for inclusion in the Wild & Scenic Rivers system.

Transportation - While the Gospel-Hump Study Area is essentially roadless, it is penetrated by non-connecting roads in several locations. State Highway 14 forms the northern boundary of the area along the South Fork Clearwater. The French Creek-Burgdorf Road follows the southern boundary of the Study Area. Graveled roads parallel much of the Study Area boundary and separate the Dixie Summit-Nut Hill Roadless Area from the larger contiguous roadless area. Roads that can be driven by most

automobiles (depending on weather and road maintenance) penetrate the Gospel-Hump Study Area to Sourdough Peak, Square Mountain, and Wildhorse Lake. Numerous low standard four-wheel drive roads are also present.

In addition, there are over 600 miles of trail within the Study Area.

Fire - Fire plays a major role in the ecology of the Salmon River breaks in the Gospel-Hump Study Area. Large fires occur fairly frequently. They benefit wildlife by maintaining grass and forb openings which produce critical winter wildlife feed. Fuels often contain large areas of cheatgrass which causes a high rate of spread on the steep slopes. The thick-barked ponderosa pine are often unaffected by the rapidly moving fires. Occasionally, pockets of timber will burn and the watershed is damaged by fire.

Fire plays an important role in maintenance of quality wildlife habitat. Periodic fires release nutrients stored in plant tissue, recycling them to the soil. The browse and forb growth that occurs following fire thus is richer in nutrients essential to wildlife for health and well-being.

In the remainder of the Study Area, fires occur less frequently. The last large fires occurred during 1910-1919, and more than 25 percent of the area has not burned since before 1870.

Insects and Disease - There are no significant outbreaks of insect or disease infestations on the Gospel-Hump Study Area, but the entire area is recovering from a serious spruce budworm infestation which culminated in 1975. A pine butterfly infestation killed many mature ponderosa pines on the Salmon face in 1974. Many stands are overmature, and as such, very susceptible to future epidemics or infestations.

Wild & Scenic Rivers

When Congress passed the Wild & Scenic Rivers Act in 1968, eight rivers were designated for immediate inclusion in the System, and an additional 27 were designated for study and evaluation using criteria established in the Act. The Salmon River, from the town of North Fork, Idaho, to its confluence with the Snake River for a distance of 237 miles, was one of those listed for study. Approximately 35 miles of the Salmon River are within or adjacent to the Gospel-Hump Study Area.

The Wild & Scenic River evaluation was completed by the Forest Service, with assistance from the State of Idaho and numerous Federal agencies. "A Proposal for the Salmon River - Idaho" was published in April 1974, and is awaiting legislative action by Congress. Under this proposal, 73 miles would be classified as Wild River, 53 miles as Scenic River, and 105 miles as Recreational River. The stretch of river east of Long Tom Creek within the Gospel-Hump Study Area would be classified Wild River, while downstream would be classified as Recreational River to the town of White Bird.

The Wild & Scenic Rivers proposal of 1974 as it relates to the Study Area is displayed on the wilderness alternative maps, pages 44-57. A final proposal for the Wild & Scenic River was submitted to the Council on Environmental Quality on June 29, 1977. A map of that proposal was not available for this publication.

Roadless Areas

The Gospel-Hump Study Area is the largest undeveloped area within the State of Idaho excluding classified Wilderness or Primitive Areas. Including areas both north and south of the Salmon River, 580,325 acres of National Forest land are within its boundaries. Most of the Study Area is one contiguous roadless area; however, a road near the eastern edge of the Study Area creates a non-contiguous, smaller roadless area, the Dixie Summit-Nut Hill.

Evaluation for the wilderness study potential of the Dixie Summit-Nut Hill roadless area was made concurrently with the evaluation for the larger contiguous roadless area as both are included in the Gospel-Hump Study Area.

III. PLANNING METHODS

Planning was accomplished in two steps. An evaluation within the Gospel-Hump Study Area was made to determine what area, if any, offered an exemplary potential for wilderness study. Once this decision was made, planning proceeded for the non-wilderness portion of the Gospel-Hump Planning Unit. This included the selection of a plan from several alternatives and the development of management guidance for the unit. This plan was designed to allocate resources and provide management prescriptions for the Gospel-Hump Planning Unit. Site specific activities and impacts will be identified subsequently in Environmental Analysis Reports (EAR). An EAR analyzes environmental impacts for individual projects and may or may not recommend preparation of an environmental statement. EAR's will be prepared for projects in accordance with instructions in Forest Service Manual 8400.

National Environmental Policy Act

Pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), 83 Stat. 852, the Forest Service prepares environmental statements on proposed major Federal actions significantly affecting the quality of the human environment. The land allocations proposed for the Gospel-Hump Planning Unit in Part Two, Gospel-Hump Land Management Plan of this document, are such a major Federal action. The Nezperce National Forest has prepared this Environmental Impact Statement and Land Management Plan in compliance with NEPA.

This publication fulfills requirements for the Environmental Impact Statement and also:

1. Describes and explains in detail the processes by which land use decisions were made.
2. Provides detailed quantitative information about natural resources in the study area and planning unit.
3. Presents, in considerable detail, the alternatives for wilderness study for the contiguous roadless area.
4. Considers a wide range and variety of management alternatives for the planning unit.
5. Prescribes a new monitoring system to insure that sediment production is maintained at or below projected levels to protect the valuable anadromous fish resource. This is in addition to existing monitoring systems.

Planning Considerations and Constraints

Land management planning occurs within a framework that has been determined by laws, regulations, policies, and biologic potentials. This section is intended to display that framework as it applies to determination of the wilderness boundary and the land management alternatives. The first five considerations and constraints -- legal, fiscal, ecological, socio-economic, political and technological -- establish the parameters for developing alternatives as shown in Figure 1. Public involvement, makeup of the interdisciplinary planning team, and the technical review procedures are additional factors which are critical to the planning process. These various considerations and constraints will be described in more detail as they apply to the Gospel-Hump Study Area and Planning Unit.

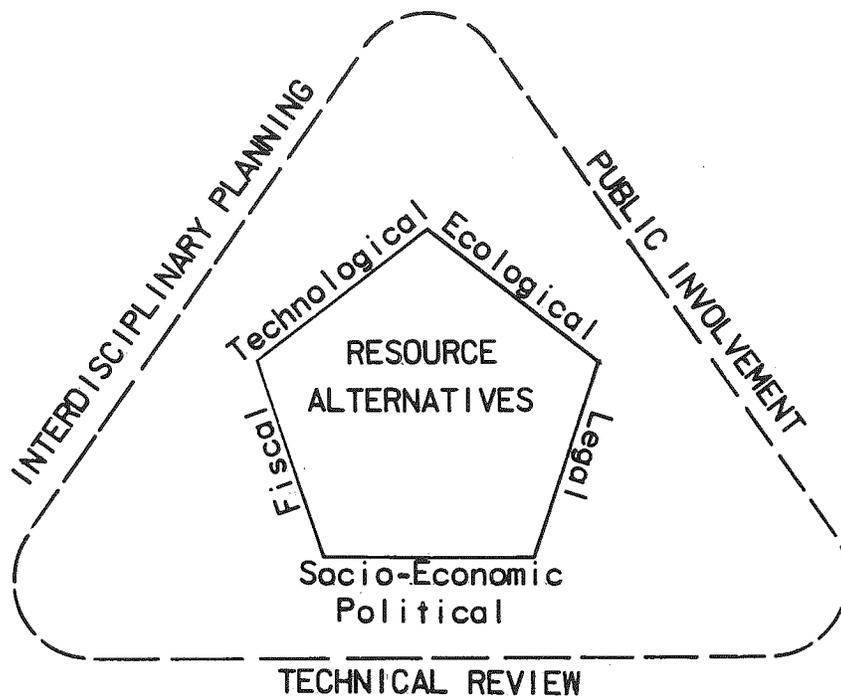


Figure 1. Planning Considerations & Constraints

Legal Parameters - This document has been prepared according to guidelines set forth in the interim directions in Forest Service Manual 8200 issued to implement the National Forest Management Act (P.L. 94-588) and is determined to be consistent with those guidelines. In addition, Executive Orders, Department regulations and directions, and the Forest Service Manual provide direction, authority and basic guidelines for planning. A helpful reference is USDA Handbook 20, "The Principal Laws Relating to Establishment of the National Forests." Certain legal requirements and limitations must be followed throughout the planning process.

Fiscal Parameters - The Gospel-Hump Study Area contains portions of four Ranger Districts on the Nezperce National Forest -- the Salmon River, Clearwater, Red River, and Elk City -- and the McCall Ranger District on the Payette National Forest. In order to determine the cost per acre of managing land in the Study Area, it is necessary to accumulate the costs associated with managing the extremity areas of these five Districts. In relation to the total time and effort spent on the various functional activities on each of these Districts, it is estimated that the current functional activity in the Gospel-Hump Study Area is very light in managing timber, grazing, recreation, soils, water, wildlife, and road maintenance and construction; moderate in fire management; and heavy in minerals management. Managing the Gospel-Hump Study Area can be closely compared with management of the Moose Creek Ranger District, a Wilderness District.

The total cost for managing the Moose Creek District in Fiscal Year 1977 was \$210,000, or 38¢ per acre. This includes all projects, general administration, and program management costs at the District level; and an estimate of general administration, program management and centralized services cost at the Supervisor's Office level associated with the District. A judgment comparison of functional activities in the Gospel-Hump area was made with Moose Creek to determine if the 38¢ per acre should be adjusted upward or downward to truly reflect the management costs of the Gospel-Hump area. Because of the presence of intruding roads and activities not found on the Moose Creek District, the 38¢ was raised to 41¢ per acre for the general operational costs of the Gospel-Hump. To these general operational costs were added the estimated operational costs of specific proposed activities.

Financial capabilities impose a constraint upon the various resource alternatives proposed through the planning process.

Ecological Parameters - Inherent land capability is defined as "an evaluation of the land's natural or inherent ability to provide for use. It is based upon the average natural productivity of the area." 2/

2/ Wildland Planning Glossary

The land's inherent abilities and natural productivities are determined through evaluation of the ecosystems within the Study Area. This ecological evaluation refers to an understanding of the interrelationships between the living and non-living components of the area and the natural processes (wind, climate, etc.) working upon those components. It is important, when planning new land uses for an area, that we study the potential effects of the new land use upon the total ecosystem. Land use or resource alternatives should fit the inherent capability of the land and thereby maintain ecological balance.

Socio-Economic and Political Parameters - This represents a very important and sensitive part of this planning job. The local Forest Service assessment of the situation rather clearly discloses a conflict between National and Regional demands for classified wilderness and local dependency on Forest products for community livelihood. There is, in addition, somewhat of a paradox in that a majority of the local community appears to agree on the need for development of resources to maintain jobs, but they would like to retain the frontier lifestyle available because of the vast unroaded areas that surround them. It is essential to balance local financial needs, sociological effects and political consequences with the National socio-economic and political situation.

The alternatives for planning must be carefully considered in light of the socio-economic and political responses each alternative may create. Land management planning must try to satisfy both local and national demands.

Technical Parameters - Technology related to forest management is rapidly changing in many areas, and major differences may occur before the end of the 23-year planning period. Aerial logging is one technological advance that's been utilized for several timber sales on the Payette Forest, but has not generally been applied over the entire Study Area. Logging experts on the Nezperce consider aerial logging a feasible possibility for considerable portions of the Gospel-Hump area.

Conservation leadership requires that attention be given to such technological advances as aerial logging. This new technology must be considered when making plans for the future.

Public Involvement - The specific objectives of public involvement for the Gospel-Hump Study are:

- (1) To ascertain the demands and desires of the public concerning this unit of National Forest land.
- (2) To eliminate the "surprise factor" when final decisions are announced.
- (3) To maintain credibility with the public.
- (4) To inform the public so that recommendations formulated by the public will be based upon facts and complete understanding.

The approach selected to achieve the above objectives was termed the "key people" process. Leaders from each recognizable interest sphere were asked to participate as "key people" (see "Consultation With Others", page vi). At each important phase of the planning process, this group was furnished with all pertinent data and assembled for a critique session. After the key people session, the same information was made available to the general public through appropriate media. Both the general public and the "key people" were told in advance how their suggestions would be used.

Further public involvement was achieved through the publication of a brochure outlining these seven wilderness study alternatives and including a mail-back form requesting public response. Over 400 of these brochures were mailed to specific individuals, groups and agencies that had previously indicated particular interest in Gospel-Hump. In addition, the brochure was publicized in local newspapers and copies were available for public review at the Forest Supervisor's offices in Grangeville and McCall and District Rangers' offices. Responses to this brochure were used in evaluation of both the wilderness alternatives and land management plan alternatives. A more detailed account of this response is written in the sections on "Selection of Alternatives" and "Alternative Rankings." The publication of this Draft Environmental Impact Statement offers the public another opportunity to review the planning methods, the range of alternatives considered, the selected alternatives, the rationale and background data behind those decisions, and the land management plan itself.

Interdisciplinary Planning - Another major consideration in the planning process was the assignment of a team of experts to supply data, analyze resource capability, generate alternatives, and perform a myriad of other duties throughout the planning process. This interdisciplinary team was given the responsibility of producing a draft environmental impact statement and land management plan for the Gospel-Hump Planning Unit. In practice, two separate teams were involved in the planning

effort. The teams were referred to as the "Core Team" and the "Peripheral Team." The relationship between the two teams is pictorially represented by Figure 2. In addition, a third group, called the Technical Review Panel, was involved in the planning process.

The Core Interdisciplinary Team consisted of the Forest Supervisors from the Nezperce and Payette National Forests and primary staff. The members of this team and their functional responsibilities are listed below: (Professional background and experience is found in the Appendix.)

- Don Biddison - Forest Supervisor (Team Leader)
- William B. Sendt - Forest Supervisor
- Ed Laven - Planning Coordinator, Watershed, Soils
- Earl Kimball - Land Use Planner
- Jim Thomson - Fire, Wilderness, Recreation & Lands
- Jim Harvey - Timber, Range, Fisheries, Wildlife, Minerals
State & Private Forestry
- Bruce Pewitt - Engineering
- Frank Sandvig - Administrative Management
- Phil Jaquith - District Ranger, Red River District
- Ron Stoleson - District Ranger, Salmon River District
- Vic Standa - District Ranger, Elk City District
- Joe Bednorz - District Ranger, Clearwater District
- John Hooper - District Ranger, McCall District

The role of the Core Team was (1) to define the problem, (2) to agree on the process to be used, (3) to evaluate and sign off on each of the process steps, (4) to evaluate and select a wilderness alternative, and (5) to approve an alternative land management plan. This team fulfilled the interdisciplinary planning requirements by meeting together with equal information on all planning considerations and negotiating solutions to questions which, because of the state of the art, required professional judgments. This Team accepted full responsibility for assuring that all necessary professions and disciplines were represented in the formation of plan alternatives. The Team Leader was responsible for final selection of an alternative plan.

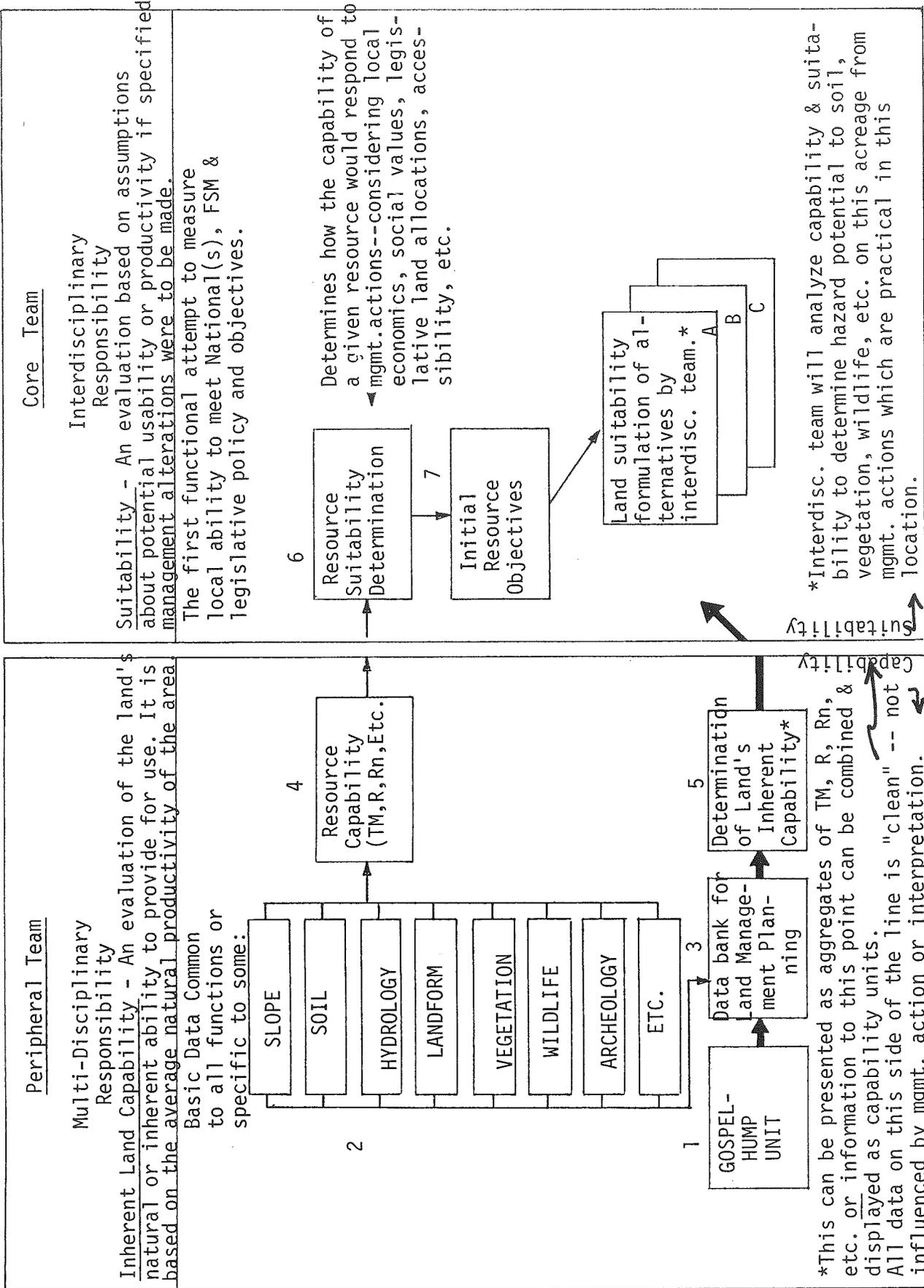


Figure 2 - Relationship Between Core Team & Peripheral Team

The Peripheral Team consisted of those professions and disciplines necessary to provide the physical, biological, economic, social, and planning expertise needed to provide the Core Team with adequate information from which decisions can be made. The Peripheral Team and their responsibilities are as follows: (See Appendix for professional background.)

