TABLE 2-2

COMPARATIVE ANALYSIS OF ENVIRONMENTAL CONSEQUENCES

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
LANDS					
Acres retained	Decrease (Minor)	Decrease (Major)	Decrease (Moderate)		No change
Acres transferred	Increase (Minor)	Increase (Major)	Increase (Moderate)		No change
ENERGY & MINERALS					
LEASABLE					
Leased w/standard stipulations		Increase	Increase	Increase	Decrease (Minor)
Leased w/seasonal occupancy		Decrease (Minor)	Increase (Minor)	Increase (Minor)	No change
Leased w/no surface occupancy		Decrease (Major)	Decrease	Decrease	Decrease (Minor)
Closed to leasing		Decrease (Major)	Decrease (Major)	Decrease (Major)	Increase
LOCATABLE					
Open to claim location		No change	No Change	Decrease (Minor)	Decrease (Minor)
Closed to claim location		No change	Increase (Minor)	Increase	Increase
SALABLE					
Open to mineral material use		Increase	Increase (Minor)	Increase (Minor)	Decrease (Minor)
Closed to mineral material use		Decrease (Major)	Decrease (Major)	Decrease	Increase
FOREST MANAGEMENT					
Commercial forest land available		Decrease (Minor)	Decrease (Minor)		Decrease (Major)
LIVESTOCK GRAZING					
Ecological Range Condition					
Excellent	No change	No change	No change	Same as C	No change
Good	Increase (Minor)	Increase (Major)	Increase (Moderate)	Same as C	Increase (Minor)
Fair	No change	Decrease (Major)	Decrease (Moderate)	Same as C	Decrease (Minor)
Poor	No change	Decrease (Minor)	Decrease (Minor)	Same as C	Decrease (Minor)
Disturbed	Decrease (Minor)	Decrease (Moderate)	Decrease (Moderate)	Same as C	Decrease (Minor)
Livestock AUMs	Increase (Minor)	Increase (Moderate)	Increase (Minor)	Same as C	Decrease (Moderate)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
WILDLIFE HABITAT					
ELK					
Calving	Decrease (Minor)	Decrease (Minor)	Increase (Minor)	Increase (Minor)	Increase (Moderate)
Summer	No change	Decrease (Minor)	Increase (Minor)	Increase (Minor)	Increase (Minor)
Spring/Fall	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
ANTELOPE					
General	No change	Decrease (Minor)	No change	Increase (Minor)	Increase (Minor)
Winter	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
Fawning	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
BIG HORN SHEEP					
Winter/spring	No change	Decrease (Minor)	Increase (Minor)	Increase (Moderate)	Increase (Moderate)
MOUNTAIN GOAT					
Winter/spring	No change	No change	No change	No change	No change
WHITE-TAILED DEER					
Yearlong	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
BIG GAME WINTER	Decrease (Minor)	Decrease (Moderate)	Increase (Minor)	Increase (Moderate)	Increase (Moderate)
SAGE GROUSE					
General	No change	Decrease (Minor)	Increase (Minor)	Increase (Minor)	Increase (Minor)
Strutting/ Nesting	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
Winter	No change	Decrease (Minor)	No change	No change	No change
Broodrearing	Decrease (Moderate)	Decrease (Moderate)	Increase (Moderate)	Increase (Moderate)	Increase (Moderate)
SHARP-TAILED GROUSE					
Yearlong	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
FOREST GROUSE					
Yearlong	No change	Decrease (Minor)	Increase (Minor)	Increase (Minor)	Increase (Minor)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
WILD TURKEY					
Yearlong	No change	Decrease (Moderate)	Increase (Minor)	Increase (Minor)	Increase (Minor)
OTHER UPLAND GAME BIRDS					
Yearlong	No change	Decrease (Major)	Decrease (Minor)	Increase (Minor)	Increase (Minor)
WATER/WATER QUALITY					
Stream Sediments	Decrease (Minor)	Increase (Moderate)	Increase (Moderate)		Increase (Moderate)
Water Quality	No change	Decrease (Minor)	Increase (Minor)		Increase (Minor)
Fisheries	Decrease (Minor)	Decrease (Minor)	Increase (Moderate)		Increase (Moderate)
Riparian	Decrease (Minor)	Decrease (Moderate)	Increase (Moderate)		Increase (Moderate)
SOILS					
RECREATION					
Developed Recreation Opportunities	No change	Increase (Major)	Increase (Major)	Increase	No change
Dispersed Recreation Opportunities					
Nonmotorized	No change	No change	Increase (Minor)	Increase (Minor)	Increase (Minor)
Motorized	No change	No change	Decrease (Minor)	Decrease (Moderate)	Decrease (Moderate)
VISUAL QUALITY	No change	Decrease (Major)	Increase	Increase	Increase (Major)
CULTURAL RESOURCES	Increased Damage(Minor)	Increased Damage(Major)	No change	No change	Decreased Damage(Major)
WILDERNESS	No change	No change	No change	6715 acres wilderness	21,870 acres wilderness
SOCIAL & ECONOMIC CONDITIONS					
Direct & Secondary Income From Public Lands	$3,676,000	$5,245,000	$4,176,000	$4,141,000	$3,376,000
Employment Generated.	358	503	407	403	332

