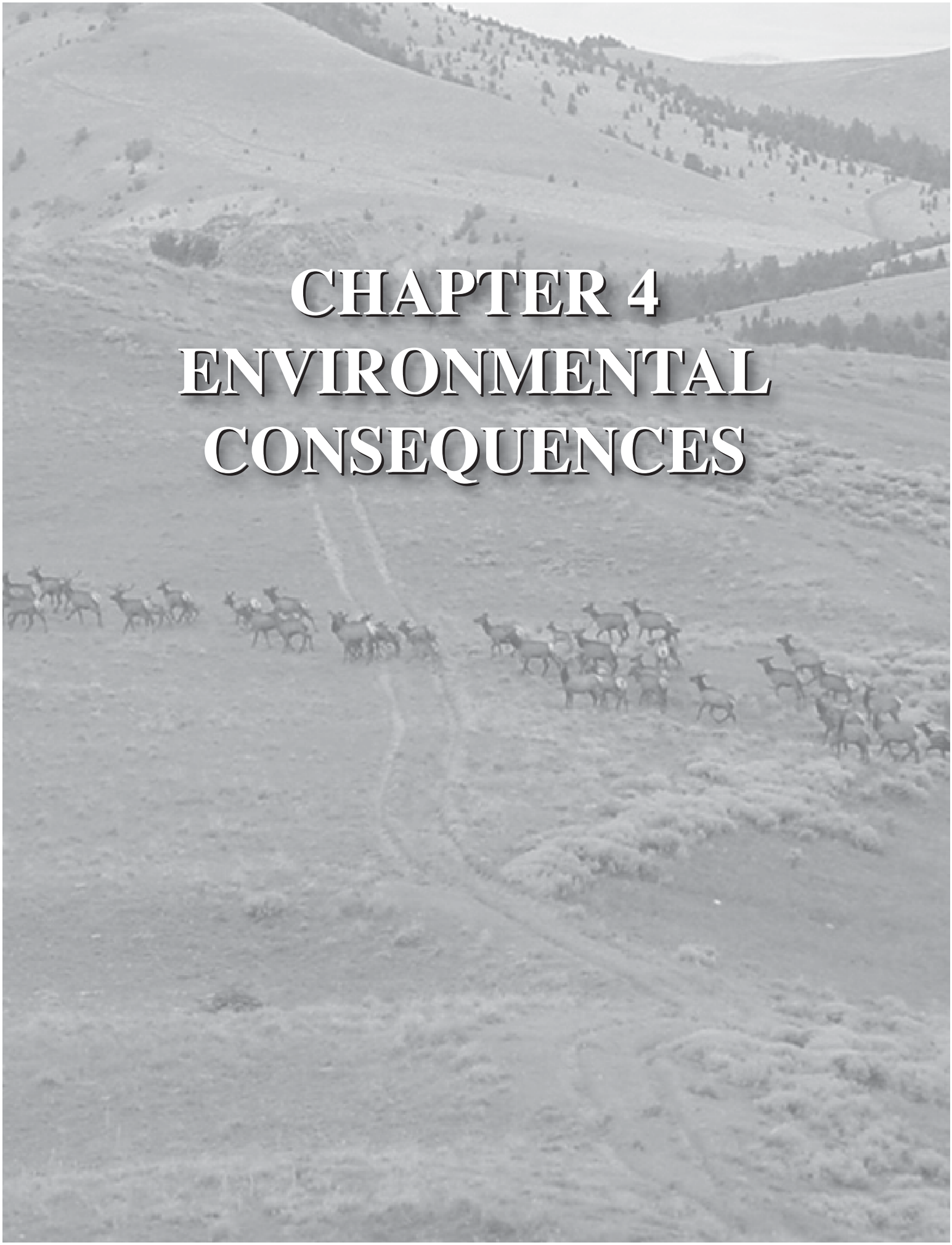

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

HOW TO READ THIS CHAPTER

Chapter 4 presents the likely impacts to the human and natural environment in terms of environmental, social and economic consequences that are projected to occur from implementing the alternatives presented in Chapter 2. Changes made as a result of public comment and internal review are shaded in gray. Chapter 2 also provides a summary comparison of the impacts in table format (see **Table 13**). Chapter 4 contains nine main sections:

- Introduction
- Analysis Assumptions and Guidelines
- Impacts Common to All Alternatives
- Impacts from Alternative A
- Impacts from Alternative B
- Impacts from Alternative C
- Impacts from Alternative D
- Cumulative Impacts
- Irretrievable and Irreversible Impacts
- Unavoidable Adverse Impacts

The *Introduction* section includes definitions of the types of effects that will be projected throughout the impact sections and the terminology used, discusses the availability of data, and identifies the BLM's Critical Elements. This section is followed by the analysis assumptions and detailed description of impacts. The detailed analysis of impacts is organized by alternative, then by resource. Since mitigation measures and standard operating procedures have been included in the alternatives as design features, many impacts are reduced or eliminated up front. The section titled *Impacts Common to All Alternatives* describes impacts that will not vary by alternative. These impacts are not discussed again. Separate sections describing cumulative impacts, irretrievable and/or irreversible commitment of resources, and unavoidable adverse impacts are presented at the end of the chapter.

For ease of reading, analysis shown in Alternative A may be referenced in following alternatives with such statements as "impacts would be the same as Alternative A" or "impacts would be the same as Alternative A, except for . . ." as applicable.

INTRODUCTION

The analysis of impacts associated with the alternatives is required by BLM planning regulations and by the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA). The analysis presents best estimates of impacts. As required by NEPA, direct, indirect and cumulative effects are discussed. When quantitative information is available, impacts have been calculated primarily through GIS applications. Direct and indirect impacts are described in terms of duration (short-term, long-term), intensity (negligible, minor, moderate or major), and context (local, regional, national). Definitions for these terms are provided under *Types of Effects*. Since the alternatives generally describe overall management emphasis, the environmental consequences are most often expressed in comparative, general terms. Separate sections describing cumulative impacts, irretrievable and/or irreversible commitment of resources, and unavoidable adverse impacts are then presented at the end of the chapter.

Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and the planning area, information provided by experts in the BLM or in other agencies, and information contained in pertinent existing literature. The baseline used for the impact analysis is the current condition or situation as described in Chapter 3 (Affected Environment). Analysis assumptions have also been developed to help guide the determination of effects (see *Analysis Assumptions and Guidelines*). Since the Draft RMP/EIS provides a broad management framework, the analysis in this chapter represents best estimates of impacts since exact locations of development or management are often unknown. Impacts are quantified to the extent practical with available data. In the absence of quantitative data, best professional judgment provides the basis for the impact analysis.

TYPES OF EFFECTS

Direct, indirect and cumulative impacts are considered in this effects analysis, consistent with direction provided in 40 CFR 1502.16.

Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place. Indirect impacts result from implementation of an action or alternative, but are usually later in time or removed in distance, and are reasonable certain to occur. Cumulative impacts result from activities combined with past, present and future actions on all jurisdictions. Cumulative impacts also result from individually minor but collectively significant actions over time. Past and present impacts are reflected in the existing conditions in Beaverhead and Madison Counties, Montana.

Actions anticipated over the next 20 years on all lands in the planning area, including private, State (FWP and DNRC) and Federal (USFS, BOR, NPS, USFWS) ownerships, have been considered in the analysis to the extent reasonable and possible. This analysis is provided for each resource/program area and is general because decisions about other ac-

tions in the planning area would be made by many public and private entities, and the location, timing, and magnitude of these actions are not well known. Actions outside of BLM's jurisdiction considered in the cumulative effects analysis include:

- Consolidation by the U.S. Fish and Wildlife Service within the boundaries of Red Rock Lakes National Wildlife Refuge will continue.
- Area reservoirs (i.e. Clark Canyon, Ruby, Lima, etc.) will continue to be operated for storage and summer draw down.
- There will be an increase in the number of conservation easements within the planning area to prevent subdivisions and development.
- Private lands will be increasingly purchased and/or operated for purposes other than commodity production, including recreation, philosophical, and quality of life values.
- Vegetation manipulation will continue on private lands, and that might lead to a decrease in sagebrush canopy.
- There will be continued timber harvest on DNRC lands.
- The Montana State River Recreation Management Plan may influence recreationists numbers, and other management activities on rivers in the DFO.
- The USDA Forest Service would continue and maintain commercial saw log harvest.
- The USDA Forest Service would increase the use of prescribed and natural ignition fires.
- Large scale, stand replacing wildland fires can be expected to cross into lands under the jurisdication of the BLM Dillon Field Office.
- Livestock and wildlife grazing on state lands would continue.
- There would be an increasing use of communication sites and corridors.
- The development of unincorporated areas would continue.
- The Montana Department of Transportation Highway Reconfiguration study may affect highways within the planning area and implementation may result in changes in traffic patterns.
- The Yellowstone National Park snowmobile use decision may affect snowmobiling use within the DFO.
- Beaverhead and Madison County will continue to maintain roads under their jurisdiction.

Impacts are described in terms of duration (short-term, long-term), intensity (negligible, minor, moderate or major), and context (local, regional, national). Definitions for these terms are provided below.

Short-Term: The effect would occur only during or immediately after implementation of the alternative. For the purposes of this plan, short-term effects would occur during the first five years.

Long-Term: The effect would occur for an extended period after implementation of the alternative. The effect could last several years or more. For the purposes of this plan, long-term effects would occur beyond the first five years and perhaps over the life of the plan.

Negligible: The impact is at the lower level of detection; there would be no measurable change.

Minor: The impact is slight but detectable; there would be a small change.

Moderate: The impact is readily apparent; there would be a measurable change that could result in a small but permanent change.

Major: The impact is severe; there would be a highly noticeable, long-term or permanent measurable change.

For ease of reading, analysis shown in Alternative A may be referenced in the following alternatives with such statements as "impacts would be the same as Alternative A" or "impacts would be the same as Alternative A, except for . . ." as applicable. A tabular summary of these impacts can be found at the end of this chapter.

Irretrievable or irreversible commitment of resources and unavoidable adverse impacts are also discussed at the conclusion of the environmental consequences section after the *Cumulative Impacts* section. Irreversible commitments of resources result from actions in which resources are considered *permanently changed*. Irretrievable commitments of resources result from actions in which resources are considered *permanently lost*. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures, and include impacts for which there are no mitigation measures.

AVAILABILITY OF DATA AND INCOMPLETE INFORMATION

The best available information pertinent to the decisions to be made was used in development of the RMP. Considerable effort has been taken to acquire and convert resource data into digital format for use in the plan—both from BLM sources and from outside sources such as the Montana Natural Heritage Program.

Certain information was unavailable for use in developing this plan, usually because inventories have either not been conducted or are not complete. Some of the major types of data unavailable are:

- Planning area-wide vegetation by species
- Detailed soil survey for lands in Beaverhead County
- Certain wildlife inventory data (i.e. lynx denning habitat, occupied pygmy rabbit habitat)
- Wildlife monitoring data
- 100 year floodplain mapping
- Traditional use areas of Native Americans
- Recreation monitoring data

As a result, impacts cannot be quantified given the proposed management of certain resources. Where this occurs, impacts are projected in qualitative terms, or in some instances, are described as unknown. Subsequent project level analysis will provide the opportunity to collect and examine site-specific inventory data necessary to determine the appropriate application of the RMP level guidance. In addition, ongoing inventory efforts within the planning area continue to update and refine the information used to implement this plan.

CRITICAL ELEMENTS

BLM considers 14 items as "Critical Elements of the Human Environment" that must be addressed during environmental analysis.

There are currently no designated ACECs or Wild and Scenic Rivers in the planning area and thus these elements are not addressed. Impacts related to proposed designations or findings are described under each respective section on ACECs and Wild and Scenic Rivers by alternative.

Floodplains and Prime or Unique Farmlands are generally not present on BLM administered lands covered by this plan. Where they may occur, subsequent analysis for any projects with potential to impact Floodplains or Prime or Unique Farmlands would be prepared to address potential impacts.

The remaining 10 critical elements are addressed under pertinent sections of Chapter 4 which are identified as containing information relating to a critical element. These include: Air Quality, Cultural Resources (addressed under Cultural Resources and Tribal Treaty Rights), Environmental Justice, Native American Religious Concerns (addressed under Cultural Resources and Tribal Treaty Rights), Threatened or Endangered Species (addressed under Special Status Species), Hazardous or Solid Wastes, Water Quality, Wetlands/Riparian Zones (addressed under Vegetation—Riparian and Wetlands), Wilderness, and Noxious Weeds and Non-Native Invasives (addressed under Vegetation—Invasive Species including Noxious Weeds).

ANALYSIS ASSUMPTIONS AND GUIDELINES

Several assumptions were made to facilitate the analysis of the projected impacts. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur within the planning area over the planning horizon (20 years). These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative and described in Chapter 2. If no assumptions were made for a resource, resource use, or program, the heading is not included in the following sections.

GENERAL ASSUMPTIONS

- Sufficient funding and personnel would be available for implementation of the final decision.
- Implementation of actions from any of the RMP alternatives would be in compliance with all valid existing rights, federal regulations, bureau policies, and other requirements.
- Local climate patterns of historic record and related conditions for plant growth would continue.
- Appropriate maintenance would be carried out to maintain the functional capability of all developments.
- The discussion of impacts is based on the best available data. Knowledge of the planning area and profes-

sional judgment, based on observation and analysis of conditions and responses in similar areas, are used to infer environmental impacts where data is limited.

- Acreage figures and other numbers used in the analysis are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations.

RESOURCE ASSUMPTIONS

AIR QUALITY

Demand for clean air in the planning area is expected to remain constant over the life of the plan. Increasing uses of the area for recreational and aesthetic reasons may lend importance to maintaining the current quality of the air, especially during seasons of high visitation.

The most likely causes of deterioration in air quality in the planning area would be emissions from fire (wildfire or prescribed fire), dust from travel on secondary roads, and dust and exhaust from construction or development activities.

CULTURAL RESOURCES

Federal undertakings and unauthorized uses have the potential to cause irreversible disturbance and damage to nonrenewable cultural resources. BLM would continue to mitigate impacts to cultural resources from authorized uses through project abandonment, redesign, and if necessary data recovery investigations in accordance with the BLM National Cultural Programmatic Agreement and the Protocol for Managing Cultural Resources on Land Administered by the BLM in Montana.

Without a 100 percent inventory of all public lands within the planning area, the exact number, kind, and variability of cultural resources will be unknown. However, new cultural resources would continue to be found and evaluated for eligibility to the National Register of Historic Places as additional inventories are completed for compliance projects. Eligible cultural resources would continue to be treated similarly and equally in terms of type, composition, and importance, but many would continue to deteriorate through natural agents, unauthorized public use, and vandalism The BLM would continue to consult with Native American Tribes on traditional cultural properties and values that are of concern to them.

All archaeological resources will be assessed according to BLM use categories. The demand for use of cultural resources is expected to increase over the life of the plan. Interest from the general public in historical tourism and from Native Americans for traditional uses is expected to increase. The demand to use cultural resources by the academic community in scientific research would be expected to remain at current levels.

FISH AND WILDLIFE

Fish

There is direct correlation between the amount of quality habitat and fish populations and changes in habitat quality would cause an increase or decrease in fish numbers. Improvement in riparian conditions would have a direct positive impact on fisheries habitat. Demand for fisheries resources is expected to increase over the life of the plan resulting in increased pressure on populations in the planning area.

Wildife

There is a direct relationship between the quantity and quality of habitat, and the size, diversity and viability of species populations. Habitat requirements for any particular species cannot be met everywhere - species specific needs are often very site specific. Habitat may be only seasonally available due to elevation, aspect, type of vegetation present and proximity of human disturbance. Habitat conditions will vary due to natural processes and wildlife uses even if human-caused influences are reduced or eliminated.

The interaction of an animal population with its habitat is dynamic, and numbers of animals and their geographic distribution may vary significantly over time. However there is a critical minimum threshold at which degraded habitat conditions or reduced population size and viability limits the long-term sustainability of a population. Conversely, there is a similar upper limit that limits further population growth or expansion. These thresholds may be physical or biological, natural or human-caused, and are most important with small, sedentary populations and species with very rigid breeding habitat requirements - amphibians/reptiles, small mammals. Learned and traditional behavior may limit a species' ability to colonize or recolonize habitat, and adaptability varies by species and habitat. Management actions intending to benefit a specific habitat for a priority species will influence any other species occurring in that same habitat. Therefore, impacts to wildlife populations and habitat are not discrete since actions may benefit one species while having an adverse, or a beneficial, impact on another. Maintaining high quality habitat conditions can have some influence on reducing the severity of outbreaks and subsequent losses from diseases, but the prevalence in the environment of various diseases cannot be fully controlled, particularly at chronic levels of occurrence.

The Dillon Field Office can be divided along a line extending from the south Pioneer Mountains through Dillon to the southwest Snowcrest Mountains. This line separates the areas retaining the most intact wildlife habitat from those areas that have been and are being most affected by larger scale development – mining, timber harvest, agricultural development and urban interface conflicts. This emphasizes the importance of protecting/conserving habitats in the southwest half of the Field Office while mitigation of habitat impacts may be more important in the northeast half.

Demand for wildlife habitat is expected to increase over the life of the plan given increased listings under the Endangered Species Act, and increasing recreational activities in the planning area (e.g., wildlife viewing, hunting).

PALEONTOLOGICAL RESOURCES

Federal undertakings and unauthorized uses have the potential to cause irreversible disturbance and damage to non-renewable paleontological resources. BLM would continue to mitigate impacts to paleontological resources from authorized uses, through project abandonment, redesign, and specimen recovery. Geologic formations with exposures containing vertebrate and non-vertebrate fossils would continue to be impacted from natural agents, unauthorized public use, and vandalism.

The demand for use of both vertebrate and non-vertebrate fossils is expected to increase over the life of the plan. The casual-use and collection of non-vertebrate fossils by “rock hounds” and fossil collectors is expected to increase. Scientific interest in vertebrate fossils by the academic community is also expected to remain at current levels or possibly increase slightly.

SPECIAL STATUS SPECIES

Continuing and additional inventory would identify additional species on lands administered by BLM. Demand for protection of species listed under the Endangered Species Act as well as for species not yet listed but of concern would likely increase given concerns over growth and development on habitats containing these species.

As awareness of special status species increases, the need for special status species habitat is expected to increase in the planning area. Conservation measures to improve and secure habitat would continue to receive special consideration during planning. As listing status changes, management will change to reflect current rank. Without a change in current population trends, some species that are currently considered sensitive, or not formally included in BLM’s sensitive species list, may be listed under the Endangered Species Act. Some currently listed species may be de-listed during the life of the RMP, including the bald eagle, gray wolf and grizzly bear.

National and regional conservation strategies/plans would be developed to avoid species listings under ESA. The use of programmatic consultation screens will streamline program consultations and provide management consistency across administrative boundaries. Without this proactive emphasis, increasing numbers of diverse species will enter the ESA listing process, the consultation process will continue to be encumbered and inefficient, and single-species recovery plans will be developed during and after listing.

VEGETATION—FOREST AND WOODLANDS

Demand for forests and woodlands would increase, based on desires for wildlife habitat, increased water yield from public lands and concerns about the effects of wildland fire. Vegetation treatments to forests and woodlands would promote successional changes that would restore vigor and vegetation production, especially in Douglas-fir (warm/dry) forest types. Both natural and human caused fire events will likely increase as fuel loading increases. Fires will most likely increase in size and intensity during the life of this plan without vegetative treatments. Fire suppression efforts will continue in areas of urban interface and where wildland fire would produce undesirable resource effects.

VEGETATION—INVASIVE SPECIES including NOXIOUS WEEDS

Noxious weeds would be controlled with a variety of methods, but will not be eradicated over the life of the plan. The demand for control of weeds is expected to increase as general public knowledge of the detriments of noxious weeds increases. Increases in invasive species would reduce habitat quality and quantity.

VEGETATION—RANGELAND

Demand for vegetative resources is expected to increase over the life of the plan. It is assumed that reduced vegetation structure and ground cover would lead to increased soil erosion and sedimentation in streams.

VEGETATION—RIPARIAN AND WETLANDS

Condition of riparian communities would improve as management measures are implemented that reduce the frequency and intensity of impacts to vegetation and

streambanks. Changing plant community composition for a greater composition of desired plants and increased structure would require restoring the vigor and production of existing vegetation in order to promote successional changes. Restoring stream channel morphology would take longer than vegetation recovery but is dependent on that process. Where native vegetation compositions or stream channel morphology have been significantly altered, the likelihood of restoring riparian areas to the original site potential may have been compromised.

VISUAL RESOURCES

Scenic resources would remain in demand within the planning area over the life of the plan. Events such as the Lewis and Clark Bicentennial and increasing tourism will increase the value of open spaces and undeveloped landscapes.

WATER

Water Quality requirements would be achieved through the use of Best Management Practices and by working with the Montana Department of Environmental Quality in the future development of Water Quality Restoration Plans. Water Quality Restoration Plans and/or the establishment of total maximum daily loads (TMDLs) would improve water quality. Roads in the DFO would continue to erode from natural causes resulting in impacts to water quality in adjacent streams. It is assumed that increased vegetative cover would lead to reduced soil erosion and in certain instances reduced deposition of sediments into streams. Removal of conifer encroachment could result in an increased quantity of water.

WILD HORSES AND BURROS

No herds would be established in the planning area over the life of the plan.

RESOURCE USE ASSUMPTIONS

FOREST PRODUCTS

Stewardship opportunities that utilize forest products in return for other resource service work would continue to increase. National and international demand for wood products would increase. Vegetation treatments would improve timber stand quality and quantity. Insects and disease will continue to contribute to the loss of growth an lengthen the time to a desired volume yield.

Increased mechanization of harvest technology will continue. Increased limitations on physical access for product removal will continue. Competition among multiple resource demands will continue to limit the yield of wood products from public lands. The potential for timber trespass onto BLM lands from harvest operations on adjacent lands will continue.

LANDS AND REALTY

Land Use Authorizations

There would be a continued demand for land use authorizations such as rights-of-way and the various types of leases and permits within the planning area for the life of the plan. It is assumed that the demand for these land use authorizations would fluctuate directly with the degree of economic growth and development occurring within and adjacent to the planning area.

Land Ownership Adjustment

There would be a continued demand, both from within and outside the BLM, for land ownership adjustments to improve the manageability of federal and non-federal lands. Land exchanges would continue to be the preferred method of land ownership adjustment. Due to the relative differences in appraised values between BLM and non-federal lands, it is expected that there would be a net loss in acres of BLM lands in most exchange transactions.

Land identified for disposal would usually go into State or private ownership, and would be used for its highest and best use (residential, commercial, industrial, or for public purposes.

Access

Demand for adequate access - the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands - is expected to remain high over the life of the plan. Easement acquisition would be the primary means of acquiring access where needed.

LIVESTOCK GRAZING

The demand for livestock forage is expected to follow market trends and conditions and will likely remain relatively stable for the life of the plan. Any reduction in grazing preference by the BLM would cause a proportional reduction in actual use levels. Estimated reductions in AUMs due to sage grouse management were based on implementation of a 7” residual herbaceous height provision and consider the worst case scenario based on current inventory information.

MINERALS—LEASABLE

No exploration or development of coal or geothermal leases would occur within the life of the plan. Oil shale would not be leased and no appreciable development of phosphate would occur within the life of the RMP. While the phosphate market is currently supplied from other areas and those supplies are expected to last 20 years or more, interest in phosphate could occur in the planning area given potential deposits that exist.

Oil and gas exploration would occur as described in the reasonably foreseeable development scenario (RFD scenario) which predicts a total of ten wells drilled over the life of the plan. The RFD scenario estimates that six of the total wells would be wildcat wells. Four of the wildcat wells would be dry holes and would be plugged and abandoned. These wells would disturb a total of 82 acres during drilling and testing. Two of the "wildcat wells" would be either oil or gas discoveries. For analysis purposes oil and/or gas production is assumed in the RFD scenario. One is projected to be on either BLM or Forest Service lands with the other on private minerals. Production is expected in the Big Hole and Lima areas. Production in the Big Hole Basin would be gas. Production in the area near Lima could be either oil or gas. Two "step-out wells" would be associated with each discovery. The productive wells would disturb 441 acres during drilling and testing. After production is established the well sites and access roads would be partially reclaimed. Pipelines would be totally reclaimed. This would leave a remaining disturbed area of 55.2 acres for the life of the wells. These disturbance figures include land disturbed by the actual well sites, access roads, and pipelines.

MINERALS—LOCATABLE

Most commodities will remain near the current price level for the life of the RMP. However, several minerals that are available in the planning area could see a marked increase in price and interest thus generating exploration activity and development. Development of new open pit mines using cyanide technology would not occur.

MINERAL MATERIALS

Demand for gravel and rip-rap and other mineral materials will increase at a moderate but steady rate over the life of the plan. This is due to the continued increase in population in the planning area and surrounding area and the fact that private land owners tend to be less willing than in the past to sell mineral material off their land. Demand for rip-rap will spike during wet years due to flooding and the need for bank stabilizing material along the many waterways in the area.

RECREATION

Demand for recreational use of public land is expected to increase over the life of the plan. Increases are expected to be focused on hunting and fishing uses, though interest in eco-tourism opportunities and non-traditional outfitted uses is expected to increase, as well as dispersed uses such as mountain biking, hiking, geocaching, and use of byway systems.

RENEWABLE ENERGY

It is assumed that the demand for renewable energy development on public lands within the planning area – particularly for wind and biomass resources – would increase provided both the technology and economic climate for these uses improve. As energy costs increase, the potential for co-generation facilities, where alternative energy sources supplement traditional sources, is expected to increase. Small diameter wood products from local public lands would become an important potential source of fuel for this type of energy production.

TRANSPORTATION AND FACILITIES

It is assumed that state and major county roads would continue to be maintained to current levels and that in general, county roads would not be abandoned. BLM facilities, mainly roads, would continue to be maintained, with priority placed on those most heavily used by the public.

UTILITY AND COMMUNICATION CORRIDORS

It is assumed that in terms of major utility lines, companies would focus first on the maintenance and upgrading of existing lines before undertaking new construction of major utility lines within the planning area. Demand for smaller distribution facilities to extend power and telephone services as rural development continues is expected to remain at current levels, but could fluctuate depending on the degree of economic growth and development occurring within and adjacent to the planning area.

FIRE MANAGEMENT AND ECOLOGY ASSUMPTIONS

WILDLAND FIRE

The Beaverhead Deerlodge National Forest and the Montana Department of Natural Resources would continue to

implement fire suppression related activities on BLM lands within the Dillon Field Office.

A Fire Management Plan would be developed for the planning area following the completion of the RMP. The Fire Management Plan will implement the fire management direction on BLM land within the Dillon Field Office.

PRESCRIBED FIRE

Wildland Urban Interface (WUI) would be the top priority for hazardous fuels treatments. Those areas outside of WUI would be prioritized for treatment based on the historical fire regime and current condition classes. Funding for treatments within WUI and other fire dependent ecosystems would remain constant, and project level collaboration and coordination would continue with other agencies.

Prescribed burn treatments would create a mosaic pattern which would in turn maintain structure and diversity. Wildfires could accomplish similar patterns, but would be more unpredictable and could instead burn large areas leaving no mosaic. Demand for fuels treatment will continue to increase over the life of the plan given the recent national trend of catastrophic fire events.

REHABILITATION

An update of the rehabilitation handbook would occur once the final Emergency Stabilization and Rehabilitation Handbook is finalized.

SPECIAL DESIGNATION ASSUMPTIONS

ACECs

Management prescribed for the potential ACECs would protect the relevant and important values identified during the evaluation process.

BACK COUNTRY BYWAYS

Management prescribed for Back Country Byways would provide opportunities for motor touring while enhancing the understanding of the multiple uses of public lands. No additional Back Country Byways would be designated over the life of the plan.

NATIONAL RECREATION AREAS

There are currently no National Recreation Areas within the planning area, and no lands within the planning area would be designated as National Recreation Areas over the life of the plan.

NATIONAL TRAILS

No additional lands within the planning area would be included in any newly designated National Historic, Scenic or Recreational Trails over the life of the plan. Use of the Continental Divide National Scenic Trail will increase as the trail is completed, improved, and maintained in the future. Use of the Bear Trap Canyon National Recreation Trail will also increase with the continued growth in the planning area and surrounding communities.

The Lewis and Clark and Nez Perce (Nee Me Poo) National Historic Trails traverse the planning area following designated motorized routes. Public lands that border the designated routes of these trails comprise a very small portion of their length within the planning area. The public demand for and recreational use of the two NHTs is expected to increase over the life of the plan. This is particularly true for the Lewis and Clark NHT as a result of Lewis and Clark Bicentennial commemoration activities between 2003-2006.