- Ed Laven - Planning Leader
- Bill Brookes - Hydrologist
- Dick Cline - Soil Scientist
- Floyd Gordon - Wildlife Biologist
- Charles Nelson - Forester & Recreation Specialist
- Paul LaBrun - Sociologist & Public Involvement Specialist
- Robert Lovegrove - Economist
- Greg Alword - Economist
- John Hoaglund - Economist
- Don Renton - System Analyst
- Tim Sale - Computer Specialist
- Ray Franks - Regional Land Use Planner
- Dewey Haeder - Timber Management Specialist
- Rusty Dersch - Minerals Geologist
- Walt Shjeflo - Engineer
- Henry Newhouse - Fisheries Biologist
- Clint McCarthy - Range Conservationist
- Pete Mourtsen - Wilderness Specialist
- Mike Lunn - Wilderness & Recreation Specialist
- Duane Marti - Archaeologist & Sociologist
- Valerie Weber - Landscape Architect

The role of this team is multidisciplinary in nature. They were responsible under the direction of the Planning Leader to provide "clean disciplinary data" in the format prescribed by the Planning Leader. This team, additionally, is responsible for locating and describing existing and potential hazards that might constrain planning alternatives.

Technical Review - A third important contribution to the planning process came from the Technical Review Panel. The Technical Review Panel represented those key disciplines around which the land management decisions pivoted. Where possible, the individuals on this panel were not Forest Service personnel, but counterparts in the key professions. These individuals represented professional disciplines, not interest groups.

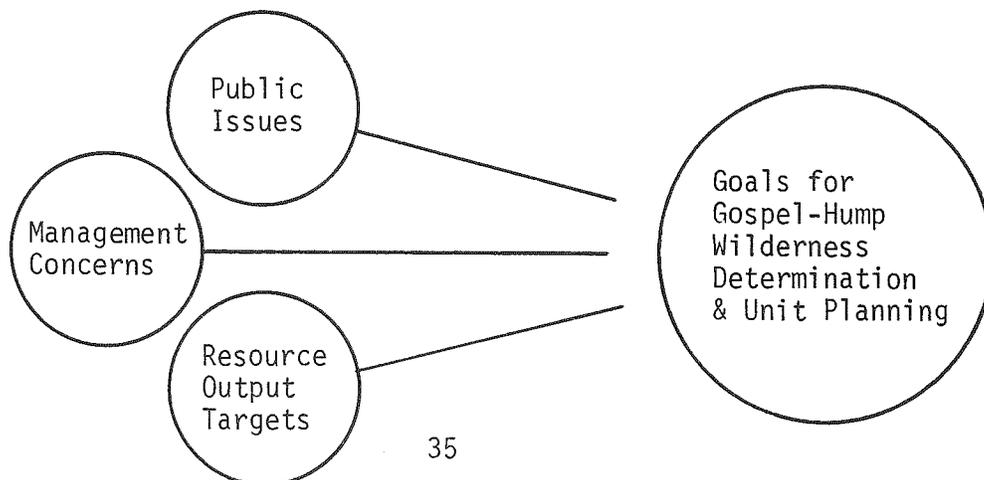
The Technical Review Panel and their fields of expertise are as follows:

Forester - Kenneth M. Sowles, M.S., Assistant to the Dean, College of Forestry, Wildlife & Range Sciences, University of Idaho
Research Fisheries Biologist - William S. Platts, Ph.D., Intermountain Forest & Range Experiment Station, Boise, Idaho
Wildlife Biologist - James M. Peek, Ph.D., Associate Professor of Wildlife Management, University of Idaho
Soil Scientist - Warren A. Starr, M.S., Professor Emeritus (Soils), Washington State University
Wilderness - John H. Schomaker, Ph.D., Ass't. Professor Wildland Recreation Management, University of Idaho
Economist - Enoch F. Bell, Ph.D., Research Economist, Forestry Sciences Laboratory, Missoula, Montana
Minerals - Maynard M. Miller, Ph.D., Dean, College of Mines, University of Idaho; Chief, Idaho Bureau of Mines & Geology

The role of the Technical Review Panel was to review the planning process, the method of formulating the final plan, and the data for adequacy and appropriateness, and to make suggestions for improvement. This technical review occurred at two points in the planning process. The first review concerned the basic inventory, study plan, and selection criteria. The second meeting concerned the display of alternatives. Additionally, individual Forest Staff members discussed aspects of their specialities with the Technical Review Panel during the planning period.

Goal Formulation

The planning considerations and constraints displayed in the preceding section provided a framework within which the planning effort would take place. One of the first steps in the actual planning process was the formulation of goals for both wilderness determination and subsequent unit planning. The goals that were established represent a synthesis of three primary components -- public issues, management concerns, and resource output targets.



Public Issues - There has been considerable public involvement in the Gospel-Hump area starting in 1972 and continuing through the present. A summary of this historical data and the evaluation of public input during this current planning process has resulted in the clear identification of eight issues surrounding the possible future management of this area. These same issues are basic to both the selection of the wilderness alternative and the determination of the land management plan for the Gospel-Hump Unit. The issues are presented in the form of eight questions (not in priority):

1. How much area should remain roadless?
2. How much timber harvest should take place?
3. How much area should remain available for mineral entry?
4. To what degree should wildlife values direct management?
5. To what degree should the fisheries direct management?
6. To what degree should local socio-economic considerations influence the plan?
7. How much of the area should be studied for wilderness classification?
8. How much of the area should remain available for motorized recreation?

Another concern has been expressed that is subsidiary to each of these issues -- How much data is needed before planning decisions can be made?. This is a concern of both the public and the Forest Service, and was one of the bases of the appeal that was filed on the Rainy Day and Mill Creek Unit Plans. The decision by the Chief of the Forest Service, however, was that the level of resource data used in those plans was adequate for making broad allocations. However, the Supervisor of the Nezperce Forest is very cognizant that this concern over data levels may remain, and the monitoring programs and stringent prescriptions in the Land Management Plan reflect that awareness.

Management Concerns - Along with the demands of the public (as expressed in the issues), the Forest Supervisor and his staff identified five management items they felt were of significant concern and should be addressed by the planning process. These concerns are listed as follows (not in priority):

1. Assuring effective public participation in planning.
2. Establishing sustained yield levels for all resources.

3. Establishing costs for all alternatives.
4. Assuring the retention of an adequate professional skill pool.
5. Resolving those critical issues previously identified.

Resource Output Targets - There are no Regionally assigned resource output targets for wilderness study. However, the Nezperce and Payette Forests are responsible for meeting a Regionally determined output of products from resource management activities as their shares of Regional and National output from the National Forest System. The output targets can be further broken down from the Forest level to the planning units on a proportional size basis. The Gospel-Hump Planning Unit comprises approximately 13% of the Nezperce Forest area, so it can be assumed that approximately 13% of the management activities should occur there. (An example of resource targets for Fiscal Year 1979 for the Nezperce Forest is displayed in Appendix 14).

Goals for Gospel-Hump Wilderness Determination and Unit Planning

Goals for the Gospel-Hump resulted from consideration of the issues, management concerns, and output targets for the Study Area. The goals are listed as follows (not prioritized):

- (1) Manage all resources in a manner that will contribute to the long term stabilization of the local economy.
- (2) Emphasize improvement of wildlife habitat for all species.
- (3) Maintain or improve the aquatic habitat for all anadromous fish.
- (4) Intensify management on the more productive National Forest timber lands to improve both quantity and quality of commercially available timber.
- (5) Sustain recreational opportunities for off-road vehicle users.
- (6) Identify highest quality wilderness land for wilderness study.

In order to achieve the goals as identified, the planning process had to provide answers to the following important questions:

1. How much, if any, of the Gospel-Hump contiguous roadless area should be recommended for wilderness study?
2. What should be the progression and extent of development for lands not selected for wilderness study?
3. What natural hazards exist in the planning unit, where are they, and how can this potential be mitigated?
4. What constitutes sustained yield for wood, water, range, wildlife and fish, recreation, and wilderness in this unit?
5. What products at what costs and with what effects might be realized from this unit?
6. What harvest systems, if any, should be employed on this unit?
7. To what degree should local socio-economic considerations influence the plan?
8. What areas have significant minerals potential and warrant further study?

These goal-oriented questions, then, were used by the Forest Supervisor and the Core Team to formulate evaluation criteria.

Evaluation Criteria

These criteria identified desired results for each of the major issue categories (local economy, wilderness study, grazing, anadromous fish, wildlife habitat, recreation, and minerals). The evaluation criteria were used in testing both a wilderness alternative and a management plan alternative.

The evaluation criteria are as follows:

1. Local Economy

Economic impacts, as measured by jobs and incomes of basic industries, should not range beyond $\pm 20\%$ of present contributions from the Study Area, as currently measured by all functional plans for surface resources.

2. Wilderness Study

Areas with a rating higher than the Slusher rating ^{3/} of 76 should be studied for wilderness classification, provided that lesser value units could be added, and high value units could be subtracted to arrive at practical boundaries. However, if this direction should preclude recreational or economic criteria as described herein, then these latter criteria shall prevail.

3. Grazing

Presently permitted numbers should be retained unless resource damage can be documented as being a result of excessive numbers, not present management techniques. However, increases that come about through other resource allocations would be permissible. Bighorn sheep needs will take priority within presently established bighorn ranges, as defined by Lauer's study. ^{4/}

4. Anadromous Fish

Select alternatives that produce the lowest sediment increases possible in achieving other planning goals, but accept only alternatives that allow survival rates of at least 75% from spawning beds.

^{3/} Refer to Wilderness Evaluation, Appendix 12, for discussion of Slusher rating.

^{4/} Refer to Wildlife Appendix 5 for a map illustrating the Lauer Study.

5. Wildlife Habitat

All proposed activities must, on the average, allow for maintenance of big game habitat at least to present levels. Bighorn sheep range must be maintained or improved. Road construction and domestic grazing will not be allowed on bighorn range.

6. Recreation

Increased dispersed recreational use must be allowed within the following parameters:

- Trail bike access will be provided to at least 10 lakes.
- At least 150 miles of snowmobile trail will be provided, with at least 5000 acres of off-trail travel available to snowmobilers.
- At least the present mileage of four-wheel drive roads will be allocated.

7. Minerals

No recommendation will be made for wilderness classification without adequate minerals study, and the results of that study will be used to measure wilderness values against minerals values, as determined by the prudent man concept. ^{5/} Access corridors will be allowed for areas of proven mineral value.

The evaluation criteria were determined before wilderness alternatives were generated. In this way, the criteria for decision-making (or selecting the "best" wilderness alternative) would not be affected by the conditions of the alternatives themselves. Of course, due to the complexity of this situation, it was impossible to select an alternative that satisfied all of the evaluation criteria. Therefore, after the generation and display of alternatives as is described in following sections, the alternative selected was the one meeting most of the criteria and producing the least amount of conflict.

^{5/} A valid mineral discovery has been defined through the courts as one where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine.

Relationship to Other Planning Units & Legislative Proposals

The Gospel-Hump Study Area includes several planning units where land management plans and final environmental impact statements have already been completed. Those units are Kelly-Bullion, Little Slate, Mill Creek, and Rainy Day. Roadless area values were considered within those plans; however, these previous evaluations did not include the total contiguous roadless area; more specifically, the roadless area south of the Salmon River was not considered. Current planning, through this publication, does evaluate the total contiguous roadless area, and those earlier management plans will be amended based on the roadless area evaluation in this environmental statement. However, once the wilderness study alternative is selected, the above mentioned planning units will be dropped from further consideration in this document.

Two other planning units, Slate Creek and Warren, have no existing land management plans, although Warren is nearing completion. Those future plans will incorporate the wilderness study boundary that is selected in this plan.

As an amendment to the Senate adopted version of the Endangered American Wilderness Act (HR 3454), Idaho Senator Frank Church has proposed immediate wilderness classification of approximately 206,000 acres within the Study Area north of the Salmon River. The boundaries of this wilderness unit were proposed by a coalition that represented local (Idaho County) industrial interests and environmentally concerned groups such as the Sierra Club and Wilderness Society. This coalition conducted negotiations over a period of several months before arriving at a compromise acceptable to both groups. While the complete legislative proposal is contained in the Appendix, the Act features three categories: instant wilderness, instant release for timber management, and a large area that will receive additional study prior to development.

IV. DETERMINATION OF THE WILDERNESS STUDY AREA

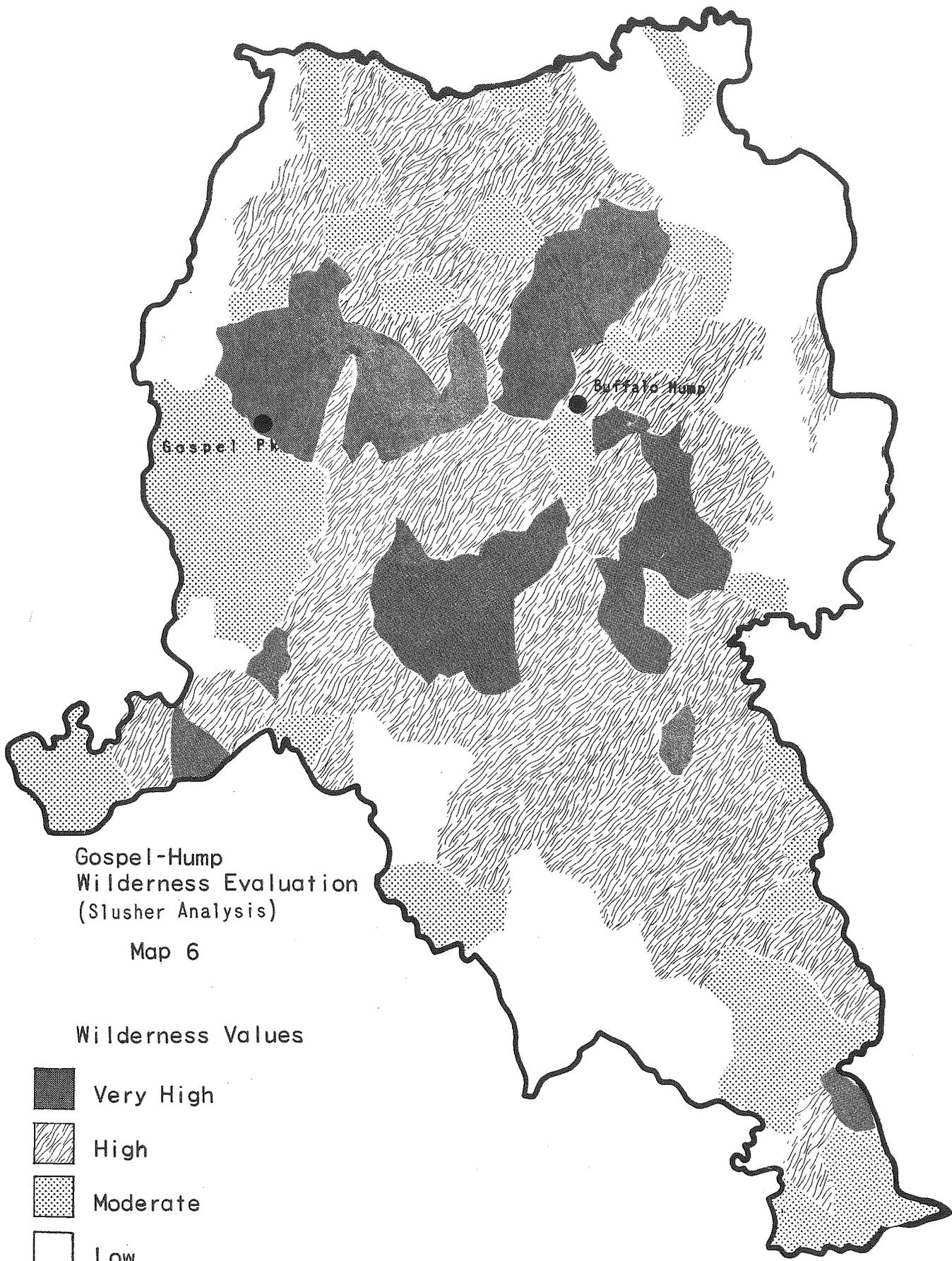
Generation of Alternatives

The exterior boundary of the Study Area encompasses all of the contiguous roadless area, plus additional area in units that have not had completed land management planning. Maintenance of the integrity of the roadless area is the primary rationale for this boundary. Other considerations include landform and biological response.

Wilderness Quality Evaluation - "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area when the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." Taken directly from the text of the Wilderness Act of September 3, 1964, this definition was the guiding consideration in determination of an area to be recommended for wilderness study. Wilderness study is an interim condition; further research and public involvement must occur before any permanent wilderness classification can take place.

An evaluation procedure that is fully described in Appendix 12 was used to rate the Gospel-Hump Study Area for various wilderness alternatives. To provide a rationale for delineation of alternative boundaries, the Study Area was divided into approximately 185 smaller units for analysis. These units were termed Recreation Experience Units (REU's) and each unit was analyzed for its relative conformance to the conditions specified in the Wilderness Act. Following this, a map was developed (Map 6) that displayed the range of wilderness values from very low to very high for all REU's throughout the Study Area.

This map, termed the Slusher Analysis Map, then became the basis for developing alternative boundaries. REU's of similar wilderness suitability were combined to create the various alternatives for wilderness boundaries. The areas proposed for Wilderness Study ranged from a no wilderness proposal to a proposal for the total Study Area to become Wilderness Study. This latter alternative had a total area of 568,935 acres. Five other alternatives had acreages between these two extremes. Thus, the Recreation Experience Units were used for purposes of defining the boundaries of seven wilderness alternatives as displayed on pages 44-56.