3

Affected Environment

CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

The Medicine Lodge Resource Area includes the upper portion of the Snake River plains from Idaho Falls northeast to Henry's Lake near Targhee Pass, north to Monida Pass on the Idaho-Montana border, west to the Idaho National Engineering Laboratory withdrawal, and east to Palisades Reservoir and the Idaho-Wyoming border near Victor, Idaho. The planning area is characterized by gently sloping plains with lava outcrops in the western and central portions at elevations from 5,000 feet to over 6,000 feet above mean sea level. The northern portion of the area rises to over 10,000 feet along Edie Creek near the continental divide separating Idaho and Montana.

The climate of the planning area is a modified continental type influenced primarily by Pacific air masses with cold, snowy winters and hot, dry summers. Precipitation varies with elevation, with lower amounts of precipitation at lower elevations and higher amounts at higher elevations. Most of the precipitation is received in winter in the form of snow and rain in the spring, while summers are typically dry. Snow is common from December through March. Windy conditions are frequent during winter and spring months. Air quality is generally excellent, although inversions are common in the winter months.

Surface water is generally adequate or abundant in the eastern portion of the planning unit. The main stem of the Snake River at Idaho Falls flows at 22,000 cubic feet per second in the spring and averages about 12-15,000 cubic feet per second during the summer and fall. A variety of permanent and seasonal streams contribute to the Henry's Fork, Teton River, South Fork, and Willow Creek -- all tributaries of the Snake River. The western portion of the unit is more limited concerning surface water. Reservoirs, spring developments and wells provide water for livestock and wildlife.

Topography in the planning area varies widely. The southwestern and central portions include geologically recent lava flows with some locally prominent pressure ridges, cinder cones and lava tubes. The Sand Mountain dunes rise to an elevation of 6,195 feet. Steep foothills and canyons are typical of the higher elevations along the Targhee National Forest boundary. The Snake River Canyon from Conant Valley to Heise includes a deep, spectacular canyon through basalt. There are numerous islands from Palisades Reservoir to the confluence of the Henry's Fork near Menan Butte. The Menan Buttes are volcanic cones.

LANDS

There are 648,719 acres of public land managed by BLM in the Medicine Lodge Resource Area. In addition, there are 140,415 acres that are under withdrawal or were acquired by the Department of Energy for the Idaho National Engineering Laboratory (INEL). The BLM has varying degrees of management on some of the lands. For the INEL, BLM manages grazing on portions of the withdrawal, issues rights-of-way, makes sales of mineral materials, and has proposed issuing mineral leases. On some Bureau of Reclamation withdrawals, BLM grants rights-of-way, issues mineral leases and grazing permits, and mining law administration.

Other kinds of withdrawals include land use classifications such as for recreation and public purposes. An existing multiple use classification segregates against Homestead, Desert Land, Indian allotment entries and public sale applications in portions of Jefferson, Clark and Bonneville counties.