BLM would continue to mitigate impacts to designated National Historic Trails from authorized uses through project abandonment, redesign, and/or other mitigation, if necessary, in accordance with the BLM National Cultural Programmatic Agreement and the Protocol for Managing Cultural Resources on Land Administered by the BLM in Montana.

WILD AND SCENIC RIVERS

Management prescribed for rivers found suitable for designation in the National Wild and Scenic Rivers system would protect the outstandingly remarkable values, tentative classification, and free-flowing nature of those segments.

WILDERNESS AND WILDERNESS STUDY AREAS

The Bear Trap Unit of the Lee Metcalf Wilderness would continue to be managed as wilderness designated by Congress, and impacts would be the same under all alternatives. Wilderness values would be protected.

The BLM Interim Management Policy for Lands under Wilderness Review would continue to be applied to Wilderness Study Areas recommended to the President under the Section 603 wilderness review process.

SOCIAL AND ECONOMIC CONDITION ASSUMPTIONS

ECONOMICS

The economic impact analysis is based on BLM-related management changes. It assumes all other factors being the same. The analysis focuses on four key industries: grazing, forest products, mining, and recreation and tourism.

Grazing: Total forage necessary to feed current cattle and sheep numbers in Beaverhead and Madison Counties totals 4.0 million AUMs. BLM currently provides about 2.0 percent (an average of 80,938 actual use AUMs) of the total forage necessary to feed cattle and sheep in Beaverhead and Madison Counties. The estimated real estate value of BLM AUMs ranges from $0-100 per AUM. Any reduction in grazing preference by the BLM would cause a proportional reduction in actual use levels. Typical livestock operations in the planning area use BLM lands for an average length of four months. During this four month period, BLM provides an estimated 8 percent of total livestock forage. Most of the livestock grazed on BLM lands are cow-calf pairs, though all classes of livestock use BLM lands. In 2000, net farm earnings across the two county area averaged $9,147 per farm employee.

Forest Products: Impacts are derived based on harvest of Probable Sale Quantities (PSQ) proposed across alternatives in forest and woodland habitats outside of aspen areas. The 2.1 MMBF PSQ for Alternative A was derived by adding the estimated average production both inside and outside of the Gravelly and Pioneer landscape areas (see **Table 12**, *Forest Products* section). Treatment of aspen areas would provide a one-time "bump" in production that could not be sustained, so those board feet are not included in this analysis. Annual total timber production from the two county area is estimated to be 18.5 MMBF.Government revenues from timber sales of green timber would average an estimated $100 per MBF. Four percent of the receipts from sales of vegetative materials would go to the county from which the sale occurs.

Mining and Mineral Production: Demand for gravel, riprap, etc. would increase at a moderate but steady rate. Development of additional locatable mineral mines would not occur. Ten oil and gas wells would be drilled over the life of the plan, but only two of these would be discoveries and consequently developed. Drilling would employ 15-20 FTE per well for each of the ten wells. It is assumed that upon completion of the RMP one producing and two step-out gas wells would occur on BLM lands. Oil and gas exploration would create 16 FTE direct jobs per well, assuming each well would take up to 300 days to drill. For analysis purposes, it is also assumed that only one exploratory well would be drilled per year until a well is developed for production. Average income per job in the mining sector would be $48,817 (average for the State of Montana, 2000, Northwest Economic Associates).

Production would employ one FTE for the productive life of each of the producing wells (approximately 25 years each). It is assumed that 34,000 acres would be leased at the minimum bid ($2.00 per acre). During the first nine years of production, annual average level of oil production would be 18,350 barrels and annual average level of gas production would be 3,529,297 MCF (Beaverhead National Forest Oil and Gas Leasing Final Environmental Impact Statement, 1995). For economic analysis purposes, it is assumed that one gas field is discovered on federal minerals, gas prices would be 6.00 per MCF (Energy Information Administration, Short-term Energy Outlook, September, 2004). The State of Montana would assess production taxes on the value of production as specified in MCA 15-36-304.

Recreation and Tourism: Recreation use related to hunting, fishing, eco-tourism, mountain biking, hiking, geocaching, and use of the byway systems would increase by an unspecified amount (based on assumptions in *Recreation* section). Current levels of recreation visits for BLM lands in the DFO are estimated at 335,000 visits. Based on a survey conducted on the Beaverhead-Deerlodge National Forest, it is estimated that 78 percent of these visits are from local residents and 22 percent are from non-local visitors.

Employment and labor income response coefficients that are used as a basis for calculating employment and labor income effects are listed in **Table 56**.

HEALTH AND SAFETY

Public health and safety issues would receive priority consideration in the management of public lands. Demand for safe visits will increase with increasing numbers of public land users.

SOCIAL

The populations of Madison and Beaverhead Counties will continue to diversify in the ways described in Chapter 3, and will continue to age. Other population trends as described in the Economics section will continue to influence the social conditions in the area. Increased recreational demands as described in the Recreation assumptions section will also influence social aspects of the planning area.

In some cases, the social impacts are described in terms of effects to social well being. The type of things that could

Table 56
Employment and Labor Income Response Coefficients*

Land Use/ Resource Management	*Employment Response Coefficient*	*Labor Income Response Coefficient*
Grazing Management	145.8 jobs per million AUMs	$2,051,301 per million AUMs
Timber Management • Logging, contractors, & camps • Sawmills (96%) • Other (posts/poles/log homes) (3%)	 • 23 jobs per MMCF • 21 jobs per MMCF • 90 jobs per MMCF	 • $644,000 per MMCF • $714,000 per MMCF • $1,980,000 per MMCF
Recreation Use	1,078 visits per each total job	$19.91 in total labor income per visit
Government Expenditures • Salary Response ** • Non-salary expenditures response	 • 10.45 jobs per $MM • 9.97 jobs per $MM	 • $648,000 per $MM • $228,000 per $MM

*Based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004
**Based on 4-year annual average FTE positions per $MM BLM Dillon Field Office Expenditures from Table 49.

affect social well being include the amount and quality of available resources, such as recreation opportunities, and resolution of problems related to resource activities. Other less tangible beliefs that could affect social well being include individuals having a sense of control over the decisions that affect their future, and feeling that the government strives to act in ways that considers all stakeholders' needs.

The social groups are defined to facilitate the discussion of social impacts. It should be noted that these groupings greatly simplify the members' actual beliefs and values. For instance, some ranchers engage in recreation and are particularly concerned about resource protection. Recreationists may engage in both motorized and nonmotorized activities. The social analysis will cover the groups and individuals that are most likely to be affected by this plan.

TRIBAL TREATY RIGHTS

The BLM, as a governmental agency, would maintain a special government-to-government relationship with Federally recognized Indian Tribes. Members of the Shoshone-Bannock Tribes of the Fort Hall Reservation, the Confederated Salish-Kootenai Tribes of the Flathead Reservation and other tribes exercise their hunting, fishing, and gathering rights on Federal lands outside the boundaries of their reservations, including public lands within the Dillon Field Office. These pursuits include fishing for resident game fish species, hunting large and small game, and gathering natural resource for subsistence and medicinal purposes. It is expected that over the life of the plan, the demand from Native Americans to exercise their treaty rights on public lands will continue and potentially increase.

IMPACTS COMMON TO ALL ALTERNATIVES

This section describes impacts that are the same across all of the alternatives. This information is presented here to avoid repetition. Management of resources/resource uses/programs that would not cause impacts to the resource/resource use/program being discussed are identified upfront and are not discussed further. Resources/resource uses/programs that only have impacts that are common to all alternatives are only discussed in this section as well and are not discussed further.

The laws and Executive Orders affecting BLM management and planning are listed in **Appendix A.** Laws, regulations and policies affecting BLM management are also listed at the beginning of each resource/resources use section in Chapter 3. Standard operating procedures resulting from these laws, regulations and policies would continue to be followed under every alternative. These standard operating procedures constitute day-to-day implementation of policy and management, and often result in certain projects being mitigated, redesigned, or dropped from consideration. Associated limitations or complications they may present to

programs (e.g., increased processing times or costs) are not considered impacts and are not discussed further in this document.

RESOURCES

AIR QUALITY (BLM Critical Element)

Under all alternatives anticipated impacts to air quality from other resources/resource uses/programs would be negligible to minor. The exception to this would be during periods of time when smoke from prescribed and/or wild fires are burning resulting in temporarily exceeding Air Quality Standards. This short term impact could be planning area wide depending on the location, number, and intensity of the fire(s) burning.

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Proposed management of the following resources/resource uses/programs would have no anticipated direct impacts to cultural resources: Air Quality, Fisheries, Geology, Paleontology, Soils, Vegetation: Invasive Species, Water, Wildlife Habitat Management, Lands and Realty: Land Tenure Adjustment, Minerals-Mineral Sales, Transportation and Facilities, Environmental Justice, Indian Trust Resources, and Social Considerations.

Management measures in all alternatives would provide a systematic and proactive means to address direct impacts to cultural resources from authorized projects and activities. Inventories to identify cultural resources in response to a proposal for development projects, and avoidance or mitigation of impacts through data recovery investigations would minimize direct impacts. However, impacts to sites eligible for the NRHP under criterion D are more easily mitigated than those impacts to sites eligible under criterion A, B, or C, particularly in regard to Native American religious or traditional use sites. Once data recovery has been conducted at a given site it limits or diminishes potential opportunities for future research and interpretation.

The greatest risk of damage or destruction of cultural resources across all alternatives results from casual, unauthorized activities (such as dispersed recreational activity, OHV use, and vandalism) and natural processes (natural decay, deterioration, or erosion). Under all alternatives, unquantified indirect impacts would occur.

Under all alternatives BLM would continue to mitigate impacts to cultural resources from authorized uses, through project abandonment, redesign, and if necessary data recovery investigations. However cultural resources would continue to deteriorate through natural agents, unauthorized public use, and vandalism.

Achieving the DFC for Vegetation: Riparian/Wetlands would be positive for cultural resources. Protection of cultural resources that occur in these fragile environments increases proportionally with the increase in the percent improvement towards PFC of riparian/wetland habitats.

Grazing management which meets established Standards for Rangeland Health and Guidelines for Livestock Grazing should reduce the amount and extent of impacts or damage to cultural resources resulting from grazing on public lands.

While direct impacts associated with range improvement projects would be mitigated, other impacts may occur as a result of livestock grazing activities. Livestock congregation and trailing at or across cultural resource site locations can damage artifacts and the contexts in which they occur. Cattle shading and rubbing can damage standing historic structures and prehistoric pictograph panels. Excessive trampling at spring sources and along stream banks, cattle trailing, and overgrazing can all lead to a denuding of protective vegetation cover and create indirect impacts to cultural resources by accelerating natural erosion and exposing artifacts to illegal surface collection and vandalism. These types of impacts would generally be localized at particular site locations, and could range from short-term to long-term to irreversible.

The issuance of rights-of-way, leases and permits that result in ground disturbing activities have the potential to directly impact cultural resources but impacts would be mitigated under standard avoidance or recovery procedures. Indirect or inadvertent impacts to cultural resources could result from the issuance of rights-of-way, leases, and permits, but the overall risk to cultural resources from such impacts would be expected to be minimal and perhaps proportional to the number and extent of rights-of-way, leases, and permits issued on an annual basis.

Acquiring new access to public lands could have an indirect effect of exposing cultural resources to increased damage from illegal collection of artifacts and vandalism.

Surface disturbing activities associated with Leasable mineral sales and energy exploration and development could result in mitigated impacts to cultural resources. In addition, the potential for indirect and inadvertent impacts would increase proportionally to the amount of land available for mineral leasing and development.

The impacts to cultural resources from the number of acres of public surface and split estate locatable minerals that are withdrawn from mineral entry is proportional to the protection and preservation of cultural resources. Withdrawal of

10 acres around Road Agent Rock from locatable mineral entry would protect this historic feature associated with the Vigilante period in southwest Montana history from exploration and development under the mining law.

Impacts from dispersed recreational activity (camping, hiking, horseback riding, mountain biking, OHV, rock climbing, etc.) are difficult to assess, particularly as such activities may impact cultural resources that have yet to be identified and recorded. Indirect and inadvertent impacts to cultural resources may occur by attracting additional attention or visitation to certain areas such as SRMAs. Increased visitation and recreational use can lead to the illegal collection of artifacts and vandalism. Providing recreational or public interpretation of cultural and historic resources may enhance appreciation and understanding of the fragile and finite nature of cultural resources. Similarly, promoting the adaptive reuse of historic buildings and structures for recreational purposes would help preserve and protect significant historic properties, helping fulfill the requirements of Section 110 of the NHPA.

Under all alternatives, wheeled, motorized travel is restricted to designated roads and trails, thus reducing the potential for impacts caused by unregulated off road travel. The level of impacts to cultural resources is proportional to the number of miles open for travel in the planning area. Unimproved two-track roads and trails designated for use may cut through sites scattering and breaking artifacts, and causing erosion problems. The noise level and presence of people can impact the use of traditional cultural properties by Native Americans in some instances.

Developing new, or upgrading existing, transportation facilities could result in the permanent mitigated loss of cultural resources. Again, increased accessibility to resources could lead to vandalism and unauthorized collection of artifacts, but could also facilitate the use of traditional locations by Native Americans.

In some extreme instances, cultural or historic sites would be damaged or destroyed when fire suppression efforts are critical to protect human life or property. Under standard protocols, impacts to known cultural resources would be considered and mitigated.

Fire rehabilitation efforts would generally increase the protection of cultural deposits that may have remained unaffected from wildland fire by preventing or reducing erosion and encouraging rapid revegetation of denuded surfaces. Potential impacts from rehabilitation activities (such as mechanical reseeding) would be mitigated under standard procedures.

Abandoned Mine Land (AML) reclamation and remediation have a direct impact to historic mining features and properties that may be mitigated through additional data recovery, recordation, and photo documentation. However, the impacts of comprehensive reclamation and remediation programs on historic mining districts and landscapes may be difficult to assess and more cumulative in nature.

FISH AND WILDIFE

Fish

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to fisheries: Air Quality, Paleontology, Visual Resources, Back Country Byways, Health and Safety, Indian Trust Resources, Tribal Treaty Rights, Geology, Wild and Scenic Rivers, Health and Safety (AML, HazMat), Economics, Environmental Justice, National Trails and Social Considerations.

Fish habitat associated with special status species management would benefit from increased efforts to implement recovery plans, State of Montana management plans and conservation strategies. Improvements in special status species habitat on a watershed level basis would likely benefit several species at the same time.

Impacts from special status wildlife management are likely to be minor. Restrictions placed on some special status species habitat may have a favorable impact on fish habitat by reducing impacts associated with logging, roads and grazing.

In areas where special status plant species are associated with fish habitat, considering the effects of mitigation measures for all species concerned could result in a benefit to both plant and fish species. Management actions taken to protect sensitive plants could also improve habitat conditions for fish. However, measures that emphasize only sensitive plant habitat could limit or eliminate improvement to fisheries if those plant species require fire or surface disturbing actions.

Improving the stability of soils would have a favorable impact to fisheries where unstable soils are contributing to increased sediment loads in streams.

Reversing coniferous community conversions back to the proper herbaceous, shrub and aspen communities would improve habitat as conditions return to those more favorable to fish habitat.

Rangeland vegetation treatments could create localized, short-term impacts, with potential for increased runoff and sedimentation impacts to some fisheries until vegetation regenerates.

Control of noxious weeds would have a positive impact on fish habitat by decreasing competition and increasing ground

cover of more desirable riparian/wetland species. Aerial application of herbicides in areas with fish habitat could have major impacts if herbicides fall into riparian areas.

Improving and maintaining riparian conditions are essential for quality fish habitat. By setting PFC as the DFC, fish habitat would improve. Achieving DFC for riparian and wetlands vegetation would help achieve DFC for fish habitat. Adjusting livestock management and setting allowable use levels on riparian habitat would allow for a gradual improvement in fish habitat conditions. Impacts such as bank trampling could be mitigated on a case by case basis.

By following the required management designed to improve or maintain water quality, water conditions within watersheds would improve. This would improve habitat conditions for fish. Reduced water temperatures and lowered sediment loads would increase the amount of fish habitat available.

Developing rights-of-way could have harmful impacts to fish habitat if roads are constructed within stream corridors. This could lead to increased sediment loads, noxious weed introduction, vegetation removal and increased fishing pressure on sensitive streams. Depending on the location and type of right of way, mitigation can minimize effects. A right of way involving a road that crosses a creek would have a greater impact on fish habitat than a power line that did the same.

Acquiring tracts of land with fish habitat values could have a major impact on management. By consolidating fish habitat, management could be applied over a larger area. This would facilitate habitat improvements and other management actions that are disrupted by checkerboard ownership patterns. Retention of tracts containing fish habitat is essential to fish management.

Acquiring public access to areas containing fisheries could have harmful impacts if roads are constructed within stream corridors. This could lead to increased sediment loads, noxious weed introductions, vegetation removal and increased fishing pressure on streams. Increased access could be beneficial if it facilitated management of fish habitats.

The impacts to fish habitat from leaseable minerals, saleable mineral materials, locatable mineral exploration and development, and renewable energy could be minor to major depending the location and scope of the proposed operation. Increased sediment loads and vegetation disturbance associated with road construction, cross country travel and site development within watersheds are concerns. Adjusting site locations and roads away from stream corridors will reduce or eliminate impacts.

Impacts to fish habitat from the management of Wilderness areas and Wilderness Study Areas (WSAs) would be minor. Some regulations may limit or hinder management actions such as barrier installation, in-stream structures and riparian exclosures that would enhance habitat.

There are minor to moderate impacts associated with travel and OHV management. With use restricted to designated open trails, impacts would be related to sediment impacts from stream crossings and runoff on high use roads. Impact severity would depend on the amount and type of use on open roads.

Road maintenance and construction has the potential to have moderate to major impacts to fish habitat by increasing sediment discharge into riparian areas. The effects can be reduced by proper maintenance and by locating any new construction away from streams. Road closure and rehabilitation have the potential to improve habitat if they reduce runoff and erosion. The closures and rehabilitation could also restore proper floodplain and channel characteristics.

Wildlife

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to wildlife: Air Quality, Cultural Resources, Geology, Paleontology, Visual Resources, Mineral Materials, Back Country Byways, National Trails, Wild and Scenic Rivers, and Social Considerations.

Management of several other resources/resource uses/programs would have indirect, often minor impacts on wildlife within the planning area. Renewable Energy, Transportation and Facilities Maintenance, and Utility and Communication Corridors would all influence the distribution of wildlife and patterns of use within the field office, but would not substantially alter habitat.

Implementing seasonal grazing restrictions or other mitigation to reduce soil compaction would have a positive impact on riparian conditions where long term heavy livestock utilization, combined with spring use, has occurred.

Reaching the Desired Future Condition (DFC) identified for rangeland, forest and woodland, and riparian and wetland vegetation would help to achieve the DFC identified for Wildlife.

Restoring a more savannah-like aspect to Douglas-fir (warm/dry) forest types would create more open habitat that would enhance conditions for wildlife species favoring that habitat. Wildlife species that that require denser, more structured forest habitat would be displaced, at least temporarily.

Forest treatments in Douglas-fir (warm/dry) forest types would reduce late fall security and winter big game uses since these forest types generally occur at lower elevations.

Treatments in Spruce/Fir (cool/moist) forest types would have less of an effect on spring, summer and fall big game use since that use is more dispersed at these times, often onto adjoining Forest Service lands. However since Spruce/Fir forest types are less available on BLM public lands, displacement of wildlife uses from these habitats reduces opportunities to provide for a wider diversity of wildlife values.

Aspen restoration would rejuvenate decadent aspen clones by promoting aspen regeneration, ensuring that sufficient recruitment survives to perpetuate the health and vigor of the clone, and reestablishing understory shrub and herbaceous compositions appropriate for the site. Restoration efforts would be limited to small enough areas, even in focus areas, that the area-wide condition of aspen stands would not be significantly altered. Many small discontinuous and isolated stands would continue to be degraded or lost through competition with conifer encroachment and other influences.

Post-treatment management, could promote improvement in understory vegetation to support successful restoration of aspen communities and supported uses, and enhance wildlife habitat.

The effects on wildlife habitat from providing forest products are the same as those from managing for forest and woodland vegetation, and relate to loss or changes in forest canopy, density, and structure. These vary primarily by the volumes of materials taken under each alternative and forest habitat type.

Acquisitions of important wildlife habitats may complement other actions on adjoining lands to provide improved habitat quality and availability. Retention of public lands with high wildlife values should maintain those values. However, acquiring higher value habitats to enhance management capability or meet specific habitat objectives may necessitate relinquishing some habitats of value.

Livestock grazing is a major influence on sagebrush and riparian habitat in the DFO. Livestock grazing impacts to wildlife will be minimized by adhering to Standards for Rangeland Health and Guidelines for grazing management.

Sage grouse conservation strategies would be considered during watershed and allotment planning processes. Conservation of sage grouse habitats in areas with uncompleted assessments could be impacted until assessments are completed and management changes are implemented.

Application of stipulations to oil and gas leases would generally protect wildlife habitats and uses. Conditions of approval and reclamation requirements attached during site-specific analysis prior to development would minimize or eliminate development impacts.

Incorporating rangeland health standards and site specific mitigation measures into plans of operation for locatable mineral proposals, along with site-specific habitat objectives developed through operating plans, should have only minor impacts to wildlife habitats.

Recreation activities and management have minor indirect impacts to wildlife and their habitat, primarily by influencing how much human activity occurs in a given area.

Maintaining existing seasonal travel restrictions would reduce disturbance to seasonal wildlife habitat. The closure of public lands to all off road travel enhances seasonal habitat availability and suitability to all wildlife species.

Application of guidelines for protecting birds from potential conflicts with construction and siting of power lines, wind turbines, and communications facilities should minimize impacts from those authorizations on public lands and decrease mortality rates.

Impacts to wildlife habitat from prescribed fire, and the need for post treatment management, would be the same as from vegetation treatments. Impacts to wildlife habitat from wildfire would vary with fire frequency, intensity, location and size.

Management of wilderness values across all alternatives would maintain large blocks of unfragmented habitat for a wide variety of wildlife species.

GEOLOGIC RESOURCES

No major impacts to geologic resources are expected from management of other resources/resource uses/programs.

Proposed withdrawal under all alternatives of three unique geologic formations (Wedding Ring Rock, Road Agents Rock and Squirrel Rock) from locatable mineral entry would provide long-term protection of these features from mineral exploration and development.

PALEONTOLOGICAL RESOURCES

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to paleontological resources: Air Quality, Cultural Resources, Fisheries, Geology, Soils, Vegetation: Invasive Species, Vegetation: Riparian, Visual Resources, Water, Wildlife Habitat Management, Lands and Realty, Minerals: Mineral Materials, Renewable Energy, Transportation and Facilities, Environmental Justice, Health and Safety, Indian Trust Resources and Social Considerations.

Management measures common to all alternatives would preserve and protect paleontological resources for present

and future generations. Adverse impacts would be mitigated through specimen recovery and analysis by professional paleontologists.

The greatest risk of damage or destruction of paleontological resources across all alternatives would result from casual, unauthorized activities (such as dispersed recreational activity, OHV use, and vandalism) and natural processes (natural decay, deterioration, or erosion). Under all alternatives, unquantified indirect impacts would occur.

SOILS

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to soils: Air Quality, Cultural Resource, Fisheries, Paleontology, Special Status Species, Visual Resources, Wildlife, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness Study Areas, Economics, Environmental Justice, Indian Trust Resources, Social and Tribal Treaty Rights.

Under all alternatives, development and construction activities associated with a variety of programs including forestry and minerals operations would result in surface disturbance and removal of vegetative cover. Soil compaction reduces water infiltration and can reduce plant growth and nutrient cycling. A decrease in vegetative cover would subject soils to compaction and erosion. Implementation of mitigation measures would reduce or eliminate those impacts. Mitigation measures would include locating roads on stable geology including well-drained soils, fitting the road to the topography by locating roads on natural benches, following natural contours, and where possible avoiding long steep slopes.

Design and installation of drainage structures at adequate spacing would effectively reduce the length of slope and minimize soil and water erosion and sedimentation in nearby streams. Reclamation would restore protective vegetative cover within two to five years of completion of project activities.

Achieving the DFC in Vegetation: Forests and Woodlands, Rangeland and Riparian/Wetlands would help conserve soil throughout the planning area.

Forest treatments such as mechanical thinning could cause a short-term increase in soil compaction. Following the Montana Forestry Best Management Practices would mitigate these effects.

Impacts to soils from management of abandoned mines and hazardous materials would also be short term if reclamation is conducted in accordance with the National Oil and Hazardous Substance Pollution Contingency Plan.

Streambank erosion would be reduced as the percentage of riparian areas in proper functioning condition increases and the percentage of functioning at risk and nonfuncting streams decreases. Riparian areas in proper functioning condition have plants whose roots masses are capable of withstanding high flow events and preventing streambank erosion.

Prescribed fires would cause localized short-term changes in physical, chemical, and biological properties of the soil. Severity of the impact would depend on the fuel type, duration, and the intensity of the fire. Burning could decrease soil infiltration rates causing accelerated erosion and removal of some nutrients. Vegetation could be re-established in one to three years, resulting in only short-term soil loss, and very little reduction in long-term productivity of the site.

Implementation of the Standards for Rangeland Health and best management practices would improve plant vigor and litter accumulation causing beneficial changes in organic matter content, soil structure, permeability, and productivity.

SPECIAL STATUS SPECIES (includes BLM Critical Element Threatened and Endangered Species)

See also *Special Status Animals*, *Special Status Fish* and *Special Status Plants* sections.

All proposed projects and authorizations require a biological evaluation to determine potential effects to any Special Status Species. If there are anticipated impacts to a listed species, implementation of recovery plan objectives or conservation strategies would likely be required as identified through the Section 7 consultation process. Conservation measures to protect non-listed but petitioned species such as sage grouse or migratory birds would likely be recommended through that same process. Implementation of these objectives and strategies would eliminate, reduce or mitigate impacts to any of these special status wildlife species, and may assist in reducing the need to list under ESA.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (includes BLM Critical Element Threatened and Endangered Species)

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to special status animals: Air Quality, Cultural Resources, Geology, Paleontology, Visual Resources, Mineral Materials, Back Country Byways, National Trails, Wild and Scenic Rivers, and Social Considerations. Note that sage grouse impacts are discussed under the *Wildlife* section.

Impacts to Special Status Species Animals are similar to the *Wildlife* section except where described below.

Management to meet the Western Montana Standards for Rangeland Health, especially the biodiversity standard, and management of riparian and upland habitats to be in proper functioning condition would maintain or enhance special status species habitat. Managing riparian habitats to achieve proper functioning condition would especially provide improved habitat quality, quantity and diversity for special status species, particularly migratory birds, dependent on those habitats. Converting coniferous riparian habitat back to deciduous shrubs and trees would favor special status species that are dependent on those types. Implementing the sage grouse conservation strategies would improve habitat for most sagebrush dependant special status species. Some special status species habitats would continue to be degraded until the areas are assessed and management can be implemented.

Implementation of recovery strategies and conservation measures for listed species would continue to provide suitable habitat and prevent disturbance during critical seasons where use by those species may occur. Using conservation measures to evaluate grizzly bear needs and risk factors when issuing use authorizations would reduce the impacts to grizzly bears and contribute to the delisting of grizzly bears.

Continued implementation of wetland habitat objectives in the Red Rock Waterfowl Habitat Management Plan would enhance habitat quality and availability for wetland-dependent special status species and decrease impacts to those species.

Vegetative treatments that create more open Douglas-fir (warm/dry) forest types would enhance conditions for species that require less habitat structure and diversity to the detriment of those that require denser, more structured habitat.

Lynx habitat in Spruce/Fir (cool/moist) forest types would be protected by implementing conservation measures from the LCAS and by not rendering more than15 percent of a LAU unsuitable habitat within 10 years.

Restoring habitats and minimizing breeding season disturbance from prescribed fire or large scale vegetation treatments would enhance productivity of sensitive species within other site limitations.

Maintaining all existing seasonal travel restrictions would protect important winter big game habitats that are supporting some wolf use and decrease impacts to game habitats by limiting displacement and general disturbance resulting from human use.

Impacts to special status species birds from land use authorizations (e.g., powerlines, wind turbines) would be reduced by applying guidelines as described in General Wildlife.

SPECIAL STATUS SPECIES—FISH

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to special status fish: Air Quality, Paleontology, Visual Resources, Back Country Byways, Health and Safety, Indian Trust Resources, Tribal Treaty Rights, Geology, Wild and Scenic Rivers, Health and Safety (AML, HazMat), Economics, Environmental Justice, National Trails and Social Conditions.

Impacts to Special Status Fish values would be similar to those projected for fisheries except as described below.