Gospel-Hump
Wilderness Evaluation
(Slusher Analysis)

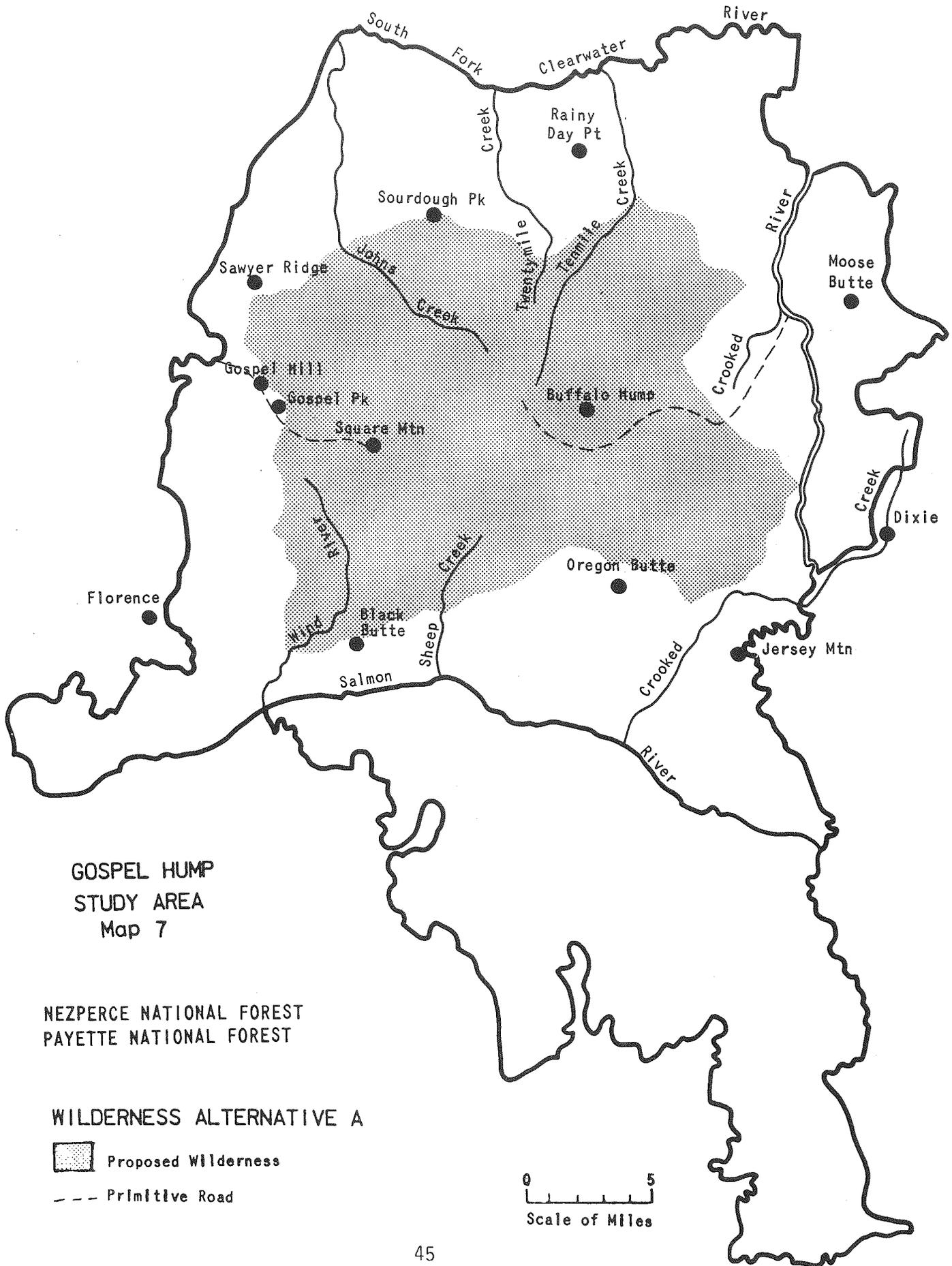
Map 6

Wilderness Values

-  Very High
-  High
-  Moderate
-  Low

Alternative A

Alternative A suggests wilderness study for 159,453 acres. The wilderness study area includes primarily the subalpine glaciated area surrounding the Buffalo Hump-Gospel Mountain divide. As shown in Appendix 12, Wilderness Evaluation, the highest concentration of wilderness values is included in this area. The boundary did not extend south to the Salmon River because (a) it was felt that eventual classification under the Wild & Scenic Rivers Act would provide adequate protection of the Salmon River corridor, and (b) there is a feeling by some managers that manipulation of habitat for big game through the use of prescribed fire is desirable to prevent continued decline of certain wildlife populations, and (c) the Slusher values provided a boundary determination that appeared logical for consideration.

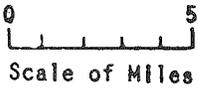


GOSPEL HUMP
STUDY AREA
Map 7

NEZPERCE NATIONAL FOREST
PAYETTE NATIONAL FOREST

WILDERNESS ALTERNATIVE A

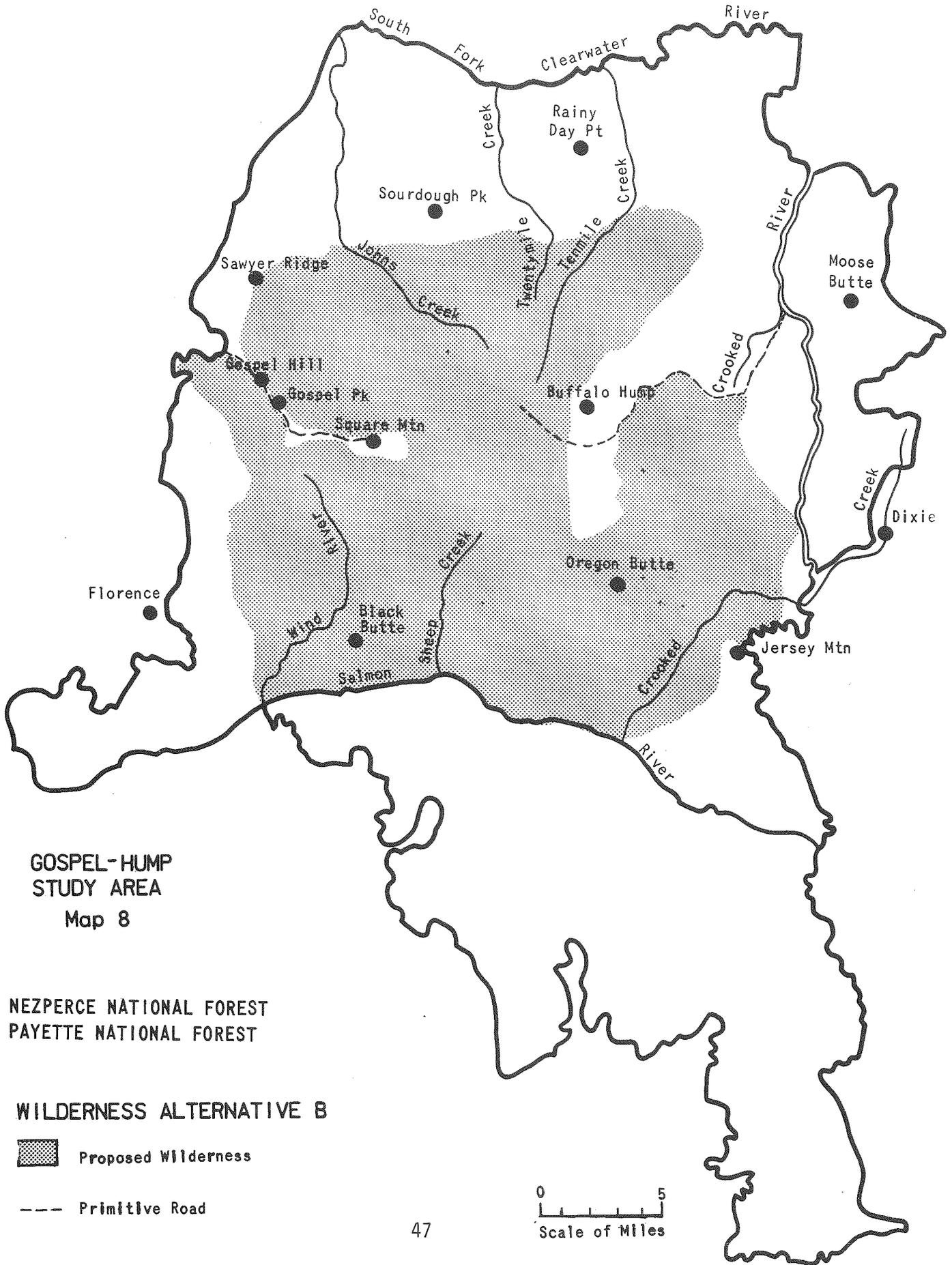
- Proposed Wilderness
- Primitive Road



Alternative B

Alternative B suggests a wilderness study acreage of 206,000 acres, and corresponds to the boundaries delineated by HR 3454.

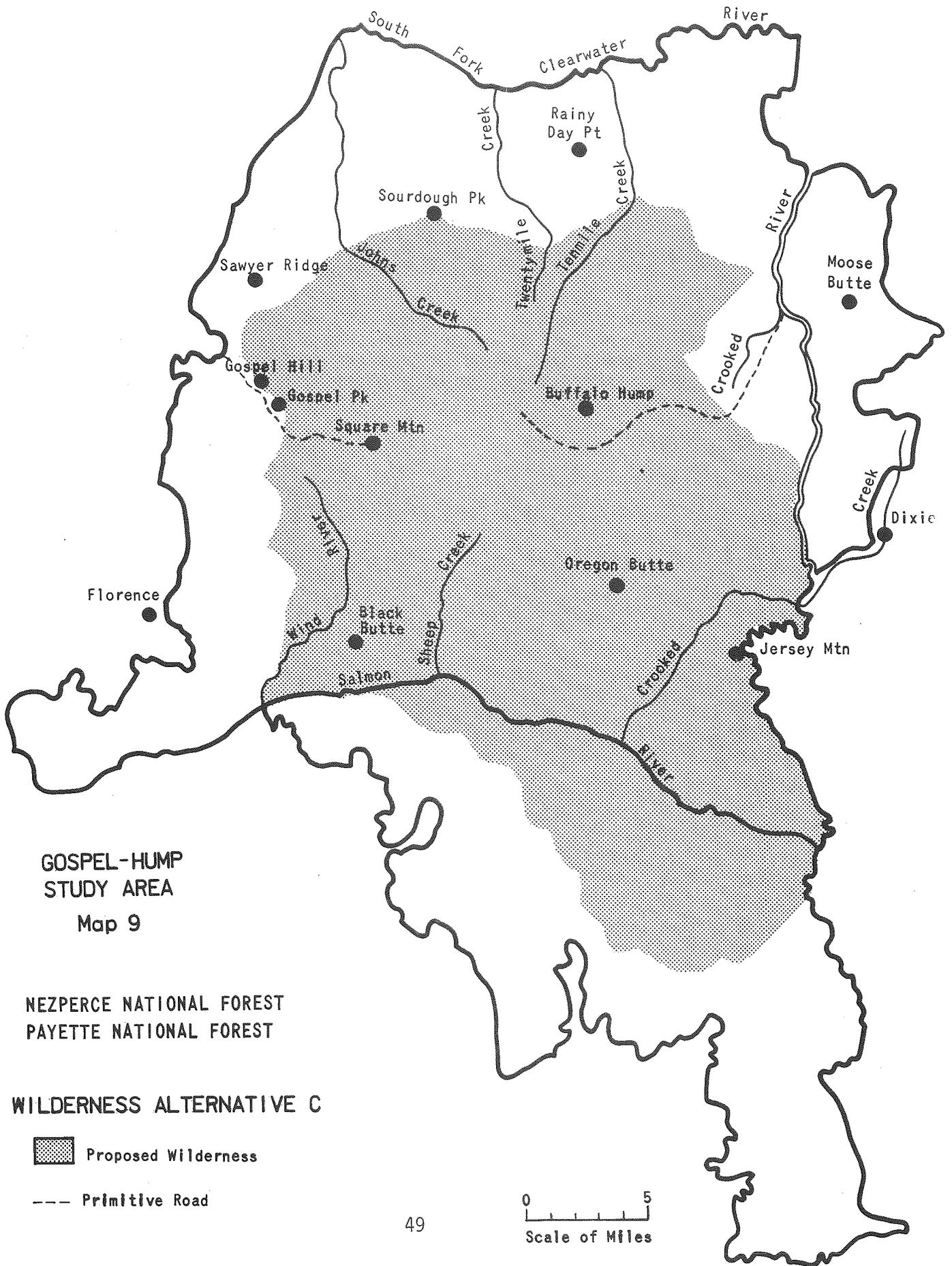
Alternative B differs from Alternative A in that 46,547 more acres are included as wilderness study. Also, the southern boundary extends to the Salmon River, and large corridors are excluded that would allow continued motorized access to the patented mining ground near Buffalo Hump and to Square Mountain. (No wilderness study proposal will result in closure of existing roads. If the area subsequently was classified as wilderness, there is a high probability that most roads would be closed to motorized vehicles.)



Alternative C

Alternative C suggests wilderness study for 255,028 acres. This alternative includes all lands contained in Alternative A and B on the Nezperce Forest, with an additional 30,830 acres south of the Salmon River on the Payette National Forest.

The added area south of the Salmon River includes mostly the steep breaklands, and the majority of the area that was rated high or very high in wilderness quality. The few units of high quality that were not included were left out primarily because of a desire to provide a manageable unit. Boundary definition was a key factor.



GOSPEL-HUMP
STUDY AREA

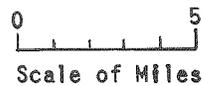
Map 9

NEZPERCE NATIONAL FOREST
PAYETTE NATIONAL FOREST

WILDERNESS ALTERNATIVE C

 Proposed Wilderness

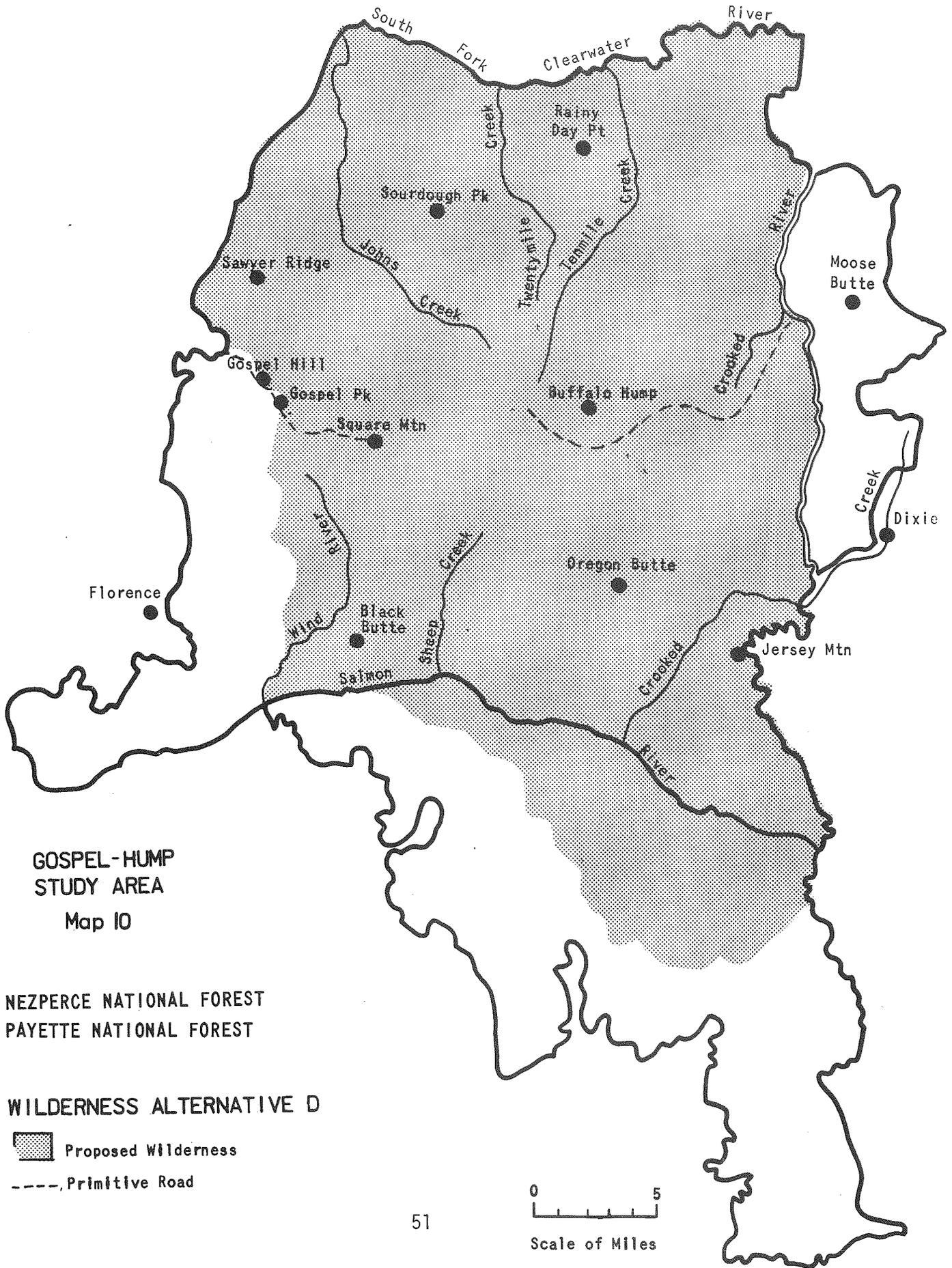
--- Primitive Road



Alternative D

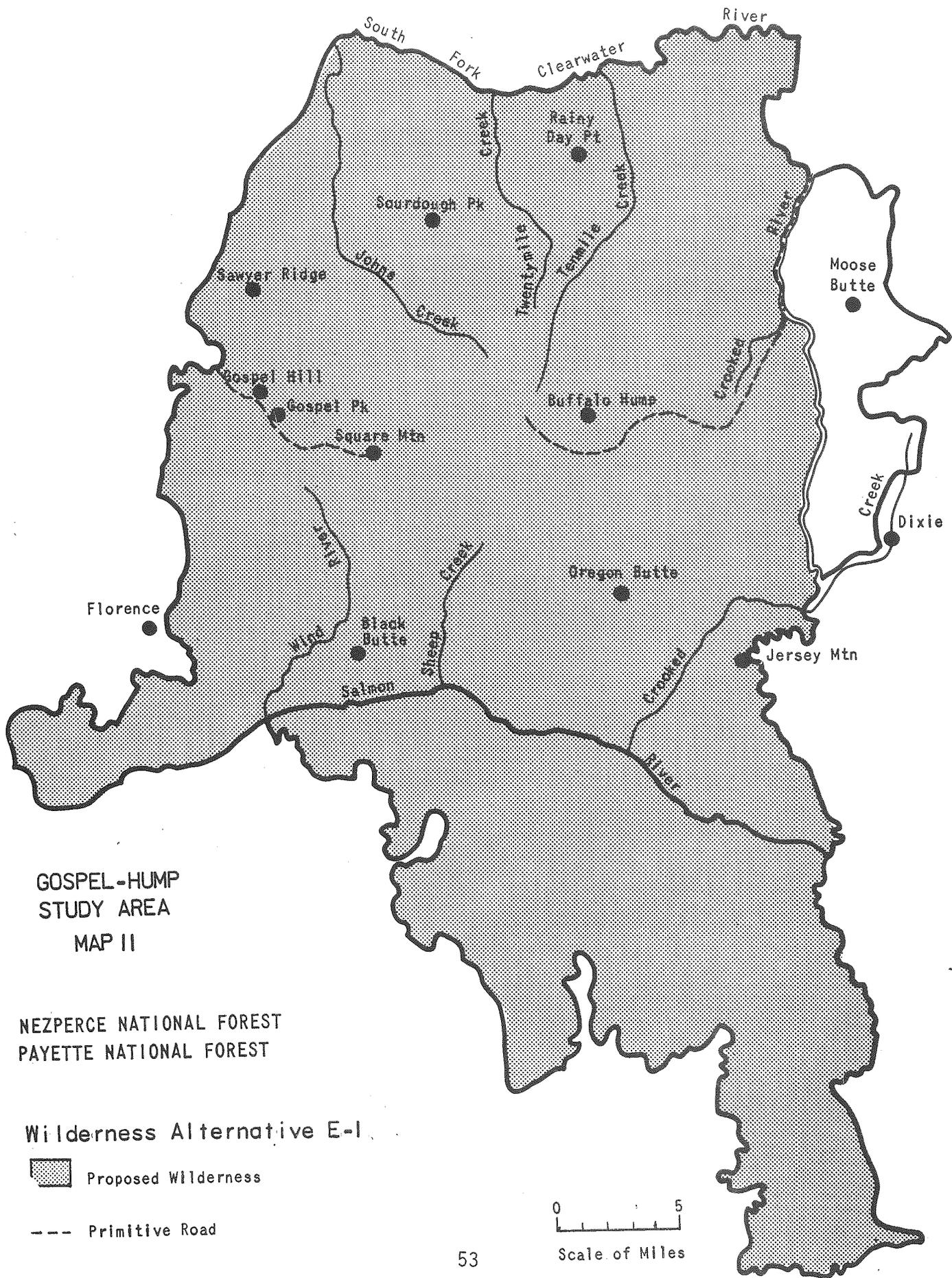
To Alternative C, D adds 106,522 acres for a total of 361,550 acres proposed for wilderness study. The southern boundary is unchanged from Alternative C, while the northern boundary is extended to the South Fork Clearwater River.