Originally, the majority of privately owned lands in the planning area were obtained through agricultural entries such as the Homestead Act, Reclamation Homestead Act, Stockraising Homestead Act, Desert Land, and Carey Acts.

There are currently 1,475 acres included in applications under the Desert Land or Carey Acts. The availability of a water supply, sufficient to irrigate all the potential irrigable acres in an entry, is required. Nearly all proposed entries identify the water source as ground water from wells drilled into the Snake River Aquifer. Anticipated well depths average about 300 feet. As part of the water appropriation process, a water permit application and a well drilling permit must be approved by the State of Idaho, Department of Water Resources. The Snake River Aquifer is known to underlie all areas currently under application, but the depths to water and quantities available are unknown. In areas known to have a declining water table, the State of Idaho, Department of Water Resources, may designate a management area or a critical ground water area and restrict further development of the water. Further restrictions on development could occur as a result of litigation and proposed legislation in the State Legislature.

At the present time, no new water permits are being approved by the Idaho Department of Water Resources because of an Idaho Supreme Court ruling which granted Idaho Power Company a certain water right at Swan Falls Dam. This apparently subordinates much of the upstream water use to Idaho Power Company's Swan Falls right.

Land for Local Government

The greatest need for public lands by local government is for use as sanitary landfills, mineral material sources for construction and maintenance projects, and rights-of-way. Some public land sites have also been identified for recreation use and development. The Recreation and Public Purposes Act provides the authority to allow developments under either lease or lease with future possibility of purchase. Sale or lease provisions under Section 203 and Section 302 of FLPMA, respectively, may also be used. Mineral materials may be made available through sales or free use permits.

Ideally, sanitary landfills should be centrally located, have good, all-weather access and be located such that other land values and uses will not be adversely affected. Two to three acres per 10,000 people per year is necessary where soils are from 10 to 15 feet deep. Soils, therefore, present the greatest limiting factor in determining suitability for sanitary landfill purposes. Very few sites larger than a few acres have soils of sufficient depth to provide the periodic covering necessary to meet State health standards required for sanitary landfills.

Known Land Exchange, Sale or Land Acquisition Proposals

The District receives many proposals to exchange private lands for public lands and requests to sell public land tracts. These actions may occur under FLPMA provisions of Section 206 (exchanges) and Section 203 (sales). Section 205 FLPMA allows the Secretary of the Interior to acquire non-federal lands by purchase, exchange or donation. Exchanges of private or state land for public lands may be considered only on lands included in a transfer category in an approved land use plan such as this RMP.

Isolated Tracts

Isolated tracts are those parcels of public land that are surrounded by private lands or are cut off from larger public land blocks by lava flows, canyons, rivers, or manmade features such as roads, canals and railroads. In some cases, they may be an appendage of a larger block of land that extends linearly into the private lands. The tracts may vary in size from less than an acre to several hundred acres.

Many of these tracts have no physical or legal public access, while others may have legal access but very restricted physical access. Because of this, and their size, they do not receive the management attention as would a larger block of land. As a result, unauthorized use of them is common. They often create a management barrier to the surrounding private landowners and are the properties for which the public has expressed the greatest amount of interest in acquiring.

They are often needed for, or would enhance, a private land operation. Conversely, they sometimes offer significant public values such as wildlife habitat that would be preserved in public ownership.

Land Use Authorizations

Land use authorizations include a variety of purposes, some short term and others long term uses. Short term uses include agricultural leases, storage of farm equipment or products, National Guard training areas, and others.

Long term uses include rights-of-way for powerlines, highways, roads, ditches, canals, telephone lines, communication sites, airport beacon and nondirectional beacon sites, electric power generation sites, and material sites.

Right-of-way corridors exist in the planning area. These corridors are areas that already have significant development for a particular use, such as electric power transmission lines, interstate highways, state highways and railroads. Rights-of-way in common will be encouraged where possible. Those rights-of-way providing general public benefits are considered a high priority use of the public lands. See Appendix A, Table A-1, page A-6.

Unauthorized Use

There are parcels of public lands being used by private entities with no authorization. These uses include farming, irrigation ditches, powerlines, sprinkler systems, storage buildings, and open dumping. Some of the uses can be curtailed, while others can be authorized by an appropriate right-of-way or permit.