Wilderness and Wilderness Study Areas (WSAs) generally contain high quality, fairly secure WCT habitat. Some regulations may limit or hinder management actions such as barrier installation, in-stream structures and riparian enclosures that could increase incidential fishing pressure on arctic grayling and some WCT populations.

Acquiring lands with special status fisheries values would facilitate habitat improvements and other management actions as described above in the fisheries section.

SPECIAL STATUS SPECIES—PLANTS

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to special status plants: Cultural Resources, Geology, Paleontology, Visual Resource, National Trails, Wild and Scenic Rivers, Environmental Justice, Indian Trust Resources and Social Considerations.

Recent trends suggest that requests for the harvest or collection of native plants and seeds for scientific study, medicinal or other commercial uses may increase. Evolving economic opportunities related to native plants would increase the vulnerability of some rare species or populations, though any commercial uses authorized by BLM would be reviewed for impacts to BLM special status species.

Populations of sapphire rockcress, beautiful bladderpod and taper-tip desert parsley have the greatest potential to be impacted by mining and mineral exploration activities.

Large mining operations have the potential to impact the most acres of habitat of these sensitive species, but also provide the best opportunity for mitigating impacts through required environmental documents.

The greatest threat to rare plant habitat from mining operations in the planning area is the potential introduction of noxious weed and invasive plant seeds (such as Spotted Knapweed and Yellow Sweet-clover) from vehicles and heavy equipment.

Management of noxious weeds under all alternatives would reduce or eliminate competition with special status plants and their habitats. Treatment methods may vary across alternatives or from site to site to protect non-target plant species.

VEGETATION—FORESTS AND WOODLANDS

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to forest and woodland vegetation: Geology, Paleontology, Lands and Realty Goals #1, 3 and 4, Minerals (Leasable, Locatable, Mineral Materials), Utility and Communication Corridors, Back Country Byways, National Trails, Wild and Scenic Rivers, Wilderness, Environmental Justice, Health and Safety on Abandoned Mine Lands, Debris Flows or Hazardous Materials, Indian Trust Resources and Tribal Treaty Rights.

Forest and woodlands treatments would be constrained by the Lynx Conservation Strategy, primarily in the Spruce/Fir (cool/moist) forest types. The number of acres that would be affected is unknown, but is anticipated to negligible because lynx habitat is infrequent within the planning area.

Constraints to protect big game habitat could be considerable and may have the greatest impact on the ability to conduct effective forest and woodland treatments in Alternatives B and D.

Aspen restoration would rejuvenate decadent aspen clones by promoting aspen regeneration, ensuring that sufficient recruitment survives to perpetuate the health and vigor of the clone, and reestablishing understory shrub and herbaceous compostions appropriate for the site. Restoration efforts would be limited to small enough areas, even in focus areas, that the area-wide condition of aspen stands would not be significantly altered. Many small discontinuous and isolated stands would continue to be degraded or lost through competition with conifer encroachment and other influences.

New roads needed to remove wood products associated with forest treatments would generally be built and used only during the duration of the project then be closed or reclaimed in accordance with protocols described in the *Transportation and Facilities* and *Travel Management and OHV Use* sections. This could potentially result in increased project costs if the same route were necessary for other projects on other ownerships, etc.

Air quality restrictions from the Montana/Idaho Airshed Group and Montana DEQ could have a minor and localized impact on forest health treatments that include slash burning.

Some cultural resource sites could be encountered and could have negligible effects on forest health restoration activities.

Invasive vegetation species (primarily noxious weeds) could be an issue on planned forest and woodlands treatments across all alternatives. Specific project design features and mitigation have controlled the spread of noxious weeds onto disturbed soils in most project areas. The potential for invasive species problems would be greater with large-scale fire events.

Rangeland operations are generally compatible with forest and woodland treatments. Site specific issues identified with vegetative treatments would be addressed through the watershed assessment process.

Special status plants would have very little impact to forest and woodlands vegetation treatments because there are very few species identified in those habitat types.

VRM Classes I and II would limit some types of harvest tools such as clearcut prescriptions. Such prescriptions would be modified to patch clearcuts, group selection or other means of partial cutting.

WSAs will have a moderate impact on forest and woodland vegetation treatments because of restrictions placed on the management of some of these areas.

The designation of ACECs would have minor impacts to forests and woodlands. Management to protect relevant and important values could place restrictions in certain ACECs that would prevent certain types of vegetative treatments.

VEGETATION—INVASIVE SPECIES including NOXIOUS WEEDS (BLM Critical Element)

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to invasive species: Air Quality, Cultural Resources, Fisheries, Geology, Paleontology, Soils, Visual Resources, Water, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness Study Areas, Environmental Justice, Health and Safety, Indian Trust Resources, Social and Tribal Treaty Rights.

Actions that conserve soil by mitigating surface disturbing activities and retaining vegetative cover would complement

the prevention and control of noxious weeds and invasive species. Proper road maintenance and conditions placed on land use authorizations and surface disturbing activities would limit the spread of noxious weeds. Implementation of any actions to protect special status species that would limit effective weed control could result in increases in noxious weeds and invasive species.

VEGETATION—RANGELAND

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to rangeland vegetation: Cultural Resources, Fisheries, Geology, Paleontology, Soils, Vegetation – Forest and Woodlands, Vegetation – Riparian and Wetlands, Visual Resources, Water, Forest Products, Lands and Realty, Minerals – Leaseable, Minerals – Locatable, Minerals- Mineral Materials, Renewable Energy, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness Study Areas, Economics, Environmental Justice, Health and Safety, Indian Trust Resources, Social, and Tribal Treaty Rights.

The relative abundance of species within plant communities, the relative distribution of plant communities, and the relative occurrence of seral stages of those communities would be affected under all alternatives. However, implementation of any alternative would not result in the complete elimination of a plant species, plant community, or seral stage.

Livestock grazing would affect vigor and reproduction of palatable species. Livestock management actions that enhance the vigor and reproduction of key plant species would cause an increase in those species.

VEGETATION—RIPARIAN AND WETLANDS (BLM Critical Element)

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to riparian and wetland vegetation: Air Quality, Cultural Resources, Geology, Paleontology, Visual Resources, Mineral Materials, Back Country Byways, National Trails, Wild and Scenic Rivers, and Social Considerations.

Continued implementation of the Sheep Creek Aquatic HMP will restore and enhance riparian and stream channel conditions on numerous stream reaches throughout the Big Sheep Creek watershed. Restoring fishery streams to proper functioning condition improves riparian vegetation.

Implementing seasonal restrictions or other mitigation to reduce soil compaction would enhance riparian conditions.

Managing habitat to support special status species and migratory birds would maintain or restore riparian vegetation health and structure. Application of conservation measures for Canada lynx would maintain or enhance riparian corridors should that serve as foraging areas and migration corridors.

Continued implementation of the Red Rock Waterfowl HMP will improve wetland conditions by providing residual nesting cover, limiting disturbance and displacement of wildlife during the breeding season on production areas around Lima Reservoir in the Centennial Valley, and implementing a variety of structural wetland habitat improvements.

Implementing the National and Montana sage grouse conservation strategies that emphasize managing moist riparian habitats to provide adequate cover and succulent forage and insects, would improve riparian habitat. Vegetation treatments in upland habitats adjoining streams may divert livestock grazing pressure sufficiently to assist in meeting riparian improvement objectives.

Forest health treatments that remove conifers from or adjacent to riparian zones to restore or enhance deciduous tree and shrub species canopy, health and vigor would improve riparian function in treatment areas.

Protection of small aspen treatment areas from browsing would enhance survival of aspen recruitment, and depending on site-specific conditions, may promote improved vigor and herbaceous plant compositions.

Management of beavers to enhance or restore fishery habitat will also benefit riparian vegetation by adding adequate deciduous woody vegetation to sustain long-term occupancy without conflicting with other uses.

Livestock grazing is a major influence on riparian habitat within the DFO. Livestock grazing impacts to riparian habitat will be minimized by adhering to Western Montana Standards for Rangeland Health and implementing Guidelines for Grazing Management. Some functional at risk and nonfunctional riparian areas will remain in less than proper functioning condition and may continue to degrade until management issues are addressed and changes in management are implemented.

Incorporating rangeland health standards and site specific mitigation measures into plans of operation for locatable mineral proposals, along with site-specific habitat objectives developed through operating plans, would mitigate impacts to riparian and wetland habitat.

Designated travel routes are present within riparian corridors and influence riparian habitat through soil compaction, sediment input, dust and maintenance practices. The degree of impact depends on the type of road, amount of traffic, and location and orientation of the road within the riparian zone. As fewer roads are identified as designated routes,

more traffic on open roads may increase impacts in those areas. Improper maintenance practices such as inadequate drainage and gradual encroachment (widening) into riparian habitat can aggravate other chronic impacts. Proper road maintenance practices would reduce and minimize impacts to riparian areas.

Reintroducing fire into riparian habitats to restore plant communities would enhance long-term stability in these habitats.

VISUAL RESOURCES

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to visual resources: Cultural Resources, Fish and Wildlife, Paleontology, Special status species, Riparian and Wetlands, Water, and Social/Economic conditions.

Objectives for each VRM class as described in Chapter 3 would be maintained under all alternatives, and visual resource contrast ratings would be completed as part of any project. This action would result in mitigation that would meet the specific objectives for each VRM class within the project area. Rehabilitation plans would be prepared to address landscape modifications as necessary to avoid long-term sustained impacts.

Visual quality would deteriorate slightly in certain areas, especially in those managed under Class IV objectives, depending on the type, size and duration of authorized activities. Visual quality could deteriorate for short periods of time throughout the planning area. This could occur during periods of time when smoke from prescribed and/or wild fires is visible.

Recreation management would have a negligible impact on visual resources.

Very little new road construction is proposed on BLM lands in any alternative. Proper location of any potential new roads should assure that VRM objectives are met in those areas. Maintenance of existing BLM roads and facilities, and closure of unused roads would have little, if any, effect on visual resources.

WATER (BLM Critical Element)

There are very few watersheds within the planning area that are managed entirely by the BLM. Vegetation management, livestock grazing, and mineral development all affect watershed conditions and the quality of both surface and groundwater on BLM managed lands. Management of those resources or resource uses could be affected by managing water resources to maintain non-impairment standards, and to promote conditions that enhance beneficial uses.

Best Management Practices would be used to control sources of non-point pollution and eliminate impairments, such as fish passage obstacles, that may be occurring as a result of DFO authorized activities.

Increased water infiltration could occur with a reduction in conifers which may increase hydrologic functions in some systems. The degree of impact is dependent on the size and location of the harvest unit, soil type, topography and mitigation measures used.

RESOURCE USES

FOREST PRODUCTS

The proposed acres and areas to be treated under this alternative are the same acres and areas that apply to the Vegetation – Forest and Woodlands section of Resources.

Impacts to Forest Products are the same as those described under Resources, Vegetation – Forests and Woodlands.

LANDS AND REALTY

Proposed management of the following resources/resource uses/programs would have no anticipated direct impacts to lands and realty management: Backcountry Byways, Indian Trust Resources, and Environmental Justice.

Under all alternatives, proposed management of various resources (e.g., wildlife and fisheries) and resource uses (e.g., minerals and recreation) as well as fire management, special area designations (e.g., wilderness study areas and ACECs), and socio-economic considerations could result in the need to complete land ownership adjustments or easement acquisitions in order to improve management.

The management of soil, air, water, and geologic resources could affect land use authorizations such as rights-of-way, leases, and permits, as well as the BLM's actions to obtain legal and physical access to public lands. Proposals for facilities and actions that are projected to degrade these resources would have to be mitigated, sited in acceptable alternative locations, or in more extreme cases, denied altogether. Applicants for such proposals could encounter time delays and greater costs in terms of project development.

The management of cultural resources could affect several aspects of the lands and realty program including land use authorizations, land ownership adjustments, and the acquisition of legal and physical access to public lands. These lands and realty actions are considered federal undertakings and must avoid inadvertent damage to federal and non-federal cultural resources through compliance with Section

106 of the National Historic Preservation Act. Cultural inventories would need to be completed prior to these federal undertakings and impacts to important cultural sites would need to be avoided by project redesign, project abandonment, and/or mitigation of adverse impacts through data recovery. This could result in actions such as re-routing a proposed right-of-way or road easement, or restructuring or abandoning a proposed land ownership adjustment such as a land exchange or sale. Such actions can increase processing costs and processing time for both the federal and non-federal parties.

The impacts from the management of paleontological resources would be very similar to those of cultural resources. Lands and realty projects occurring in known fossiliferous areas would require that adequate time and resources be allocated to conducting an inventory of these resources. The discovery of scientifically important paleontological resources could result in the rerouting or redesign of proposed right-of-way and easement facilities. The presence of these resources could also lead to the restructuring or abandoning of land ownership adjustments such as land exchanges or sales. Such actions can increase processing costs and time for both the federal and non-federal parties.

The management of vegetation, including special status species, would have several environmental consequences. The need to protect special status species and riparian and wetland vegetation would impact land use authorizations, land ownership adjustments, and acquisition of legal and physical access to public lands. Facilities proposed to be constructed under various land use authorizations or access easements in areas where these types of vegetation are present may need to be mitigated, constructed in alternate locations, or in extreme cases, dropped from consideration. The need to protect certain vegetation types could also result in the restructuring or elimination of a land ownership adjustment proposal such as an exchange or sale. In cases where fire is used to manipulate vegetative composition, there is always a slight possibility of losing control of such a fire and sustaining damage to above-ground facilities authorized by land use authorizations. Where vegetation is treated through logging, the impacts would potentially be the same as discussed under forest products.

The management of leasable, salable, and locatable minerals under all alternatives would likely result in requests for land use authorizations such as rights-of-way and permits for utilities and access.

For livestock grazing, land use authorizations such as rights-of-way and BLM access easements that traverse areas where livestock grazing occurs could occasionally require mitigation that involves excluding livestock grazing during the construction and rehabilitation phases of the project. Mitigation could also be required to facilitate livestock movement or provide for public safety (e.g., fencing and cattleguards) throughout the effective period of the authorization.

Fire management under all alternatives would generally help protect facilities on public lands authorized through the lands and realty program by reducing fuel loads and suppressing fires. However, there is always a slight possibility of losing control of prescribed fire and damaging above-ground facilities.

Transportation and facilities management could require that easements be acquired for any BLM roads or other types of facilities to be located on non-federal lands. Right-of-way reservations could be needed for BLM roads and other types of facilities to be located on public lands.

The management of wildlife and fisheries, including special status species, would have several environmental consequences. The need to protect special status species as well as certain other species of fish and wildlife could impact land use authorizations, land ownership adjustments, and the acquisition of legal and physical access to public lands. Facilities proposed to be constructed under various land use authorizations or access easements in areas that could adversely affect wildlife or fisheries may need to be mitigated, constructed in alternate locations, or in some cases, dropped from consideration. Land ownership adjustments such as exchanges or sales proposed in areas where wildlife or fisheries could be adversely affected may need to be restructured or eliminated from consideration. These types of actions could increase processing costs and time for both the federal and non-federal parties.

Reviewing existing withdrawals and classifications and revoking/terminating those that are no longer serving their intended purpose would ensure that the public lands are not unnecessarily encumbered and are open to the widest possible array of public land uses consistent with other portions of the plan. Such a review would also ensure that withdrawals and classifications still serving their intended purpose would remain in place. Management proposed for new withdrawals under all alternatives would also ensure that such actions encumbered the minimum area necessary to achieve the intended purpose.

Any renewable energy development proposed for public lands could result in requests for land use authorizations such as rights-of-way and permits.

The need to manage national trails to protect the values for which they were designated could impact land use authorizations such as rights-of-way as well as BLM's actions to obtain legal and physical access to public lands. Proposed facilities such as power lines may need to be mitigated (e.g., burial of the line) or rerouted in order to protect these trail values. Land ownership adjustments such as sales or exchanges may need to be restructured or eliminated from

consideration in order to avoid disposing of public lands containing important trail segments.

Management of the 6,347-acre Bear Trap Canyon Unit of the Lee Metcalf Wilderness as well as any BLM lands that may be designated as wilderness in the future would impose a major restriction on the use of these areas for land use authorizations and generally preclude realty-related disposals of these lands.

In terms of health and safety, land use authorizations for uses which would involve the disposal or storage of materials which could contaminate the land would not be issued. Lands proposed for acquisition or disposal would need to be inventoried for the presence of hazardous materials. The presence of contaminants may lead to actions such as the modification or abandonment of a landownership adjustment proposal, or remediation in the form of cleanup and removal of the contaminants.

Tribal treaty rights on public lands within the planning area could impact land ownership adjustments such as exchanges and sales. It is possible that potential actions such as these would need to be restructured or eliminated from consideration if it were determined that they adversely affected tribal treaty rights.

LIVESTOCK GRAZING

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to livestock grazing: Paleontology, Visual Resources, Wild Horses and Burros, Forest Products, Minerals – Leasable, Minerals- Locatable, Minerals – Mineral Materials, Recreation, Renewable Energy, Transportation and Facilities, Utility and Communication Corridors, Fire Suppression, Back Country Byways, National Trails, Wild and Scenic Rivers, Wilderness Study Areas, Environmental Justice, Health and Safety, Indian Trust Resources, Social, and Tribal Treaty Rights.

Under all alternatives, vegetation allocation and use levels would be adjusted, if necessary, following watershed assessments to meet the *Western Montana Standards for Rangeland Health*, which could impact grazing operations and operators.

MINERALS—LEASABLES

Oil and Gas

Leases issued with major constraints (No Surface Occupancy stipulations) would still be accessible by directional drilling, except where large blocks of land would preclude it. These stipulations would decrease the lease value, increase operating costs, and to a lesser extent (given the RFD) require relocation of wellsites and modify field development. Leases issued with minor constraints (Timing Limitation and Controlled Surface Use stipulations) would result in similar impacts, as well as delays in operations, uncertainty on the part of operators regarding restrictions.

Coal, Geothermal, and Oil Shale

There are no impacts identified as there is no anticipation that there will be activity on federal resources during the life of the RMP.

MINERALS—LOCATABLES

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to locatable minerals: Geology, Paleontology, Vegetation – Forest Woodlands, Forest Products, Livestock Grazing, Minerals Leasable, Recreation, Backcountry Byways, Utility and Communication Corridors, Social, Tribal Treaty Rights, Environmental Justice, and Indian Trust Resources.

The majority of mining projects would probably center on large identified mineralized zones. Since the specific location, type of mine, size and other factors cannot be identified until an ore body is identified and proposed for development, the mitigating measures and how they specifically affect locatable minerals cannot be projected. Mitigation measures and the degree they affect mining are therefore discussed in general terms.

Management of resources/resource uses/programs that require mitigation measures to eliminate or reduce impacts resulting from mining operations could result in additional expenditures and a longer permitting timeframe for the developer.

Authorization of right-of-ways for facilities such as roads, highways, and powerlines would influence locatable mineral operations in a positive manner by providing access and infrastructure to exploration and mining operations. Development of renewable energy resource could also provide future energy sources for milling and other facilities.

Land ownership adjustments could result in acquisition or disposal of lands with mineral value, and as a result either increase or decrease opportunities for development. Acquisition of additional legal access across private or other lands would provide increased opportunities to explore and develop areas that may not be accessible by another route.

Maintaining the approximately 30,000 acres currently withdrawn from locatable mineral entry under all alternatives would continue to preclude locatable mineral development opportunities, though most of the areas are not located in highly mineralized zones.

The proposed withdrawal of Road Agent Rock, Squirrel Rock and Wedding Ring Rock under all alternatives would remove a total of 30 acres under all alternatives. Only Road Agent Rock, which is located in a high mineral potential area, is considered to be in a potentially mineralized area. No mining is currently occurring in the area, although a number of historic mine shafts still exist. Road Agent Rock is currently in a realty classification that prohibits mineral entry on five acres that surround it. Withdrawing 10 acres around the rock would formally withdraw it from mineral entry, prohibiting mining of the 10 acres and potentially inhibiting expansion of future adjacent surface or underground mines.

Travel management provisions under all alternatives would require a permit to drive off road to access a mining claim or conduct exploration work.

Fire management activities could temporarily restrict access to a mining project during implementation of prescribed burning, or during wildland fire suppression.

Designation of ACECs would require that a 3809 Plan of Operations be filed for all mineral related activities greater than casual use. Performance standards would be required to protect the relevant and important values of the ACEC. Mineral exploration normally subject to 3809 Notice-level review would require NEPA analysis and would be subjected to additional time delays.

Management of wilderness values would result in protective measures placed on mining activities that occur in areas that are “grandfathered” in.

Rehabilitation and closure of abandoned mine land sites and associated features would remove or obscure information contained in waste dumps, excavations, adits, and shafts that is used by exploration companies to sample and map mineral deposits.

MINERAL MATERIALS

Proposed management of the following resources/resource uses/programs would have no anticipated impacts to mineral materials: Fish and Wildlife, Geology, Paleontology, Soils,Vegetation – Forest Woodlands,Vegetation – Rangeland, Vegetation – Riparian and Wetland, Water, Wildlife, Forest Products, Lands and Realty, Livestock Grazing, Minerals Leasable, Minerals Locatable, Recreation, Renewable Energy, Transportation, and Facilities, Fire Management, Special Area Designation, Social and Economic Consideration.

RECREATION

Proposed management of the following resources/resource uses/programs would have no or negligible anticipated impacts to recreation: Air Quality, Soils, Leasable Minerals, Renewable Energy, Utility and Communication Corridors, or ACECs. Management of several other resources or resource uses would have indirect, often minor impacts on recreational uses of the public lands. Vegetation, Water, and Fire Management Activities will all influence distribution of fish and wildlife, and cause variations in the function and appearance of the landscape, which influence recreational use patterns and preferences within the planning area, but would not substantially alter the demand for, or distribution of activities within the planning area as a whole.

Management of cultural and paleontological resources would provide for the protection of resources of interest to the recreating public, and would provide public education and outreach efforts designed to enhance public appreciation and respect for these resources. Adaptive re-use of historic properties, provided for under Section 110 of the NHPA would provide opportunities for additional interpretive sites, and could provide for the use of renovated historic cabins that might be used for recreational rental cabins in the future to offer additional opportunities for public enjoyment of the surrounding lands.

Areas not withdrawn from entry under the Mining Law are always susceptible to disturbances from exploration and potential development, posing potential impacts to recreational uses in any given area. Locatable mineral potential is generally rather low. Many of the areas that are ranked as having high or moderate potential for locatable minerals have already been impacted by past mineral exploration activities, and any recreational use that might have occurred there has been adapted over the years to co-exist with those impacts. Although the recreational uses that relied on natural conditions may have been displaced, recreational uses have been created in these locations for rockhounders, historic mining buffs, spelunkers, and motorized vehicle enthusiasts.

Management of livestock grazing has minor impacts on recreational use of the public lands, sometimes temporarily displacing recreational activities from areas where intensive livestock use is taking place. Backcountry areas which might accommodate overnight camping activities are similarly impacted by intensive livestock grazing activities, rendering them undesireable for overnight camping for periods of time, especially along streams which would normally be attractive to recreational users. These impacts are typically short term, but often cyclic, depending on the grazing management system (i.e. – they return when the grazing rotation places cattle back in those locations). In some instances, livestock trailing, particularly between reliable water

sources, can provide opportunities for single-track mountain biking and backcountry running or jogging. The presence of commercial "dude ranch" operations also provide a unique recreational opportunity that might decrease in availability if livestock operations were not authorized within the planning area.

The designation and required management of the wilderness and wilderness study areas for maintenance of wilderness values provides some assurance of locations where primitive and semi-primitive recreation opportunities will remain available at least seasonally (unless Congress releases the wilderness study areas from further consideration as wilderness). Most of the WSAs have limited public access and no developed trail systems, limiting the amount of recreational use occurring within the core of those areas. Three WSAs (Centennial Mountains, Hidden Pasture, and East Fork Blacktail Deer Creek) and part of a fourth (the south half of the Blacktail Mountains) are closed yearlong to snowmobile use. Therefore, widespread motorized use could occur through the winter months provided there is adequate snow cover in most of the WSAs. In most years snow cover in most of these areas is insufficient to encourage much snowmobile use. Snowmobile or other motorized user trespass into WSAs could result in impacts to primitive recreation.

Completion of the Continental Divide National Scenic Trail through the Centennial Mountains would be expected to slightly increase the use of that segment of trail by hikers and equestrians. The emphasis on maintenance of this, and its tributary trails, would enhance public enjoyment of this area for primitive recreation. Interpretation of the two National Historic Trails (L&C and Nez Perce) would enhance public enjoyment of these trails and could slightly increase use along the routes. Use of the Bear Trap Canyon National Recreation Trail is likely to increase with the continued growth of Bozeman and surrounding communities. Proposed maintenance of this trail would be unlikely to influence the rate of increased use of the trail, but would be necessary to maintain it in a safe, functional, and aesthetically pleasing condition.

Cooperation with other agencies and recreation groups is expected to continue to improve management of recreation to reduce, or at least slow the growth of recreation use conflicts and improve opportunities for recreational use of the public lands.

Motorized vehicle use continues to be the greatest source of conflict among recreation users in this planning area. In many cases, the conflict is the result of a relatively small portion of the public that violates the travel management restrictions provided by the travel map, but continued emphasis on education and signage may help address non-compliance.

TRANSPORTATION AND FACILITIES MAINTENANCE

Maintenance of BLM roads and facilities would create safer conditions for the public and provide for administrative uses. Certain resources could be affected directly by surface-disturbing maintenance activities or indirectly as a result of increased use or traffic generated by improved travel routes. Implementation of mitigation measures such as lower levels of maintenance or innovative design features would reduce or eliminate direct impacts.

TRAVEL MANAGEMENT AND OHV USE

There are no impacts to travel management. Travel management is done in response to competing demands for resource uses or protection. Travel management proposals and subsequent decisions are most influenced by demands for administrative or recreational uses, to provide access for resource uses, and to mitigate wildlife management concerns. Certain areas or roads might also be closed, re-routed, or otherwise managed to accomplish a resource objective such as to reduce soil erosion or reduce residual effects such as contributing sediment to streams, affecting fisheries, etc. There are numerous impacts *to* other resources or resource uses *from* Travel Management, but there are no impacts *to* travel management.

FIRE MANAGEMENT AND ECOLOGY

Proposed management of the following resources/resource uses/programs would have no or negligible anticipated impacts to fire management: Soils, Leasable Minerals, Renewable Energy, Utility and Communication Corridors, ACECs, or Wild & Scenic Rivers.

SPECIAL DESIGNATIONS

NATIONAL RECREATION AREAS

None exist within the planning area.

NATIONAL TRAILS

The Bear Trap Canyon National Recreation Trail is within the Bear Trap Canyon Wilderness, and would continue to be managed in accordance with the wilderness management plan. There are no anticipated impacts to the trail from man-

agement activities proposed under any of the alternatives that would affect management of the trail.

The portion of the Continental Divide National Scenic Trail historically managed by the BLM Dillon Field Office crosses lands administered by the Beaverhead-Deerlodge and Targhee National Forests, the Agricultural Research Service, and the BLM. There are no activities proposed under any of the alternatives in this plan that would impact management of that trail segment.

Management measures common to all alternatives provide a systematic and proactive means to address direct and indirect impacts to the Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails, and under all alternatives effects would be mitigated during the activity and project level planning process. Mitigation measures would be implemented to reduce visual impacts that may introduce intrusive elements on public lands along the trails and thus protect the visual qualities of BLM lands along the trail.

WILDERNESS (BLM Critical Element)

Wilderness values in the Bear Trap Unit of the Lee Metcalf Wilderness would continue to be managed and preserved under all alternatives.

WILD AND SCENIC RIVERS

It is anticipated that the following resources/resource uses/programs will have no direct or indirect impact to wild and scenic rivers under any of the identified alternatives: air quality, cultural resources, fisheries, geology, paleontology, soils, special status species, vegetation-forest and woodlands, vegetation-rangeland, riparian wetlands, livestock grazing, water, wild horses and burros, wildlife, renewable energy, areas of critical environmental concern, backcountry byways, lands and realty, recreation, national recreation areas, wild and scenic rivers, wilderness study areas, utility and communication corridors, economics, environmental justice, health and safety, Indian trust resources, social, and tribal treaty rights.

SOCIAL AND ECONOMIC CONDITIONS

ECONOMICS

Mining

Leasable Minerals

The two-county area currently has no oil and gas industry operating on federal lands. Studies indicate that at the limited scale of development projected over the life of the plan, area increases in employment for local residents would be limited and temporary (USDA-FS and USDI-BLM 1990). Gas production in the area would contribute to state and local governmental revenues through oil and gas tax revenues.