The added area on the north end includes much heavily timbered, gentle terrain, and the breaklands associated with the drainages of Crooked River, Tenmile, Twentymile, Johns Creek, and South Fork Clearwater River. A road penetrates the area from the mouth of Santiam Creek to Sourdough Peak, a distance of approximately 27 miles.



Alternative E-1

Alternative E-1 provides wilderness study for the total contiguous roadless area, a total of 540,688 acres.



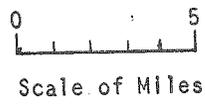
GOSPEL-HUMP
STUDY AREA
MAP II

NEZPERCE NATIONAL FOREST
PAYETTE NATIONAL FOREST

Wilderness Alternative E-1

 Proposed Wilderness

--- Primitive Road



Alternative E-2

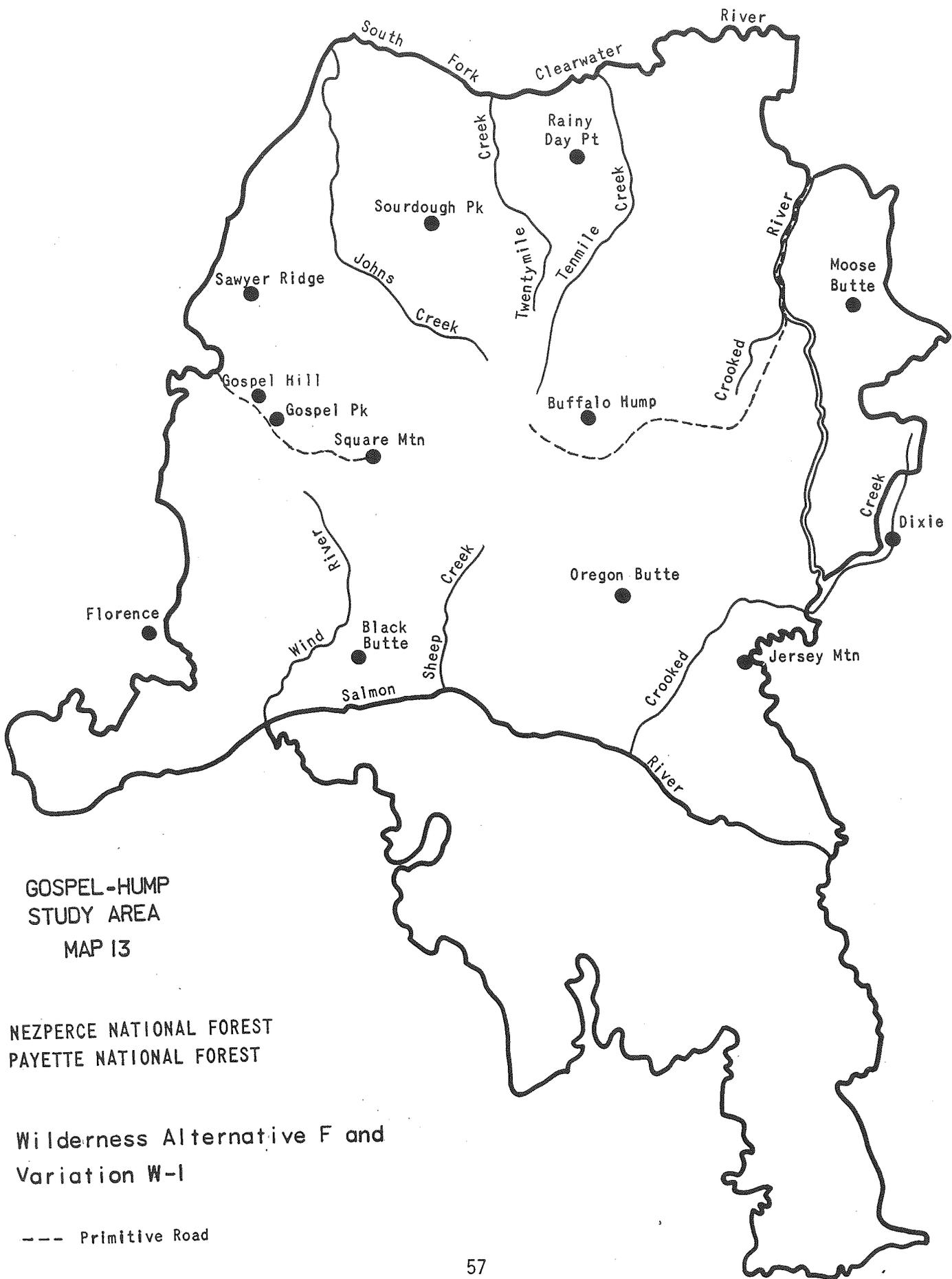
This was the maximum wilderness alternative, 568,935 acres, and suggested wilderness study for the total contiguous roadless area and also the Dixie Summit-Nut Hill Roadless Area. This alternative was displayed to show the relationship of the total roadless area within the study area to other resource values.

Alternative F

Alternative F proposed that no part of the Study Area receive consideration for wilderness. This completed the range of alternatives, from no area for wilderness study to wilderness study for all roadless areas within the Gospel-Hump Study Area. This alternative is displayed on Map 13.

Variation W-1

W-1 was a variation of Alternative F, the no wilderness study alternative. The wilderness study boundary for W-1 was the same as for F and is also displayed on Map 13. In Variation W-1, wildlife habitat values would be emphasized by conducting projects that would create areas of seral stage browse. This was to be accomplished through a combination of timber harvest and specific habitat projects.



GOSPEL-HUMP
STUDY AREA
MAP 13

NEZPERCE NATIONAL FOREST
PAYETTE NATIONAL FOREST

Wilderness Alternative F and
Variation W-1

Evaluation of Alternatives

An analysis of alternatives was conducted using the "Functional Mathematical Programming System." 6/ A full description of this process is on file at both the Nezperce and Payette Forest Supervisors' offices. The social and economic analyses were conducted using economic base and input/output analysis. 7/

Data assembly and content for these analyses are explained in Appendix 14.

Analyses Overview - Each alternative was analyzed in terms of potential management activities and associated resource outputs (explained further in Appendix 14). The following displays (pages 58-70) are designed to provide the reader with an overview of each alternative analysis. These displays illustrate the various management options analyzed for each alternative and the resource outputs resulting from those management options. Over 100 such options were analyzed, although only 13 of the most important analyses are included in this publication. All analyses are on file for public information at the Forest Supervisors' offices. Following this presentation of management options within each alternative, all 13 options are compared in Figures 9 and 10.

6/ Functional Mathematical Programming System - Sperry Univac Publication #UP-8198.

7/ Palmer, Charles J. "Impact Analysis Using Input-Output Techniques," Unpublished Technical Paper, February 1972. (Region 2, Englewood, CO).

Alternative A - Option 1 (A-1)

Design Criteria

159,453 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural. 8/

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.940
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	65.6
AUM's (Domestic Livestock)M	6.0
Timber (bd.ft.) MM	24.8
Payette (bd.ft.) MM	11.6+ <u>9/</u>
Nezperce (bd.ft.) MM	13.2
Big Game (bd.ft.) MM	2.2
Rd.Const.(mi.)	22.5
Existing Roads (mi.)	539
Wilderness Study (ac.) M	159
Marten Hab. (ac.) M	33
Disp.Rec. (V.D.) M	60.8
Dev.Rec. (V.D.)	699

Sediment Outputs

Total Sediment M cu.yds.	38.7
Crooked River M cu.yds.	2.9* <u>10/</u>
10-Mile M cu.yds.	4.8
20-Mile M cu.yds.	5.4
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	7.2
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	15.2

8/ As related to Anadromous Fish, Forest Service data indicates that Sediment at 150% of natural will allow survival of 75% of the Anadromous Fish at emergence.

9/ A + indicates the highest output for any one resource within the 13 Options displayed.

10/ A * indicates the lowest output for any one resource within the 13 Options displayed.

Alternative A - Option 2 (A-2)

Design Criteria

159,453 acres of Wilderness Study

Maximize timber harvest, utilizing aerial logging systems.

Maintain sediment at less than 150%.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.949
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	73.2+
AUM's (Domestic Livestock)M	6.7+
Timber (bd.ft.) MM	36.9+
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	25.3
Big Game (bd.ft.) MM	3.0
Rd.Const.(mi.)	25.4
Existing Roads (mi.)	611
Wilderness Study (ac.) M	159
Marten Hab. (ac.) M	31
Disp.Rec. (V.D.) M	61.8
Dev.Rec.(V.D.)	737

Sediment Outputs

Total Sediment M cu.yds.	39.1
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.9
20-Mile M cu.yds.	5.9
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.7
Sheep Creek M cu.yds.	7.4
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.4
Payette M cu.yds.	15.2

Alternative B - Option 1 (B-1)

Design Criteria

206,000 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.938
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	64.4
AUM's (Domestic Livestock)M	5.9
Timber (bd.ft.) MM	23.2
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	11.6
Big Game (bd.ft.) MM	3.0
Rd.Const.(mi.)	22.1
Existing Roads (mi.)	530
Wilderness Study (ac.) M	206
Marten Hab. (ac.) M	33
Disp.Rec. (V.D.) M	59.7
Dev.Rec.(V.D.)	797

Sediment Outputs

Total Sediment M cu.yds.	38.7
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.5
20-Mile M cu.yds.	5.1
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.8
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	15.2

Alternative B - Option 2 (B-2)

Design Criteria

206,000 acres of Wilderness Study

Maximize timber harvest, utilizing aerial logging systems.

Maintain sediment at less than 150%.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.946
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	70.6
AUM's (Domestic Livestock)M	6.5
Timber (bd.ft.) MM	33.8
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	22.2
Big Game (bd.ft.) MM	3.0
Rd.Const.(mi.)	23.5
Existing Roads (mi.)	571
Wilderness Study (ac.) M	206
Marten Hab. (ac.) M	30*
Disp.Rec. (V.D.) M	60.5
Dev.Rec.(V.D.)	835

Sediment Outputs

Total Sediment M cu.yds.	38.6
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.8
20-Mile M cu.yds.	5.8
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.4
Sheep Creek M cu.yds.	6.3
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	11.9
Payette M cu.yds.	15.2

Alternative B - Option 3 (B-3)

Design Criteria

206,000 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

No constraints on sediment production. 11/

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.972+
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	72.4
AUM's (Domestic Livestock)M	6.7
Timber (bd.ft.) MM	38.2
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	26.6
Big Game (bd.ft.) MM	6.7
Rd.Const.(mi.)	39.6+
Existing Roads (mi.)	977+
Wilderness Study (ac.) M	206
Marten Hab. (ac.) M	32
Disp.Rec. (V.D.) M	61.4
Dev.Rec.(V.D.)	612

Sediment Outputs

Total Sediment M cu.yds.	67.1
Crooked River M cu.yds.	14.5+
10-Mile M cu.yds.	20.9+
20-Mile M cu.yds.	24.3+
Johns Cr. M cu.yds.	35.8
Crooked Creek M cu.yds.	5.9+
Sheep Creek M cu.yds.	7.8+
Wind River M cu.yds.	15.2+
Salmon River M cu.yds.	16.0
Payette M cu.yds.	15.2

11/ This is obviously not a viable alternative, as unconstrained sediment production would be illegal as well as poor management for multiple use values. It is displayed only as an indication of total volume of harvestable timber under this wilderness study alternative.

Alternative B - Option 4 (B-4)

Design Criteria

206,000 acres of Wilderness Study

Maximize timber harvest, utilizing only non-aerial logging systems.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.948
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	64.3
AUM's (Domestic Livestock)M	5.7
Timber (bd.ft.) MM	19.9
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	8.3
Big Game (bd.ft.) MM	8.2
Rd.Const.(mi.)	22.0
Existing Roads (mi.)	529
Wilderness Study (ac.) M	206
Marten Hab. (ac.) M	32
Disp.Rec. (V.D.) M	59.0*
Dev.Rec. (V.D.)	835

Sediment Outputs

Total Sediment M cu.yds.	38.6
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	5.0
20-Mile M cu.yds.	5.9
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.8
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	11.9
Payette M cu.yds.	15.3+

Alternative C - Option 1 (C-1)

Design Criteria

255,028 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.938
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	64.3
AUM's (Domestic Livestock)M	5.9
Timber (bd.ft.) MM	20.1
Payette (bd.ft.) MM	8.8
Nezperce (bd.ft.) MM	11.3
Big Game (bd.ft.) MM	3.0
Rd.Const.(mi.)	21.8
Existing Roads (mi.)	524
Wilderness Study (ac.) M	255
Marten Hab. (ac.) M	33
Disp.Rec. (V.D.) M	71.0
Dev.Rec.(V.D.)	699

Sediment Outputs

Total Sediment M cu.yds.	38.4
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.7
20-Mile M cu.yds.	5.3
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.8
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	14.9

Alternative C - Option 2 (C-2)

Design Criteria

255,028 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

No constraints on sediment production. 12/

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.970
Deer-Elk W.R. (lbs.) MM	16.1
Deer-Elk S.R. (lbs.) MM	71.7
AUM's (Domestic Livestock)M	6.7
Timber (bd.ft.) MM	34.6
Payette (bd.ft.) MM	8.8
Nezperce (bd.ft.) MM	25.8
Big Game (bd.ft.) MM	6.7
Rd.Const.(mi.)	37.8
Existing Roads (mi.)	956
Wilderness Study (ac.) M	255
Marten Hab. (ac.) M	32
Disp.Rec. (V.D.) M	72.6
Dev.Rec. (V.D.)	513*

Sediment Outputs

Total Sediment M cu.yds.	67.3+
Crooked River M cu.yds.	14.4
10-Mile M cu.yds.	20.8
20-Mile M cu.yds.	24.2
Johns Cr. M cu.yds.	36.2+
Crooked Creek M cu.yds.	5.1
Sheep Creek M cu.yds.	7.0
Wind River M cu.yds.	14.4
Salmon River M cu.yds.	16.2+
Payette M cu.yds.	14.9

12/ Please refer to footnoted discussion of Alternative B, Option 3.

Alternative D - Option 1 (D-1)

Design Criteria

361,550 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.926
Deer-Elk W.R. (lbs.) MM	14.1*
Deer-Elk S.R. (lbs.) MM	57.2
AUM's (Domestic Livestock)M	5.6
Timber (bd.ft.) MM	14.5
Payette (bd.ft.) MM	8.8
Nezperce (bd.ft.) MM	5.7
Big Game (bd.ft.) MM	0*
Rd.Const.(mi.)	8.8
Existing Roads (mi.)	401
Wilderness Study (ac.) M	362
Marten Hab. (ac.) M	34+
Disp.Rec. (V.D.) M	70.3
Dev.Rec.(V.D.)	736

Sediment Outputs

Total Sediment M cu.yds.	35.5
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.3*
20-Mile M cu.yds.	4.9*
Johns Cr. M cu.yds.	8.6*
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.8
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	14.9

Alternative E - Option 1 (E-1)

Design Criteria

540,688 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.918
Deer-Elk W.R. (lbs.) MM	14.1
Deer-Elk S.R. (lbs.) MM	55.9
AUM's (Domestic Livestock)M	5.4
Timber (bd.ft.) MM	2.8
Payette (bd.ft.) MM	0*
Nezperce (bd.ft.) MM	2.8
Big Game (bd.ft.) MM	0
Rd.Const.(mi.)	4.4
Existing Roads (mi.)	316.
Wilderness Study (ac.) M	541
Marten Hab. (ac.) M	34
Disp.Rec. (V.D.) M	91.7+
Dev.Rec.(V.D.)	838

Sediment Outputs

Total Sediment M cu.yds.	32.0
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.3
20-Mile M cu.yds.	4.9
Johns Cr. M cu.yds.	8.6
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.8
Wind River M cu.yds.	9.1
Salmon River M cu.yds.	9.6
Payette M cu.yds.	13.9*

Alternative E - Option 2 (E-2)

Design Criteria

568,935 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.911*
Deer-Elk W.R. (lbs.) MM	14.1
Deer-Elk S.R. (lbs.) MM	54.4*
AUM's (Domestic Livestock)M	5.3*
Timber (bd.ft.) MM	.8*
Payette (bd.ft.) MM	0
Nezperce (bd.ft.) MM	.8
Big Game (bd.ft.) MM	0
Rd.Const.(mi.)	1.3*
Existing Roads (mi.)	251*
Wilderness Study (ac.) M	569+
Marten Hab. (ac.) M	34
Disp.Rec. (V.D.) M	91.7
Dev.Rec. (V.D.)	839+

Sediment Outputs

Total Sediment M cu.yds.	30.7*
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.3
20-Mile M cu.yds.	4.9
Johns Cr. M cu.yds.	8.6
Crooked Creek M cu.yds.	3.5*
Sheep Creek M cu.yds.	5.5*
Wind River M cu.yds.	7.7*
Salmon River M cu.yds.	8.2*
Payette M cu.yds.	13.9

Alternative F - Option 1 (F-1)

Design Criteria

0 acres of Wilderness Study

Maximize timber harvest, utilizing a combination of logging methods.

Maintain sediment at less than 150% natural.

Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.956
Deer-Elk W.R. (lbs.) MM	15.8
Deer-Elk S.R. (lbs.) MM	66.2
AUM's (Domestic Livestock)M	6.2
Timber (bd.ft.) MM	28.6
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	17.0
Big Game (bd.ft.) MM	0
Rd.Const.(mi.)	22.7
Existing Roads (mi.)	602
Wilderness Study (ac.) M	0*
Marten Hab. (ac.) M	31
Disp.Rec. (V.D.) M	60.5
Dev.Rec. (V.D.)	737

Sediment Outputs

Total Sediment M cu.yds.	38.7
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.7
20-Mile M cu.yds.	5.3
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	7.3
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	15.2

Variation W - Option 1 (W-1)

Design Criteria

0 acres of Wilderness Study

Maximize values of deer and elk winter range.
Maintain sediment at less than 150% natural.
Maximize net present worth.