Omitted Lands

The "Omitted Lands" along the Snake River have been a very sensitive item in Eastern Idaho. The problem originated during the late 1800's when inaccurate government surveys erroneously located the actual banks of the Snake River. This error resulted in the omission of large acreages of public lands from survey. In some places the original survey placed the Snake River channel as much as one-half mile from its true location. The error caused confusion and uncertainty as to the ownership of the unsurveyed land.

Through the years after the survey, the lands in the vicinity of the Snake River were homesteaded and settled. Often, individuals who acquired land adjoining the unsurveyed lands assumed ownership of them and used them as their own private land. Some omitted land tracts were "sold" and "resold," thus passing a defective title from individual to individual.

In 1922, Robert Farmer conducted a reconnaissance survey and discovered the gross inaccuracy of the late 1800's survey. Unfortunately, however, a new dependent survey (retracement) of the Snake River was not initiated until 1957. Once completed, the retracement survey verified the existence of the omitted lands and the government subsequently claimed ownership of them. The retracement survey also revealed that homes and businesses had been constructed on the omitted lands, while other omitted lands had been placed under cultivation. To resolve this ownership problem special legislation was needed.

In 1962, Congress passed the Omitted Lands Act. This relief legislation authorized the Secretary, at his discretion, to dispose of certain omitted lands to preference right claimants, at fair market value. A preference right claimant is one who farmed, occupied or placed valuable improvements on the land prior to March 30, 1961. After passage of the Act, the Bureau of Land Management initiated an intensive program to inventory the omitted lands. Decisions were made as to which lands should be sold to preference right claimants, and which lands should be retained for public benefit. Of the more than 7,300 acres of omitted lands located within the boundaries of the Medicine Lodge Resource Area, to date over 1,500 acres have passed into private ownership. Another 200 acres have been identified for disposal to private individuals, but have not yet been sold. The remaining acreage has been determined to be valuable for recreation, wildlife or other public values and has been retained by the federal government.

MINERALS

Geologic Setting

The Medicine Lodge Resource Area includes portions of the Northern and Middle Rocky Mountain physiographic provinces and the Snake River Plain intermontane province. At the northern margin of the resource area are the Beaverhead, Centennial and Henry's Lake mountain ranges of the Northern Rockies. In the southeastern part of the resource area are the Caribou, Snake River and Teton ranges of the Middle Rockies. Separating the Rocky Mountain provinces is the eastern Snake River Plain.

Within the Rocky Mountains are metamorphic and sedimentary rocks of Precambrian to Mesozoic age that underwent a series of orogenic or mountain building events. Intensive uplifting, faulting and folding occured along the Cordilleran orogenic belt, a zone of structurally disturbed strata that extends from northern Alaska to Central America. In the Cenozoic Era, during the latter stages of this orogenic activity, the mountainous belt was dissected by either an extensive rifting of the earth's crust, a regional downwarping of the rock strata, the downward displacement of a massive fault block, or a combination of these processes. As this broad trough was forming, it filled with felsic volcanic flows, which were also deposited on the older sedimentary strata of the adjacent mountain foothills. The extrusion of basaltic flows over the felsic flows completed the filling of the trough and, for the most part, the formation of the Snake River Plain.

Leasable Minerals

Oil and Gas

The Cordilleran orogenic belt is often called the Overthrust Belt Oil and Gas Province where a thick sequence of sedimentary rocks were folded and faulted. Older strata were thrust eastward over younger strata, forming structures capable of trapping oil and natural gas. The Wyoming-Utah-Idaho portion of the Overthrust Belt (within which are producing fields) includes the Middle Rockies within the resource area. To the northwest, the Northern Rockies also have characteristics favorable for the occurance of oil and gas. Petroleum reserves might even occur in the basement sedimentary rocks or the overlying volcanics within the Snake River Plain.

Although there has been no production of oil and gas from lands within the resource area, over 80% of the open federal oil and gas estate administered by the BLM is under oil and gas lease or lease application. Almost all, 99.6%, of the BLM mineral estate lands in the resource area are classified prospectively valuable for oil and gas.