The actual drilling work and subsequent field development would probably involve outside firms and contractors. According to the U.S. Department of Energy and its Energy Information Administration (EIA), the average cost per foot for drilling natural gas wells that become producers was $138 in 2000. This means a gas well at depths of 5,000 to 10,000 feet would cost anywhere from $700,000 to $1.4 million to drill. The average U.S. drilling cost for dry holes was $183 per foot and this would translate into costs of $1 million or more for wells of over 5,000 feet deep. Projected drilling activity based on current drilling costs would result in expenditures by exploration companies and crews of over $4 million for four dry holes and an additional $4 to $8 million for six wells revealing some development potential – the initial two wildcat exploration wells plus two more step-out wells for each of these. This would total $8 to $12 million in expenditures and, again, would probably be undertaken by outside firms. Two or more local jobs could be created during the development and production stages of the two wells under this scenario – activities such as workover and roustabout – but this would only be for a limited amount of time.

It is assumed that over the life of the RMP one producing and two step-out gas wells would occur on BLM lands. Oil and gas exploration would create 16 FTE direct jobs per well, assuming each well would take up to 300 days to drill. Average income per job in the mining sector would be $48,817 (average for the state of Montana, 2000, Northwest Economic Associates). Annual direct labor income would be about $781,000 per well. Two longer-term direct jobs would be supported by oil and gas development and production. Longer-term direct labor income associated with development and production would be $100,000. Government revenues from lease rentals would be $51,000; after five years this would increase to $68,000.

The standard royalty rate on oil and gas production on public domain lands is 12.5 percent of the value of production. The federal government would receive royalties on this value and one-half of the royalty income is transferred to the State of Montana. The amount of royalty that the federal and state governments each would receive would amount to $6,250 per $100,000 of production. Of the amount received by the state, 12.5 percent would be returned to the county where production occurs (personal conversation with Van Charlton, Natural Resources Evaluation Section, Montana Department of Revenue). For analysis purposes, it is assumed that annual average production during the first nine years, would be 3,529,297 MCF of gas. Related federal royalties would be $2.65 million.

Additional federal revenues would come in the form of annual rental fees on the leases. This amounts to $1.50 per acre for the first five years and $2.00 per acre each year thereafter. Assuming that 34,000 acres would be leased at the minimum bid, annual rental would be $51,000 per year for the first 5 years and $68,000 per year for each year thereafter. Revenues to the federal government would also include one-time lease bids (estimated at $2.00 per acre). This would be an estimated $68,000 per lease period.

Within in Beaverhead and Madison counties in 2000, the natural gas and crude petroleum industry reported few employees and little industry output. Of the 128 industry sectors with reported activity, the natural gas and petroleum industry in Beaverhead and Madison counties ranked 57th in terms of industry output ($1.9 million) and 92nd in number of employees (8 employees) (based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004). The economic effects of oil and gas exploration, development, and production are anticipated to have at most only minor effects on local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates).

Locatable Minerals

The economic contribution from exploration and development of locatable minerals on federal minerals administered by BLM in the planning area is not expected to change across any of the alternatives.

PILT

None of the alternatives would result in significant changes in Federal ownership in the planning area. Any future land exchanges or sales would be assessed to determine specific impacts, but in general, actions proposed within the RMP/EIS will not change payments to Madison and Beaverhead Counties made under the PILT program according to established formulas.

Other Impacts

Under all alternatives, **economic diversity** indicated by the number of economic sectors would remain unchanged, though shifts in emphasis could occur. **Costs to local government** would remain unchanged, i.e. demand for services and infrastructure would not change.

Area income generated by BLM expenditures both in operational dollars and personnel expenditures are expected to remain similar to current contributions, or increase slightly, across all alternatives.

ENVIRONMENTAL JUSTICE (BLM Critical Element)

During the course of this analysis, no alternative considered resulted in any identifiable effects or issues specific to any minority or low income population or community as defined in Executive Order 12898. While minority and low income populations exist in the planning area, no particular BLM actions proposed across the alternatives have been identified as causing disproportionate adverse effects on these populations. The agencies have considered all input from persons or groups regardless of race, income status, or other social and economic characteristics. A detailed analysis of effects to potentially affected social groups can be found in the *Social Conditions* sections, and economic impacts are described in the *Economics* sections.

HEALTH AND SAFETY

Abandoned Mine Lands

Abandoned mines that pose a significant risk to human health and the environment will be remediated. Partial BLM ownership of most sites requires cooperative efforts with the state of Montana to address environmental impacts.

Management of locatable minerals and to a lesser extent, leasable and saleable mineral programs could assist in reclamation efforts of abandoned mine lands. In some instances, actual mining operations would remove tailings piles or mill tailings that contain environmental hazards such as heavy metals or chemicals.

Other programs are not expected to have an effect on AML.

Debris Flows

There are no anticipated impacts under any of the alternatives given the low likelihood of debris flows on public lands in the planning area.

Hazardous Materials (BLM Critical Element)

Under all alternatives, environmental conditions would be protected as a result of hazardous materials management. Any authorized uses would adhere to federal and state requirements to reduce or eliminate impacts. Procedures in place to address unauthorized use and accidental events would help to minimize to the extent possible public exposure and environmental impacts.

SOCIAL CONDITIONS

Under all alternatives, livestock grazing permittees may be affected by a loss of AUMs resulting from management changes necessary to meet the Standards for Rangeland Health as identified in watershed assessments and allotment planning processes. Economic effects to ranchers are discussed in the Economics section. Changes in grazing management, in many cases, would be viewed by the involved operator as an expansion of government control over his or her ranch management options. Operators would probably be positive toward changes which improve range condition without severely limiting operator options. Losses in income could result in declines in social well being for affected ranchers and their families.

Small commercial operators would have the most potential for being affected. Lifestyle changes in response to income loss could include families decreasing their spending, diversifying the operation to make it less dependent upon traditional ranching, or sending family members to work off the ranch to bring in more income. Most permittees would try to maintain their ranching lifestyle by adjusting their operations to absorb the income losses, rather than selling their ranches. If ranches are unable to continue in the ranching business, effects to local communities could include loss of business activity and/or the businesses themselves, loss of members of ranching families, and potentially a decline in open space if ranches were sold and developed in some manner. The communities most likely to be affected would be very small towns that are experiencing ongoing population decline and are highly dependent upon agriculture. Based on discussions with Beaverhead and Madison county residents, the preservation of the local ranches and associated open space are very important for the continuation of their communities as desirable places to live.

County/Community residents would benefit from the wildland-urban interface being made the top priority for hazardous fuels treatments. The potential social effects from wildfires can include smoke (causing eye, throat or lung irritation), injury, loss of property and reduced recreation potential (USDI-BLM 2003b). These effects would decline in the long term under Management Common.

Limiting travel in the planning area to designated routes as specified in the Statewide OHV EIS could reduce conflicts between motorized recreationists and those recreationists seeking a quiet, solitary experience.

IMPACTS FROM ALTERNATIVE A

RESOURCES

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Alternative A would result in less impact to cultural resources compared to the other alternatives given the level and extent of proposed vegetation treatments.

Riparian and wetland management under Alternative A would not provide as much incidental protection for cultural resources in these fragile environments, because DFC would be achieved on fewer acres.

Management under VRM Classes I and II would best preserve and protect the visual setting where cultural resources occur. Designating 163,555 acres as either VRM I or II under Alternative A would provide more protection to cultural resources than Alternatives B or D, and similar protection as Alternative C.

Management of several areas as potential ACECs and as eligible Wild and Scenic River segments under Alternative A would not substantially increase protections provided currently for cultural resources under law and regulation, though options for data recovery would likely be more limited under this alternative.

Potential damage to cultural resources from proposed travel management is expected to be greatest under Alternative A since the most roads are designated as open for travel in this alternative. This increases motorized access that can prompt indirect impacts as well as direct impacts from travel on sites exposed in roadbeds, etc.

FISH AND WILDLIFE

Fish

Impacts from livestock grazing management are closely tied to impacts to riparian vegetation and stream channel alteration. Grazing management which meets established Standards for Rangeland Health and Guidelines for Livestock Grazing should reduce the amount and extent of impacts to fish habitat conditions over the long-term. Management under Alternative A would require adjustment to grazing systems found to be a contributing factor in the decline in fish habitat conditions.

Improving recreational facilities could increase pressure on some fisheries.

Impacts from wildlife management are likely to be minor. Proposed management actions for wildlife under this alternative would generally have minor impacts to fish habitat, though in some areas high densities of big game are causing damage to streams containing fish habitat. Any habitat improvements or vegetation treatments designed to enhance big game habitat must consider the effects increased use would have on fish habitat.

Impacts to fish habitat from timber harvest on BLM managed lands would be minor under this alternative. Sediment from roads and runoff from harvest units could impact fish habitat, but impacts would be mitigated through implementation of Best Management Practices. Limiting timber harvest in portions of some watersheds would reduce or eliminate impacts from logging activities.

Impacts associated with fire management under this alternative would result primarily from fire suppression activities. Focus would be on fire suppression with no areas designated for fire use. Sediment impacts could be mitigated by setting buffers near drainages to reduce sediment reaching streams. The use of prescribed fire in restoring aspen and willow communities could improve fish habitat in many areas. In many areas conifer encroachment has been identified as affecting the quality and quantity of available habitat.

Wildlife

Management of several resources/resources uses/programs would have moderate to major impacts on wildlife within the planning area and impact the DFC. Management of vegetation, soils, water, livestock grazing, recreation, travel and fire all are anticipated to influence available habitat and distribution of wildlife.

Continuing current management under this alternative would maintain overall wildlife habitat conditions and enhance localized conditions as individual projects and plans are developed and implemented. However, changes would be slower and more site-specific than in the other alternatives.

Oil and gas leasing stipulations include a combination of no surface occupancy (NSO) and no lease on state game ranges, and a timing limitation to prevent disturbance on big game winter ranges, elk calving and big game birthing areas. Bighorn sheep yearlong habitat is protected from disturbance using a timing limitation with an additional NSO on core habitats. Timing stipulations on O&G activities would preclude disturbance to important big game habitats but would still allow some modification of habitat within those important areas. Waterfowl production and molting habitat, and wetland projects, are protected from disturbance by NSO. These stipulations would generally protect most habitats with only minor impacts.

About 7,400 acres of elk calving areas and about 22,000 acres of elk winter range could be affected by forest treatments in the Pioneer and Gravelly landscapes. The timing of treatments would minimize or eliminate potential disturbance within those habitats. While localized impacts would occur at this proposed level of harvest, planning area-wide impacts on the condition and availability of forested wildlife habitat would be minor since only eight percent of forested habitats could be treated under this Alternative.

Aspen restoration on approximately 500 acres in the Pioneers and Gravelly Range would have a minor impact on wildlife. Improved condition of aspen and herbaceous vegetation would enhance foraging habitat for many species, and maintain availability of tall trees providing a variety of nesting sites and aerial foraging for birds. If restoration areas are small and occur adjacent to big game winter habitat, aspen regeneration may provide winter forage. However, this browsing may inhibit full recovery of healthy and vigorous aspen clones.

Current management of the area around Blue Lake is protecting axolotl habitat.

A total of about 2,100 miles of road would be designated as open in the DFO and this would leave road densities in certain habitats that are high enough to cause wildlife disturbance or displacement at least seasonally. Current management that closes certain areas to snowmobile use, either on a yearlong or seasonal basis, would continue to protect big game and other wildlife during the winter season in those areas that have restrictions in place.

See the *Vegetation – Riparian and Wetland* section for further discussion of those habitat impacts.

PALEONTOLOGICAL RESOURCES

Impacts to paleontological values would be similar to those projected for Cultural Resources under this alternative.

SOILS

Impact to soils from travel management would be the greatest under this alternative because there are the greatest number of miles of roads open for travel, and therefore the greatest potential for erosion.

Impacts to soils from vegetation management would be less than under the other Alternatives because of the proposed number of acres to be treated would be the least.

Impacts to soils from the management of riparian/wetland areas would be greatest in this alternative because the number of NF and FAR reaches would remain the highest.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (including BLM Critical Element Threatened and Endangered Species)

Considering wildlife movement during project and activity planning will insure that additional barriers to wildlife and special status animals are not created but since migration or linkage corridors will not be delineated, there is a risk of fragmenting some habitats that provide linkages. Overall, existing wildlife corridors will be maintained at current conditions under this alternative but the needs of wide ranging, mobile species may not always be met.

Restoring healthy aspen stands provides habitat for grizzly bear, lynx, and a wide variety of sensitive species similar to that described in Alternative A, *Wildlife*. With the limited distribution of treatments scattered across 500 acres in the Pioneer Mountains and Gravelly Range, improved conditions would provide only localized benefit to any listed or sensitive species and would not alter current distribution or occurrence of those species.

Impacts on lynx denning habitat from forest vegetation treatments are difficult to quantify because lynx denning information in the planning area is not complete. Forest treatments that create forage habitat in or near existing denning habitat could increase lynx habitat.

Changes in livestock grazing management would be implemented following watershed allotment planning processes. Some special status species habitat could be impacted in areas of uncompleted watershed assessments until assessments and management changes are implemented.

Adjusting grazing to meet fisheries potential, wetland objectives and sensitive plant protection would have a positive but unquantified effect.

Travel management under Alternative A would have similar impacts as described in wildlife.

Centennial Mountains ACEC are currently managed under WSA guidelines that restrict habitat modification, the Centennial Mountains travel plan, and conservation strategies and measures required for grizzly bear, lynx and wolf. These generally protect Special Status Species habitat in the eastern two-thirds of the area while management in the remaining area outside the WSA may not fully accommodate SSS needs.

Oil and gas leasing stipulations include no surface occupancy and timing limitations to protect bald eagle and peregrine falcon nesting territories from habitat modification around a nest site and disturbance during the breeding season. The NSO buffer around sage grouse leks may not adequately protect sage grouse breeding habitat. Male strutting activity moves around within a general lek area and using only a 500-foot buffer could have a major effect by modifying vegetation and increasing mortality risk on individual leks. Timing stipulations on Oil and Gas activities would preclude disturbance to sage grouse breeding habitat and all raptor nesting territories but would still allow some modification of habitat within those important areas.

SPECIAL STATUS FISH (including BLM Critical Element Threatened and Endangered Species)

Impacts to special status fish values would be similar to those projected for fisheries under this alternative.

A continuation of current management would likely lead to a gradual decline in special status fish habitat, primarily WCT habitat, over the long term. Primary impacts to habitat would come from sedimentation and a decline or lack of improvement in riparian and adjacent upland communities. These conditions would affect all aspects of special status fish habitat such as spawning, rearing and security.

Impacts to Special Status Fish from Recreation would be minor. State of Montana fishing regulations require catch and release fishing for Arctic grayling and WCT. Improving recreational facilities could increase incidental fishing pressure on arctic grayling and some WCT populations.

SPECIAL STATUS PLANTS (including BLM Critical Element Threatened and Endangered Species)

Direct impacts to special status plants occur primarily from surface disturbing activities such as mining or road construction, herbivory, trampling and herbicide application.

Plant collection, off highway vehicle use, prescribed and natural fire may also directly impact special status plant populations.

Impacts to habitats supporting special status plant populations may be classified as indirect impacts and include soil compaction and erosion, alteration of hydrologic regimes, insecticide applications which may kill pollinators, modified fire return intervals, and invasion of native habitats by noxious weeds and exotic species.

Alternative A would emphasize maintenance rather than restoration or enhancement of individual plant species. Mitigation measures would be considered for known populations of special status species when authorizing surface disturbing activities. As a result, plants or populations may be inadvertently reduced or destroyed.

Approximately 2,102 miles of roads are open to motorized travel under Alternative A which is at least 700 miles more than any of the other alternatives. This management provides the greatest potential for vehicular transportation and dispersal of noxious weed seeds into special status plant habitats.

Since livestock utilization levels would be set on a case-by-case basis during watershed and allotment planning processes, some rare plant populations and habitats in areas with uncompleted assessments could be impacted by heavy grazing and trampling until assessments and management changes are implemented.

Fire suppression activities under Alternative A would encourage vegetative succession toward plant communities that develop on respective ecological sites without fire. As a result sensitive species requiring early seral plant communities and those that require periodic disturbance would decline.

VEGETATION—FORESTS AND WOODLANDS

The proposed acres and areas to be treated under this alternative are the same acres and areas that apply to the Forest Products section of Resource Uses.

Forest vegetation treatments could affect about 11,000 acres of conifer forest (14 percent of the forest base acreage and 8 percent of all forested acres over the life of the plan). Treatments would restore Douglas-fir (warm/dry) forest types by decreasing stand density in the Pioneers and Gravelly Landscapes. Age class diversity would increase in Spruce/Fir (cool/moist) forest types, both in and outside of these two geographic areas. Approximately 500 acres of aspen on forested lands throughout the planning area would be restored. The majority of these would be in the Pioneer and Gravelly landscapes. This would enhance site specific conditions but would have very little effect on the area-wide health and vigor of aspen stands.

Approximately 540 acres of forested wildlife habitat within the allowable base acres would be restricted from timber harvest due to big game wildlife concerns. The four areas are; Shaw Basin -200 acres, Noble Creek- 80 acres, North End of the Tendoys – 200 acres and Divide Creek – 60 acres. Forest health treatments for these specific locations would not be possible under this alternative. Biomass in these areas would exceed historic levels and could contribute to the intensity of a wildfire event. **Table 57** summarizes the number of acres and corresponding percent of forest-woodland acres and base acres where treatments may be affected by these other resources.

VEGETATION—INVASIVE AND NON-NATIVE SPECIES, including NOXIOUS WEEDS (BLM Critical Element)

Continued weed control efforts under Alternative A would improve biodiversity, watershed function and rangeland health. Management actions to improve ecological function and rangeland health would have a positive effect on preventing or reducing Invasive and Non-native species, including Noxious Weeds. Habitats that exhibit better health and function are more resistant to establishment or spread of invasive species.

Resource management actions or projects that result in ground disturbance could result in an increased establishment of invasive species. Burned area rehabilitation would reduce the risk of weed invasion by reestablishing vegetation on these sites. Burned or rehabilitated sites that receive two growing seasons of deferred grazing would also reduce the risk of additional invasive species by reducing disturbance and spread of weed seeds.

There could be a change or increase in the costs associated with controlling noxious weeds under this Alternative because the aerial application of herbicides and pesticides would evaluated on a case-by-case basis.

Table 57
Effects on Forest/Woodlands and Forest Products from Alternative A Management Provisions

Resource/Resource Use	*Acres Affected*	*% Base Acres **	*% All Forest/Woodlands ***
Big Horn Sheep	4,963	6	3
Elk Calving	7,382	9	5
Elk Winter	22,284	27	15
Antelope (Yearlong)	13,692	16	9
Bald Eagles	725	<1	<1
Lynx	13,955	17	9
WCT	524	<1	<1
Peregrine Falcon	444	<1	<1
VRM I or II	8,449	10	6
Total Acres Treated by Alternative (Includes Aspen)	11,500	14	8

* The total base acres available for mechanical treatment is estimated to be approximately 83,000 acres (does not include WSAs and wilderness).
** The total forest and woodland acres in the Dillon Field Office is estimated to be approximately 149,000 acres (includes WSAs and wilderness).

VEGETATION – RANGELAND

Under Alternative A, the ecological condition of rangeland vegetative communities would improve through vegetative manipulation and resource management systems. The vegetative manipulation units would be designed and evaluated on a case-by-case basis as the BLM completes each watershed analysis. Project or management activities that cause ground disturbing activities could affect vegetative communities through the introduction of invasive species. The integrated weed management actions being applied would slow the spread and reduce the establishment of noxious weeds. Special status species, wildlife or visual resource considerations would cause some adjustments to vegetation treatment unit boundaries or timing of treatments.

Under this alternative active conifer encroachment control would not be conducted. This would lead to the expansion of conifer stands at the expense of mountain big sagebrush. During the next 20 years there would most likely not be a significant change in the relative amount of the two vegetation types. However, in the long term of 50 to 60 years there would be significant change from sagebrush to conifer as has been demonstrated in photo comparison of the past 60 years.

Areas burned by wildland fire would be rehabilitated or revegetated to protect, soil, water, and vegetation resources, to minimize the possibility of wild land fire recurrence or invasion of weeds to prevent unacceptable damage. Resting rehabilitated areas for two growing seasons allows vegetation to reestablish, allows litter to build up on the soil and reduce erosion. The two seasons of deferment also makes disturbed areas less susceptible to invasion of noxious weeds.

Few changes to livestock carrying capacities are anticipated. Changes would be determined and analyzed through the watershed assessment process, and subsequent revision and implementation of watershed management plans.

The ecological condition of the vegetative communities helps determine the overall health of the land. As vegetative condition decclines, habitat diversity decreases and functionality of ecological processes declines. This would cause increased erosion and reductions in forage and habitat for commercial and wildlife species. Vegetative manipulation projects may cause short term negative impacts to air quality, soils, visual resources and wildlife. The long term effect from vegetation manipulation projects would be improved vegetative condition, habitat diversity, including diversity in composition (structure and seral stage) and forage production as well as reduced erosion runoff on a landscape level.

VEGETATION – RIPARIAN AND WETLAND (BLM Critical Element)

Direct impacts to riparian/wetland vegetation result from the physical disturbances resulting from activities within the habitat surrounding streams and wetlands. These generally relate to utilization of vegetation by livestock and wildlife but also from any surface disturbing activities that may

influence plant health, vigor or production such as mining or roads.

Adjusting grazing to protect sensitive plant or fish habitat would enhance riparian habitat conditions to support those values but habitat response would be variable depending on the type or extent of changes.

Managing for Proper Functioning Condition following watershed assessments would not always provide for the consideration of riparian vegetation at site potential when objectives are established. This may limit the development of riparian vegetation communities that are at less than site potential and may not provide the vegetative structure and composition that they would at potential.

VISUAL RESOURCES

The majority of forest treatments in this alternative (approximately 8,500 acres out of 11,000 total) would be located in Class I and II VRM areas. In order for these projects to be completed, they would need to be designed to meet the VRM objectives for these areas, and would necessarily cause very limited change to the existing landscape, repeating basic visual features of the area. In order for this to be accomplished, these treatments would likely be small in scale, and spread out in time over the life of the plan, causing small-scale, relatively short-term impacts in any particular viewshed at any particular time. Forest treatments proposed for VRM Class III and IV areas would likely cause moderate short-term changes to the existing landscape, and would affect a tiny fraction of the overall acreage within the planning area.

Impacts to Visual Resources from Lands and Realty under this alternative could be substantial, depending upon the nature of proposed future activities. The absence of designated right-of-way use areas and corridors, exclusion areas and avoidance areas would make virtually any location in the planning area potentially available for these types of uses. These might include major power lines, communication sites, wind farms, roads, canals, ditches, reservoirs, or other facilities typically authorized under a right-of-way. The proliferation of these types of facilities could potentially impact more than 500,000 acres within the planning area managed under VRM Class IV in this alternative, where major modifications to the existing landscape could be allowed. In reality, each of these activities would be evaluated through some type of environmental analysis, and visual impacts would be mitigated to at least prevent unnecessary and undue degradation of the public lands as required under FLPMA (Section 302 (b)). However, current land use plan direction would not preclude major impacts to visual resources from occurring.

Surface disturbing activities associated with mineral related activities, energy exploration or development could have a major impact on visual resources by changing the existing character of the landscape. Once again, project proposals would be managed on a case-by-case basis to prevent unnecessary and undue degradation, but major changes could affect the visual resources over more than half of the lands within the planning area. Management classes assigned to specific areas determine the amount of mitigation necessary to protect visual resources, which under this alternative would allow at least partial modification of the landscape in nearly 80 percent of the planning area (VRM Class III and IV areas). Areas withdrawn from mineral entry provide visual resource protection for approximately 30,000 acres under this alternative.

WATER (including BLM Critical Element Water Quality, Surface and Ground)

Management of riparian habitats under Alternative A would make the least progress toward meeting water quality goals of all the alternatives. Channel restoration through natural channel processes would occur slower in this alternative than others. Where they exist, elevated water temperatures, aggraded channels, and poor sediment transport would take the most time to be mitigated under this alternative.

Erosion caused by motorized use of approximately 2,102 miles of designated travel routes would continue to have localized, direct impacts to streams and water quality in certain areas where slopes are steep, soils are fragile, where streams are crossed, or where existing tracks are expanded.

Continued fire suppression would prolong the already high risk of catastrophic wildfire. Occurrence of catastrophic wildfire could increase accelerated erosion and resulting sedimentation to streams.

RESOURCE USES

FOREST PRODUCTS

The proposed acres and areas to be treated under this alternative are the same acres and areas that apply to the Vegetation –Forests and Woodlands section of Resources.

Forest products would continue to be produced at about the same level as they have for the past 20 years, averaging 1.6 MMBF annually. An estimated 0.2 to 0.8 MMBF of forest products would also be produced annually from within the Gravelly and Pioneer Landscape areas.

While administrative access would be allowed for forest treatments, travel restrictions could result in limited public access for fuel wood in treatment areas. Continuation of existing wildland fire management would maintain or potentially increase acres of forest and woodlands. Implementation of prescribed fire to recycle the nutrients in slash following harvest treatments would have a major effect on forest succession and growth rates on a local basis.

LANDS AND REALTY

Management for forest products would potentially result in the need for road access to forested areas in the form of road rights-of-way and road use agreements. It could also result in a need for the BLM to acquire easements for legal and physical access to public lands. In comparison with the other alternatives, however, this alternative would likely have the least need for access.

Visual Resource Management (VRM) under this alternative would affect land use authorizations such as rights-of-way, leases, and permits. Facilities would need to meet objectives for the particular VRM class in which a project was proposed. This could entail mitigation, relocation, or elimination of certain facilities resulting in additional time and costs in project development. In terms of the degree of these impacts, Alternative A contains substantially more acres in VRM Class IV than the other alternatives, and thus, would be the least limiting of the alternatives when authorizing facilities through land use authorizations that involve major modifications to the existing character of the landscape. However, Alternative A contains substantially fewer acres in VRM Class III than the other alternatives, and therefore would be the most limiting of the alternatives in terms of authorizing facilities through land use authorizations that involve moderate modifications to the existing character of the landscape.

Under this alternative, no ACECs would be designated and management of the 13 potential ACECs would be evaluated as proposals were made in those areas. Land use authorizations, land ownership adjustments such as exchanges and sales, and access to public lands within the planning area could be constrained by this alternative, but this would have to be evaluated on a case-by-case basis to determine whether the proposed lands and realty action adversely affected relevant and important values.

Management of the eight eligible rivers segments to protect free-flowing character, outstandingly remarkable values, and tentative classification could result in modifications or denial of new facilities such as electric transmission lines, water lines, etc. In instances where these types of facilities are present as a valid existing right, impacts from ongoing activities and/or maintenance would be mitigated to minimize adverse impacts to outstandingly remarkable values.

Under this alternative, all existing WSAs within the planning area, amounting to approximately 124,681acres, would continue to be managed under the Interim Management Policy so as not to impair their suitability for preservation as wilderness until such time as Congress makes a decision on them. Such management would impose a major restriction on the use of these areas for land use authorizations and land disposals.

For lands and realty, and specifically land use authorizations, this alternative would provide the greatest flexibility in locating certain facilities such as transmission lines, pipelines, and communication sites since there would be no designated right-of-way corridors or use areas, and no right-of-way avoidance or exclusion areas. This could lead to a proliferation of separate rights-of-way and their associated impacts when compared to the other alternatives. Not designating corridors and use areas for the above-mentioned uses could result in a greater likelihood that other land uses occurring during the life of the plan may preclude the location of these types of right-of-way uses. Not concentrating major energy-related right-of-way facilities in certain areas could make them, along with the public which relies on them, less vulnerable to potential natural disasters.

The current two-zone system based primarily on the 1984 Land Pattern Review and Land Adjustment Supplement to the 1983 State Director Guidance would allow progress toward the stated goal for land ownership adjustment. Actions such as exchanges, sales, and purchases would adjust the relatively fragmented public land pattern to better manage public lands over the long-term. Consolidation of public land holdings could facilitate access to public lands and reduce the number of access easements needed. Consolidation could also lead to a reduction in encroachment problems on public lands from adjacent property owners as a result of fewer miles of BLM boundaries within the planning area. Because approximately 90 percent (811,000 acres) of the planning area would be managed as a “retention zone” generally for retention, but allow for some disposal, and because the remaining 10 percent (91,000 acres)

would be managed as "lands outside retention zones" and allow for the full array of land adjustment opportunities, this alternative would provide the greatest flexibility in both disposal of public lands and acquisition of lands or interests in lands. Allowing the exercise of the right of eminent domain for access purposes would also contribute to this flexibility.

Implementation of Alternative A would enable the BLM to achieve the management goal for access using the criteria and direction contained in the State Director Guidance on Access (April 1999). Because of the relatively large retention zones and the ability to exercise the right of eminent domain, this alternative would likely provide more flexibility than the other alternatives in terms of how and where access could be obtained.