Outputs

Water Yield (ac.ft.) MM	.924
Deer-Elk W.R. (lbs.) MM	18.6+
Deer-Elk S.R. (lbs.) MM	59.3
AUM's (Domestic Livestock)M	5.4
Timber (bd.ft.) MM	13.9
Payette (bd.ft.) MM	11.6
Nezperce (bd.ft.) MM	2.3
Big Game (bd.ft.) MM	9.7+
Rd.Const.(mi.)	11.1
Existing Roads (mi.)	316
Wilderness Study (ac.) M	0
Marten Hab. (ac.) M	33
Disp.Rec. (V.D.) M	59.1
Dev.Rec.(V.D.)	736

Sediment Outputs

Total Sediment M cu.yds.	38.7
Crooked River M cu.yds.	2.9
10-Mile M cu.yds.	4.6
20-Mile M cu.yds.	6.0
Johns Cr. M cu.yds.	11.5
Crooked Creek M cu.yds.	4.8
Sheep Creek M cu.yds.	6.7
Wind River M cu.yds.	11.2
Salmon River M cu.yds.	12.0
Payette M cu.yds.	15.2

Interalternative Comparison - Alternatives and their management options are graphically compared in Figures 4-7. The data illustrated on these charts may be compared to the numerical outputs listed on pages 58-70 and are further interpreted in the narrative following Figures 4-7.

Figure 4 Interalternative Comparison

Output	A		B				C		D	E	F	W	
	A-1	A-2	B-1	B-2	B-3	B-4	C-1	C-2	D-1	E-1	E-2	F-1	W-1
1 (acre ft.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer - Elk W. R.	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer-Elk S. R.	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Livestock AUM's	0	0	0	0	0	0	0	0	0	0	0	0	0
Big Game Timber (bd.ft.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 5
Interlative Comparison

	A	B	C	D	E	F	W
Output							
Timber Total							
6 (bd. ft.)	0						
Payette Timber							
7 (bd. ft.)	0				00		
Nezperce Timber							
8 (bd. ft.)	0						
Rd. Const.							
9 Miles	0						
Existing Rd.							
10 Miles.	0						
	A-1 A-2	B-1 B-3 B-4	C-1 C-2	D-1	E-1 E-2	F-1	W-1

Figure 6 Interlative Comparison

	A		B				C		D	E	F	W	
	A-1	A-2	B-1	B-2	B-3	B-4	C-1	C-2	D-1	E-1	E-2	F-1	W-1
Output													
Wilderness Study													
11 (acres)	0											00	00
Marten Hab.													
12 (acres)	0												
Disp. Rec.													
13 Visitor Day	0												
Dev. Rec.													
14 Visitor Day	0												

Figure 7 Interalternative Comparison

	A		B				C		D	E	F	W	
	A-1	A-2	B-1	B-2	B-3	B-4	C-1	C-2	D-1	E-1	E-2	F-1	W-1
Output													
Total Sediment													
15 cu. yds.	0												
Clearwater Sediment													
15 cu. yds.	0												
Salmon River Sediment													
15 cu. yds.	0												
Payette Sediment													
15 cu. yds.	0												

The following synopsis of resource outputs possible within the range of alternatives is numbered to correspond with the Inter-alternative Comparison (Figures 4-7) and provides interpretation of that comparison.

1. Water Yield

Water yield could range from a low of 911,000 acre feet to a high of 972,000 acre feet, depending on the alternative chosen. Since increased water yield is primarily a function of vegetation removal, the maximum wilderness alternatives provided the least water yields. The runs in which sediment was unconstrained (B-3 and C-2) produced the most water. When sediment was constrained at 150%, there was an inverse relationship between water yield and acres allocated for wilderness study.

2. Deer-Elk Winter Range

Annual forage production on areas used by deer and elk in the winter ranged from 14.1 to 18.6 million pounds within the various alternatives. The larger amounts of forage would result from converting old growth timber stands to an earlier stage of vegetative succession either through commercial timber harvest and/or specific habitat manipulation projects. Since neither activity is permitted in classified wilderness, it can be assumed that wildlife populations would continue to decline because of advancing successional stages. Old-growth conversion in the developed areas could provide for a stable or increasing population of deer and elk. This biologic relationship is not casual (i.e., a given amount of additional forage doesn't necessarily result in a corresponding increase in animal numbers), but winter range conditions are an important consideration. While many of the beneficial results of stand conversion can be attained through wildfire, the results and timing are neither predictable nor reliable.

3. Deer-Elk Summer Range

Summer range showed a similar relationship, however no specific habitat manipulation projects were proposed on summer range areas. Increased forage in all cases was a result of timber harvest.

Production of forage within the alternatives and management options ranged from 54.4 million pounds to 73.2 million pounds, an increase of 134%. As with forage increases on winter range, no implication is made that animal numbers will increase proportionately with increases in available forage. However, forage production is an important consideration for summer range also.

4. Domestic Livestock (AUM's)

Forage available for grazing by domestic livestock ranged from the approximate current level of 5300 animal unit months (AUM's) to 6700 AUM's, an increase of 126%. This increase might not be made available to domestic livestock, however, because it essentially is the same forage shown in Deer-Elk winter and summer range. The numbers reflect a potential for increased domestic livestock use but there is also a trade-off with wildlife.

5. Big Game (Bd.Ft.)

This category applied only to the Nezperce Forest, as similar treatments were not measured on the Payette portion in their Warren Land Management Plan.

The timber yield was based on harvesting mature and/or overmature timber and broadcast burning the area to increase production of browse and forbs favored by deer and elk. Unlike the timber yield in normal harvest, these proposed yields would not be annual, but would be for only one harvest with no subsequent growth of timber volume. As previously mentioned, the timber yield here is a secondary effect of big game habitat manipulation. The primary output of this manipulation is an increased quantity and quality of forage.

Timber harvest ranged from 0 to 9.7 million board feet (MMBF), with the highest amount occurring in variation W-1, when the analysis was purposely designed to optimize winter range. That option also resulted in the highest forage production. No area was considered for wilderness study in the W-1 analysis.

6. Timber (Total)

The projected annual harvest from the study area ranged from a low of 0.8 million board feet (MMBF) with the maximum wilderness alternative to a high of 36.9 MMBF. ^{13/} The effect of adding areas of wilderness study is most easily seen by comparing the alternatives F-1 (28.6 MMBF), A-1 (24.8 MMBF), B-1 (23.2 MMBF), C-1 (20.1 MMBF), D (14.5 MMBF), E- (2.8 MMBF) and E-2(0.8 MMBF). With each alternative, the output could be varied depending on logging systems and imposed sediment limits. Additional discussion follows in the breakdown by Forest.

^{13/} Page 22 indicates that the potential yield of the Study Area is 68 MMBF. That figure was based on all timber being available, with no constraints imposed by Wilderness Study or sediment.

7. Timber Harvest - Payette N.F.

Timber production within the Gospel-Hump Study Area on the Payette Forest was at three levels, 11.6 MMBF, 8.8 MMBF, and 0 MMBF. It should be explained that these yields were determined during planning efforts for the Warren Land Management Plan. Management activities and sediment levels were not varied as they were on the Nezperce Forest, hence the timber volumes are more consistent throughout the alternatives. The significant variable was acres of wilderness study.

8. Timber Harvest - Nezperce N.F.

Projected timber output on the Nezperce portion of the Study Area varied among alternatives and also within the individual alternatives depending on logging systems, sediment yields, wildlife considerations, and other variables. When wilderness study Alternative B was analyzed with no limits on sediment (Option B-3), 26.6 MMBF was the projected timber yield. With sediment limited at 50% above natural levels, the yield associated with aerial logging the majority of the area was 22.2 MMBF. When non-aerial systems were used, harvest levels were reduced to 8.3 MMBF as shown in B-4. The difference in yield results from the constraint upon sediment production. Non-aerial logging requires more road construction than aerial systems. Increased road construction results in increased sediment production. To remain within the sediment constraint of 50% above natural, timber yield has to be lower with non-aerial logging.

9. Road Construction

This category also was not comparable on the Payette Forest, so the information only concerns the Nezperce.

Miles of annual road construction varied from a low of 1.3 miles to a high of 39.6 miles. These mileages relate directly to the acreage of timber harvested by the three logging systems as explained in Appendix 14. Road construction is also the primary contributor towards sediment production.

10. Existing Roads

There are currently an estimated 225 miles of road within the study area. By multiplying the annual road construction times twenty years ^{14/} and adding that product to currently existing roads, the total mileage at the end of the planning period is obtained. Under Alternative E-2, only 26 additional miles of road would be built, while under B3, an additional 792 miles would be constructed.

^{14/} There is approximately a three-year lag time between a road proposal and construction of the road. Therefore, 20 years was used rather than 23.

An assumption was made that all necessary roads would be completed by the year 2000, the end of the planning period. Since the construction probably would not occur that soon, the road construction and existing roads represent the maximum possible.

11. Wilderness Study

Figure 6 displays the acres of Wilderness Study proposed by each alternative.

12. Marten Habitat

Marten habitat is displayed as an index for wildlife species requiring old-growth forest conditions. (See Wildlife Appendix for more detail.) The maximum wilderness proposal (E-2) showed only a 13% difference in area available for marten habitat than the maximum timber harvest alternative (B3). This narrow range shows that this need can be filled by any alternative displayed.

13. Dispersed Recreation

Dispersed recreation estimates varied widely, ranging from a low of 59,000 visitor days to 91,700 visitor days. There is an additional consideration not shown in the figures. While the maximum wilderness figures displayed the greatest dispersed use, there would also be a definite change in the type of user. The area is primarily used now by recreationists that are closely associated with motorized transportation. That use would be replaced by non-motorized uses, horsemen and hikers in the maximum wilderness alternative. A user increase would be due, in large part, to the increased attention the area is receiving nationally.

14. Developed Recreation

Developed recreation is not a significant attraction in the area, and the small variance is not significant.

15. Sediment Production

Sediment production was shown for the South Fork Clearwater River, Salmon River, Payette, and a combined total. The Payette and Salmon sediment yields vary only a small amount among the alternatives. The Clearwater sediment displays the largest variance. Analysis B-3 and C-2 had no sediment constraints. All other analyses were limited to an increase not exceeding 150%.



Twenty-Mile Meadows are located near the center of this photograph. Note the heavily timbered, gentle terrain and the sharp breaks of the South Fork Clearwater River to the left.

Selection of Wilderness Study Alternative

Consideration of Evaluation Criteria - The Core Team determined how well each alternative satisfied the Evaluation Criteria developed earlier. This evaluation is displayed below:

TABLE 1
Evaluation of Alternatives

Evaluation Criteria	Alternatives						15/
	A-1	B-1	C-1	D-1	E-1	E-2	
1. Local Economy	X	X	X	X	X	X	X
2. Wilderness Study	X	X	X	X	X	X	
3. Grazing	X	X	X	X	X	X	X
4. Anadromous Fish	X	X	X	X	X	X	X
5. Wildlife Habitat	X	X	X	X	X	X	X
6. Recreation		X					X
7. Minerals	X	X	X	X	X	X	X

(X indicates criteria were satisfied.)

The Evaluation Criteria developed earlier in this publication are repeated here for your reference:

1. Local Economy

Economic impacts, as measured by jobs and incomes of basic industries, should not range beyond $\pm 20\%$ of present contributions from the Study Area, as currently measured by all functional plans for surface resources.

2. Wilderness Study

Areas with a rating higher than the Slusher rating of 76 should be studied for wilderness classification, provided that lesser value units could be added, and high value units could be subtracted to arrive at practical boundaries. However, if this direction should preclude recreational or economic criteria as described herein, then these latter criteria shall prevail.

15/ W-1 was a Management Variation of the F-1 Alternative and was, therefore, not evaluated separately.

3. Grazing

Presently permitted numbers should be retained unless resource damage can be documented as being a result of excessive numbers, not present management techniques. However, increases that come about through other resource allocations would be permissible. Bighorn sheep needs will take priority within presently established bighorn ranges, as defined by Lauer's study.

4. Anadromous Fish

Select alternatives that produce the lowest sediment increases possible in achieving other planning goals, but accept only alternatives that allow survival rates of at least 75% from spawning beds.

5. Wildlife Habitat

All proposed activities must, on the average, allow for maintenance of big game habitat at least to present levels. Bighorn sheep range must be maintained or improved. Road construction and domestic grazing will not be allowed on bighorn range.

6. Recreation

Increased dispersed recreational use must be allowed within the following parameters:

- Trail bike access will be provided to at least 10 lakes.
- At least 150 miles of snowmobile trail will be provided, with at least 5000 acres of off-trail travel available to snowmobilers.
- At least present mileage of four-wheel drive roads will be allocated.

7. Minerals

No recommendation will be made for wilderness classification without adequate minerals study, and the results of that study will be used to measure wilderness values against minerals values, as determined by the prudent man concept. Access corridors will be allowed for areas of proven mineral value.

Consideration of Public Input - A brochure was developed that displayed the various wilderness alternatives and the outputs for the range of management options within each alternative. These brochures were mailed to 400 individuals and organizations who had previously asked to receive all information on the Gospel-Hump Study Area. In addition, the availability of the brochures was advertised in area newspapers and on radio. The brochures were mailed out October 28, 1977, and responses were requested not later than November 10, 1977.

Better than 20% of the brochures were returned within the short period for response, however, only 71 of those respondents preferred a specific alternative. Table 2 summarizes this public preference. A more complete display of the public response to the brochure is contained in Appendix 15, Public Involvement.

TABLE 2

PUBLIC PREFERENCE FOR WILDERNESS ALTERNATIVES

Alternatives	Origin of Response					Total
	Grangeville	Remainder of Idaho County	South Idaho	North Idaho	Out of State	
A-1	2	4			1	7
A-2	1					1
B-1	1	1		2	2	6
B-2	1	1				2
B-3	5	3				8
B-4						0
C-1			2	4	1	7
C-2						0
D-1			1	4	1	6
E-1		1		2		3
E-2		1	1	7	3	12
F-1	6	2	1	4		13
G-1 <u>16/</u>	1			1		2
W-1		3		1		4
Total	17	16	5	25	8	71

16/ Alternative G-1 was dropped from further consideration.

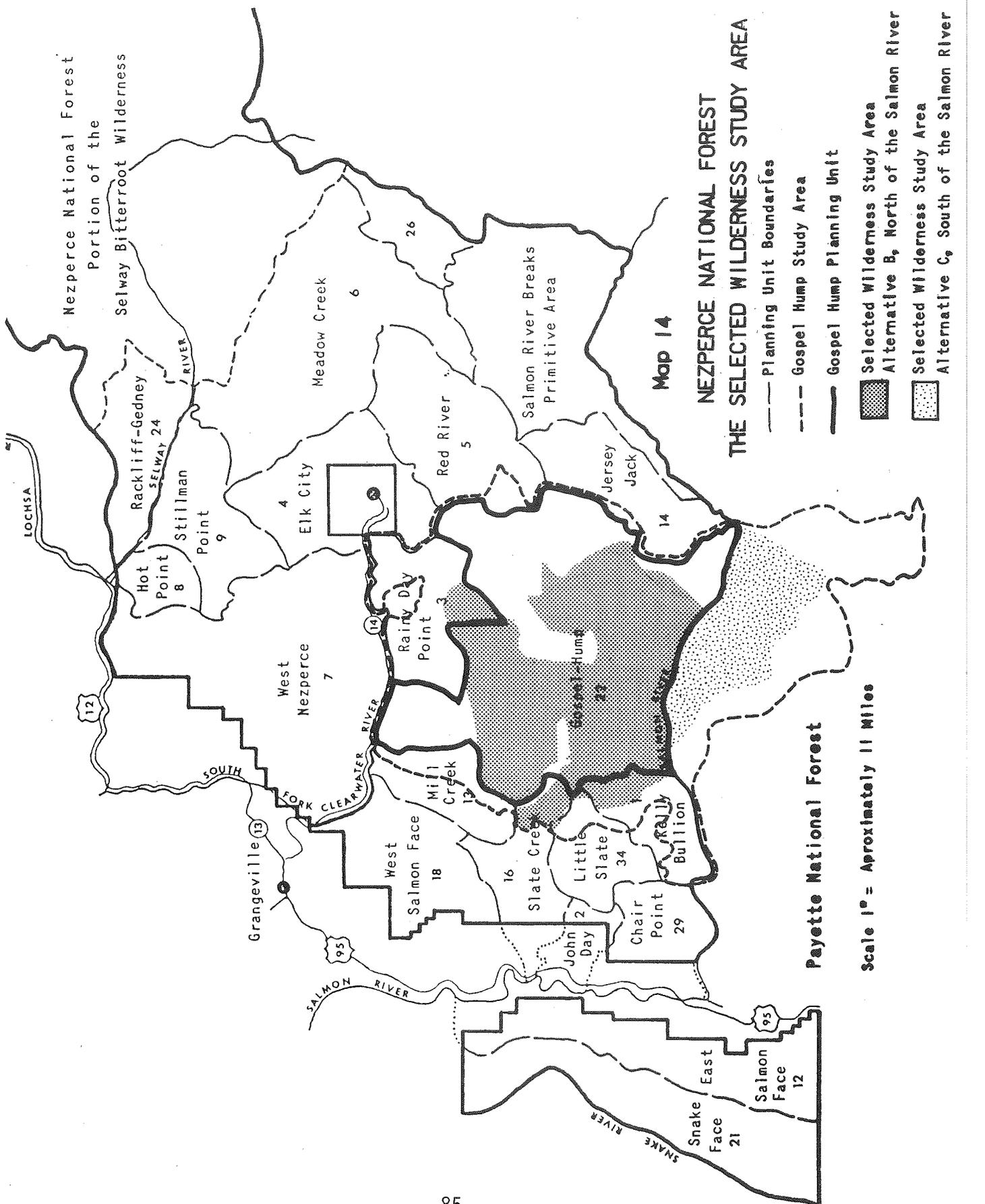
While public involvement constitutes an important part of land management planning, alternative selection cannot be based on a majority vote. The people responding to the brochure are not necessarily representative of the total population. Public involvement allows areas of public agreement and disagreement to surface. Two polarized viewpoints were evident in the response to the Gospel-Hump brochure. Twelve respondents preferred E-2, the maximum wilderness alternative, while thirteen respondents preferred the no wilderness alternative, F-1. However, a middle ground was also displayed. Alternatives B and C, or combinations of the two, were favored by a number of people, and many other persons indicated that while C was second choice, it did offer a reasonable compromise. Furthermore, the coalition of citizens that worked to achieve a legislative solution (H.R. 3454) represented a range of public interests and proposed Alternative B.

The Recommended Wilderness Alternative - The evaluation criteria and public input both called for selecting a combination of wilderness alternatives B and C -- alternative B north of the Salmon River and alternative C south of the Salmon River. Congressional action fixed the actual boundaries of alternative B. The recommended alternative, therefore, is Wilderness Study Alternative B, containing 206,000 acres north of the Salmon River, and Alternative C, containing 30,830 acres south of the Salmon River. A corridor, one-quarter mile wide, on both sides of the Salmon, is excluded since management within that area will be in conformance with the Wild and Scenic Rivers Act of 1968.