Since 1974, 73 geophysical exploration operations (mostly seismic and magnetotelluric surveys) were conducted on public lands within the resource area. Exploratory drilling proposals are currently submitted at a rate of four per year, but primarily involve national forest lands.

Oil and gas reserve estimates for the Wyoming-Utah-Idaho portion of the Overthrust Belt range from 0.6 to 90 billion barrels of oil and 4 to 515 trillion cubic feet of gas (Ver Ploeg, 1979).

Geothermal Resources

Several thermal wells and springs occur along the margins of the Snake River Plain and in the Rocky Mountain foothills. Other indications of thermal anomallies in the area include geologically recent volcanic eruptions, active fault zones, volcanic rift zones, and silicic caldera systems. Surface temperatures of the thermal waters are 20 degrees Centigrade to over 50 degrees Centigrade. Although geochemical testing of these fluids show geothermal reservoir temperatures as high as 200 degrees C., the most reliable geothermometers indicate subsurface temperatures of at most 100 degrees

Centigrade (U.S. Department of Interior, 1982a). If geothermal resource temperatures high enough for electrical power generation (above 150 degrees Centigrade) occur within the resource area, they probably exist at depths of 8,000 to 30,000 feet. The primary potential for this resource lies in non-electrical applications such as space heating, hot springs resort development and greenhouse operations.

10.8% of the federal mineral estate administered by the BLM is classified prospectively valuable for geothermal resources. About 5,100 acres of these lands are under geothermal lease or lease application. In 1978 and 1979 three geothermal exploration operations (the drilling of shallow temperature gradient holes) were conducted in the area. No exploration or development plans have been proposed since that time. The Island Park and Yellowstone Known Geothermal Resource Areas involve national forest lands in the northeast corner of the resource area.

Phosphate

Within the resource area are exposures of the Meade Peak Phosphatic Shale Member of the Permian Phosphoria Formation. These exposures occur mostly on national forest lands in the mountain ranges of the Northern and Middle Rockies. The richest deposits are in the Caribou Range Known Phosphate Leasing Area (KPLA). West of Swan Valley the northernmost 80 acres of this KPLA lie outside of the national forest on lands with privately owned surface estate. A federal phosphate lease covers half of this acreage, plus another 40 acres of private land adjacent to the KPLA. The U.S. has reserved and the BLM administers the phosphate mineral estate on these 120 acres. Including the acreage under KPLA designation, about 6,400 acres of federal mineral estate administered by the BLM are classified prospectively valuable for phosphate.

Within 5,000 feet of the surface, over a billion tons of low to high grade phosphatic rock occur in the resource area (Sheldon, 1963). However, because most of this rock cannot be mined economically, interest in developing these deposits has not been significant. Future interest will depend on the depletion of reserves at the active mining properties south of the resource area where about 140 million tons of ore have been mined since notable production began in 1907 (U.S. Department of Interior and Agriculture, 1976).

The southeast Idaho phosphate field encompasses several KPLAs from the Caribou Range at the field's northern end to the Wasatch Range at its southern end. Also considered part of this field are the phosphate resources in the Fort Hall Indian Reservation. Mineable reserves for this area are defined as phosphate deposits of at least 20 feet in thickness, consisting of at least 24% P_2O_5 and under at most 600 feet of overburden. The known mineable reserves of the southeast Idaho field are in the KPLAs and in the Reservation and are estimated at just over a billion tons (Garrand, 1975). Mineable reserves in the Caribou KPLA may be around 100 million tons or about 10% of the total.

Locatable Minerals

Industrial-grade limestone, travertine building stone, bentonite, and placer gold sources occur in the resource area.

Marine, fresh water and travertine limestones from Carboniferous to Tertiary in age crop out in the Northern and Middle Rocky Mountains. The limestone in the Lidy Hot Springs-Medicine Lodge Creek area has the best development potential. Since 1965 an estimated 60,000 tons of limestone have been mined from nine quarries in this area. Past use of the material includes the cutting of travertine building stone but because of its high purity (over 95% $CaCO_3$), current production is primarily for industrial use. About 10,000 tons of limestone are mined per year from four mines and the limestone is processed for use as cattle feed supplement. Production is projected to increase 10-50% through 1989. Patent has been applied for on 10 limestone/bentonite mining claims in this area. A recent mineral examination has determined that 1,062 of the acres claimed contain economically mineable limestone (Harrison, 1984b). Hundreds of millions of tons of economically mineable limestone may occur in the Lidy Hot Springs-Medicine Lodge Creek area.