LIVESTOCK GRAZING

The BLM has estimated that 844,000 acres would be available for grazing and 57,000 acres would be unavailable for grazing under this alternative. The BLM would also allocate approximately 113,000 AUMs on 425 allotments. Areas that are available for temporary non-renewable grazing are included in the acreage that is available for grazing.
The quality and quantity of forage available for livestock would be maintained or increased. The two-year post-treatment deferment would result in a short-term forage loss for livestock, but these manipulation projects would increase the quality of forage available. Livestock grazing management would be adjusted if watershed assessments and evaluations of rangeland health standards indicate that livestock are the reason that one or more of standards are not being met, or if necessary to sustain other resources. Adjustments may include grazing rotation, season of use, timing, duration, utilization, stubble height, bank alteration or limited use riparian pastures. Generally speaking, the impact to livestock grazing would be minor.

MINERALS–LEASABLE

Oil and Gas

In those areas open to leasing under this alternative, leases would be issued under the terms found in the Dillon Management Framework Plan and the Butte District Oil and Gas Environmental Assessment of BLM Leasing Program, and any further document amending the Management Framework Plan. Based on this direction, areas open to leasing in Alternative A would be offered subject to no restrictions, minor restrictions, or major restrictions. These include no surface occupancy, controlled surface use, and timing limitation stipulations.

Under Alternative A, approximately 9 percent (129,316 acres) of federal minerals in the planning area would be unavailable for lease. This includes the Beartrap Wilderness Area, BLM Wilderness Study Areas, and ARS lands. Approximately 43 percent would be subject to minor constraints, 16 percent to major constraints, and 32 percent could be leased under standard lease terms. Next to Alternative D, this alternative would offer the most flexibility for leasing and development.

Table 58 shows the number of acres that would be subject to No Surface Occupancy, Controlled Surface Use, and timing limitations stipulations. Approximately 426,535 acres would be available for leasing subject to standard lease terms.

Geophysical Exploration

The closure of identified areas to geophysical operations would impact ability to acquire subsurface data in those areas. Lack of or incomplete geophysical data could affect leasing or lease development decisions. The number of leases sold and the number of wells drilled could be reduced because of the lack of data.

Phosphates and Other Solids

Approximately 91 percent (1,229,705 acres) of the federal minerals in the planning area would be available for leasing under Alternative A. This alternative would still preclude new leases within the Centennial Mountains WSA, an area of significant deposits of phosphate. Development of the minerals available for lease could be limited by provisions to protect other resource values, but to a lesser extent that Alternative C.

MINERALS–LOCATABLE

Alternative A is the least restrictive toward locatable mineral mining.

Table 59 lists the areas under Alternative A that are proposed for withdrawal from mineral entry. With the exception of Road Agent Rock (see Impacts Common to All Alternatives), none of the proposed lands are known to have significant mineral potential.

Withdrawing the Centennial Mountains east of Matsingale Creek would not affect any known significant locatable mineralization on BLM managed land, although this area does have substantial potential for phosphate which is a leasable mineral.

Table 58
Summary of Acres Affected by Oil and Gas Stipulations under Alternative A

Lands unavailable for lease were not removed prior to calculating stipulated acres and therefore acres subject to stipulations for a particular resource may exceed totals of acres identified in **Table 5**.

Type of Stipulation	*Moderate Development Potential Acres*	*Low Development Potential Acres*	*Very Low Development Potential Acres*	*Total Mineral Acres Stipulated*
No Surface Occupancy				
Sage Grouse Strutting Grounds (leks)	76	392	158	626
State Game Ranges (4)	11,839	5,413	1,373	18,626
Bighorn Sheep Core Areas	8,391	6,009	8,810	23,210
Bald Eagle Nesting/Breeding (stip is for NSO for 1/2 mile and TL for 1 mile)	6	5,733	3,953	9,692
Waterfowl Production Molting Areas	0	17,818	67	17,885
NAWCA/IMWJV wetland projects	3,220	2,368	0	5,588
Westslope Cutthroat Trout Habitat (90-100% pure)	6,244	28,110	34,368	68,722
Fluvial and adfluvial arctic grayling habitat	267	8,039	9,863	18,169
Class 1 Fisheries (Blue Ribbon)	1,632	6,928	3,958	12,518
Developed and Undeveloped Recreation Sites	4,431	14,953	8,273	27,657
NRHP Eligible Properties/Districts	125	2,288	1,658	4,071
Traditional Cultural Properties	62	167	205	434
Wetlands, Floodplains, and Riparian Areas	17,097	70,928	94,788	182,813
National Historic Trails	388	1,200	473	2,061
National Historic Landmarks	0	1,080	1,020	2,100
Continental Divide National Scenic Trail	8	635	762	1,405
Major Roads and ROWs	534	5,584	3,850	9,968
Timing Limitation				
Sage Grouse Winter/Spring Range	22,086	49,383	26,778	98,247
Big Game Winter Range	120,000	372,124	281,765	773,889
Elk Calving/Big Game Birthing Areas	12,695	27,732	58,659	99,086
Bighorn Sheep Yearlong Habitat	9,886	13,498	15,226	38,610
Bald Eagle Nesting/Breeding Areas	252	15,344	9,213	24,809
Raptor Breeding Areas	12,107	64,909	3,869	64,004
Ferruginous hawk nesting areas	7,333	52,802	3,869	64,004
Controlled Surface Use				
Controlled Surface Use stipulations for TES Species, Vehicle Use Restrictions, and VRM Classes apply across the entire planning area and acreages were not calculated separately.				
Active Mass Movement Areas	10,470	6,049	2,257	18,776
Slopes ≥30%	26,183	65,812	91,104	183,099

Table 59
Proposed Mineral Withdrawals under Alternative A

	Total Acres	*Moderate Mineral Potential*	*High Mineral Potential*
Road Agent Rock	10	0	10
Squirrel Rock	10	0	0
Wedding Rock	10	0	0
Public Lands East of Matsingale Creek	12,270*	0	0

*contains major deposits of phosphate which is a leasable mineral.

Management of visual resources under Alternative A would provide the most flexibility to locatable mineral operations in the planning area. Fewer acres would be managed under Class II VRM objectives in Alternative A (approximately 4,000 fewer acres than Alternatives B and D and 8,000 fewer than Alternative C). The biggest difference between Alternative A and the other alternatives is the large number of acres managed under Class IV VRM objectives (519,045 acres in Alternative A versus 18,412 in Alternative B; 18,412 in Alternative C; and 44,752 in Alternative D). While the impacts of Class III and Class IV to mining are similar and comparable to what is already required in current reclamation standards, Class IV management provides additional flexibility.

Under Alternative A there would be no ACEC designations. Evaluation of proposals within potential ACECs on a case-by-case basis could result in protective measures placed on locatable mineral development necessary to protect relevant and important values.

Alternative A would provide the most access to locatable minerals (all existing routes would remain designated open for travel).

MINERAL MATERIALS

Alternative A would provide the most flexibility, next to Alternative D, in allowing for mineral material disposal. Except for the Beartrap Wilderness Area and all Wilderness Study Areas, the entire planning area would be available for consideration of mineral material operations. New locations for community pits, exclusive sales and common use areas would be considered on a case-by-case basis.

RECREATION

Recreation Management under this alternative would continue to provide “a diverse array of quality, resource based recreation opportunities” within the planning area.

Wildlife and fish habitat management actions would continue to provide opportunities for recreational uses including; fishing, hunting, wildlife viewing and photography, and influence the public’s preferred camping locations and travel patterns. Seasonal motorized vehicle restrictions under this alternative are primarily the result of wildlife management concerns, and would continue to contribute to the viability of these populations which are important to the recreating public. However, these same travel limitations would also continue to limit the public’s ability to access certain areas of public lands seasonally.

Management of Forest Products under Alternative A would have minor impacts on recreational use, temporarily displacing recreational use from areas where timber harvest activities are occurring, but also providing additional access into areas that may have been inaccessible before, and providing breaks in timber which often benefit big game hunting and wildlife viewing opportunities in the long term, and sometimes increase camping and OHV opportunities. Due to the relatively few timber sales, and limited acreage that those sales have affected, the impacts described are relatively site-specific and confined to just a few locations within the planning area. Provided the level of harvest activity does not increase, recreation opportunities would not be diminished in the planning area, and could be increased somewhat over the life of the plan.

Implementation of the Lower Madison River Recreation Area Management Plan would allow opportunities for more active management of recreation use than has occurred historically, and would minimize recreation use conflicts and provide protection of the resources to ensure long-term quality of the recreation opportunities in that area.

The eight current SRMA designations (Axolotl Lakes, Bear Trap/Red Mountain, Big Sheep Creek, Centennial Mountains, East Fork of the Blacktail, Upper Madison River, Lower Big Hole River, and Ruby Reservoir) would fail to respond to changing recreation demands for additional managed motorized vehicle and mountain bike opportunities in the planning area.

With an unlimited number of permits for commercially guided big game hunting available to licensed outfitters, it would be more difficult to respond to recent complaints from the public about the amount of outfitted big game hunting use within the planning area. Although the numbers of permits issued would be somewhat self-regulated by the pub-

lic demand for outfitted hunting services, availability of state outfitters licenses, and competition with established businesses, outfitted big game hunting could increase, causing an accompanying increase in conflicts with the non-guided hunting public. Other outside influences such as major habitat loss in surrounding areas due to wildfire, disease, or insect infestation could quickly divert additional outfitted, and non-outfitted hunting use into this area, increasing the potential for conflict.

Other commercially guided recreation activities authorized through Special Recreation Use Permits would increase over the life of the plan in response to anticipated increases in tourism and regional population growth within the planning area. Conflicts are not anticipated based on past experience.

Travel Management, under this Alternative, provides the most motorized public access of any of the alternatives. With the recent decision regarding the Montana-Dakotas OHV EIS, all motorized wheeled vehicle travel would be limited to existing roads in areas where cross-country travel was previously allowed. Motorized travel in other areas would continue to be managed in accordance with the most recent Interagency Visitor/Travel Map, except in the Centennial Mountains where other minor changes were made in the February, 2001 Centennial Mountains Travel Management Plan. Although the reported mileage of open routes under this alternative appears to be substantially higher than under any of the other alternatives, actual public access to approximately 25-30 percent of those road miles is blocked by private lands or lands managed by other agencies that are closed to motor vehicles. Designating those routes as open to public motorized use in many cases would allow only those adjoining private property owners, and anyone with their permission, to legally travel on many of those routes.

Future management of the Big Sheep Creek Back Country Byway would include the development of interpretive signs or brochures to enhance the public's understanding and appreciation of the natural history, and current and historical uses of the surrounding lands along the route. These management activities would be expected satisfy a portion of the public demand for "pleasure driving" opportunities.

RENEWABLE ENERGY

See impacts described for Land Use Authorizations under the *Lands and Realty* sections.

UTILITY AND COMMUNICATION CORRIDORS

See impacts described for Land Use Authorizations under the *Lands and Realty* sections.

FIRE MANAGEMENT AND ECOLOGY

WILDLAND FIRE

Fire suppression strategies to manage wildland fire under Alternative A would control a large percentage of fires at small acres in the short term. As fuel loads increase over time, the size and extent of fires under extreme weather conditions would increase. This could create conditions that decrease the probability to effectively manage fires. The exposure of fire fighters and the public to danger and safety risks would be reduced in the short term, but would increase over time.

As the structure and composition of forest, rangeland, and riparian vegetation continues to grow, there would be an increase in available fuel to burn, both live and dead, increasing the risk of large, high intensity wildfires. Suppression effectiveness would decrease, especially in areas that have conifer encroachment adjacent to the wildland urban interface. Overall, the risk to communities and fire fighter safety would be compromised as the amount of available fuel increases.

The limited removal of forest products under Alternative A would have little change to the effectiveness of fire suppression. Timber slash created from isolated timber harvest activities would increase the potential for higher intensity wildfires in the short term, but if treated these areas would have a decrease in fire intensity over the long term.

Management of Wilderness Study Areas under current control fire suppression strategies would limit the opportunity to manage fires in these areas for resource benefits.

PRESCRIBED FIRE

Under Alternative A, forest, rangeland, and riparian vegetation would be treated on a case-by-case basis. As plant composition changes, more intense management would be required to reduce fuel loading and change the structure and plant composition within these sites. Treatments would be on a small scale and require pre-treatment of vegetation followed by prescribed burning.

The fewest number of acres would be converted to mimic historical fire regimes. As a result, more acres in the planning area would move into condition class 3.

Smoke created from prescribed burning could have short term impacts on air quality within the local Airshed.

FIRE REHABILITATION

The potential for a greater number of acres to be burned by wildfire under Alternative A management as compared to Alternatives B or D would result in an increased amount of disturbance and greater rehabilitation costs.

SPECIAL DESIGNATIONS

ACECs

None of the thirteen potential ACECs would be designated under Alternative A. Impacts to the relevant and important values identified in the ACECs would come from projects or actions proposed within their boundaries. Management would be applied to protect relevant and important values when projects or activities are proposed and could result in additional restrictions or design requirements for certain uses or activities, and in some cases, denial or abandonment of projects. This case-by-case management would be applied to an estimated 227,067 surface acres in the planning area. This would affect approximately 25 percent of the planning area.

BACK COUNTRY BYWAYS

See discussion under the *Recreation* section.

NATIONAL TRAILS

Under Alternative A, potential direct and indirect impacts to NHTs would be evaluated on a case-by-case basis and appropriate mitigative actions implemented, which would reduce impacts to the trail. A stipulation of No Surface Occupancy within 300 feet of any NHT would be in place for oil and gas development to protect visual qualities.

WILD AND SCENIC RIVERS

Under this alternative all eight river segments would be managed as eligible. The suitability review would not be completed. A case-by-case review of proposed actions within an eligible segment would be completed and any actions that would alter the free flow, outstandingly remarkable values, or tentative classification, would be mitigated. Protective management would be subject to valid existing rights.

Case-by-case analysis of each noxious weed control project would provide the opportunity to apply management actions to protect the values that made the segment eligible.

VRM Management Objectives (as defined in BLM Manual Handbook H-8431) for each respective class would provide an additional layer of protection for visual resources along all segments.

- Approx. 9 miles of stream are located in VRM Class I
- Approx. 40.3 miles of stream are located in VRM Class II
- Approx. 12.5 miles of stream are located in VRM Class III
- No stream segments are located in VRM Class IV

Management Objectives for each respective class would provide an additional layer of protection for visual resources along all segments. Management objectives are defined in BLM Manual Handbook H-8431.

Project proposals for locatable, leasable and saleable minerals would be managed on a case-by-case basis. Proposed actions would be mitigated to protect the existing qualities upon which the eligibility is based. Mining regulations prohibit the “undue degradation” of the environment and would prevent some associated impacts.

Proposed actions related to leasable, locatable and mineral materials development would be mitigated to protect the existing qualities upon which the eligibility is based. Mining regulations prohibit the “undue degradation” of the environment and would prevent some associated impacts.

Management of transportation and facilities under this alternative might provide some positive effects to eligible river segments. A case-by-case review of new road projects would enable better management considerations for protection of identified values. Opportunities to close roads within the segment corridor would help in protection of resource values.

WILDERNESS AND WILDERNESS STUDY AREAS

Under this alternative, 10 Wilderness Study Areas would continue to be managed according to the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1), which requires the non-impairment of wilderness values. The Bear Trap Canyon Wilderness would continue to be managed according to the Bear Trap Canyon Wilderness Management Plan, which would be updated during the life of this plan to ensure continued maintenance of wilderness opportunities into the future.

There are no, or negligible, anticipated impacts to wilderness from the proposed management of the following resources or resource uses: Air Quality, Soils, Wild Horses and Burros, Leasable Minerals, Renewable Energy, Utility and Communication Corridors, ACECs, or Wild & Scenic Rivers. Management of several other resources or resource uses would have indirect, often minor impacts on recre-

ational uses of the public lands. Vegetation, Water, and Fire Management Activities would all influence distribution of fish and wildlife, and cause variations in the function and appearance of the landscape, which influence recreational use patterns and preferences within the planning area, but would not substantially alter the demand for, or distribution of activities within the planning area as a whole.

Snowmobile use is allowed in seven WSAs and occurs regularly within two (Axolotl Lakes WSA, and much less frequently in the north end of the Blacktail Mountains WSA). The other five WSAs receive very light use from snowmobiles, in large part because they seldom have adequate snow cover to accommodate use. The opportunity for the Blacktail and Axolotl Lakes WSAs to be designated as wilderness by Congress could be diminished by growing snowmobile use within these areas.

Other impacts to wilderness values within WSAs are due to grandfathered or valid existing rights. The IMP provides guidance on the level of activity that is allowed to occur, and impacts to wilderness values are minimized as much as possible.

SOCIAL AND ECONOMIC CONDITIONS

ECONOMICS

Agriculture and Livestock Use

Under Alternative A, forage availability and number of authorized AUMs is expected to continue at current levels and economic contributions attributed to livestock use of BLM lands would continue at current levels. Livestock grazing on public lands would provide year-round forage for up to 2.0 percent of the total number of cattle (332,904 head) and sheep (20,626 head) in the two county area (2002 Census of Agriculture). Livestock grazing on BLM administered public lands results in an estimated total employment effect of 26 jobs and an annual total labor income effect of 395,000 to the local economy. **Table 60** displays estimated employment and labor income effects from grazing management.

The **dependency** of livestock operators on BLM forage would remain unchanged at about two percent of total livestock forage. BLM forage often provides a critical element of the livestock producer's matched complement of grazing, forage, and hay production.The **number of livestock operators** would remain unchanged at about 268 permittees or about one half the livestock producers in the two county area. Since there would be no change in the authorized level of grazing use, the **real estate value** of base properties would remain unchanged.

Forest and Woodland Resources

Annual production of 2.1 MMBF from DFO lands under Alternative A would meet or moderately exceed current estimates by DFO staff of area demand for wood materials from BLM lands, but would not provide the capability to support additional forest product operations in the two-county area. **Table 60** displays estimated employment and labor income effects from timber management on BLM administered public lands. Estimated combined total effect from timber management of BLM public lands on logging, sawmills, and post/poles/log homes economic sectors would be 48 jobs and $1.275 million in labor income. This would be an increase in total jobs and labor income which over the past 24-year averaged 21 jobs and $558,369 in labor income.

Timber sales of 2.1 MMBF would be more than double the past average DFO-BLM timber sales. The BLM would also increase the proportion of total timber sales in the two counties from about 5 percent (average over the past 24 years) to 11 percent. Federal revenues from these timber sales would amount to about $2.1 million. Four percent of the receipts from sales of vegetative materials would go to the county from which the sale occurs.

Recreation

It is estimated that 311 total jobs and $6.67 million in total labor income is generated within the local economy by recreation use and visits on DFO-BLM lands (see **Table 60**). The amount of revenues generated by special recreation use permits and user fees would be about $29,000.While the status quo would be maintained with regard to management proposals on DFO lands for hunting, fishing, and other forms of recreation, the increase in demand would likely result in an increase in economic contributions attributable to recreation and tourism uses of BLM lands, though to an unknown extent.

Employment, Income and Dependency

Total (direct, indirect, and induced) local employment and trends related to livestock grazing, timber harvest, mining, and oil and gas exploration, and government operations would remain unchanged. Local employment related to oil and gas exploration would increase by about 16 while employment related to production from gas wells would increase by an estimated two FTE per year as long as the wells continue to produce (i.e. during the life of the plan). Local employment related to recreation use would be an estimated 311 total jobs. Total employment related to salaried government employment and non-salaried government expenditures would be about 101. The number local jobs generated by BLM grazing management, timber management, recreation management, and salaried and non-salaried govern-

Table 60
Employment and Labor Income Summary under Alternative A*

Land Use/ Resource Management	*Employment Effect (jobs)*			*Labor Income ($000)*		
	Direct	*Indirect & Induced*	*Total*	*Direct*	*Indirect & Induced*	*Total*
Grazing Management (80,938 AUMs of actual use)	12	14	26	166	229	395
Timber Management (2.1 MMBF total Probable Sale Quantity (PSQ))						
• Logging, contractors, & camps	12	7	19	338	139	477
• Sawmills (96 %)	11	14	25	360	356	716
• Other (posts/poles/log homes) (3 %)	1	3	4	31	51	82
Recreation Use (335,000 recreation visits per year (22% non-local, 78 % local))	283	28	311	6,064	606	6,670
Government Expenditures ($3.3 million)						
• Salary response **	34	13	47	2,138	799	2,937
• Non-salary response	33	21	54	752	461	1,213

*Based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004
**Based on 4-year annual average FTE positions per $MM BLM Dillon Field Office Expenditures from Table 49.

ment expenditures would be an estimated 386 direct and 486 total jobs.

Total (direct, indirect, and induced) local labor income related to livestock grazing, timber harvest, and recreation visits are presented in **Table 60**. Income related to mining, on public lands, and government operations would remain unchanged. Annual direct labor income associated with oil and gas exploration would be about $781,000 per well; and local labor income associated with two additional FTEs for oil/gas production would increase by an estimated $100,000 per year. Local labor income related to recreation use would be an estimated $6.67 million. Total labor income related to salaried government (BLM) employment and non-salaried government (BLM) expenditures would be about $4.2 million for each alternative. The amount of local labor income generated by BLM grazing management, timber management, recreation management, and salaried and non-salaried government expenditures would be an estimated $9.8 million in direct labor income and $12.5 million in total labor income.

The **dependency of the local economy** on the livestock industry, timber production, mining, and oil and gas exploration, and recreation activities would not be affected by BLM resource management. The total number of jobs and the total amount of labor income stimulated by casual and authorized uses on BLM land would amount to about 5 percent of the total jobs and 7.6 percent of the total labor income reported in 2000 in Beaverhead and Madison counties. The influence of resource management on BLM administered lands would not change local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates).

Government revenues from livestock grazing ($116,000), timber production ($2.1 million), mining, and recreation use ($29,000) on public lands would not be affected by BLM resource management. Government revenues in the form of royalties from oil/gas production would amount to an estimated $2.65 million. Assuming that producing wells occur on public lands, 50 percent of the royalties would go to the state, 10 percent of royalties would go to the General Fund of the US Treasury, and 40 percent of royalties would go to the special purpose accounts to the reclamation fund.

Annual oil and gas lease rentals would also contribute $51,000 for the first five years and $68,000 per year thereafter.

Local Commodity prices and cost trends of renting alternative pasture/forage, timber sales, and recreation opportunities would not change.

SOCIAL CONDITIONS

This alternative, along with D, would most closely maintain the current situation for livestock grazing permittees, though changes in AUM allocations could be made during site-specific planning to meet Standards for Rangeland Health. Most adjustments would mean changes in season of use, grazing systems, and use levels, but AUM allocations could also be adjusted. Changes in the intensity of management can change lifestyle by requiring more time spent moving livestock. The potential social effects of these changes are discussed in detail in the Social Conditions section of Impacts Common to All Alternatives.

Management of motorized use as proposed under Alternative A would provide the most motorized access on designated routes of all the alternatives. Motorized recreationists and those who need motorized access for various other purposes would benefit the most under this alternative. Groups or individuals who value solitude and non-motorized activities would have fewer places to enjoy. This alternative is most responsive to the desires of individuals and groups who feel public lands should remain open to motorized access at the current levels and would enhance their social well-being. However, most people who discussed travel planning indicated that some closures were appropriate. The social well-being of groups and individuals who feel some roads should be closed to motorized use would decline.

Conversations with interested members of the public indicate some support for leaving all roads open for the following reasons: it allows people to go where they want to go, provides more opportunities for the aging population and people with limited mobility, access is being lost/limited elsewhere, and the difficulty in enforcing restrictions on motorized travel. Almost all the people involved in the conversations indicated seasonal closures for wildlife are acceptable and would have little effect on those who would use the road system.

Under this alternative, new permits for commercially guided big game hunting would be available to licensed outfitters on a case-by-case basis. This would let the field office respond to future increases in demand. Increases in outfitter days in already occupied areas could increase the conflicts between outfitted and non-outfitted recreationists, which could diminish the experiences of both types of recreationists. Current outfitters could be affected if conflicts between outfitted and non-outfitted recreationists increase, or if more outfitters days are created than there is a demand for and some current outfitters lose business. Consequences of outfitters losing business is described in detail in Alternative C. Some people who participated in discussions on this topic indicated more hunter outfitter days should be permitted on a case-by-case because: there have not been a lot of problems and this gives some flexibility if things change in the future. Other people who participated in the discussions wanted the numbers to remain the same or decline based on some negative experiences with outfitters.

Wildlife and fish habitat management would continue to provide opportunities for hunting, fishing, wildlife viewing and photography. Conflicts between recreationists would remain unchanged or increase and opportunities for solitude would be less available than under Alternatives B and C. The visual environment would be protected as it has been in the past, and more modifications could be made than under Alternatives B and C. The Big Sheep Creek Back Country Byway would retain its designation but no increased interpretation would be provided to enhance the public's understanding of the area. Block Mountain would not be designated an ACEC which could result in a loss of this area for educational purposes. Overall, there would be negative effects to the social well being of recreationists who prefer solitary, quiet experiences and positive effects to the social well being of recreationists who prefer motorized experiences. Opportunities for hunting and fishing opportunities would be unchanged.

Groups and individuals who would give a very high priority to resource use would probably feel not enough resource use, such as wood product production, would be allowed on public lands under this alternative**.** They would, however, support the idea of livestock grazing being continued at its present levels. Many of these people are very concerned about local economies, including providing jobs from resources such as wood products from public lands. They also perceive a growing fire danger and feel potential wood products are going to waste because they are not being harvested. Many of these people indicate that resource protection is also an important goal to them, but they think production and protection can occur at the same time, that more consideration must be given to people who make their living from the land, and that resource activities can meet a variety of goals. For instance, many people indicated that activities that would enhance livestock forage would also enhance forage for wildlife. There was little support for the concept of PFC, partly because the concept is seen as difficult to carry out consistently. These individuals and groups indicate that more production from public lands would help their communities survive and prosper which in turn would make these communities a better place to live.

Groups and individuals who would give a very high priority to resource protection would probably feel the resources

they are concerned about, such as wildlife, forest and woodlands, riparian and water, would not be adequately protected under this alternative. During scoping, BLM received many comments about issues that should be addressed in regard to wildlife habitat management. The condition of the resources on public lands is important to these people because they value public lands for biodiversity, recreation, wildlife habitat, scenic and spiritual qualities, and a variety of other reasons. Many appreciate just knowing that these areas exist, and feel federal agencies have an obligation to manage these resources for future generations.

Under this alternative, due to fuel loads increasing over time, the size and extent of wildfires under extreme conditions would increase. These conditions could result in decreased ability to effectively manage fires and could increase safety risks to fire fighters and communities as described in Impacts Common to All Alternatives. This alternative would not meet the public's preference for active fire management.

TRIBAL TREATY RIGHTS (including BLM Critical Element Native American Religious Concerns)

Under this alternative, public lands in the Dillon Field Office could be utilized in land exchanges to acquire public lands in other parts of the Montana/Dakotas, outside of the historical cultural areas of the Shoshone-Bannock and Confederated Salish-Kootenai tribes. The net effect of such land tenure adjustments could be to limit or reduce the area within which tribal treaty rights could be exercised.

Alternative A designates the greatest number of miles of roads across BLM as open to OHV use, and therefore would be potentially the least restrictive alternative in providing motorized access to tribal members to exercise treaty rights on public lands.

IMPACTS FROM ALTERNATIVE B

RESOURCES

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Under Alternative B, cultural resource management plans would be prepared and implemented on a case by case basis. Under this alternative, the indirect protection of cultural resources is likely to occur more quickly than in Alternative A or D, but not as quickly as proposed in Alternative C.

Alternative B is likely to have more indirect impacts to cultural resources than Alternative A because a higher level of vegetation management is anticipated throughout the planning area.

As described in Alternative A, VRM Class I and II designations provide indirect protection to cultural resources from visual intrusions. Under Alternative B, 128,269 acres would be managed as VRM Class I and 30,810 acres as Class II. This would result in less indirect protection for cultural resource values than in Alternatives A and C, and approximately the same as in Alternative D.

The designation of five specific right-of-way use areas for communication sites and two right-of-way corridors for 69kV or greater electrical transmission lines would limit the amount of visual intrusion and other associated indirect impacts to cultural resources associated with the development of such facilities.

Under this alternative a right-of-way avoidance area would be designated for the Lewis and Clark National Historic Trail and all WSAs. This would protect cultural resource values more than Alternative A and D.