The Recommended Wilderness Study Area - Map 14

The alternatives for wilderness study ranged from designation of the entire roadless area as a wilderness study. This wide range of wilderness study alternatives for the Gospel-Hump Study Area was analyzed by a professional interdisciplinary planning team, technical review team and the public. Consideration was given to fiscal, socio-economic, political, legal and technological responsibilities in addition to the ecological capabilities of the natural resource itself.

Alternative B for the area north of the Salmon River, as illustrated on Map 14, was chosen as being most compatible with all planning considerations and constraints, and all forms of public and professional input. Alternative C was chosen for the area south of the Salmon River.



Map 14

NEZPERCE NATIONAL FOREST
THE SELECTED WILDERNESS STUDY AREA

- Planning Unit Boundaries
- - - Gospel Hump Study Area
- Gospel Hump Planning Unit
- ▨ Selected Wilderness Study Area Alternative B, North of the Salmon River
- ▤ Selected Wilderness Study Area Alternative C, South of the Salmon River

Payette National Forest

Scale 1" = Approximately 11 Miles

Rationale for the Recommendation - Alternative B is the preferred alternative for the area north of the Salmon River based on recent testimony by the Secretary of Agriculture that supported the wilderness classification proposed by HR 3454. The Forest Service, however, recommends this area for wilderness study, not for instant wilderness classification.

Relationship to Evaluation Criteria - Each wilderness alternative was tested against the evaluation criteria as follows:

1. Local Economy - All alternatives were within the desirable range as defined by the economic analysis. A stable level (or at least insignificant change) could be maintained with Alternatives A, B, C, or F.
2. Wilderness Study - Alternative C appeared to contain the highest values for wilderness study. The addition of other areas to the north and south added little but acreage, since generally the wilderness values in those additional areas were lower. Also, the economic need for timber was considered adequate to preclude additional wilderness study. Alternatives A and B also included predominantly high values, but excluded areas of high value south of the Salmon River. The boundary proposed in Alternative B presented some difficulties for management.
3. Grazing - All alternatives met the evaluation criteria.
4. Anadromous Fish - Any wilderness alternative could protect the anadromous fish. The important consideration was the management activities that would occur outside the wilderness. It was recognized that careful management of sediment would be required.
5. Wildlife Habitat - All alternatives appeared to maintain wildlife habitat to present levels. There appeared to be benefits to elk and deer available through development (timber harvest) as indicated by the increased forage on winter and summer ranges. Alternatives D, E1, and E2 did not provide as much forage for deer and elk since less development would occur with those alternatives.

No alternative selection would affect bighorn sheep range. Alternative A or F would have provided opportunity for use of prescribed fire for habitat improvement. Alternative B provides a significant area for habitat improvement east of Crooked Creek.

6. Recreation - Alternative F was the only alternative to exceed all features of this evaluation criterion. Alternative B also satisfied each part of this criterion. Trail bike access is available to at least 10 lakes. (In several cases, a short hike would be necessary as trails do not reach each lake, or the lake is barely inside the wilderness.) Large areas are available for snowmobile use. Four-wheel drive roads in the Buffalo Hump corridor would be available, in addition to many miles in the peripheral areas.

7. Minerals - Alternative F provided no wilderness study, hence minerals would all be available for development. Alternative B provided corridors in heavily mineralized areas that provided benefits for minerals operation when compared to the other alternatives. On the Payette, Alternative C excluded much of the already mined area from the wilderness study area. All alternatives propose only wilderness study, which would feature a thorough investigation and report of mineral values prior to any recommendation for wilderness classification.

Relationship to Public Involvement - Two sources of public involvement that weighed heavily in selecting the wilderness study are the responses to the brochure and previous public involvement. Only Alternative B satisfied all the evaluation criteria. Public involvement revealed that Alternatives A, B, and C, or combinations of the three, were favored by many people as a compromise between the extremes of no wilderness and total wilderness. A significant number of people were also interested in wilderness study for an area south of the Salmon River. The boundary of Alternative C south of the river was chosen to be added to Alternative B north of the Salmon.

Dixie Summit - Nut Hill Roadless Area

The Forest Service does not recommend adding the Dixie Summit-Nut Hill Roadless Area to the selected wilderness study area. The 26,660 acres within Dixie Summit-Nut Hill generally do not have high values for wilderness. The 5,325 acres of Dixie Summit-Nut Hill within the Red River Planning Unit will remain roadless as allocated in the previous Red River Unit Management Plan, with management emphasis on wildlife and watershed. The portion of Dixie Summit-Nut Hill within the Gospel-Hump Planning Unit will be developed in accordance to direction of the Gospel-Hump Land Management Plan contained in this publication.

The basic rationale for this decision on Dixie Summit-Nut Hill is as follows:

1. Values for other resources outweigh value for wilderness in Dixie Summit-Nut Hill.
2. The area is lower in wilderness quality than other areas within the contiguous roadless area that were excluded from further consideration when Alternative B was selected. If additional wilderness study was desired, it would more logically have come from those higher quality areas.
3. The quality of the area is much lower than nearby areas classified as wilderness.
4. No public input requested inclusion of this specific area, although several general statements favored maximum wilderness.
5. Several roadless areas on the Nezperce Forest that have yet to be studied appear to have higher values for wilderness and have received significant past public involvement favoring wilderness study.
6. The ecosystems of the Dixie Summit-Nut Hill area are well represented in existing classified areas. However, approximately 750 acres in near natural condition in Moose Meadow Creek is being protected as a potential Research Natural Area.



View looking north across Salmon River. The major drainage entering the Salmon River from the north is Wind River. The proposed Wilderness Study Area boundary comes to the mouth of Wind River.

Socio-Economic Impacts of the Recommended Wilderness Alternative

The dominant factors which influence the economic assessment area (Idaho, Lewis and Nez Perce Counties) are timber production and recreational use. In order to understand the importance of any change that would occur for any alternative, a benchmark approximating the existing situation is necessary. Alternative B, option 1, will serve as that benchmark. Its output levels are similar to those currently being realized. Personal income with this alternative was about \$225 million in 1974 and employment totaled approximately 23,000 workers. This amounts to \$9800 in earnings per worker.

The timber harvest level is approximately 23 million board feet (MMBF) and dispersed recreation use amounted to about 60 MVD (thousand visitor days). Changes in outputs among the various alternatives range from an increase of 14.3 MMBF (63 percent) for Alternative B (option 3) to a decrease of 21.8 MMBF (96 percent) for Alternative E-2. Wilderness study acres associated with these figures are 222,734 and 524,458, respectively. Obviously, there is a large tradeoff between these two factors. Dispersed recreation output was 61.4 MVD and 91.7 MVD, respectively. In many cases, the more wilderness study area, the more dispersed recreation use will occur.

The economic consequences in the three county assessment area of any of the alternatives are not very great, especially when viewed in the aggregate. For example, the effects on total employment range from an increase of 105 workers of a 1974 labor force of 23,185, to a decrease of 159. ^{17/} Even this decrease is only about 1/2 of one percent of the total number of workers. Most of the impact would fall in the wood products sector where a maximum of 94 jobs might be lost. For Alternative B, option 3, an additional 61 jobs might be supported. This compares with 1976 woods products employment in the three counties of 3,206, or a range of +2 percent to -3 percent in change. Almost all of the woods products sector impact would occur in Idaho County where 1976 wood products employment was 1,188. The difference between changes in wood products employment and earnings and all sectors' changes occur in other sectors of the economy due to the turnover of money within the local area. This secondary economic effect is estimated at 70¢/dollar of change in the wood products sector.^{18/} A detailed socio-economic display and narrative may be reviewed in Appendix 1.

^{17/} Estimated using data from Timber Cut, Employment and Wages: Multipliers for Idaho's Timber Using Industry by E.G. Schuster, et al., Forest, Wildlife & Range Experiment Station, Technical Report #1, University of Idaho, June 1975.

^{18/} This is based on an earnings economic base multiplier of 1.7.

Environmental Impacts of the Recommended Wilderness Alternative

Environmental impacts resulting from the allocation of wilderness study according to the selected Alternative B are described here in terms of physical changes to the natural conditions now prevalent within the Gospel-Hump Study Area. Socio-economic impacts were presented in the preceding section. Because wilderness study is an interim condition, only short term impacts were examined. This refers to the 30,830 acres proposed for wilderness study on the Payette. The 206,000 acre wilderness created by the Endangered Wilderness Act is accepted as fact and not analyzed herein.

Long term impacts will be considered in the recommendation resulting from the formal wilderness study. These short term impacts are measured for an estimated 10 years. A period of 10 years should provide enough time for thorough inventory, evaluation and Congressional action which would either classify the area as wilderness or not.

Figure 8 is a graphic representation of the short-term environmental impacts upon the Study Area due to Wilderness Study Alternative B.

Figure 8

ENVIRONMENTAL IMPACTS OF THE
 SELECTED WILDERNESS ALTERNATIVE
 ALTERNATIVE B WILDERNESS STUDY AREA

AIR 	WATER 	SOIL 
WILDLIFE 	FISHERY 	VISUAL 

MINERALS 	TIMBER 	FORAGE 
RECREATION 	WILDERNESS  	ARCHEOLOGICAL HISTORICAL 

 MAJOR ADVERSE

 MINOR ADVERSE

 NEGLIGIBLE

 MINOR FAVORABLE

Summary of Environmental Effects of the Wilderness Study Recommendation*

This section provides additional explanation for those impacts which were rated as other than negligible. Wilderness Study, as an interim condition, will have no impact (adverse or favorable) on the air, water, soil, minerals, timber, forage, wildlife, fishery, visual, recreation, or historical values since no changes will be made in those conditions. Those impacts which may occur have already been discussed as socio-economic impacts.

1. Wilderness Favorable Effects - The area selected for wilderness study will receive additional consideration for its value to the state and nation for classification in the National Wilderness Preservation System.

Adverse Effects - The area not selected for development will receive no further Forest Service consideration for its wilderness resource. While much of the area will remain roadless for many years, it will not be managed as wilderness.

Relationship Between Short-Term Uses of the Environment and Maintenance of Long-Term Productivity

The decision to allocate an area to wilderness study is a short term (interim) classification that does not affect long term productivity. The non-selected area will be affected in the long term, but only by allocations from land management plans that fully discuss the environmental consequences of the proposed actions.

*This refers to the wilderness study proposal south of the Salmon River. The Gospel-Hump Wilderness was created by the Endangered Wilderness Act and an analysis of the effect would serve no purpose here.

Irreversible and Irretrievable Commitment of Resources

No irreversible and irretrievable commitment of resources was made by the decision to provide wilderness study for a portion of the Gospel-Hump Study Area. The non-selected area may have some irreversible and irretrievable commitment of resources, but only after discussion of the environmental impacts within the management plan.

Alternatives to the Proposed Action

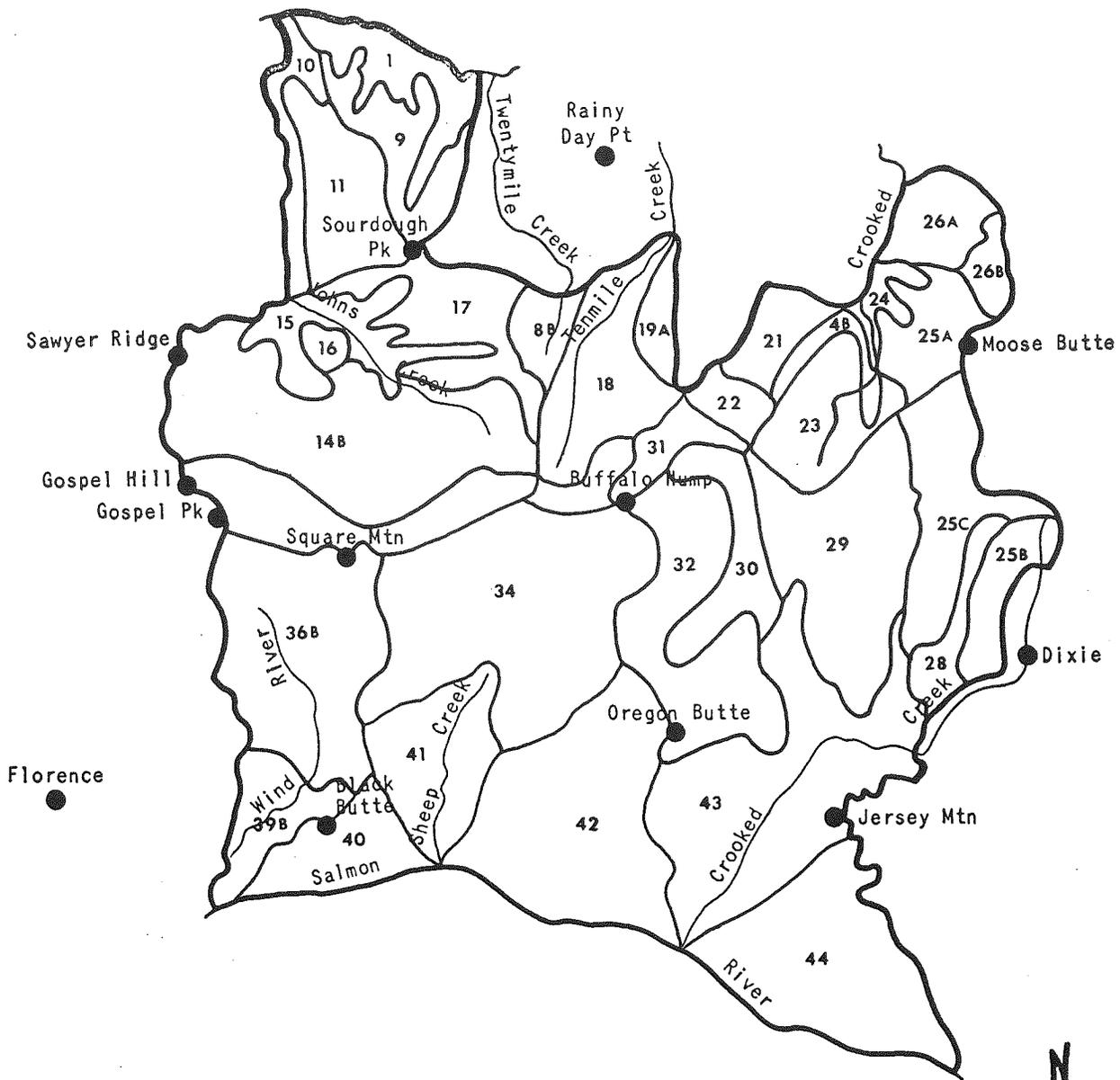
A wide range of alternatives was presented, ranging from no allocation to wilderness study, to wilderness study for all roadless area within the Study Area. A range of seven alternatives was analyzed. These alternatives are displayed on pages 44-55.

Consultation with Others

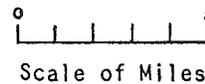
In November 1977, 400 brochures presenting wilderness alternatives were distributed to various agencies, organizations, businesses and individuals. A response form was included. Eighty-five responses were received. In addition, public input has been received concerning this area over the past six years and literally involves thousands of responses (Appendix 15, History of Public Involvement).

Wilderness and the Plan

Once the Wilderness Alternative was selected, this Wilderness Study Area Boundary became a "given" for land management planning within the Gospel-Hump Planning Unit.



GOSPEL-HUMP
 PLANNING UNIT
 Map 15



V. DETERMINATION OF THE LAND MANAGEMENT PLAN

The selection of Alternative B for wilderness study established the limits of the area within which resource development activities could be planned in the Gospel-Hump Planning Unit. The portions of other planning units that had received consideration during the wilderness study evaluation (Kelly-Bullion, Slate Creek, Little Slate, Mill Creek, Rainy Day, and Warren Units) will receive no additional consideration in this publication except for the needed direction to incorporate the "B" wilderness study alternative in their respective plans. Direction for water quality monitoring will also be added to several completed plans within the Study Area that previously had no such provisions.

Generation of Alternatives

The Gospel-Hump Planning Unit is contained within the larger Gospel-Hump Study Area. (Map 14 may help to clarify the relationship between the two areas.) The alternatives for the Land Management Plan were similar to the management options within the now "given" Wilderness Alternative B. An analysis, using only resource data from the Planning Unit, was conducted in order to compare the four planning alternatives. The process followed in planning alternative analysis was the same as was done for the wilderness alternative analysis and is described in Appendix 14. The four planning alternatives are described on the following pages, along with an overview of each alternative analysis.

Map 15 illustrates the Gospel-Hump Planning Unit.

Alternative 1

Design Criteria

Timber harvest was maximized (utilizing a combination of logging methods.)

Sediment production was constrained to 150% natural.

Net present worth was maximized.

Outputs

Water Yield (ac.ft.) MM	.667
Deer-Elk W.R. (lbs.) MM	8.772
Deer-Elk S.R. (lbs.) MM	42.475
AUM's (Domestic Livestock)M	2.85
Timber (bd.ft.) MM	6.7
Rd.Const.(mi.)	9.3
Existing Roads (mi.)	293
Wilderness Study (ac.) M	187
Marten Hab. (ac.) M	26.3
Disp.Rec. (V.D.) M	25.8
Dev.Rec.(V.D.)	372

Sediment Outputs

Total Sediment M cu.yds.	14.7
Crooked River M cu.yds.	1.3
10-Mile M cu.yds.	2.0
20-Mile M cu.yds.	2.0
Johns Cr. M cu.yds.	6.8
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.9
Wind River M cu.yds.	7.8

Alternative 2

Design Criteria

Timber harvest was maximized utilizing aerial logging systems.

Sediment production was constrained to 150% normal.

Net present worth was maximized.

Outputs

Water Yield (ac.ft.) MM	.680
Deer-Elk W.R. (lbs.) MM	8.970
Deer-Elk S.R. (lbs.) MM	44.803
AUM's (Domestic Livestock)M	3.07
Timber (bd.ft.) MM	10.1
Rd.Const.(mi.)	9.8
Existing Roads (mi.)	304
Wilderness Study (ac.) M	187
Marten Hab. (ac.) M	26.2
Disp.Rec. (V.D.) M	26.9
Dev.Rec.(V.D.)	372

Sediment Outputs

Total Sediment M cu.yds.	14.7
Crooked River M cu.yds.	1.3
10-Mile M cu.yds.	2.0
20-Mile M cu.yds.	2.0
Johns Cr. M cu.yds.	6.8
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.9
Wind River M cu.yds.	7.8

Alternative 3

Design Criteria

Timber harvest was maximized utilizing a combination of logging methods.

Sediment production was unconstrained. 19/

Net present worth was maximized.

Outputs

Water Yield (ac.ft.) MM	.677
Deer-Elk W.R. (lbs.) MM	8.780
Deer-Elk S.R. (lbs.) MM	45.254
AUM's (Domestic Livestock)M	3.10
Timber (bd.ft.) MM	10.8
Rd.Const.(mi.)	15.6
Existing Roads (mi.)	420
Wilderness Study (ac.) M	187
Marten Hab. (ac.) M	25.6
Disp.Rec. (V.D.) M	26.4
Dev.Rec.(V.D.)	372

Sediment Outputs

Total Sediment M cu.yds.	21.5
Crooked River M cu.yds.	5.2
10-Mile M cu.yds.	5.9
20-Mile M cu.yds.	5.9
Johns Cr. M cu.yds.	12.7
Crooked Creek M cu.yds.	5.9
Sheep Creek M cu.yds.	7.8
Wind River M cu.yds.	8.7

19/ This is not a viable option since unconstrained sediment production would be illegal as well as poor management. This alternative is displayed only as an indication of the total volume of harvestable timber available under this planning alternative.