Bentonite clays of sufficient quality to be commercially valuable for use in the foundary and drilling industries occur in the Lidy Hot Springs area. Since the 1960's several thousand tons have been produced from three pits. A mineral examination of the Wilson claims under patent application has determined that 185 of the acres claimed contain economically mineable bentonite (Harrison, 1984b). Several million tons of mineable bentonite reserves are in the Lidy Hot Springs area.

Gravel deposits along channels of the Snake River are potential sources of placer gold. Roughly 600 ounces of gold were produced from three sites within the resource area from the 1870's to the 1950's (Savage, 1961 and Staley, 1945). Because of numerous recovery problems, there has been no recent gold production from the area, but exploration activities are currently active in the Deer Parks area and southwest of Stinking Springs Canyon. In 1983, samples of skim bar or flood gold placer deposits were taken from islands of the Snake River's South Fork. The highest sample values were less than 5% of that needed for economic feasibility (Harrison, 1984a).

About 135 mining claims involving limestone, bentonite, placer gold, building stone, and other, unidentified mineral deposits are located in the resource area. 73.3% of these claims are in management area 1, 14.1% in area 9, 9.6% in area 4 and 3.0% in management areas 2, 3 and 5. Five 43 CFR 3809 Notices of claim operations involving limestone, bentonite and placer gold are currently active.

Saleable Minerals

Deposited throughout the resource area are common varieties of eolian, alluvial, colluvial and volcanic mineral materials.

From 75 sites about 3 million cubic yards of sand, gravel, cinders, riprap, talus, and fill dirt have been produced since the 1930's. These materials are used primarily by state and county road departments and local irrigation districts for the construction and maintenance of roads, canals and dams. Thirty-eight free use permits and material site rights-of-way issued for many of these sites were active in 1983. One or two sales of gravel or riprap are negotiated each year.

The Middle Rockies contain Tertiary ash flow deposits that are major sources of commercial grade pumice. From the Rock Hollow area six miles southeast of Idaho Falls and from a mine three miles east of Ammon, Producers Pumice Company and AMCOR, Inc. produce 25,000 to 30,000 tons annually. The material is used in the manufacturing of construction and decorative veneer building blocks. Production from federal lands at the Sunnyside Pit east of Ammon and at the Shell Pit in the Rock Hollow area took place almost entirely from the 1930's to the early 1960's and is estimated at 500,000 tons. Mineable reserves of federal pumice at the two sites also are an estimated 500,000 tons. However, production from private sources will meet the demand for 30 or more years (Carroll, 1984).

Deposits of lava building stone veneer occur 20 miles west and 25 miles east-northeast of Dubois. During the Quaternary and Tertiary geologic periods, thin flows of andesite and basalt formed poligonal slabs of rock on the surface as they cooled.

An estimated 500 to 1,000 tons of andesite plates have been mined from the flanks of a volcanic mesa near Devil's Gap west of Dubois. Mining claims have been located on this deposit and rock has been mined from the area since the mid 1970's. However, it is not likely that the material is an uncommon variety of building stone locatable under the 1872 Mining Law as amended.

The deposit east of Dubois involves basalt flows from which minor amounts of rock have been removed. Interest in this rock has been expressed for several years, but the potential for the production of significant quantities of basalt slabs from the area is not known.

FORESTRY

The Medicine Lodge Resource Area contains about 14,410 acres of commercial forest land and 12,773 acres of woodland (see Glossary) according to an extensive forest inventory and operations inventory in 1979, 1980 and 1981. Most of the commercial forest land adjoins or is within 2 miles of the Targhee National Forest in Fremont, Teton and Clark counties. These commercial stands stocked with predominantly Douglas-fir and lodgepole pine are usually a part of a major forest type lying principally within the adjoining national forest or an isolated stand of low value timber. Scattered stands of aspen, Englemann spruce and limber pine are located throughout the planning area. Narrow leaf cottonwood is found in pure stands and also occurs with Douglas-fir along the South Fork of the Snake River.