Due to the high amount of recreational use that occurs and is expected to occur at the Ruby Reservoir and Lower Big Hole SRMAs, dropping these two SRMAs is not expected to diminish the indirect and inadvertent impacts to any cultural resources that may occur there. The designation of two new SRMAs (South Pioneers and Rock Hills) would attract additional recreational activity and increase the potential damage to any cultural resources that may occur within, or in close proximity to, these proposed SRMA areas. Consequently the indirect effects would be greater under this alternative than Alternatives A and C, and the same as Alternative D.

Under Alternative B, four of the eight areas designated as ACECs were identified to protect important cultural resource values, including Beaverhead Rock, Everson Creek, Muddy Creek/Big Sheep Creek, and the Virginia City Historic District. Cultural resource values occurring within the other five proposed ACECs may be provided protection indirectly because surface disturbing activities would be limited.

Under Alternative B, 860 acres of Section 202 Tobacco Root Tack-on WSA would be released from interim management and made available for all public land uses. Any cultural resources occurring on the lands released from interim management may suffer indirect and inadvertent impacts from increased access, and other activities prohibited under Alternative A.

FISH AND WILDLIFE

Fish

Managing Class 1 fisheries and WCT habitat to achieve a desired future condition (DFC) or show an upward trend in habitat conditions within 15 years would require change in land use practices in the identified habitat that would improve habitat quality. Habitat improvements such as adding large woody debris and cooperative actions with FWP on water leasing would increase habitat diversity and availability of water.

Efforts aimed at improving special status fish habitat could also improve conditions for other fish species occupying the same habitat. For example, improved WCT habitat would also generally favor other native fish species such as the long nosed dace or mottled sculpin as well.

Management actions described under Alternative B would likely lead to an improvement in fish habitat. Some impacts to habitat would continue to occur from sedimentation. Management goals for fisheries would be achieved under this alternative, but not as soon nor progress as far as under Alternative C.

Increasing production of forest products from 3,000 to 35,000 acres could affect fish habitat by increasing sediment and runoff associated with timber harvest activities. The degree of impact would depend on location and size of the harvest unit, soil type, topography and mitigation measures used. Some benefit to fish habitat may be gained from the 12000 acres of proposed treatments to restore aspen if the treatments occur in riparian zones. Increased water infiltration could occur with a reduction in conifers which may increase hydrologic functions in some watersheds.

Impacts from leaseable minerals under alternative B would be similar to Alternative A. Risks to Class I fisheries would be further reduced given the increase of the NSO buffer from 1000' to 1/2 mile.

Additional protection of special status plants in riparian habitat under this alternative would likely improve fish habitat by improving riparian vegetative conditions.

Increasing the functionality of riparian zones by 30 percent or more over a 20 year time frame would improve fish habitat. The use of prescribed fire and other treatment methods in restoring 100 miles or more of riparian zone aspen and willow communities would improve fish habitat. In many areas conifer encroachment has been identified as affecting the quality and quantity of riparian habitat. By actively treating conifer encroachment on 100 miles of riparian areas, fish habitat would likely improve as riparian conditions returned to a habitat type more favorable to fisheries.

Impacts associated with fire management under Alternative B would come from both fire suppression activities and sediment from runoff of fires allowed to burn through drainages. However, management of the majority of public land under Fire Management Category C would take into account resource constraints and minimize affect of unplanned wildfire.

Management of eight areas as designated ACECs would have minor effects on fish habitat. It may improve habitat conditions in the Centennial Mountains and Muddy/Big Sheep Creek by restricting some types of surface disturbing actives that could degrade habitat values.

Wildlife

Management applied to migration corridors and linkages would enhance elk migration routes in these areas. Protecting denser, taller patches of sagebrush for sage grouse and pygmy rabbit would enhance habitat quality and availability for numerous other sagebrush-dependent wildlife species that prefer tall, dense sagebrush.

Implementing protective measures for sensitive plants and adjusting grazing management would have a minor localized effect on wildlife, depending on how that use may be adjusted. Winter grazing to benefit sensitive plants may conflict with elk and sage grouse winter use, and concentrate livestock mechanical damage in basin big sagebrush habitats on specific allotments or pastures. Sensitive plant HMPs and conservation strategy objectives for specific sensitive plants could enhance or degrade habitat conditions for wildlife species, depending on the proposed management.

Treatment of up to 23 percent of forested lands could displace big game use from fall and winter habitat. These impacts would be concentrated in the focus areas identified in this alternative. Treatments would also create additional forage habitat for wildlife by creating forest openings. Where this forest opening occurred adjacent to bighorn sheep habitat in the Greenhorn Mountains, there would be increased forage availability and opportunity for population expansion into or through areas that may be currently blocked by denser patches of forest.

Wildlife impacts from restoring aspen stands would have substantial benefits to wildlife, as described in Alternative A. However concentrating efforts primarily in the Centennial Mountains would increase those benefits where conifer cover had reduced the size of aspen stands and the amount of herbaceous forage available for wildlife. Implementing restoration efforts on a broader scale and in larger treatment units may avoid some of the adverse impacts of attracting concentrated big game use on aspen regeneration. Big game calving /fawning would be substantially improved by pro-

viding larger areas of lush herbaceous vegetation. Nesting and foraging habitat for numerous birds, small mammals and amphibians would be enhanced by restoring larger stands of aspen with all the associated wildlife habitat values. Juniper harvest from upland and riparian habitat in the south Tobacco Roots would restore deciduous woody species to some riparian habitats and benefit migratory birds. This could also restore more open sagebrush communities and associated sage grouse use in the same area. However this may also result in the loss of big game security cover in some areas.

Treating Douglas-fir encroachment in sagebrush habitat would reduce habitat diversity at the forest-shrubland interface on a portion of the planning area. Although this action would restore an historic condition, it removes dense, structured habitat in a location that now supports an association of bird species and other wildlife that require this type of habitat. This would also remove security and thermal cover on some big game winter habitat. However elk populations are meeting elk management targets and the percentage of forest habitat treatments is minor compared overall to available habitat. Actively managing sagebrush community composition, age classes and structure specifically to address sage grouse needs as described in **Appendix D** should also provide suitable habitat for sagebrush-dependent species across the DFO. Using the strategy described in Alternative B for sage grouse habitat would accommodate appropriate levels of treatment while avoiding important seasonal wildlife habitats. Nesting losses to migratory birds from prescribed fire would be minimized by designing site-specific treatment strategies to avoid or reduce impacts during the breeding season.

Implementing mountain mahogany treatment at levels prescribed in this alternative may have minor localized effects but would have no effect on the overall decline of mountain mahogany and would provide limited benefits to mule deer and moose.

Managing riparian habitats to maintain deciduous habitat types rather than allowing succession to proceed to conifer types preserves a broader diversity of habitat that supports a wider range of wildlife species. This management could affect up to 20 percent (~200 miles) of the riparian habitats in the planning area, although major changes would likely occur on less than 10 percent (~100 miles).

Adjusting livestock grazing management to increase the functionality of riparian zones by 30 percent or more over 20 years would improve wildlife habitat.

Adding small sales of forest products to the same areas available for commercial harvest and forest health treatments may compound and extend and disturbance in wildlife habitats over a longer period of time.

Oil and gas leasing stipulations include no surface occupancy (NSO) on state game ranges, and a timing limitation to prevent disturbance on big game winter ranges. Elk calving/big game birthing areas and bighorn sheep yearlong habitat are protected from disturbance using a timing limitation that extends longer than under Alternative A. Core bighorn sheep habitats are still protected from disturbance with NSO. Waterfowl production and molting habitat are protected from disturbance with a timing limitation.

Wetland projects that contain wildlife habitat are protected from disturbance by NSO. Although timing stipulations on Oil and Gas activities would preclude disturbance to seasonal big game and waterfowl habitats some modification of habitat within those important areas could occur. These stipulations would generally protect most habitats and provide more protection than Alternative A.

This alternative designates about 64 percent of all existing roads as open. Compared to Alternative A this reduced density of designated roads enhances all wildlife uses of suitable habitat across the planning area, with only minor impacts from disturbance or displacement. Maintaining all existing seasonal travel restrictions further enhances this major impact.

Closure of the Ruby Mountains WSA, Farlin Creek WSA, the north half of the Blacktail Mountains WSA, the Bachelor Mountain area near Reservoir Creek, and an isolated section of BLM lands near the East Fork of Little Sheep Creek will reduce the amount of lands available for snowmobile use (in comparison to Alternative A) by nearly 60,000 acres. Though most of these areas currently receive very little snowmobile use, officially closing them to that use could result in less disturbance and displacement of wildlife (provided enforcement is not an issue), during the winter when animals may be more stressed or vulnerable to motorized activities. Restricting all motorized use, including snowmobiles, during winter and spring in the Bachelor Mountain area under this alternative would benefit elk, antelope, pygmy rabbit and sage grouse to a greater degree than the other alternatives.

Management of Blue Lake under this alternative would differ from Alternative A by excluding vegetation treatment actions which would reduce the risk of sediment and nutrient introduction into Axolotl habitat.

PALEONTOLOGICAL RESOURCES

Impacts to paleontological resources are similar to impacts to cultural resources.

SOILS

Streambank erosion would be less than Alternative A because fewer miles of stream would be FAR and NF than in Alternative A.

The degree of impacts to soil from management of forest products would be greater than Alternative A because more acres would be harvested, resulting in more erosion. Mitigating measures would be similar to those mentioned in Management Common to all for roads built to support forest vegetative treatments.

Soil erosion on roads would be less than Alternative D but more than Alternative C because of the number of miles of road that would be open to public travel would also be intermediate between A and C.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (including BLM Critical Element Threatened and Endangered Species)

Maintaining or enhancing conditions in migration corridors and linkages between major blocks of habitat would enhance the suitability of these areas for potential occupancy by SSS, particularly grizzly bear, wolf, and Canada lynx. However, vegetation treatments that would occur in focus areas under this alternative would increase habitat fragmentation by reducing patch size and adding temporary roads.

Broader scale restoration of aspen in the Centennial Valley could provide substantial benefit for listed and sensitive species of wildlife. Larger aspen restoration areas providing lush herbaceous vegetation and restoring taller tree canopies could attract increased use by grizzly bear and lynx. Prey base for wolves would also be increased as a broader array of wildlife species use restored aspen stands. Restored aspen conditions that provide improved nesting and foraging habitat across a broad area would have substantial benefits for migratory birds. These benefits would be further enhanced where aspen occurs on the edge between denser conifer forest and open sagebrush habitats. Although no specific acres are proposed for treatment of xeric or mountain shrub communities, restoration of a 50-year (xeric) or 20-40 year (mountain shrub) fire interval would affect sagebrush habitats where the majority of BLM sensitive species occur resulting in a decrease in habitat in the short term, but provide more habitat in the long term.

Occupied pygmy rabbit habitat in large, denser sagebrush stands (Class 3, 4 and 5) would be protected from any vegetation modification treatments or management that would reduce the structure and density of sagebrush stands.

Restricting sustained surface disturbing activities in key raptor management areas for ferruginous hawks would protect nesting structures, maintain interspersion in sagebrush-grassland habitats, and limit disturbance during breeding season. Other raptor species nesting in close association with ferruginous hawks would also benefit.

Confining habitat disturbance within two adjoining 6th HUCs and minimizing displacement from adjacent areas during vegetation treatment projects could accommodate special status species such as the grizzly bear and migratory birds.

Under this alternative, using a one mile of open road per square mile target for post-project road density when considering new road proposals is consistent with objectives in grizzly bear management plans for maintaining security and reducing mortality risk.

Aspen restoration in the Centennial Valley generally would enhance habitat conditions. Inclusion of juniper harvest from upland and riparian habitat in the south Tobacco Roots would restore deciduous woody species to some riparian habitats with associated benefit to migratory birds. This could also restore more open sagebrush communities and provide additional habitat for sagebrush dependent special status species.

Adjusting grazing use to accommodate sensitive plant needs, protecting aspen treatment projects from browsing, and implementing a 12” residual vegetation standard in Centennial Valley wetlands would enhance nesting cover, foraging and security habitat for several SSS.

Oil and gas leasing stipulations include no surface occupancy (NSO) and timing limitations to protect bald eagle and peregrine falcon nesting territories from habitat modification around a nest site and disturbance during breeding season. A proposed 1/4 mile NSO buffer around sage grouse leks would more adequately protect that habitat from modification than the 500 feet buffer in Alternative A. More protective NSO stipulations extended to Special Status Species and raptor habitats compared to timing stipulations under Alternative A would eliminate modification of habitat from oil and gas activities within those important areas.

This alternative designates about 64 percent of all existing roads as open. Reduced road density in this alternative would enhance all Special Status Species wildlife uses of suitable habitat across the planning area. Density in the grizzly bear use area is about one-half mile open road per square mile which exceeds conservation criteria.

SPECIAL STATUS FISH (including BLM Critical Element Threatened and Endangered Species)

Alternative B provides more protection and restoration of habitat for Special Status Species Fish than Alternative A. Except as described below, impacts would be similar to those described in Alternative A.

Overall, management actions described under Alternative B would likely lead to an increased rate of improvement in special status fish habitat than under alternative A. Some impacts to habitat would continue to occur from sedimentation result in a decline in habitat conditions. This would affect all aspects of fish habitat such as spawning, rearing and security. Management goals would likely be met under this alternative.

Defining special status fish habitat as priority areas and managing it to achieve a desired future condition (DFC) or show an upward trend in habitat conditions within 15 years would require changes in land use practices not only to the identified habitat but to any adjacent areas contributing to a decline in habitat quality. Habitat improvements such as adding large woody debris, installing fish barriers, stream restoration and cooperative actions with FWP for water leasing would improve some of the basic habitat conditions. However, in some cases setting a goal of 15 years for improvements may be inadequate to reverse or even maintain habitat that supports some existing populations.

Increasing forest product production and rangeland conifer treatments would increase the risk of impacts such as sediment ands runoff associated with these types of activities.

By managing special status fish habitat as Category 1 (retention) lands, habitat for WCT and arctic grayling would be preserved.

Impacts to special status fisheries under Alternative B from locatable minerals would be reduced because development near WCT streams would be restricted. This would reduce the threats of sediment and vegetation disturbance on WCT populations in the planning area.

Adjusting livestock management to incorporate protection measures for WCT spawning habitat and setting allowable use levels on riparian habitat would allow for a gradual improvement in habitat conditions. Impacts such as bank trampling could be mitigated on a case by case basis.

Special status plants management would have essentially the same impacts under alternative B as occurred under A. Additional habitat management plans and conservation strategies for special status plant species in riparian habitats would provide improved special status fish habitat quality. Designation of the Muddy/Big Sheep Creek ACEC may complement WCT conservation by restricting some types of surface disturbing actives that could degrade habitat values.

SPECIAL STATUS PLANTS (including BLM Critical Element Threatened and Endangered Species)

Management under Alternative B primarily focuses on individual plant species but would provide some opportunities for restoration and enhancement of individual sensitive plant populations that would be different from Alternative A.

Under Alternative B completing botanical inventories for special status plant species prior to authorizing new surface disturbing activities on BLM lands would lessen impacts from those activities.

Impacts to fire-adapted plants would be positive from prescribed fire in non-forest habitats. Achieving the 20-50 year fire return intervals in the sagebrush steppe would contribute to the long-term maintenance of disturbance-dependant species such as Lemhi Beardtongue. Individual populations of rare fire–adapted species may decline in size or be lost if their habitat isn't burned by either wildfire or prescribed fire during the life of this plan.

Authorizing only temporary non-renewable grazing use for the lands around Eli Spring would allow the needs of sensitive plant species.

VEGETATION—FORESTS AND WOODLANDS

The proposed acres and areas to be treated under this alternative are the same acres and areas that apply to the Forest Products section of Resource Uses.

Next to Alternative D, this alternative would restore the most acres of forest and woodlands, focusing restoration efforts in the south Tobacco Root and Ruby Mountains and in the Barton/Alder Gulch areas. It would treat up to 42 percent of the forest base acres and 23 percent of all forest lands (including 12,000 acres of aspen). The effect on aspen restoration would be concentrated in the southern portion of the DFO where the majority of the larger aspen clones are found. Focusing aspen restoration primarily in the Centennial Valley would enhance the largest concentration of aspen in the Field Office, and potentially provide larger treatment areas thus minimizing the attraction for wildlife and livestock. Using a variety of follow-up treatments (mechanical, fire) would increase the amount of disturbance and that may increase the risk that individual stands might not recover. The

potential for conflict with other resources is higher than with Alternatives A or C but less than Alternative D. For instance this alternative could allow some mechanical treatments in WSAs where such treatment would enhance wilderness values.

Rangeland health projects to remove conifer encroachment would decrease the acres of conifer woodlands and would restore rangeland conditions under a more natural fire regime.

Removing Douglas fir canopies would improve productivity on Mountain Mahogany habitat types by reducing shading. Restoration of riparian communities would reduce the conifer component under this alternative but the effect on conifer forests overall would be negligible.

Limiting disturbances associated with forest treatments to no more than two adjacent 6th order hydrologic units at a time to address wildlife concerns would primarily limit the number of acres treated and the timing of the treatments in Spruce/Fir (cool/moist) forest types.

Up to 33 percent of forest and woodland treatments in the base acres could be constrained by big game concerns. Enlarging Douglas-fir treatment unit size within the topographical limits to benefit bighorn sheep would increase the number of acres of Douglas-fir savannah in the northwest portion of the Greenhorn Mountains.

Table 61 summarizes the number of acres and corresponding percent of forest-woodland acres and base acres where treatments may be affected by other resources.

VEGETATION—INVASIVE AND NON-NATIVE SPECIES, including NOXIOUS WEEDS (BLM Critical Element)

Potentially limiting aerial control of weeds to protect occupied pygmy rabbit habitat, sage grouse breeding habitat, Mountain Mahogany habitat, special status plants in the Centennial Sandhills and Big Sheep Basin could restrict aerial application on up to 40 percent of acres treated annually. If the same level of treatment occurred in the future up to 680 acres would have to be treated by methods other than aerial treatment annually. This would increase costs of the total DFO weed management budget by up to 48 percent. The spread of noxious weeds has been directly related to vehicle travel. Limiting travel routes will assist in reducing the spread of noxious weeds.

VEGETATION – RANGELAND

Removal of conifer encroachment would restore condition to a more natural fire regime and increase the acres of sagebrush grassland. With treatment susceptibility to insect infestation and fuel accumulation would decrease the likelihood of stand replacement fires.

Table 61
Effects on Forest/Woodlands and Forest Products from Alternative B Management Provisions

Resource/Resource Use	*Acres Affected*	*% Base Acres **	*% All Forest/Woodlands ***
Big Horn Sheep	4,963	6	3
Big Horn Sheep	268	<1	<1
Elk Calving	6,822	8	5
Elk Winter	15,374	19	10
Antelope (Yearlong)	6,456	<1	<1
Bald Eagles	232	<1	<1
Lynx	8,604	10	6
WCT	274	<1	<1
Peregrine Falcon	237	<1	<1
VRM I or II	2,473	3	2
Total Acres Treated by Alternative (Includes Aspen)	35,000	42	23

* The total base acres available for mechanical treatment is estimated to be approximately 83,000 acres (does not include WSAs and wilderness).
** The total forest and woodland acres in the Dillon Field Office is estimated to be approximately 149,000 acres (includes WSAs and wilderness).

VEGETATION – RIPARIAN AND WETLAND (BLM Critical Element)

Adjusting management to reach or make significant progress toward desired future condition (DFC) in 20 years would improve riparian conditions at a faster rate than Alternative A because vegetative DFC would be considered as well as functionality when setting objectives for riparian areas. This will improve vegetative composition and structure as well as increasing the number of stream miles in proper functioning condition.

Riparian habitat, including vegetation composition and structure, would be improved by protection westslope cutthroat trout spawning habitats, and implementing the North American Bird Conservation Initiative to restore, enhance or maintain habitats for all birds.

Since many BLM sensitive plants are riparian/wetland species, adjusting grazing use to protect or enhance conditions for those plant species would enhance overall riparian conditions. Winter livestock grazing in the Cold Springs and Stonehouse (Spring Creek pasture) would benefit sensitive plants and enhance riparian conditions. Implementation of sensitive plant habitat management plans and conservation strategies for sensitive plants in riparian habitats would improve riparian conditions within those areas.

Removing conifers and using prescribed fire to restore aspen stands, primarily in the Centennial Valley where the most extensive stands occur, would include some riparian areas, but would have a minor impact overall to riparian conditions. Conversion of conifer riparian habitats back to deciduous types would restore plant community diversity to habitat types that are inherently more stable and resistant to disturbance than are conifer types, particularly in the typical mountain foothills setting found on most DFO lands.

Providing a 12-inch residual stubble height on tall emergent wetland vegetation in the Centennial Valley wetlands would enhance shoreline stability and improve vegetation density and composition.

VISUAL RESOURCES

Management actions for treatment of forested areas in VRM Class I or II would be constrained by the management objectives for these areas, resulting in negligible to minor impacts to visual resources over the forested base area, treating 2,473 acres or two percent of all forests or woodlands. Forest treatments in VRM Class III areas would also be designed to achieve the visual resource objectives for those areas, but would result in moderate, relatively short-term changes to the existing character of the landscape.

Impacts from removal of conifer in non-forested habitat types using prescribed and natural fire, mechanical treatments, or other tools as appropriate would have a short term minor impact on visual resources but should not affect visual quality over the long term if these actions are conducted on small localized areas. Treatments to xeric, mesic and mountain shrub would have a short term minor impact on visual resources but should not affect visual quality over the long term if these actions are conducted on small localized areas. Any adverse impacts from prescribed burns and natural fire would be negligible if mitigation measures are followed to retain the naturalness of the landscape.

Identifying five specific areas for communication sites and two ROW corridors would encourage applicants to locate within these areas and reduce impacts to visual resources in the remainder of the planning area. Designating the Beartrap Wilderness as a right- of-way exclusion area, and designation of all WSAs and the Lewis and Clark Trail as avoidance areas would further protect visual resources. There would be minor impacts to visual resources by increased use of existing communication and utility sites as a result of the location of additional facilities at those sites.

Impacts to visual resources from management actions relating to leasable, locatable and mineral materials would be less in this alternative than in Alternative A since fewer acres would be available for development.

WATER (including BLM Critical Element Water Quality, Surface and Ground)

Impacts under this alternative would be similar to Alternative A.

An increase in treatments in rangeland, forest and woodland habitats, including the use of prescribed fire, would result in the potential for short term direct impacts from soil disturbance and reduced surface cover. After rehabilitation efforts provide soil cover, hydrologic function, infiltration, soil condition, and runoff conditions would be expected to improve over existing conditions.

Reducing the number of designated motorized travel routes under this alternative would lessen the potential for sedimentation associated with motorized use.

An increase in the number of riparian areas in proper functioning condition under Alternative B would directly correlate to cooler water temperatures, more effective sediment transport, and less channel aggradation.

RESOURCE USES

FOREST PRODUCTS

The acres proposed for treatment are the same as those proposed in Resources in the Forests and Woodlands section.

A Probable Sale Quantity (PSQ) of 6.6 MMBF would include 3.0 MMBF from aspen restoration treatments.

While administrative access would be allowed for forest treatments, travel restrictions that would limit motorized travel on 36 percent of existing roads would reduce access to firewood by the public, though many of these routes are currently blocked by private lands or locked gates.

Placing the majority of the DFO lands in Fire Management Category C could allow wildland fire to function in a more natural role. The use prescribed fire would be similar to Alternative A but applied to a larger area.

Release of the Tobacco Root tack on WSA would allow for potential forest and woodlands treatments on 860 acres.

LANDS AND REALTY

The types of impacts from forest products management related to access would be the same as Alternative A. However, in comparison to the other alternatives, this alternative would likely require a greater need for access than the other alternatives except for Alternative D.

The types of impacts from the management of vegetation and special status species would be the same as Alternative A. The degree of impact would vary primarily with special status species. Requiring special status species inventory would increase cost and processing time for land use authorizations such as rights-of-way, leases, and permits.

Impacts from application of visual resource management objectives would be similar to Alternative A.

Under this alternative, none of the eight eligible river segments would be recommended as suitable for inclusion in the National Wild and Scenic Rivers System. Therefore there would be no impacts from Wild and Scenic River Management.

Special management, which could affect lands and realty actions, would be required to protect relevant and important values within the following potential ACECs:

- Beaverhead Rock (120 acres) – new rights-of-way would be excluded from this area. However, the affects on potential right-of-way applicants would be minor since the relatively steep, rough topography of this small, isolated parcel would not be conducive to most right-of-way uses. Management of this isolated tract would affect land ownership adjustment to the extent that it could not be transferred from federal ownership by any method (e.g., an exchange) except under very limited circumstances.

- Block Mountain (8,661 acres); Blue Lake (430 acres); Centennial Mountains (40,715 acres); Centennial Sandhills (1,040 acres); Everson Creek (8,608 acres); and Muddy Creek/Big Sheep Creek (13,097 acres) – management to protect values in these areas could affect land use authorizations such as rights-of-way, leases, and permits, as well as BLM proposals to cross these areas to secure access to other public lands. Proposals for facilities and actions that are projected to degrade these values would have to be mitigated, sited in acceptable alternative locations, or possibly abandoned.

- Virginia City Historic District (513 acres) – the impacts to land use authorizations and BLM access would be the same as discussed above for Block Mountain, Blue Lake, etc. Impacts to landownership adjustment would be the same as identified for Beaverhead Rock.

The environmental consequences from the management of WSAs would be the same as identified in Alternative A, except that since the Tobacco Root Tack-on WSA would be released from further consideration as Wilderness, the area within WSAs affecting land use authorizations, land disposals, and the areas with restricted physical and legal access to public lands would be reduced slightly to 123,508 acres.

Designating and encouraging the use of the two right-of-way corridors for certain types of electric transmission lines and pipelines, and the five right-of-way use areas for communication sites, would tend to concentrate these types of uses in these particular areas and diminish the proliferation of separate rights-of-way and their associated impacts when compared to Alternative A. The designation of these right-of-way corridors and use areas would put the public on notice that these are the preferred areas for certain types of right-of-way facilities. The designation and management of right-of-way corridors and use areas would make it more likely that these types of right-of-way uses would not be precluded by other land uses throughout the life of the plan. However, having these types of right-of-way facilities in close proximity to one another could make them, and the public that relies on them, more vulnerable to potential natural disasters.

Under this alternative, approximately 13.9 percent of the planning area, including all WSAs and the Lewis and Clark Trail, would be designated as right-of-way avoidance areas. The Bear Trap Canyon Unit of the Lee Metcalf Wilder-

ness, constituting approximately 0.7 percent of the planning area, would be designated a right-of-way exclusion area. Although much less restrictive than Alternative C, it would still be the second most restrictive of the alternatives in terms of where within the planning area rights-of-way could be located. Designating avoidance and exclusion areas would put the public, particularly potential right-of-way applicants, on notice that there are certain areas that they should attempt to stay away from when planning for the location of right-of-way facilities.

Alternative B would allow progress toward the stated goal for land ownership adjustment using a three-category system. Actions such as exchanges, sales, and purchases would adjust the relatively fragmented public land pattern to better manage public lands over the long-term. Allowing the exercise of the right of eminent domain to secure access to public lands would facilitate access in difficult situations where no other options exist and where access is critical. Consolidation of public land holdings would facilitate access to public lands and reduce the number of access easements needed. Consolidation would also lead to a reduction in encroachment problems on public lands from adjacent property owners as a result of fewer miles of BLM boundaries within the planning area.

Under this alternative, the approximately 16 percent (142,000 acres) of the planning area in Category 1 would be precluded from disposal by any method, resulting in protection of resource values associated with those lands. Not having these lands available for land ownership adjustments would have a minor impact on the lands and realty program since the vast majority of these lands are already unavailable for such use due to law, regulation or policy. Designating these lands as retention areas (no disposal) would put the public on notice that they are unavailable for land ownership adjustments.

Less than one percent (4,100 acres) of the planning area in Category 3 would be targeted specifically for disposal – including disposal by FLPMA Sec. 203 sale – that would result in better management of public lands over the long-term as parcels that are isolated and difficult to manage are transferred from BLM management. The remaining approximately 84 percent (756,100 acres) of the planning area in Category 2 would provide flexibility in adjustment of lands to meet other resource objectives under this alternative.

Implementation of Alternative B would enable the BLM to achieve the management goal for access. This alternative would afford somewhat less flexibility and more geographic focus in acquisition of legal access than Alternative A. This is because of the emphasis on acquiring access on those routes designated as “open” in the travel plan and the higher priority accorded access to Category 1 retention lands. Allowing the exercise of the right of eminent domain for access purposes would partially offset this lesser degree of flexibility.

LIVESTOCK GRAZING

An estimated 843,000 acres would be available for grazing under Alternative B and 58,000 acres would be unavailable for grazing.

Assessments for rangeland health would continue on a watershed basis. During the assessments adjustments to allowable use levels and grazing systems would be made based on assessment information. This could cause changes, probably reductions, to the forage allocated to livestock.