Alternative 4

Design Criteria

Timber harvest was maximized utilizing non-aerial logging systems.

Sediment production was constrained to 150% natural.

Net present worth was maximized.

Outputs

Water Yield (ac.ft.) MM	.666
Deer-Elk W.R. (lbs.) MM	8.724
Deer-Elk S.R. (lbs.) MM	41.719
AUM's (Domestic Livestock)M	2.80
Timber (bd.ft.) MM	3.5
Rd.Const.(mi.)	9.1
Existing Roads (mi.)	290
Wilderness Study (ac.) M	187
Marten Hab. (ac.) M	26.1
Disp.Rec. (V.D.) M	25.8
Dev.Rec.(V.D.)	372

Sediment Outputs

Total Sediment M cu.yds.	14.7
Crooked River M cu.yds.	1.3
10-Mile M cu.yds.	2.0
20-Mile M cu.yds.	2.0
Johns Cr. M cu.yds.	6.8
Crooked Creek M cu.yds.	4.9
Sheep Creek M cu.yds.	6.9
Wind River M cu.yds.	7.8

Evaluation of Alternatives

Maximization of other resources was considered within the Wilderness Study alternative analysis, and was satisfied by the selection made. The evaluation made there (see page 57a) indicates that recreation, grazing, wildlife and fishery needs can be met within the four planning alternatives (previously described) in combination with the recommended wilderness alternative. The management alternatives are compared graphically in Figures 9 and 10, and interpreted in the narrative following the graphics.

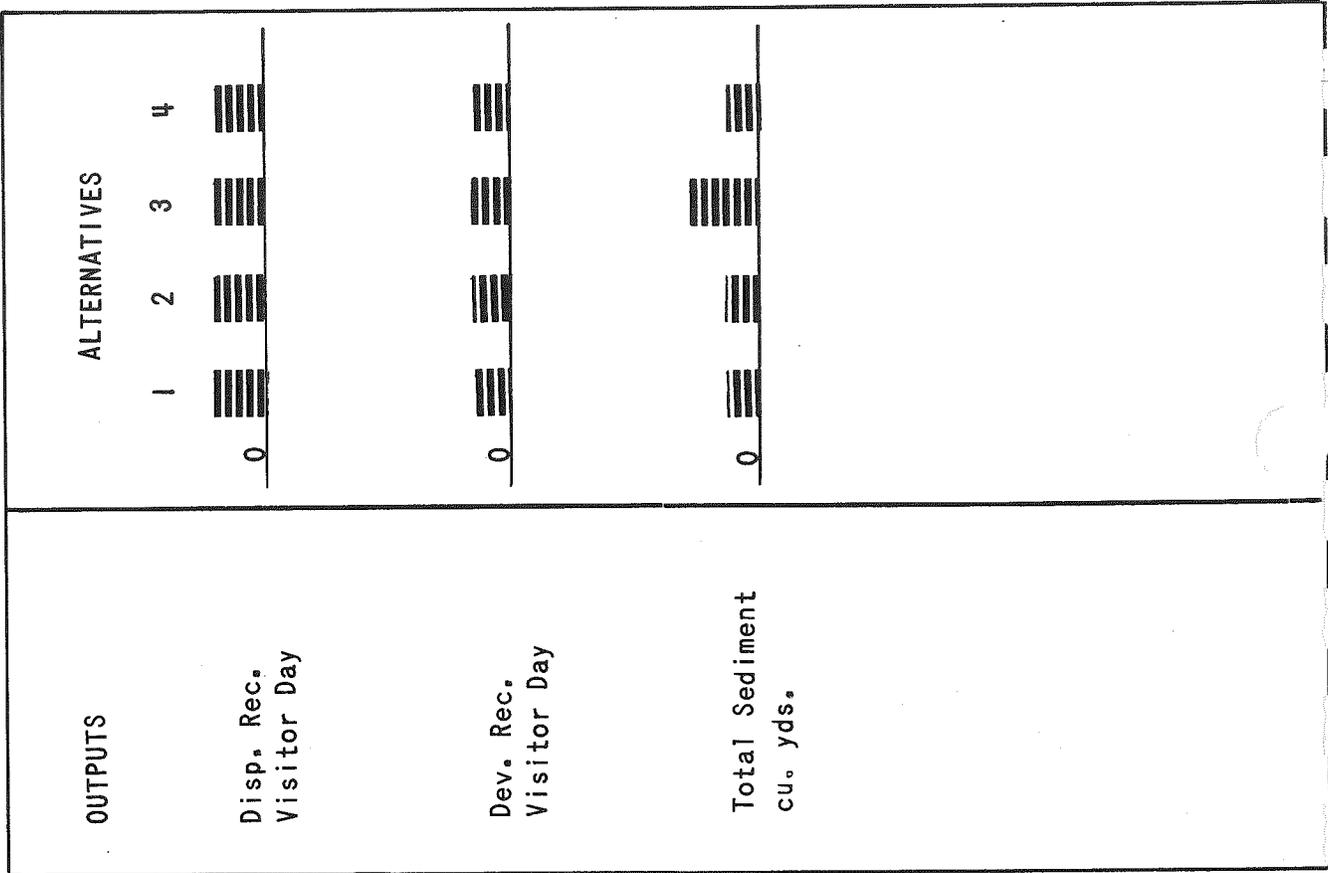
ARSON - PLANNING

INTERALTERNATIVE

Figure 9



Figure 10 INTERALTERNATIVE COMPARSON - PLANNING



The following synopsis of resource outputs possible within the range of planning alternatives is numerically arranged to correspond with the Interalternative Comparisons of Figures 9 and 10.

1. Water Yield varied among the alternatives by 14,000 acre feet, or an increase of approximately 2% over the least yield alternative.
2. Deer-Elk Winter Range - Pounds of forage produced on winter range areas varied by approximately 3% of the least yield alternative. The increase is due to timber harvest on a larger area which would remove the mature and overmature canopy, allowing more vigorous growth of browse and forbs.
3. Deer-Elk Summer Range - Outputs varied by 8% of the least yield alternative, again relative to the amount of area planned for timber harvest.
4. AUM's, Domestic Livestock - The alternatives all showed an increased production over current stocking while varying over a range of 2,800 AUM's to 3,100 AUM's. As explained earlier, this forage may not be available for increased livestock numbers, however, since there is overlap between domestic livestock and wildlife needs.
5. Timber - Production of timber ranged from an annual programmed sell level of 3.5MMBF to 10.7MMBF. The varying levels demonstrated the magnitude of the constraint imposed by the need to control sediment production at an acceptable level. Alternative 3 is the maximum sustained yield that could be harvested from the unit. By using only aerial systems, nearly all the volume could be removed while staying within the sediment limits. The data indicates that using only non-aerial systems, the sediment limit is reached while removing less than one-third of the potentially available amount.
6. Road Construction - The miles of road that would be built annually over the next 20 years varied from 9.1 miles to 15.6 miles. The controlling factors were the acreage harvested and logging systems employed.
7. Existing Roads - The mileage of roads that would exist at the end of the planning period was dependent on the amount of average annual construction over the 20-year period. There are currently 108 miles of road in the planning unit.
8. Marten Habitat - There was no significant difference in the area available to pine martens as indicated by the analysis.

9. Dispersed Recreation - Recreation use not dependent on developed facilities varied by slightly more than 1,000 visitor days, or approximately 4%. The roading density provided by aerial logging (Alternative 2) appeared optimal for increasing dispersed use. Increased road densities such as Alternative 3 did not show a corresponding increase in use.

10. Developed Recreation - Because no projects were proposed that would affect the small existing developed areas, no change in use resulted.

11. Sediment (All Categories) - The only variance occurred when no constraints were imposed on the model. Alternatives 1, 2, and 4 were programmed at a predetermined level of 150% maximum.

Selection of Planning Alternative

Consideration of Evaluation Criteria - To select a land management plan from the four alternatives, Evaluation Criteria and Public Involvement were again relied upon by the Core Team. Each alternative was ranked for its satisfaction of each evaluation criterion, with a rating of 4 being highest, and 1 lowest. A dash (-) indicates the criteria were not satisfied. This numerical ranking was based on resource outputs displayed on pages 94-97.

TABLE 3
Evaluation of Alternatives

Evaluation Criteria	<u>Alternatives</u>			
	1	2	3	4
1. Local Economy	2	3	4	1
2. Wilderness Study	Already Decided			
3. Grazing	2	3	4	1
4. Anadromous Fish	4	4	-	4
5. Wildlife Habitat	Differences Insignificant			
6. Recreation	Differences Insignificant			
7. Minerals	2	3	4	2

A more complete description of the Evaluation Criteria is listed on pages 39 and 40 of this publication.

Consideration of Public Input - Public input was again an important part of the decision-making process. As described earlier the public issues pertinent to this area were deciding factors in the establishment of the Evaluation Criteria and the Planning Goals. In addition, although a brochure was not published specifically for the Land Management Plan, much of the public response to the Wilderness Study Brochure applied also to the Planning Unit.

The Selected Planning Alternative - Based on these considerations, the Core Team chose Alternative 1 as the guideline base for development of the Gospel-Hump Land Management Plan. What this alternative means in terms of the actual Gospel-Hump Land Management Plan is explained in Part Two of this publication.

Rationale for the Decision

The decision to choose planning Alternative #1 was made even though Alternative #2 best satisfied the evaluation criteria. This was done because in the judgment of the Forest Supervisor and his staff, the local industry will not be able to immediately begin harvesting all sales with helicopters or balloons. This will be partly because of the expense of changing over from present machinery to that required, partly because of the learning process needed to adapt to new systems, and partly because some stands, due to size or percentage of defect, will not support helicopter operations.

Higher yields are available under Alternative #2, and this will be an incentive to adopt aerial methods as soon as possible.

It will be the policy of the Nezperce National Forest to move to aerial systems during this planning period. Aerial systems harmonize with other resources better than conventional systems, and will, in fact, allow more volume to be harvested under the sediment constraints imposed.

The relationship of planning alternatives to both the Evaluation Criteria and to public input is explained as follows.

Relationship to Evaluation Criteria - The alternatives were discussed in terms of the evaluation criteria as follows:

1. Local Economy - As reflected by jobs and earnings, Alternative 3 is slightly better than Alternative 2, with both providing an increase that is significant only to the immediate Grangeville area. When compared to the three county zone of influence, the differences lose significance.
2. Grazing - The four alternatives differed only slightly in their ability to provide domestic forage, with all meeting current stocking rates. Hence, each satisfied the criteria.

3. Anadromous Fish - Alternative 3 was unacceptable because the sediment production was excessive and would result in unacceptable damage to the anadromous fish. The other three alternatives, with equal sediment constraints, will allow for survival of 75% of the young fish (alevins).

4. Wildlife Habitat - Based on forage produced, the differences are probably insignificant. Alternative 3 is less favorable for wildlife due to the miles of road in existence at the end of the planning period, and the potential for disturbance associated with it.

5. Recreation - There was no appreciable difference in recreational opportunity.

6. Minerals - Alternative 3 was judged most favorable because the roads would enhance opportunities for prospecting, exploration, and development of mineral resources. Alternative 2 was only slightly better than 1 or 4.

Based purely on the Evaluation Criteria, it was certain only that Alternative 3 was unacceptable because of its impact on fisheries. Alternative 2 ranked highest of all alternatives.

However, Alternative 2 was eliminated because it relied almost totally upon yarding by aerial systems. While this is a feasible method, and is currently in operation on neighboring Forests, it cannot be used as a primary system at this time. Certain areas and tree species are much more suitable to aerial systems than others.

Alternative 4, which relied only on non-aerial systems, was also eliminated because it did not adequately protect the local economic situation or make the most efficient use of the timber resource. With nearly identical sediment production, the alternative would produce only one-half the timber volume. This was not acceptable to the Core Team.

Relationship to Public Involvement - The trends in public response to the Wilderness Study Brochure were considered for the Planning Alternative selection. There were 16 responses to the Wilderness Brochure that favored Wilderness Study Area B as their first choice. Of those 16, the preference among management options was as follows:

Wilderness Study Alternative B

Management Options	B-1	B-2	B-3	B-4
Planning Alternatives	(1)	(2)	(3)	(4)
Public Preference	6	2	8	0

Several people favored B-3 because it provided high timber yields without the requirement for aerial harvest systems. Two of those responses further indicated that "reasonable sediment constraints should be applied."

Fourteen responses also addressed helicopter logging specifically. While a few people favored it, most questioned its use except for small areas or for high value timber species.

Socio-Economic Impacts of the Selected Planning Alternative

The economic implications of the alternatives for the Gospel-Hump Planning Unit are mostly proportional to the changes in wood fiber harvest. There are even fewer changes among the other resource use areas that might have economic consequences for the Planning Unit (see Table 4). Assuming Alternative 1, which is the recommended plan, represents approximately the present situation, no significant economic changes would occur in the assessment area. Alternatives 2 through 4 reflect variations of about equal magnitude in both directions.

Alternative 4 could reduce wood products employment by 14 workers. The changes would be less than 1/2 of one percent of the present total levels, even in the wood products activity. Consequently, any of the alternatives for the Planning Unit would have little, if any, noticeable effect on the local economy.

The financial analysis results for the Planning Unit alternatives are not unlike those for the Wilderness Study Area. Recall that the four alternatives displayed for the Planning Unit were all relatively unattractive in the wilderness analysis. One difference is that Alternative 3 has a negative net present worth. The alternatives compared to the least cost alternative all return considerably less than their costs. One point of interest is that Alternative 2 is the least cost alternative while producing the second highest timber output. It also has the highest net present worth. This results from the cost aspects of aerial logging.

In summary, then, the proposed alternative will essentially maintain the local economy, but at a net cost of \$2.7 million. This cost can be reduced as the Forest moves toward further use of aerial logging.

TABLE 4

Socio-Economic Implications for Each Planning Alternative

Activity	Alternative			
	1 (Present Situation)	2	3	4
Water Yield (MAF)	667	680	677	666
Developed Recreation (MVD)	.4	.4	.4	.4
Dispersed Recreation (MVD)	26	27	26	26
Values from Above (\$M)	1035	1062	1045	1034
Revenue (\$M)	145	95	263	449
Total Revenue (\$M)	1180	1157	1308	1483
Total Cost (\$M)	919	592	1534	1280
Discounted Benefits(\$M)	10478	10274	11615	13169
Discounted Cost (\$M)	8161	5257	13622	11366
Net Present Worth (\$M)	2317	5017	-2007	1803
Benefit/Cost	1.28	1.95	.85	1.16
Difference in Benefits(\$M)	23	--	151	326
Difference in Costs (\$M)	327	--	942	688
Marginal Benefit/Cost	.07	--	.16	.47
Change in Wood Prod. Emp.	29*	15	17	-14
" " " " Income (M\$)	261*	133	156	-125
" " " " Total Employment	49*	25	29	-24
" " " " Income	444*	225	265	-212

*This is the total contribution from the Alternative.

Environmental Impacts of the Selected Planning Alternative

Environmental impacts resulting from the selected land management plan (Alternative 1) are described here in terms of physical and biological change to the natural conditions now prevalent within the Gospel-Hump Planning Unit. Socio-economic impacts were presented in the preceding section. Both long term and short term impacts were examined for the land management plan. Figure 11 is a subjective evaluation of the environmental impacts upon the Planning Unit due to Planning Alternative 1.

FIGURE II

Environmental Impacts of the Selected Plan

Resources Affected

Activities Resulting In Impacts	Air	Water	Soil	Minerals	Timber	Forage	Wildlife	Fishery	Archeological Historical	Visual	Recreation	Wilderness
Timber Harvest	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Logging Operations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Road Construction	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Fire Management	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Borrow Areas	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Site Preparation	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Stash Disposal	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Timber Stand Improvement	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Wildlife Habitat Improvement	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Grazing	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Recreation Development	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Motorized Vehicle Use	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑

↑ Negligible ↑ Favorable ↑ Adverse

The Ratings assume That Quality Management Practices (As Expressed In The Forest Service Management Directives And The Management Direction And Guidance Of The Proposed Plan) Are Followed. These Ratings Are For The Overall Impact On A Particular Resource. Specific Projects Could Differ Somewhat From The Indicated Impact.

Summary of Environmental Effects of the Proposed Plan

Primary Effects - As used here, primary effects refer to those effects which occur within the Planning Unit. This section discussed the effects resulting from the impacts identified in Figure 11. Favorable effects and adverse effects which cannot be avoided after mitigation are discussed. Mitigating measures are discussed in the Land Management Plan contained in Part Two of this publication. The effects will not occur uniformly over the entire Planning Unit, but only to the extent that a particular activity occurs within a management unit.

1. Timber Harvest

a. Favorable Effects

1. Timber harvest will increase the base water yield. Increases can be predicted according to cutting patterns. A given cutting will produce relatively short term increases, but with succeeding cuts in adjacent areas, the increased yield can be maintained.

2. Timber harvest allows the stand to be managed for high productivity. Stands can be manipulated to control species, spacing, size and age so as to promote higher yield.

3. Removal or opening of the forest canopy temporarily enhance the growth of forage that may be used by domestic stock.

4. Growth of browse species can be improved by removing or partially opening the forest canopy. This can be of particular benefit on big game winter range.

b. Adverse Effects

1. Timber harvest alters the natural landscape, accentuating man's activity.

2. Harvesting old growth timber reduces the available habitat for wildlife species that require the environments found in mature and over-mature stands. Fisher and pine marten require a closed canopy forest composed of large trees. Large hollow trees are important as den sites. This habitat is also required by certain woodpeckers, owls and hawks.

3. Harvested stands do not provide the quality pristine recreation experience many people prefer.

4. Timber harvest seriously impairs wilderness values for the near future.

2. Logging Operations

a. Adverse Effects

1. Even with strict preventive controls, some soil movement will occur on skid trails and landings.

2. Tractor skidding will cause some soil compaction.

3. Temporary increases in stream sediment will occur.

4. Skid trails and landings will change the landscape.

5. Wildlife will be disturbed during logging operations. Big game will be temporarily displaced to adjacent areas while logging is in progress.

6. The fisheries temporarily will be affected by increases in stream sedimentation.

7. Traffic and noise associated with logging conflicts with recreation use.

3. Road Construction

a. Favorable Effects

1. Access will be provided for more efficient management of timber.

2. Minerals will be more accessible for prospecting and mining.

3. Recreation activities dependent upon vehicle access will increase.

b. Adverse Effects

1. Large quantities of soil will be displaced during construction. Most erosion will occur the first year with almost complete stabilization within a few years.