There are 15 active commercial timber sales in the planning area. These sales total 500 acres with a remaining volume to be cut of about 5 million board feet (MMBF). The sales are predominantly salvage in nature and were part of the BLM's salvage program initiated in the late 1970's. The planning area maintains a minor firewood and forest product program in an area known locally as the Donut Hole. Approximately 200 acres with a present volume of 600 thousand board feet (MBF) of deadwood remains. At the present rate of use, the area will support this program for another 2-3 years. No new firewood areas are planned.

At the current funding levels, the Idaho Falls District will average an annual harvest of about 400 MBF per year. The majority of this volume will come from the Medicine Lodge Resource Area. The current 5 year plan calls for approximately 2.8 MMBF to be harvested from the Resource Area. A majority of the proposed sales will be firewood and salvage sales geared towards the small timber sale operator or family type operation. These sales will be a method of cleanup in certain timber areas. The potential does exist for a fairly large Douglas-fir salvage program. However, due to the importance of contract administration on the existing sales in the area the number of sales offered in the immediate future may be limited.

The number of requests for firewood and wood products material will probably increase significantly over the next few years. With the relatively small forested acreage in the area, BLM can handle these only on a limited basis. The demand for wood products is also expected to increase from forested lands in the planning area classified as woodlands. The Resource Area contains approximately 12,800 acres that can be classified as woodland. Accordingly, all woodland areas should be further inventoried to ascertain the acreage and productivity to further classify them available or non-available for wood product harvesting.

The forestry program in the Resource Area will strive to achieve forest land management compatible with other resource values as identified in the planning system. Harvesting timber and utilizing proper silvicultural treatments are essential elements in forest management. Specific management goals for the area are as follows:

1. Salvage of trees damaged by insects, disease, fire, and weather conditions.

2. Harvest through approved silvicultural prescriptions stagnated and overmature stands.

3. Provide optimum conditions for natural regeneration in the harvest program through soil scarification, thinning at regular intervals, rodent and livestock control, and disease and insect control.

4. To manage the timber resources under the principle of sustained yield.

LIVESTOCK FORAGE AND GRAZING

The Medicine Lodge Resource Area has 269 grazing allotments which are used by 262 livestock operators. There are 156 allotments administered under Section 3 of the Taylor Grazing Act used by 144 operators (see Glossary) . The remaining 113 allotments administered under Section 15 of the Taylor Grazing Act are used by 118 operators. Most of the Section 3 allotments contain state and/or private lands within the allotments, requiring establishment of percent federal range licensing. In the Section 3 allotments percent federal range varies from 1% to 100% with an average of 59%. Almost all Section 15 allotments are used in conjunction with private lands.

Grazing permits and leases are authorized on 625,273 acres of public land, of which 588,888 acres are administered as Section 3 licenses and 36,385 acres administered as Section 15 leases. There are also 180,419 acres within the

Idaho National Engineering Laboratory (INEL) withdrawal on which the BLM currently admininsters the grazing. The above acreages include 27,436 acres of public land and 55,383 acres within the INEL that are part of the Twin Buttes allotment but within the Big Butte Resource Area. These acres were not covered under other grazing EISs and will be included in this document.

Within the resource area there are 103,281 adjudicated animal unit months (AUMs) on the public lands. Of this, 7,313 AUMs are adjudicated on the INEL. All of the adjudicated AUMs are active preference. There are approximately 29,000 cattle, 62,000 sheep, and 110 horses that use 70,687, 31,957, and 637 AUMs respectively on the public and INEL lands.

There are currently 6 allotments managed under allotment management plans (AMPs). Five of the allotments are under rest-rotation systems and one has a deferred rotation system.

An ecological site inventory was conducted during 1982 and 1983 to determine the ecological condition of the public lands. Ecological condition may be explained as the results of comparing the existing plant community on a parcel of land with the potential plant community that should be on that parcel of land barring man's influence (USDA, SCS, 1976).