AUMs could be reduced by up to 11 percent from the current allocation of 113,000 AUMs (it is assumed that any reduction in grazing preference by the BLM would cause a proportional reduction in actual use levels). These decreases would result mainly from changes related to sage grouse management but would occur to a lesser extent to protect concentrated westslope cutthroat trout spawning areas and the Centennial Valley Wetlands.

Known sage grouse breeding and brood rearing areas are located in 157 allotments across approximately 265,000 acres of BLM ownership. If the use of conservation measures in Montana’s sage grouse strategy resulted in implementation of a 7” residual herbaceous height provision, the amount of available forage for livestock purposes would be reduced. There are approximately 67 miles of stream with BLM ownership involving 59 grazing allotments that have westslope cutthroat trout that are 99 percent or higher in purity. The amount of change in livestock forage would be determined during the watershed assessments. Grazing would also be reduced in the Centennial Valley Wetland waterfowl production areas to meet the 12 inch residual stubble height for tall emergent vegetation. These impacts would be direct but localized within the allotments supporting the values being protected. Adjustments to livestock grazing duration and/or season of use would also be made to achieve the desired conditions. There would be a change in the amount of effort required on the part of operators in order to ensure desired conditions are met.

Impacts from vegetative treatments would be the same as Alternative A. Small and isolated aspen treatment areas would be excluded from livestock grazing, but would have a negligible affect in available livestock AUMs.

MINERALS–LEASABLE

Oil and Gas

Alternative B emphasizes a moderate level of protection, use restoration and enhancement of resources and services. Alternative B should allow for a higher chance than Alternative C for leasing and development of lands administered by the BLM but a slightly lower level of leasing and development than Alternative D.

Under Alternative B, approximately 11 percent (145,554 acres) of federal minerals in the planning area would be unavailable for lease. This includes the Beartrap Wilderness, nine Wilderness Study Areas, federal minerals underlying ARS lands, and lands within the boundaries of National Historic Landmarks. Approximately 47 percent would be subject to minor constraints, 32 percent to major constraints, and 10 percent could be leased under standard lease terms.

Table 62 shows the number of acres subject to No Surface Occupancy, Timing Limitations, and Controlled Surface Use stipulations. Approximately 281,829 acres would be available under standard lease terms.

Geophysical Exploration

Under Alternative B, proposals to conduct geophysical exploration would be reviewed on a case-by-case basis and mitigation measures applied. Travel restrictions as well as other measures to protect resource values would be applied as a result of the site-specific analysis, and could require adjustment of schedules or methods, which could impede or limit collection of data.

Phosphates and Other Solids

Impacts would be similar to those described under Alternative A, except that an additional 894 acres of federal minerals in the planning area could be leased as a result of the release of the Tobacco Root Tack-On WSA. Though not in an area of known solid mineral deposits, this management would increase leasable mineral opportunities, though to a minor degree.

MINERALS–LOCATABLE

Overall, Alternative B is less restrictive than C but more restrictive than A or D in regard to development of locatable mineral resources.

Table 63 lists the areas under Alternative B that are proposed for withdrawal from mineral entry. Alternative B would be similar to Alternative A in that it would include Road Agent Rock, Squirrel Rock and Wedding Ring Rock. Proposed withdrawals would remove one percent of the planning area (2,305 acres) from mineral entry under this alternative.

Alternative B would also withdraw 20 acres at the Christnot mill located in the Axolotl Wilderness Study area. This site currently has longstanding, active claim(s). Withdrawing this parcel from mineral entry would prohibit any potential mining in the future and could inhibit the expansion of an adjacent mining operation, although valid existing rights would be protected.

Withdrawing the Lower Madison Lands would prohibit future mining of 40 acres in a moderate mineral potential area. A number of older and more recent workings are present on the hills on both sides of the river. Several old adits on the east side of the river show signs of mineralization while exploration roads and other disturbances on the west side indicate there may be a higher potential for mineralization.

Withdrawing approximately 797 acres for Developed Recreation Sites would prohibit future mining on 66 acres at Ruby Reservoir (which lays on the edge of a high mineral potential area). The withdrawal would also affect the following sites in moderate mineral potential areas: portions of Red Mountain Campground (138 acres), Maiden Rock (45 acres), Warm Springs (61 acres) and Bear Trap (32 acres).

The Virginia City Historic District and possibly Everson Creek ACEC designations potentially restrict mineral development. It is not anticipated that locatable mineral development would be restricted by the other six ACECs that would be designated.

As a result of travel management under Alternative B, access for exploration for locatable minerals would be less than that provided for under Alternative A or D but greater than that allowed under Alternative C. Some roads are only open on a seasonal basis but still provide access.

MINERAL MATERIALS

Under Alternative B, 136,226 acres would be closed to mineral material disposal including the Beartrap Wilderness, Centennial Sandhills, Christnot Mill, Developed Recreational sites, lands within 1/4 mile of Big Sheep Creek, Lewis's Lookout and all WSAs. Closing these areas may limit the supply of mineral materials to the immediate areas.

Table 62
Summary of Acres Affected by Oil and Gas Stipulations under Alternative B

Lands unavailable for lease were not removed prior to calculating stipulated acres and therefore acres subject to stipulations for a particular resource may exceed totals of acres identified in **Table 5**.
Except for arctic grayling and Special Recreation Management Area changes, all acres changes are a result of data updates, not alternative adjustments.

Type of Stipulation	*Moderate Development Potential Acres*	*Low Development Potential Acres*	*Very Low Development Potential Acres*	*Total Mineral Acres Stipulated*
No Surface Occupancy				
Sage Grouse Strutting Grounds (leks)	359	2,753	1,220	4,332
Bighorn Sheep Core Areas	8,391	6,009	8,810	23,210
State Game Ranges (4)	11,839	5,414	1,373	18,626
Bald Eagle Nesting/Breeding	6	5,733	3,953	9,692
NAWCA/IMWJV wetland projects	4,818	3,792	0	8,610
Peregrine Falcon Breeding Territories	0	20,103	13,488	33,591
Ferruginous hawk nesting areas	7,333	52,802	3,869	64,004
Westslope Cutthroat Trout Habitat 99-100% pure	3,991	37,341	52,938	94,270
Fluvial and adfluvial arctic grayling habitat	639	13,661	9,649	23,949
Class 1 Fisheries (Blue Ribbon)	5,013	17,755	8,757	31,525
Developed Recreation Sites	153	2,204	646	3,003
NRHP Eligible Properties/District	125	2,288	1,658	4,071
Traditional Cultural Properties	1,494	4,791	5,365	11,650
Known Paleontological Sites/Locales	26	408	50	484
Known or Discovered Special Status Plant Populations				
Wetlands, Floodplains & Riparian Areas	18,306	77,808	98,752	194,866
Active Mass Movement Areas	10,470	6,049	2,257	18,776
National Historic Trails	3,470	11,933	5,292	20,695
Continental Divide National Scenic Trail	197	5,618	8,417	14,232
R&PPs and 2920 Authorizations	119	1,170	181	1,470
Timing Limitations				
Sage Grouse Winter/Spring Range	27,829	65,642	42,148	135,629
Sage Grouse Breeding Habitat	55,007	198,295	100,152	353,524
Big Game Winter Range	121,176	399,858	299,450	820,484
Elk Calving/Big Game Wildlife Birthing Areas	12,695	27,732	58,659	99,086
Bighorn Sheep Yearlong	9,886	13,498	15,226	38,610
Bald Eagle Nesting/Breeding	252	15,344	9,213	24,809
Raptor Breeding Areas	12,107	64,909	9,502	86,518
Ferruginous hawk nesting areas	19,730	112,738	14,588	147,026
Waterfowl Production Molting Areas	0	24,355	147	24,502
Controlled Surface Use				
Controlled Surface Use stipulations for TES Species, Vehicle Use Restrictions, VRM Classes, Cultural Resource Inventory, Paleontological Inventory, and Special Status Plant Inventory apply across the entire planning area and acreages were not calculated separately.				
Westslope Cutthroat Trout Habitat 90 up to 99% pure	11,538	61,301	68,333	141,172
Special Recreation Management Areas	12,775	96,105	54,230	163,110
Slopes ≥30%	26,183	65,812	91,104	183,099

Table 63
Proposed Mineral Withdrawals under Alternative B

	Total Acres	*Moderate Mineral Potential*	*High Mineral Potential*
Beaverhead Rock*	120	0	0
Christnot Mill	20	0	20
Developed Recreation Sites	797	0	0
Everson Creek*	2,160	0	0
Lewis's Lookout	160	83	0
Lower Madison lands	1,609	1,034	0
Road Agent Rock	10	0	10
Squirrel Rock	10	0	0
Virginia City*	513	0	513
Wedding Ring Rock	10	0	0

*The proposed withdrawal of these areas is considered "special management" as part of the ACEC designations under this alternative, rather than standard management of the alternative.

RECREATION

Under this alternative, impacts to Recreation would be the same as under Alternative A except as described below.

Fish habitat management under this alternative would provide additional emphasis on actions to improve blue ribbon trout fisheries and WCT habitats. Improvements in fish habitats, especially sport fisheries (blue ribbon), would enhance recreational fishing opportunities. Improvement of WCT fisheries would expand and diversify fishing opportunities for recreational anglers.

Wildlife management activities under this alternative would include additional consideration of "grizzly bear needs and risk factors" primarily in the Centennial Mountains/Centennial Valley, and the East Fork Blacktail Deer Creek. Although the consideration is directed toward use authorizations, this would affect at least two Special Recreation Permits for outfitted hunting in these areas. Foreseeable considerations associated with these permits might include requirements to retrieve and remove game within a specified time period, and to implement grizzly bear food storage restrictions in areas identified where bears are likely to occur.

Other wildlife management activities under this alternative would provide for enhanced opportunities for wildlife viewing and bird watching by improving habitats for all birds, and other sensitive wildlife species.

Visual Resource Management (VRM) activities under this alternative would place substantially more emphasis on maintenance of the scenic values by managing less than 20,000 acres in Class IV (rather than nearly 520,000 acres in Alternative A), and moving the bulk of the acreage into the more protective Class III category. Scenic values are consistently identified as one of the most important values for both visitors and residents of this area (Beaverhead and Madison County reports, ITRR reports). Management actions to preserve the scenic character of this area would ensure long-term enjoyment for recreational users, as well as residents in the area. This alternative also manages slightly less acreage in the more protective VRM Class II category (moved into Class III) that would allow moderate changes to some of the more undisturbed lands (primarily to allow for fire management activities).

Realty management activities under this alternative establish "acquisition criteria" for lands and public access easements that would increase opportunities for public lands recreational use. The amount of change that would actually take place would depend upon the availability of "willing parties" over the life of the plan.

Proposed withdrawals from locatable mineral entry under this alternative emphasize protection of recreation facilities and long-term assurance that heavily used areas for recreational use areas would not be impacted by future mining activities.

Recreation management activities under this alternative would provide additional emphasis on addressing crowding issues and maintaining the quality of recreation experiences on public lands and adjacent waters. Coordination with FWP on establishment of use levels at BLM river access sites would provide for a consistent approach to management of recreational river use within the planning area. Similarly, establishing allocated use levels for outfitted big game hunting on BLM lands would provide opportunities for quality outfitted big game hunting experiences while minimizing the potential for conflict with other commercial operations and the non-outfitted public.

Dropping the Lower Big Hole River and Ruby Reservoir SRMAs would have very little practical effect on management of recreation in those areas. The Ruby Reservoir SRMA is an isolated site on the Ruby Reservoir that would continue to be managed as a recreation site within the Dillon Extensive Recreation Management Area (everything outside of an SRMA is within the ERMA). The BLM also manages only one developed site along the Lower Big Hole River (Maiden Rock Boat Launch), which would also be managed as a site within the ERMA. These changes are primarily administrative.

Designation of two new Special Recreation Management Areas (SRMAs) the South Pioneers and Rocky Hills (if released from WSA) would re-focus attention on emerging recreation demand identified by the public in recent years,

and during the public scoping process for this plan. Management of the South Pioneers, in coordination with the USFS, would provide additional opportunities for "loop routes" for both motorized vehicles and mountain bicycles. If Congress were to release the Henneberry Ridge WSA from further consideration as wilderness, designation of the Rocky Hills SRMA could provide a suitable location near Dillon to satisfy the growing demand for mountain biking opportunities in addition to the very light, mostly non-motorized day-use recreational activities that occur there. Bannack State Park's current effort to develop additional hiking and equestrian opportunities within and around the park would be complemented by provision of an area to accommodate mountain bike use as well.

Travel Management under this alternative would identify approximately 1,342 miles of road across BLM lands as open to public travel. This alternative would provide approximately 64 percent of the motorized access provided by Alternative A. This would increase opportunities for solitude and quiet recreation in the planning area, but would reduce opportunities for motorized recreation and make game retrieval more difficult by eliminating roads that might otherwise be legally traveled to recover game. Although motorized hunting access might be reduced, game animals might also return to areas that are no longer accessible to motorized vehicles, essentially negating any change in the proximity of game to motorized access.

Closure of the Ruby Mountains WSA, Farlin Creek WSA, the north half of the Blacktail Mountains WSA, the Bachelor Mountain area near Reservoir Creek, and an isolated section of BLM lands near the East Fork of Little Sheep Creek will reduce the amount of lands available for snowmobile use by nearly 60,000 acres. This will result in nearly 140,000 acres closed to snowmobile use and nearly 765,000 acres open to snowmobile use within the planning area. In reality, a very small percentage of those acres are either suitable for snowmobile use, or have been used by snowmobile recreationists in most years. The actual impacts to snowmobile recreation use include a nearly negligible reduction of visitor use in the Ruby Mountains, Bachelor Mountain, and the East Fork Little Sheep Creek areas. Although public access into the north end of the Blacktail Mountains is extremely limited, especially during the winter, the area is used regularly, though not heavily, for snowmobile recreation – primarily by surrounding landowners and their guests.

Though most of these areas currently receive very little snowmobile use, officially closing them to that use will guarantee future opportunities for quiet winter recreation use, such as cross-country skiing, snowshoeing, winter camping, and wildlife-viewing provided compliance and enforcement of the closure is effective. Because non-motorized recreation is often displaced by the presence of motorized recreation, where the inverse is not generally true, maintaining suitable areas with official closures to motorized recreation ensures the long-term protection of the diversity of recreation opportunities to be provided in the planning area.

RENEWABLE ENERGY

See impacts described for Land Use Authorizations in the *Lands and Realty* section.

UTILITY AND COMMUNICATION CORRIDORS

See impacts described for Land Use Authorizations in the *Lands and Realty* section.

FIRE MANAGEMENT AND ECOLOGY

WILDLAND FIRE

Fire suppression strategies under this alternative would allow for some flexibility to manage fires, but a large percentage of fires could be controlled at small acres. The effects of this alternative would be similar to Alternative A, but the risk and exposure to fire fighter and public safety could increase as fires are managed for longer durations.

The risk of large, high intensity wildfire would be reduced by treating approximately 45,000 acres in the forest and restoring fire return intervals on a case by case basis by in the rangeland vegetation. The suppression effectiveness would increase as these areas are treated. By reducing conifer encroachment within or adjacent to Wildland Urban Interface, fire suppression effectiveness would increase and reduce the risk to these communities. Overall, there is a reduced risk to communities and fire fighter safety.

The removal of forest products would increase effectiveness of fire suppression on those acres that treated. An increase in timber slash created from timber harvest activities could increase the potential for higher intensity wildfires in the short term, but if the slash is treated, these areas would have a decrease in fire intensity over the long term.

Wilderness Study Areas would allow for greater flexibility in managing wildland fires.

PRESCRIBED FIRE

There are more acres converted to historical fire regimes than Alternatives A and C. There could be a minor decrease

in the available fuel. All vegetation condition classes could have treatments and this would move more acres into condition class 1 and 2.

Compliance with the required guidance, laws, regulation, and policies for cultural resources are adhered to prior to implementing a prescribed burn project. The demand for cultural clearance could increase therefore may delay project completion.

The effects from forest, rangeland, and riparian vegetation would be similar to Alternative A. However, there would be an increase in workload associated with the number of acres treated. On those areas where treatments occur, the risk to fire fighter and the public safety would be reduced.

Wildlife concerns such as elk calving or winter range affect approximately 20,000 acres are located in areas that could potentially be treated. Unit location and timing of the treatments could affect projects scheduling.

Smoke created from prescribed burning and wildland fire use could have greater short term impacts on air quality within the local Airshed than Alternative A. An increase in particulate matter and emissions would occur due to the increase in potential acreage burned.

There are more acres proposed in Visual Resource Management classes I and II, therefore reducing the size and extent of hazardous fuels treatment areas within those classes.

FIRE REHABILITATION

Costs associated with rehabilitation would be less under Alternative B than in Alternative A, because fewer acres would be projected to burn. As a result, conflicts with other resources values due to rehabilitation activities would also be less under this alternative.

SPECIAL DESIGNATIONS

ACECs

Alternative B would result in special management provisions being applied to an estimated eight percent (73,184 acres) of the planning area.

Management identified under standard provisions within Alternative B would provide protection of relevant and important values of five potential ACECs. The following sites would not be designated under this alternative, but negligible impacts would be anticipated:

- Big Sheep Creek Basin (2,393 acres within overall 25,990 acre area)
- Centennial Valley Wetlands (17,388 acres)
- Ferruginous Hawk Nesting Area (114,300 acres)
- Lewis & Clark Trail (8,136 acres; 16 miles)
- Westslope Cutthroat Trout Habitats (1,934 acres; 74 miles)

Eight potential ACECs would be designated based on the need for special management (beyond standard provisions) to protect relevant and important values. Management would result in limitations or restrictions placed on other resource uses and activities in order to prevent irreparable damage to the identified values. In some cases, special research projects would be initiated.

- Beaverhead Rock (120 acres)
  Management would remove 120 acres from mineral entry and eliminate new exploration and development. New rights of way would also be excluded. However, these impacts would be localized and in contrast to the protection of a recognizable landmark along the Lewis and Clark National Historic Trail.

- Block Mountain (8,661 acres)
  Special management considerations in the Block Mountain area (8,661 acres) would require potential relocation and/or special design of any proposed activities. This could affect activities such as right-of-way construction, facility placement, and mineral development.

- Blue Lake (430 acres)
  Preventing activities that contribute to nutrient enrichment or increased water temperature in the 430 acres around Blue Lake and placement of barricades would limit certain types of vegetation management, timber harvest, and facility development.

- Centennial Mountains (40,715 acres)
  Proposed management would limit certain uses that cause habitat fragmentation and increase wildlife mortality risk within the Centennial Mountains. Management would prohibit new permanent roads and this could have direct and indirect consequences for various development projects or land use applications, especially in areas outside of the Wilderness Study Area boundary.

- Centennial Sandhills (1,040 acres)
  Implementation of non-mechanical disturbances to maintain habitat within this ACEC would have little to no impact on other resources. If mechanical disturbance is required, site specific analysis would identify resource concerns and protective measures for those other values would be developed before such disturbance was implemented. Special management would require adjustment in grazing systems to provide for management of the relevant and important values, but would main-

tain disturbances necessary to maintain or enhance sand dune habitat. Inventory, research, and monitoring studies would have little to no impact.

- Everson Creek (8,608 acres)
  Management would remove 2,160 acres from mineral entry limiting new mineral exploration and development. Management of the area to prevent surface disturbance and visual intrusions would require relocation or possible abandonment of land use projects such as right-of-ways and communication sites. Limitation of new road construction would have direct and indirect impacts to any development projects or land use applications proposed within the area.

- Muddy Creek/Big Sheep Creek (22,829 acres)
  Uses that would damage cultural resources in the area would be subject to special provisions such as relocation or redesign. Designation of the area as an ACEC would require filing of a Plan of Operations for mineral development. Impacts on uses could range from short-term to long-term dependent upon development proposals.

- Virginia City Historic District (513 acres)
  Management would remove 513 acres from mineral entry limiting new mineral exploration and development.

BACK COUNTRY BYWAYS

See *Recreation* section of Alternative A.

NATIONAL TRAILS

A stipulation of No Surface Occupancy within 1/2 mile of National Historic Trails and inclusion of the trail as a right-of-way avoidance area would reduce the potential visual impacts from oil and gas and utility development to a greater degree than Alternative A.

WILD AND SCENIC RIVERS

Under this alternative none of the eight river segments would be found suitable for inclusion in the National Wild and Scenic Rivers System and resource values identified on each segment would be managed through other program guidance as appropriate. Any impacts to outstandingly remarkable values or the free-flow of the river under this alternative would be as described in other sections of this document for this alternative.

WILDERNESS STUDY AREAS

Impacts under this alternative would be the same as under Alternative A except that the Tobacco Roots Tack-on (Section 202) WSA would be released from further consideration as wilderness. This Section 202 WSA consists of two isolated parcels of BLM lands totaling 860 acres bordering the northwest fringe of the Tobacco Root Mountains. They were identified as a potential complement to the adjacent USFS lands that were being considered for their wilderness potential. The USFS has since (1987) identified the adjacent lands to emphasize motorized recreational use. These isolated BLM parcels by themselves provide no wilderness values. Therefore, their release from further consideration as wilderness would have no impact on wilderness values.

The judicious use of prescribed fire in certain WSAs could potentially enhance wilderness values by facilitating the eventual return of natural fire in those areas. The use of prescribed fire would be limited to those circumstances where the area's natural fire regime could be determined with reasonable documentation that natural ignition wildfires would have affected the WSA had they not been excluded or suppressed. Carefully designed prescribed fire treatments could enhance wilderness values in the short term by restoring a more natural vegetative landscape and related natural processes. In the long term, natural ignition wildfires might be allowed to burn within prescription, eliminating the impacts of suppression activities.

SOCIAL AND ECONOMIC CONDITIONS

ECONOMICS

Agriculture and Livestock Use

Grazing use would be reduced an estimated 11 percent to 72,035 AUMs. This would provide about 1.8 percent of the forage needed to feed the current number of livestock in the two counties.

Permittees who experience reductions in or loss of federal grazing privileges would likely respond by restructuring their existing operations, e.g. leasing other private pasture, feeding the livestock, reducing their herd size, leasing their base property to other livestock operators, or run smaller numbers of other operators' livestock through a livestock control agreement.

Changes in season of use would also require changes in operation. Large, diversified agricultural operations with capital reserves or resources could probably make these changes easier than smaller, less diversified operations and operations with relatively small privately-owned land. The effect on individual operators would be influenced by the number of AUMs reduced and the operator's dependency

on BLM forage. Total cost to affected operations would likely increase. The change in grazing management from current use levels would be spread unequally among an estimated 115 BLM permittees. Economic effects would vary among individual operators.

Overall, the **dependency** of livestock operators on BLM forage would decrease under this alternative to about 1.8 percent of the total forage needed to feed the current number of livestock in the two county area. Since grazing on BLM often provides a critical element of the livestock producer's matched complement of grazing, forage, and hay production, even a relatively small change in BLM grazing use in an allotment could have more than a proportional impact on the permittee's livestock operation. The **number of livestock operators** may decrease, but to an unknown extent. Since there would be a change in grazing preference, the **real estate value** of base properties may also decline. Livestock grazing on BLM administered public lands would support an estimated total employment effect of up to 23 jobs and an annual total labor income effect of up to $352,000 to the local economy. Total employment and annual labor income related to livestock grazing would decline by up to three jobs and $43,000 respectively. **Table 64** displays estimated direct, indirect/induced, and total employment and labor income effects from grazing management at preference levels.

Forest and Woodland Resources

A Probable Sale Quantity of 3.6 MMBF annually would boost overall timber volume in the two-county area by an estimated 2.675 MMBF compared to the past 24-year average timber sale activity from BLM land. Achieving this volume of timber production would exceed estimates by DFO staff of current demand for wood materials from DFO lands and would probably be absorbed by large processing facilities in the larger surrounding region. Annual regional employment and labor income would increase by an estimated 33 jobs and $910,000 respectively compared to Alternative A. **Table 64** displays estimated direct, indirect/induced, and total employment and labor income effects from timber management on BLM administered public lands. Estimated combined total effect from timber management of BLM public lands on logging, sawmills, and post/poles/log homes economic sectors would be 81 jobs and $2.185 million in local labor income.

Timber sales of 3.6 MMBF would be more than triple the past average DFO-BLM timber sales. The BLM would also increase the proportion of total timber sales in the two counties from about 5 percent (over the past 24 years) to 17 percent. Federal revenues from these timber sales would amount to about $360,000. Four percent of the receipts from sales of vegetative materials would go to the county from which the sale occurs.

Table 64
Employment and Labor Income Summary under Alternative B*

Land Use/ Resource Management	*Employment Effect (jobs)*			*Labor Income ($000)*		
	Direct	*Indirect & Induced*	*Total*	*Direct*	*Indirect & Induced*	*Total*
Grazing Management (72,035 AUMs of actual use)	11	12	23	148	204	352
Timber Management (3.6 MMBF total PSQ)						
• Logging, contractors, & camps	21	12	33	580	237	817
• Sawmills (96 %)	18	24	42	617	611	1,228
• Other (posts/poles/log homes) (3 %)	2	4	6	53	87	140
Recreation Use (recreation visits unknown)				1,078 visits per job		$19.91 per visit
Government Expenditures ($3.3 million)						
• Salary response **	34	13	47	2,138	799	2,937
• Non-salary response	33	21	54	752	461	1,213

*Based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004
**Based on 4-year annual average FTE positions per $MM BLM Dillon Field Office Expenditures from Table 49.

Recreation

This management scenario would result in less motorized use of DFO lands for hunting, fishing, and general recreation because of fewer roads and reduced access. The economic significance of these impacts is impossible to gauge and assess with available information. There could be an increase in use of lands in the DFO by non-motorized users which could also contribute to the economy. It is estimated that one total (direct, indirect, and induced) job is created per 1,078 visits and each visit generates $19.91 in total (direct, indirect, and induced) local labor income (see **Table 64**). The amount of revenues generated by special recreation use permits and user fees would be unknown.

Employment, Income and Dependency

Total (direct, indirect, and induced) local employment and trends related to mining and oil and gas exploration, development, and production would be the same as Alternative A. A reduction in livestock grazing use on BLM lands could result in an estimated reduction of employment in the agriculture sector and related business sectors of up to three employees. An annual average increase in timber harvest of 1.5 MMBF would also increase local and regional employment by an estimated 33 full-time jobs. Changes in employment related to recreation use cannot be determined. Total employment related to salaried government employment and non-salaried government expenditures would be about 101. Overall, there would be a relatively small net increase in employment in the two counties, i.e. probably less than 0.5 percent net employment change from the 2000 level of 9,541 (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004).

Total (direct, indirect, and induced) labor income and trends related to mining would remain unchanged. Annual d**irect, indirect, and total local labor income** and trends related to livestock grazing would be reduced by an estimated $43,000. Local labor income associated oil and gas exploration, development, and production would be the same as Alternative A. Local labor income associated with 33 additional full-time forestry jobs would increase by an estimated $910,000 per year. Labor income related to recreation use would likely increase, however the amount cannot be determined. Total labor income related to salaried employment and non-salaried expenditures would be about $4.2 million. Overall, net increase in total labor income in the two county area would likely be less than 0.5 percent of 2000 total wage and salary and other labor income, i.e. less than 0.5 percent of 2000 wages, salaries, and other labor income of $144 million (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004).

The **dependency of the local economy** on livestock grazing, timber production, mining, and oil and gas exploration, and recreation activities would remain relatively unchanged, though dependency on grazing public lands would likely decrease and dependency on timber production would likely increase. The total number of jobs and the total amount of labor income stimulated by casual and authorized uses on BLM land would increase slightly but not enough to affect dependency of the local economy on economic activity related to BLM resource management. The influence of resource management on BLM administered lands would not change local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates).

Compared to Alternative A, **annual government revenues** to the BLM from livestock grazing would decline by about $10,000; government revenues from timber production would increase by an estimated $150,000; government revenues from mining would remain unchanged, and government revenues associated with recreation use on public lands would change by an unknown amount. Government revenues from leasing and renting federal minerals for oil and gas production would be the same for all alternatives. Royalties from oil/gas production would amount to an estimated $2.75 million.

Local commodity prices and cost trends of renting alternative pasture/forage may increase slightly, but timber sale prices and recreation opportunities would likely not change.

SOCIAL CONDITIONS

Under this alternative, projected reductions of up to 11 percent of the existing permitted use to protect the Centennial Valley Wetlands, westslope cutthroat trout, and provide a 7” vegetation height in sage grouse breeding areas would affect about half of the allotments in the planning area. Economic effects to ranchers are discussed in the Economics section. Losses in income could result in declines in social well being for affected ranchers, their families and small communities as described under Management Common to All Alternatives.