2. Water quality will be lowered due to soil movement into streams. This effect diminishes as soil stabilization occurs.

3. The roads leave permanent scars on the landscape which detract from the natural scenery.

4. Wildlife travel routes will be interrupted. Game will be more exposed to man and his activities.

5. Even with the plan's prescriptions to protect the water, minor reduction in the quality of fishery habitat can be expected.

6. Opportunities for recreational activities that require a pristine environment will be reduced.

7. Road construction eliminates the wilderness option.

4. Fire Management

a. Favorable Effects

1. Fire management protects the watershed, resulting in higher quality water and more even water flows.

2. By protecting the vegetative cover, soils development and preservation are assured.

3. Investments for timber management are protected.

b. Adverse Effects

1. Water quality may be temporarily reduced as a result of erosion from fire line construction near and adjacent to stream channels. Fire retardants may temporarily pollute streams. Effect is normally very minor and little or no effect after one year.

2. Fisheries will be affected by the water quality reduction as mentioned in (1) above.

3. Fireline and emergency road construction can leave visual scars incongruous with the natural landscape.

4. Use of heavy equipment for fire control activity within roadless areas has a significant trammeling effect and reduces the wilderness potential.

5. Borrow Areas (These areas are associated with road construction. Sites with suitable rock may be used as a source of aggregate for road surfacing outside the Planning Unit.)

a. Favorable Effects

1. The aggregate stabilizes road surfaces which, in turn, lessens soil movement and stream sedimentation.

b. Adverse Effects

1. The borrow alters the landscape.

2. Generally, the site is lost for timber production; however, the effect is slight since these sites have low productive capacity.

6. Site Preparation

a. Favorable Effects

1. Faster aesthetic recovery after logging.

2. Site preparation encourages rapid reforestation.

3. Grasses, forbs, and browse are stimulated providing seral stage vegetation for wildlife and domestic livestock.

b. Adverse Effects

1. Dozer scarification will cause minor erosion.

2. Prescribed burning will cause temporary air pollution.

7. Slash Disposal

a. Favorable Effects

1. Elimination of the logging slash improves the aesthetics of the logged-over area.

2. Slash burning can stimulate forage production.

3. Reduces incidence of insects and disease and eliminates fire hazard.

b. Adverse Effects

1. Even under the best conditions, slash burning creates some pollution.

2. Disposal activities, particularly burning, conflict with recreation users. Most burning occurs during the fall hunting season when dispersed recreation use is at its peak.

8. Timber Stand Improvement

a. Favorable Effects

1. Timber quality and production are improved.

b. Adverse Effects

1. Natural stand conditions are altered, lowering wilderness values for the short term.

2. Visual resources are impaired.

9. Wildlife Habitat Improvements

a. Favorable Effects

1. The quality of wildlife habitat can be improved.

b. Adverse Effects

1. Smoke from prescribed burning will cause temporary air pollution.

2. Prescribed burning will cause short term (1-10 years) scars on the landscape.

3. The natural ecosystems are altered.

10. Grazing

a. Adverse Effects

1. Water quality is reduced where cattle graze near streams.

2. Domestic livestock may compete with wildlife for the same forage.

3. The presence of cattle in concentrated recreation use areas creates conflicts with people.

11. Recreation Development

a. Favorable Effects

1. Facilities provide more pleasant camping for recreation users not inclined to primitive camping.

2. Sanitation facilities protect the health and welfare of the forest user.

12. Motorized Vehicle Use (All forms of public vehicle use are included.)

a. Favorable Effects

1. Prospecting for, development of, and the removal of mineral resources is enhanced by the use of motorized vehicles.

2. Provides access for people otherwise unable to enjoy recreation activities in remote areas.

b. Adverse Effects

1. Some vegetative cover will be disturbed and some soil movement will occur.

2. Solitude for wildlife is disrupted by motorized traffic and the game become more accessible to the hunter.

3. Recreationists seeking solitude from the mechanized world must seek more remote areas.

4. Noise levels will be increased.

Secondary Effects - Secondary effects include those which occur outside the Planning Unit. Generally, they are more difficult to identify because they intertwine with impacts from other areas. The effects are most identifiable locally, but certainly they extend regionally and nationally, commensurate with the Planning Unit's share of markets. Secondary effects tend to be oriented more to the socio-economic environment. Some of the more evident secondary effects include:

1. About 29 man-years of work each year will be sustained in the local logging and lumbering industry.

2. An additional 300 acre-feet per year of water yield can be used by downstream hydroelectric plants and/or for irrigation.

3. Air pollution will occur due to smoke drift from slash, site preparation and habitat improvement burning. Also, wood product manufacturing can result in air and water pollution.

4. Little if any change will result in employment or personal income in the three-county zone of influence, or in the immediate Grangeville-Elk City locale.

5. The identification of the relationship between anadromous fisheries and sediment will result in a long term benefit to the future of the fisheries.

Relationship Between Short-Term Uses Of The Environment and Maintenance Of Long-Term Productivity

In developing the proposed plan, one of the criteria was to assure the long-term productivity of the land for all resources. To meet this objective, each activity is limited to the extent it can be performed without endangering the land's long-term productivity. By maintaining the basic land productivity, future generations will have continuing options for land management.

The effect of short-term uses on long-term productivity varies by management unit. As an example, the effects of timber harvest and its related activities do not apply to management units where timber harvest has been precluded. The discussion which follows speaks to the long-term productivity of the planning unit as a whole. The change in productivity for each management unit will occur only to the extent allowed by its prescribed management direction and guidance.

Long-term productivity for the Planning Unit is discussed in terms of the following categories:

1. Amenity Values - Planned activities including timber harvest, road construction, recreation developments and grazing, will affect the long-term scenic quality. The natural landscape will be permanently altered to some degree. The choice for solitude will be reduced by better access and wilderness classification options have been foregone.
2. Wildlife and Fish - Species dependent upon old growth forests will have less habitat as a result of the management prescribed by this Plan. Future management options could include the restoration of old growth forests, although the process would be measured in centuries. Under these terms, long-term productivity of wildlife and fish will not be reduced. No species will be excluded from the Planning Unit as a result of the proposed action.
3. Recreation - Development of the unroaded areas will favor motorized recreation. Primitive type recreation and experiences will be reduced in the long run.
4. Water - Management of the forest canopy will produce a long-term increase in water yield. A slight decrease in water quality can be expected.
5. Timber - In order to protect other resources, timber production will not be optimized. Silvicultural prescriptions will be modified to enhance wildlife habitat and to protect soil and water. In certain areas, timber will not be managed or harvested because of other resource constraints, particularly sediment.

Cultural activities such as planting and thinning will increase the productivity of the managed stands. The potential for increasing future timber productivity will not be affected by the action.

6. Range - Some of the increased forage resulting after timber harvest will be allocated for domestic stock grazing. Better management of existing primary range will make it more productive in the long term.

7. Minerals - No effect on mineral productivity is expected, except that better access may make marginal operations profitable.

8. Soils - The planned action will not change the long-term productivity of the soil, except for the land used for roads. Road construction will displace the top soil. On temporary roads, a long period of time will be required to rebuild a soil profile. Experience has shown that the road surfaces can be revegetated, but the productivity for many plant species is reduced. On permanent roads, the driving surface no longer produces vegetation -- which, in turn, affects wildlife habitat and timber and forage production are lost.

Irreversible and Irretrievable Commitment of Resources

This plan deals with both developed and undeveloped (roadless) lands. In the case of lands already developed by roading, a high degree of irreversibility exists; whereas, in the case of undeveloped lands, generally a wide range of options exists. Dasmann, et al., in Ecological Principles for Economic Development, 1973, (pp. 22-23), recognized six broad allocation categories for lands, each with progressively greater irreversible and irretrievable commitment of resources associated with it. Dasmann's development categories are:

1. The land can be left in a completely natural state and reserved for scientific study, educational use, watershed protection and its contribution to landscape stability.
2. It can be developed as a park, refuge or reserve with the natural scene remaining largely undisturbed to serve as a setting for outdoor recreation and attraction of tourism.
3. It can be used for limited harvest of its wild vegetation or animal life, but maintained for the most part in a wild state -- serving to maintain landscape stability, support certain kinds of scientific or educational uses, provide for some recreation and tourism and yield certain commodities from its wild populations.
4. It can be used for more intensive harvest of its wild products as in forest production, pasture for domestic stock (recreation), or intensive wildlife production. In this case, its value as a "wild" area for scientific study diminishes, but it gains usefulness for other kinds of scientific and educational uses. Its value for (some) tourism and outdoor recreation diminishes, but is not necessarily lost. Its role in landscape and watershed stability is changed, but may be maintained at a high level.
5. The wild vegetation and animal life having been removed in part, it can be intensively utilized for the cultivation of planted tree crops, pastures or farming crops.
6. The wild vegetation and animal life having been almost completely removed, it can be used for intensive urban, industrial or transportation purposes.

The lands in the Gospel-Hump Planning Unit are categorized according to Dasmann's framework as shown in Table 5.

TABLE 5

Irreversibility of Allocation Proposed by
Gospel-Hump Land Management Plan Alternative 1

Dasmann's Development Categories						
<u>Range of Irreversibility</u>						
	<u>Low</u>					<u>High</u>
	1	2	3	4	5	6
Acres in Gospel-Hump Planning Unit Within Each Category:	187,796		68,444		30,450	2,344

Category 1 - Includes 187,046 acres allocated to wilderness study and 750 acres to be studied as a potential Research Natural Area.

Categories 2, 3, 4 - Includes activities that are considered as current management. Wildlife habitat improvements would be rated as 4, as would several forms of recreation use that require more than primitive modes of travel or surroundings. Specific acreage allocations were not made in the plan, hence the general grouping.

Category 5 - Includes areas allocated for management and harvest of the timber resource on a sustained yield basis.

Category 6 - Includes the actual area of road construction, based on 293 miles of road and an average of eight acres per mile.

With the first three categories, the option remains open to change to any of the other categories. In the fourth category, the options for restoring the land to any of the first three categories are reduced, but not eliminated. Developed lands are likely to attain the fifth developmental level. This possibility would largely prohibit any shift to other alternatives within a reasonable period of time.

Based on the levels of irreversibility, only 11 percent of the Planning Unit is being allocated to uses characterized as being highly irreversible (timber harvest and road construction). The remaining 89% of the area remains available for virtually any future use which can be supported by the resource.

Alternatives to the Proposed Action

The ecological, topographical, and resource variety found in the Planning Unit make possible the formulation of an almost endless number of alternatives. However, once the goals and issues were identified, many of the possibilities became meaningless, because they did not relate to either goals or issues.

Selecting an area for wilderness study as a first step in the planning process also reduced the options available in the Planning Unit. The alternative of wilderness study designation for the complete planning unit, as well as a full range of less than total wilderness alternatives, did receive full consideration in that first planning stage (Section IV). And, as was mentioned earlier, while a no-action alternative was considered, it was rejected as being meaningless in light of the goals and issues. Therefore, only the four alternatives that were previously discussed were considered. The four were:

Alternative 1 - Timber harvest was maximized (utilizing a combination (Selected Plan) of logging methods.)

- Sediment production was constrained to 150% natural.
- Net present worth was maximized.

Alternative 2 - Timber harvest was maximized utilizing aerial logging systems.

- Sediment production was constrained to 150% natural.
- Net present worth was maximized.

Alternative 3 - Timber harvest was maximized utilizing a combination of logging methods.

- Sediment production was unconstrained.
- Net present worth was maximized.

Alternative 4 - Timber harvest was maximized utilizing non-aerial logging systems.

- Sediment production was constrained to 150% natural.
- Net present worth was maximized.

VI. MANAGEMENT DIRECTION

This section provides management direction for those planning units other than Gospel-Hump which were included in the Study Area. (See pages 8 and 11 for applicable areas.)

Wilderness Study

The following allocations were made to wilderness study by the selected alternative and will be incorporated in the planning unit direction as hereby shown:

Kelly-Bullion - 6,400 acres are allocated to wilderness as shown on Map 16. The Kelly-Bullion Land Management Plan is hereby amended to include that allocation.

Rainy Day - 6,200 acres are allocated to wilderness as shown on Map 16. The Rainy Day Land Management Plan is hereby amended to include that allocation.

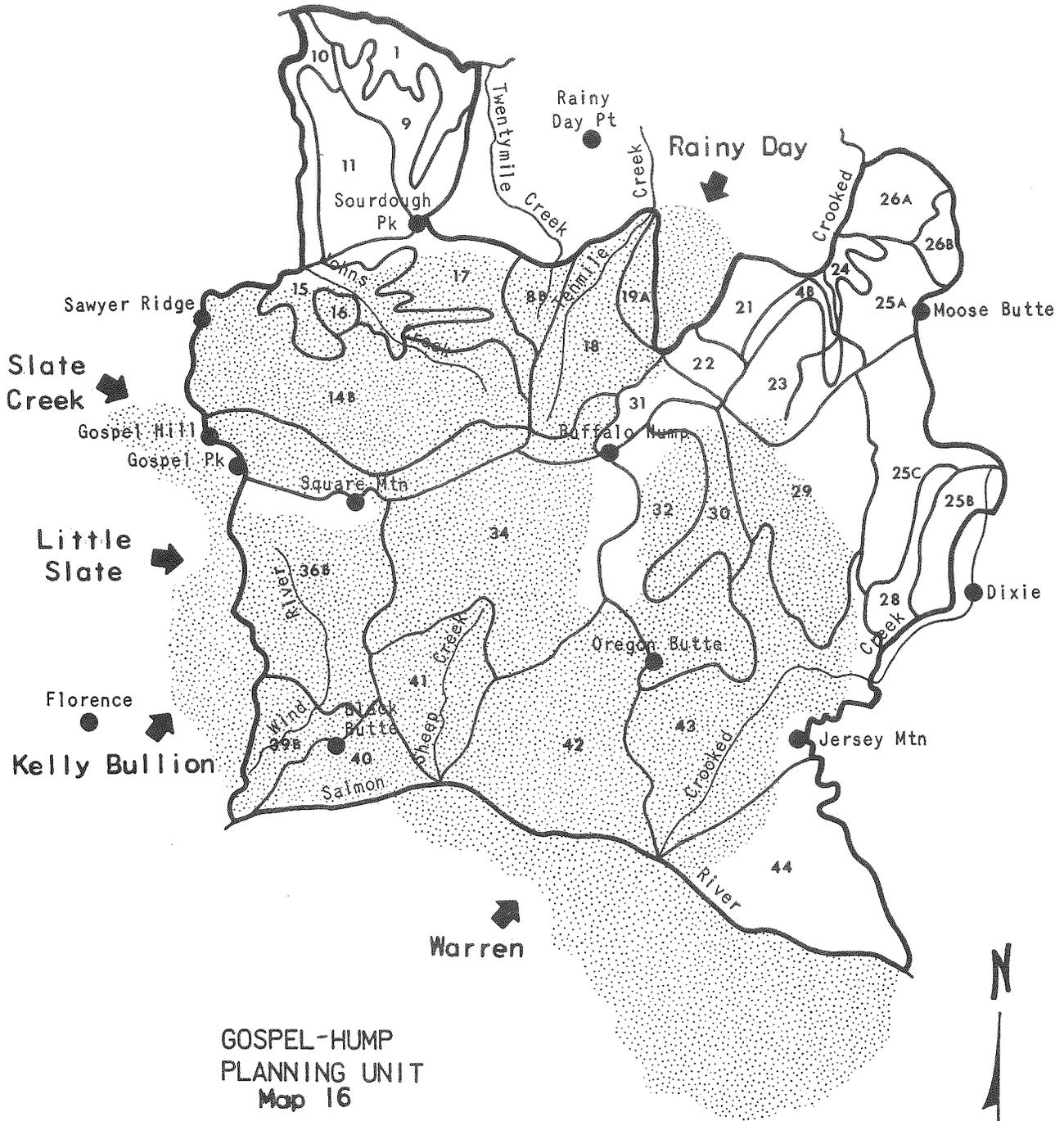
Little Slate Creek - 1,100 acres are allocated to wilderness as shown on Map 16. The Little Slate Creek Land Management Plan is hereby amended to include that allocation.

Mill Creek - No area is allocated to wilderness. The area originally allocated for further consideration will be managed for its roadless values, but will receive no further study of its wilderness potential.

Red River - No area is allocated to wilderness. The roadless area allocated by the Red River Land Management Plan will continue to be managed as directed therein.

Slate Creek - Approximately 5,000 acres are allocated to wilderness as shown on Map 16. That allocation will be binding when future land management planning is done for the unit.

Warren - 30,830 acres are allocated to wilderness study. This allocation will be reaffirmed in the soon-to-be-published Warren Land Management Plan.



GOSPEL-HUMP
 PLANNING UNIT
 Map 16

 Wilderness Alternative B

0 5
 Scale of Miles

Water Quality Monitoring

No allocation changes will directly result from the water quality monitoring needs, therefore the following guidance will be added to the existing land management plans indicated, with no formal amendment of those plans:

a. The following streams will have base monitoring for stream stage and discharge, total alkalinity, total hardness, specific conductance, pH, turbidity, total filterable solids, bedload sediment, air and water temperature, stream channel stability, fisheries habitat condition, and percent of fines in spawning gravels:

Crooked River							
Tenmile Creek (will require addendum to Rainy Day Plan)							
Twentymile Creek	"	"	"	"	"	"	"
Johns Creek							
Mill Creek	"	"	"	"	Mill Creek Plan		
Little Slate	"	"	"	"	Little Slate Plan		
Wind River	"	"	"	"	Kelly-Bullion Plan		

b. In the same streams listed in 'a' above, stream channel cross sections will be measured annually to determine changes in stream channel geometry and sediment deposits, and samples for complete water chemistry will be taken and analyzed at least six times a water year.

c. Land disturbing activities will be monitored as near the site as feasible for the direct effects of erosion, sedimentation, and changes in water chemistry or stream environments. Environmental analysis reports will include a watershed monitoring plan with pre-, on-going, and post-activity requirements.

d. All contracts dealing with land disturbing activities will contain clauses requiring cessation of operations (except for corrective measures) whenever total sediment as measured at the mouths of the base monitoring stations reach 150%* of normal.

e. In streams containing 150 square yards and above of spawning gravels, 18%* fines as measured in the spawning gravels will be cause for cessation of activities (fines in spawning gravels will control in case of disparity).

*The point up to which survival of alevins at least to a 75% level is assured. Fines are sediment particles less than 6.33 mm.



The marshy shores of Fish Lake, left center, are a favored feeding area for moose. The Orogrande Summit road is shown on the right leading to Wildhorse Lake. Crystal Lake is visible in the upper center, nestled below the Buffalo Hump.

Relationship of the Environmental Statement to the Land Management Plan

The Gospel-Hump Land Management Plan was written following the selection of both the wilderness and planning alternatives as described in the Environmental Impact Statement. The Land Management Plan, therefore, begins with two already determined parameters: (1) that a Wilderness Study Area, defined by the B Wilderness Study Alternative, will be established in the Planning Unit, and (2) that the general direction for management will follow Planning Alternative 1. Thus, the Environmental Impact Statement provides a foundation for the development of the Gospel-Hump Land Management Plan presented in Part Two of this publication.