The potential plant community is derived from natural environmental factors such as soils, topography and climate, which creates an environment that is best suited for that native plant community (Stoddart, Smith, and Box, 1975). It shouldn't be assumed that good ecological condition is necessarily good condition for livestock grazing. A plant community that is altered by burning, spraying or mechanical treatment may rate as fair ecological condition but may be good or even excellent condition for livestock grazing. Therefore, obtaining the potential plant community is not always the management goal for an area.

The results of the Ecological Site Inventory as pertaining to ecological condition are as follows: 1% excellent; 45% good; 34% fair; 2% poor; and 18% disturbed on public lands and 23% good; 56% fair; 11% poor and 10% disturbed on INEL lands. The disturbed rating was used for those areas that had their natural plant community altered by wildfire, prescribed burns, mechanical treatment including seeding or spraying (see Appendix B, page 3).

An Apparent Trend Inventory was conducted in conjunction with the ecological site inventory. Trend may be explained as the direction a plant community is heading in comparison to where it is now (Stoddart, Smith, Box, 1975). If the plant community succession is towards the potential plant community or towards management objectives for the community then the trend is upward. If there is no change in the plant community then the trend is static. If the plant community succession is away from the potential plant community or management objectives for the community then the trend is downward. The results of the apparent trend inventory is 9% upward, 71% static, and 20% downward.

Livestock grazing generally occurs between May 1 and November 30 but some early spring and late fall and winter use is also authorized. A large percentage of the operations use the public lands in the spring, then move on to the high country, usually U. S. Forest Service lands, in the summer and return to the public lands in the fall before returning to their home base.

The resource area has three major problems affecting range management. These problems are excessive sagebrush density, lack of water and livestock distribution. Most of the fair ecological condition range is classified as fair due to the high composition of sagebrush. The understory of these areas is abundant with key forage perennial grasses. Areas of heavy sagebrush that had brush removed by burning, spray or mechanical means in the past have responded significantly with increased perennial forage production. Once the brush is removed, these areas begin succession towards a balanced plant community which is near the potential plant community (Blaisdell, Murray, McArthur, 1982). The Sands HMP (Area 5), the northern-most portion of the Medicine Lodge (Area 1), the Twin Buttes, and INEL are examples of areas of excessive sagebrush density.

The lack of water and livestock distribution are directly related in range management. The improvement of livestock distribution requires the establishment of water and sometimes fences to provide additional range for livestock grazing. Range improvements are lacking throughout management areas 1, 2 (Twin Buttes), 3, and 5, resulting in the concentrated use of some areas within allotments and light to no use of other areas.

TERRESTRIAL WILDLIFE HABITAT

Wildlife habitat is composed principally of high quality native ranges. These native ranges are basically defined as Wyoming sagebrush/squirreltail, basin big sagebrush/bluebunch wheatgrass, Mt. big sagebrush/Idaho fescue, low sage/bluebunch wheatgrass, bitterbrush/needle and thread, lodgepole pine, Douglas-fir, and juniper/serviceberry types. Wildlife species diversity is high as a result of the diversity in habitat and the abundance of water. Only major species will be addressed in this document due to limitations on space. Some Idaho sensitive species have not been addressed for this reason, but management direction for these species will be consistent with the Bureau's Sensitive Species Management Direction (BLM/IDF&G MOU, 1977).

Wildlife habitat condition was rated as satisfactory or unsatisfactory based on the habitat requirements needed by the species to maintain and produce a viable population. Some of the general factors considered in delineating satisfactory and unsatisfactory habitats were:

- Age and form class of the key herbaceous and browse species,
- Livestock utilization of key vegetation species in crucial areas,
- Presence or absences of key vegetation species in riparian zones, and the vigor of the plant community,
- The loss or improvement of key habitat components that are located side by side.

Wildlife AUMs were provided to the BLM by Idaho Department of Fish and Game. The AUM changes that occur in each alternative were concurred with by Idaho Department of Fish and Game. AUMs were based on Idaho Instruction Memo ID-79-212 with the exception of antelope (10 antelope = 1 AU).