Under Alternative B, the plan developed by the Travel Subgroup of BLM’s Western Montana Resource Advisory Council (RAC) would be adopted. This plan designates an estimated 1,342 miles out of a total of 2,102 miles of road as open for motorized travel either yearlong or seasonally and emphasizes loop routes, access to all areas and elimination of duplicate routes. Except for Alternative C, this alternative would provide the greatest opportunities for solitude and non-motorized recreation and would enhance the social well being of groups and individuals who participate in these activities. This alternative could limit opportunities for disabled and elderly people, particularly in relation to

game retrieval. Access for people with disabilities would be allowed on closed roads on a case-by-case basis. The social well being of those who feel all roads should be open, or who need motorized access because of physical limitations, could decline.

Conversations with interested members of the public showed support for this alternative as developed by the RAC, with most individuals indicating some closures are appropriate. Some indicated the RAC goals made sense but they were not sure about the particulars. Reasons given for closing some roads include: too many roads, too much activity on the roads, weed management concerns, and the need for a balance between open and closed. Many people indicated a concern for education, signing and enforcement and that road closures would be ignored. Almost all the people involved in the conversations indicated seasonal closures for wildlife are acceptable and have little effect on those who would use the road system.

Under this alternative, permits for commercially guided big game hunting would be maintained at the current level. Outfitter days could not increase even if an increase in demand were to occur in the future. There would be no effect to current outfitters. Current conflicts occurring between outfitted and non-outfitted recreationists would continue. Most of the people who participated in discussions on this topic indicated the number of days should stay at their current level due, in some instances, to negative experiences with outfitters. Others indicated management should be left open so that problems could be addressed if they arise in the future. Adoption of Alternative B recreation provisions may reduce the potential for conflicts between non-outfitted and outfitted users and at BLM river access sites.

Fish and wildlife habitat management would provide enhanced opportunities for hunting, fishing, wildlife viewing and photography. The visual environment, specifically Virginia City, would receive more protection than under Alternatives A or D. The Big Sheep Creek Back Country Byway would retain its designation but increased interpretation would be provided to enhance the public's understanding of the area. There is concern that ranchers living along the byway would continue to be affected by requests for help from byway travelers that get stuck or have vehicle breakdowns. Safety information provided with the increased interpretation may help to prevent some of these emergency situations. Block Mountain would be designated an ACEC, which would preserve the area for educational purposes.

Overall, there would be positive effects to the social well being of recreationists who prefer solitary, quiet experiences. The social well being of those who feel all roads should be open, or who need motorized access because of physical limitations, could decline. Opportunities for hunting and fishing would be enhanced.

Groups and individuals who would give a very high priority to resource use may feel that not enough enough resource use, such as timber production, would be allowed on public lands under this alternative, though more timber production would occur under this alternative than under Alternatives A or C. See Alternative A for why this is important to these individuals and groups.

Some of the groups and individuals who would give a very high priority to resource protection would probably feel the resources they are concerned about such as wildlife, forests and woodlands, riparian and water would be adequately protected under this alternative. Some of these people indicated that, for some goals like proper functioning condition (PFC) of riparian areas, things would not change overnight and BLM should take the time to do it right, and that the preservation of the local ranching community is very important to preserving open space. This alternative would address those concerns as well as many of the protection considerations. See Alternative A for a discussion of why these resources are important to these groups and individuals.

Under this alternative, the potential for large, high intensity wildfire would be reduced leading to a reduced risk to communities and fire fighter safety. This would reduce the potential effects from wildfire as described under Alternative A. This alternative would meet the public preference for active fire management.

The costs to Beaverhead and Madison counties for services and infrastructure would not be affected by this plan. Area income generated by BLM expenditures and personnel expenditures are expected to remain similar to current contributions or to increase slightly. PILT receipts would not change. Employment and income related to resource use could increase slightly. The dependency of the local economy on livestock grazing, timber production, mining, oil and gas exploration and recreation activities would remain relatively unchanged though dependency on grazing of public lands would likely decrease and dependency on timber production would likely increase.

TRIBAL TREATY RIGHTS (including BLM Critical Element Native American Religious Concerns)

Limiting land adjustment actions to localities within the planning area would assure areas in the same general vicinity could provide for treaty uses. See **Appendix O** for treaty provisions.

Management of 4,000 acres of public land as available for disposal under Category 3 could limit or reduce the area within which tribal treaty rights may be exercised.

Motorized access to resources for tribal use is more restricted under this alternative than Alternative A, but opportunities for solitude would be increased.

IMPACTS FROM ALTERNATIVE C

RESOURCES

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Under Alternative C, cultural resource management plans would be prepared and implemented on a case by case basis. In addition, a minimum of 800 acres of non-Section 106 cultural resources inventory would be conducted annually based on a statistically valid sample within priority watersheds. Over the life of the plan, this would amount to an approximate 18 percent sample of the planning area.

The level of vegetation treatments would result in more indirect impacts than anticipated with Alternative A, and fewer indirect impacts than Alternative B or D.

Direct impacts to cultural resources from mechanical rehabilitation/restoration or prescribed fire projects under Alternative C could increase indirect or inadvertent impacts to cultural resources than Alternative A, but fewer indirect or inadvertent impacts than Alternative B or D.

Changes in riparian condition that would also provide indirect protection for cultural resources would occur on a higher percentage of riparian/wetland areas over the life of the plan, and aspen treatment projects would be excluded from grazing for a period of time to allow recovery. These two actions would complement cultural resource protection.

Designating 42,370 acres as VRM Class II would provide indirect protections from visual intrusion on more acres than in Alternative A, B, or D.

Under Alternative C, a right-of-way avoidance area designated for the Lewis and Clark National Historic Trail, Blue Lake, Centennial Mountains, Everson Creek, Virginia City Historic District, and all WSAs, would protect cultural resource values found in those areas more than Alternatives A, B and D.

Due to the high level of recreational use that occurs and is expected to continue at the Ruby Reservoir, dropping the SRMA designation is not expected to diminish the indirect and inadvertent impacts to any cultural resources that may occur there.

Under Alternative C, ACEC designation in two areas could provide protection for cultural resources through proposed management that would limit surface disturbing activities.

Under Alternative C, all of the eight eligible river segments are recommended as suitable for WSR nomination. Any cultural resources found along the eight segments would indirectly be provided additional protection from WSR designation and management that limits surface disturbing activities along the river segments.

Under Alternative C only, approximately 4.4 miles of public land along the Lewis and Clark National Historic Trail in the Upper Horse Prairie Valley would be designated as VRM Class II to provide further protection for the viewshed along the trail.

Impacts to cultural resources from the release of the Tobacco Root Tack-on WSA would be the same as under Alternative B.

FISH AND WILDLIFE

Fish

Overall, management actions described under Alternative C would likely lead to accelerated improvement in fish habitat. Management goals for fisheries would be best met under this alternative.

Impacts from managing fish habitat to achieve a desired future condition (DFC) would be the same as Alternative B, except habitat improvement would occur within 10 years.

Impacts under Alternative C would likely have the same or nearly the same impacts to fish habitat as were identified under Alternative B, except as described below.

A reduction in forest product production from 35,000 acres in Alternative B to 19,000 acres would likely have a corresponding decrease in impacts such as sediment and runoff associated with timber harvest activities. Some benefit to fish habitat may be gained from the 12000 acres of proposed treatments to restore aspen if the treatments occur in riparian zones. Increased water infiltration could occur with a reduction in conifers which may increase hydrologic functions in some systems. The degree of impact would be dependent on size and location of the harvest unit, soil type, topography and mitigation measures used and.

Reducing livestock numbers and setting allowable use levels on some types of riparian habitat could reduce impacts related to livestock use and allow for improved fish habitat conditions. Initiating protection measures for some types of fish habitats during critical times such as spawning and in-

cubation would contribute to reproduction success of species such as WCT.

Impacts from leasable minerals under Alternative C would be less than those in either A or B, with a larger buffer for Class I fisheries and most of the planning area unavailable for lease. Reducing the amount of acreage within the planning area available for oil and gas exploration and development would likely reduce associated impacts.

Impacts to fisheries from vegetation-riparian under Alternative C would be nearly the same as described under alternative B with the exception that by increasing the functionality of riparian zones by more than 40 percent over a ten year time frame, fish habitat would be greatly improved and recovery would occur over a much shorter time frame.

Impacts associated with fire management under Alternative C would come primarily in the form of sediment runoff from fires allowed to burn through drainages. This alternative has the greatest potential to impact fish habitat since it has the greatest number of acres managed under Category D.

Wildlife

Impacts from management of migration corridors and linkages would be the same as described in Alternative B. Minimizing breeding season disturbance from prescribed fire would enhance productivity of birds and other wildlife species. Implementing sage grouse guidelines as management standards at the project level would directly influence site-specific habitat conditions on-the-ground. This would ensure that necessary sagebrush and herbaceous canopy and cover are provided within site capability to meet seasonal needs of sage grouse and numerous other sagebrush-dependent wildlife species. Conducting DFO-wide inventory and monitoring of amphibians and bats provides baseline information that may identify risks and management opportunities that are currently lacking. Special Status Plant management would generally enhance conditions for wildlife species if it reduces grazing pressure, increases residual vegetative cover and reduces seasonal disturbance.

The amount of forest treatment in Douglas fir (warm and dry) forest types that would occur under this alternative would have a minor effect on wildlife habitat. Treating conifer encroachment primarily in aspen and riparian restoration projects would be relatively localized and would enhance wildlife habitat. Using natural fire only to manage Douglas-fir encroachment into other non-forested habitats would likely result in expanded areas of conifer habitats and reduced acres of mountain big sagebrush habitats. Area-wide, Douglas-fir encroachment would replace a minor amount of sagebrush habitat with a minor effect on the availability of forage over the short-term.

Managing sagebrush communities outside of aspen restoration and urban interface with natural fire alone would generally perpetuate existing compositions and structure over the short term.

Aspen restoration under this alternative would have the same impacts to wildlife as those under Alternative B. Deemphasizing mechanical treatments may increase the likelihood of successful restoration of herbaceous understory and more rapidly provide better wildlife habitat conditions.

Reducing Douglas-fir overstory in mountain mahogany habitat may restore mountain mahogany in focus areas which would benefit mule deer and moose. However, effectiveness would still be constrained by climatic conditions, currently reduced plant vigor area-wide, locally heavy wildlife browsing and protective measures that may be implemented, and the extent of treatment areas.

Managing riparian habitats to maintain deciduous habitat types rather than allowing succession to proceed to conifer types preserves a broader diversity of habitat that supports a wider range of wildlife species. This management could affect up to 20 percent (~200 miles) of the riparian habitats in the DFO, although major changes would likely occur on less than 10 percent (~100 miles). Managing riparian habitat under this alternative would have the same impacts to wildlife habitat as Alternative B.

Extended growing season rest from livestock grazing after vegetation treatments would enhance plant community recovery. Some wildlife uses would continue to affect these areas.

Offering small sale opportunities within wildland-urban interfaces should have negligible effect on wildlife habitat.

Authorizing no grazing permits or leases on Centennial Valley wetlands would allow wetlands to develop to potential, limited only by the physical site and water availability. This would enhance habitat conditions for a wide variety of wetland-dependent wildlife species. Most of these tracts would need to be fenced to exclude livestock which would represent additional restrictions to wildlife movement. Applying a 35 percent upland forage utilization standard DFO-wide, and resting elk winter ranges, would increase the amount of residual cover and forage available to wildlife. Deferring grazing use and providing yearlong rest to benefit sensitive plants would provide additional forage and cover for wildlife where these plants occur. Authorizing only cattle grazing (no domestic sheep permits) on mountain mahogany habitats would eliminate livestock browsing use of mahogany and reduce competition with wildlife.

No impacts from oil and gas exploration or development would occur on big game winter habitat, elk calving habi-

tat, bighorn sheep habitat, sage grouse winter/spring/leks, bald eagle and peregrine falcon nesting/breeding territories, raptor breeding habitat, waterfowl production areas and NAWCA wetland projects since these areas would not be leased. Sage grouse breeding habitat would be protected by a No Surface Occupancy stipulation. All other threatened, endangered or special status species habitat would be protected using Controlled Surface Use stipulations.

Travel management would designate 53 percent of all existing roads as open, and would decrease wildlife disturbance or displacement from important habitats to a greater degree than Alternatives A and B. Public land open road densities in migration corridors are also lower than in other alternatives. Closure of all WSAs to snowmobiles would also decrease wildlife disturbance and displacement in certain areas that are conducive to snowmobile use, especially during the winter months when animals may be more vulnerable to motorized activity. The amount of acreage closed to snowmobile use is similar to Alternative B, though in Alternative C, the more heavily used Axolotl Lakes area would also be closed as well as the north half of the Blacktail Mountains WSA, but the Bachelor Mountain area would not be. As a result, (assuming the Bachelor Mountain area receives snowmobile use) Alternative C would provide more benefits to wildlife species using forest and woodland habitats but not in sagebrush habitat.

Management of Blue Lake under this alternative would differ from Alternative B only by implementing a mineral withdrawal and establishing a protocol for salvaging and restoring axolotls if a natural event should degrade the existing habitat. These actions would further enhance the security of this resource.

PALEONTOLOGICAL RESOURCES

Impacts to paleontological resources would be similar to those described for cultural resources.

SOILS

Impacts to soil from forest vegetative treatments would be similar to Alternative B. Impacts to soil from invasive and non-native species and noxious weeds are the same as Alternative B.

Streambank erosion would be moderate because a moderate number of miles of stream would be FAR and NF.

Impacts from management of forest products would be similar to Alternative A, except that more acres would be harvested until aspen restoration treatments are complete. After that, levels would drop below those for Alternative A. Impacts to soils and erosion rates would also decrease with the eventual decrease in treatment. Mitigating measures would be similar to those mentioned in Management Common for all roads built to support forest vegetative treatments.

Soil erosion on roads would be least under this alternative because the least number of miles of road would be open to public travel.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (including BLM Critical Element Threatened and Endangered Species)

Impacts of management of migration corridors and linkages would be the same as described in Alternative B, except some additional protection would be provided for grizzly bears and wolves and existing barriers would be identified.

Alternative C would consider grizzly bear needs and risk factors over a broader area than under Alternative B and further reduce impacts to grizzly bears.

Implementing a local conservation strategy/habitat management plan for pygmy rabbit would proactively establish management criteria that would enhance pygmy rabbit habitat in the planning area.

Expanding the provisions outlined in Alternative B to protect all raptors and habitat across the planning area would provide major habitat protection and enhance raptor productivity.

Maintaining 250-acre blocks of unfragmented habitat within adjacent 6th HUCs during forest treatments should provide most habitat needs for special status species.

Managing sagebrush communities outside of aspen and urban interface with natural fire alone would generally perpetuate existing compositions and structure over the short-term. Impacts would be similar to those under Alternative A, and are the same discussed for Wildlife under this alternative.

Aspen management under this alternative would affect listed sensitive species the same as described in Alternative B.

Exclusion of grazing from Centennial Valley wetlands would allow those areas to develop toward site potential. This trend toward later seral vegetation conditions should improve conditions for occupancy by species such as trumpeter swan. Implementing a 35 percent forage utilization standard DFO-wide, regular rest of elk winter ranges, and deferring and resting sensitive plant habitats should provide forage and cover and enhance overall habitat conditions for all wildlife species including Special Status Species. Deferring grazing till after westslope cutthroat trout spawning should enhance

riparian conditions and habitat for riparian dependent special status species.

Limiting domestic sheep authorizations in suitable grizzly bear and wolf habitat and migration corridors would reduce potential depredation conflicts and mortality risks. This would improve the potential for occupancy of these habitats on public lands.

Oil and gas leasing stipulations on areas still available for lease in this alternative would protect Special Status Species habitat.

Impacts to Special Status Species from Travel Management under this Alternative are the same as those described under Wildlife.

SPECIAL STATUS FISH (including BLM Critical Element Threatened and Endangered Species)

Impacts to special status fish would be similar to those described under this alternative for general fisheries.

SPECIAL STATUS PLANTS (including BLM Critical Element Threatened and Endangered Species)

Alternative C would provide the greatest opportunity for increasing special status species plant numbers and populations to their historic or potential occurrence and distribution limits. Implementing Habitat Management Plans (HMPs) prepared for high density Special Status plant habitats would protect, restore, and enhance habitats while still providing protection for individual plant species.

Implementing livestock rotation grazing strategies that consider ecological requirements of special status species susceptible to herbivory such as Railhead Milkvetch and Idaho Sedge would ensure long-term persistence of these species. Limiting growing season use by livestock to no more than once in three years and limiting annual utilization to 35 percent or less would allow for sufficient seed production and dispersal, seedling establishment and recruitment, which may ultimately allow populations to increase in number and/or size.

Resting and/or deferring grazing on all burned areas for five years after fires should provide for adequate opportunity for any Special Status plants present to produce fruits and seeds necessary for population maintenance or expansion.

Additional protection would be provided for habitat supporting Rocky Mountain Dandelion on lands around Eli Spring as a result of rerouting the existing road and authorizing grazing use only to meet the needs of Special Status Species plants. This would provide the highest level of protection of any Alternative.

Safeguarding Special Status Species populations with a 1/4 mile buffer from surface disturbing activities would minimize inadvertent adverse impacts to plant species such as Bitterroot milkvetch that might be missed during a botanical inventory due to its variable number of above ground stems. The 1/4 mile buffer would also reduce the opportunity for heavy equipment to introduce noxious weed seeds into occupied Special Status plant habitat.

VEGETATION—FORESTS AND WOODLANDS

The acres proposed for treatment are the same as those proposed in Resource Uses in the Forest Products section.

This alternative would treat the second least amount of the four alternatives. It would treat up to about five percent of the conifer forest about eight percent of the conifer forest in the base acreage. This would be negligible to minor positive step in restoring forest health. No mechanical treatment would be allowed in WSAs to enhance wilderness values. This alternative would treat aspen on the same acres as in Alternative B, with the same impacts, except that the additional surface disturbance from mechanical follow-up treatments would be minimized or avoided. The risk of limited recovery would be reduced compared to Alternative B.

Restrictions associated with the North American Bird Conservation Initiative to address migratory bird concerns could affect treatment design and implementation. Maintaining or enhancing dispersal corridors in the North Gravelly Mountains, Tobacco Root Mountains, Gravelly Range, Centennial Mountains along the Continental Divide to the Lemhi Pass area for wildlife and Special Status Species could reduce the size, extent, or design of forest health treatments in Douglas Fir (warm/dry) forest types. Potential salvage efforts could be similarly affected. Provisions such as raptor breeding suitability restrictions and buffers to protect Special Status plant species that could reduce the size extent or design of forest and woodlands treatments. **Table 65** summarizes the number of acres and corresponding percent of forest-woodland acres and base acres where treatments may be affected by these other resources.

Removal of conifer encroachment in urban interface areas and aspen areas would decrease the acres of conifer woodlands that have become established under fire suppression and would restore rangeland conditions to a more natural fire regime, with minor to moderate positive effects. The restriction on salvage to 40 acres or less and leaving 30 percent of the standing dead would have moderate to major negative effects upon BLM's ability to respond to salvage

Table 65
Effects on Forest/Woodlands and Forest Products from Alternative C Management Provisions

Resource/Resource Use	*Acres Affected*	*% Base Acres **	*% All Forest/Woodlands ***
Big Horn Sheep	34	<1	<1
Elk Calving	2,664	3	2
Elk Winter	5,251	6	4
Antelope (Yearlong)	1,429	<1	<1
Bald Eagles	0	0	0
Lynx	1,191	<1	<1
WCT	75	<1	<1
Peregrine Falcon	37	<1	<1
VRM I or II	1,637	2	1
Total Acres Treated by Alternative (Includes Aspen)	19,000	23	13

* The total base acres available for mechanical treatment is estimated to be approximately 83,000 acres (does not include WSAs and wilderness).
** The total forest and woodland acres in the Dillon Field Office is estimated to be approximately 149,000 acres (includes WSAs and wilderness).

opportunities. Removal of Douglas-fir in mountain mahogany habitat would restore mountain mahogany overstory in Barton Gulch/Idaho Creek, Canyon Creek/Big Hole, Big Sheep Creek and Hell's Canyon areas. This alternative would place the most emphasis on riparian restoration. Increasing the hardwood component of riparian areas would be a moderate positive effect.

There would be no pre-commercial thinning of even-aged lodgepole pine in this alternative which would restrict early growth rates within these stands.

Mitigation measures for wildlife habitat, movement and migration could affect forest and woodlands treatments and would be considered on a watershed basis. Big game mitigations could restrict up to eight percent of the forest and woodland treatments in this alternative. Maintaining 250 big game core security areas with in adjacent 6th HUC during treatment of forest and woodlands could reduce the size, extent or design of treatment.

A minimal change in the structure and composition of forest, rangeland, and riparian vegetation would occur under this alternative. Approximately 7,000 acres of timber harvest and 12,000 acres of aspen treatments would occur. However, rangeland and riparian treatments would occur only on a case-by-case basis. As a result there would be an increase in available fuel (both live and dead) to burn, and an increased risk of large, high intensity wildfire increases.

VEGETATION—INVASIVE AND NON-NATIVE SPECIES, including NOXIOUS WEEDS (BLM Critical Element)

Prohibiting aerial control of weeds to protect occupied pygmy rabbit habitat, sage grouse breeding habitat, mountain mahoghany, and areas within 1/4 mile of Special Status Species plant habitats would eliminate aerial application on up to 40 percent of acres treated annually. If the same level of treatment occurred in the future, up to 1,020 acres would have to be treated by methods other than aerial treatment. This would increase costs of total DFO weed management budget by up to 72 percent.

VEGETATION – RANGELAND

Under this alternative conifer encroachment would be treated using all available tools in aspen restoration or urban interface areas. Outside these areas the BLM would only use prescribed natural fire to treat encroachment. This would lead to increased acres of conifers and reduced acres of mountain big sagebrush. Wildland fire would occur only occasionally, but would be large in scale and would remove the canopies of not only the conifer encroachment but the adjacent sagebrush and timber stands as well. Resting and deferring grazing on all burned areas for five years after fires should provide for herbaceous plant recovery to a greater degree than other alternatives.

The remaining impacts would be the same as Alternative A.

VEGETATION – RIPARIAN AND WETLAND (BLM Critical Element)

The impacts of adjusting management to reach or make significant progress toward DFC in 10 years would be the same as described in Alternative B except the changes would occur more rapidly. Impacts from implementing the North American Bird Conservation Initiative would be similar to Alternative B, with improved riparian vegetation composition and structure in more areas due to additional restoration efforts where rangeland health standards are not being met.

Protecting westslope cutthroat trout spawning habitat April 15 through August 15 would enhance riparian conditions by limiting livestock use during spring and hot season when streambank trampling and vegetation utilization is most difficult to manage. As described in Alternative B, adjusting grazing use to protect special status plants in riparian habitats could enhance overall riparian conditions.

The implementation of Special Status plant Habitat Management Plans (HMPs) would enhance riparian conditions in those plan areas. Conifer removal and prescribed fire treatments to restore aspen stands would occur in some riparian areas, but would have a minor impact overall riparian conditions. Conversion of conifer riparian habitat types back to deciduous types would have the same impacts as under Alternative B.

Mineral withdrawal of the Axolotl Lakes area and the associated watershed would eliminate any potential for degradation from locatable mineral exploration and development in this riparian/wetland complex.

Excluding livestock grazing from Centennial Valley waterfowl areas would allow wetlands to reach site potential. Implementing a 35 percent forage utilization standard DFO-wide and resting elk winter ranges would provide substantially more residual cover and vegetation in most habitats.

VISUAL RESOURCES

Approximately 1,637 of forested acres or one percent of all forest lands in VRM Class I or II would be treated under this alternative. Treatment design would meet VRM objectives so impacts would be negligible.

Impacts from designations of communication site use areas and rights-of-way corridors would be the same as Alternative B. Increased protection of visual resources would be provided in the following specific areas by designating both the Bear Trap Wilderness and Beaverhead Rock as right-of-way exclusion areas and designating all WSAs, the Lewis and Clark Trail, Blue Lake, Centennial Mountains, Everson Creek, and Virginia City Historic District as avoidance areas.

Impacts to visual resources from management actions relating to leasable, locatable and mineral materials would be less in this alternative than in Alternative A and B since fewer acres would be available for development. There would be minor impacts to visual resources by increased use of existing communication and utility sites as a result of the location of additional facilities at those sites.

WATER (including BLM Critical Element Water Quality, Surface and Ground)

Most impacts under this alternative would be similar to Alternative A and B. The smallest amount of vegetative treatment would be applied. Fewer short-term direct impacts would be anticipated; however, the extent of long-term improvements would be limited compared to Alternatives B or D.

Sedimentation or other impacts associated with motorized travel on designated routes would occur at lowest level of any of the alternatives since the fewest miles of road are designated in this alternative.

Overall water quality as indicated by water temperatures, sediment transport and stream channel function would be the best compared to other alternatives.

RESOURCE USES

FOREST PRODUCTS

Aspen restoration, and the associated decline from a Probable Sale Quantity of 3.7 MMBF to a PSQ of 0.7 MMBF, would likely occur within the life of this plan. Operations in Spruce/Fir (cool/moist) forest types would be restricted to salvage opportunities only, which would restrict the ability to produce forest products from the most productive habitat types. Small sales would be de-emphasized, except near urban interface areas, which would limit the availability of products.

While administrative access would be allowed for forest treatments, travel restrictions on about one-half of existing roads would reduce access to firewood by the public to a greater degree than any other alternative.

Placing the majority of the DFO lands in Fire Management Category D provides opportunities to enhance natural succession and vigor using fire as a management tool, but could also result in the loss of forest products through naturally ignited fires. This would occur particularly in conifer en-

croachment areas that are outside of wildland urban interface or aspen restoration areas. Impacts from prescribed fire would be the same as Alternative A.

Management of the two designated ACECs would have no effect on Forest Products.

LANDS AND REALTY

The types of impacts from forest products would be the same as Alternative A. However, in comparison to the other alternatives, this alternative would likely require a greater need for access than Alternative A, but less of a need for access than Alternatives B and D.

Implementing special status plant protection proposed under this alternative would increase cost and processing time for land use authorizations more than any other alternative.

VRM Classes I and II could require design or siting adjustments for mitigations, relocation, or elimination of certain land use authorizations and certain facilities resulting in additional time and cost in project development. Alternative C would be the most limiting when authorizing land use authorizations.

All eight eligible river segments would be recommended as suitable for inclusion in the National Wild and Scenic Rivers System. Impacts to land use authorizations would be essentially the same as those identified in Alternative A.

Impacts from special management to protect relevant and important values within Block Mountain and the Centennial Sandhills would be the same as described in Alternative B for these two areas.

Impacts from management of WSAs would be the same as described in Alternative B.

Impacts associated with the designation of the right-of-way corridors and right-of-way use areas would be the same as Alternative B.

Under this alternative, approximately 16 percent of the planning area, including all WSAs, the Lewis and Clark Trail, Blue Lake, the Centennial Mountains, Everson Creek, and Virginia City Historic District, would be designated as right-of-way avoidance areas. The Bear Trap Canyon Unit of the Lee Metcalf Wilderness and Beaverhead Rock, constituting approximately 0.7 percent of the planning area, would be designated as right-of-way exclusion areas. This alternative would be the most restrictive of the alternatives in terms of where rights-of-way could be located within the planning area.

Impacts from land ownership adjustments would be similar to those described in Alternative B except no land would be placed within Category 3, and the exercise of the right of eminent domain for access purposes would not be considered.

Since there are no Category 3 lands in Alternative C targeted specifically for disposal, and no disposals can be made through FLPMA Sec. 203 sales, along with the exclusion of the exercise of the right of eminent domain, this alternative is somewhat less flexible than Alternative B in terms of accomplishing land ownership adjustments.

In terms of access, impacts would be essentially the same as Alternative B. However, this alternative would afford slightly less flexibility in the acquisition of legal access than Alternative B because the exercise of the right of eminent domain would not be considered.

LIVESTOCK GRAZING

An estimated 823,000 acres would be available for grazing under Alternative C with an allocation of approximately 74,000 AUMs on 400 allotments. Approximately 77,000 acres would be unavailable for grazing under Alternative C. Areas that are available for temporary non-renewable grazing are included in the acreage that is available for grazing. Actual changes to the grazing management and livestock use levels (AUMs) would be determined during the watershed assessments.

Adjustments to livestock grazing use would be evaluated during the watershed assessment process. AUMs could be reduced by up to 50 percent by various resource restrictions to protect sage grouse breeding habitat, the Centennial Valley Wetlands, westslope cutthroat trout streams, elk winter range, and BLM sensitive plant populations.

Management for sage grouse habitat would account for AUM reductions at least as much as outlined in Alternative B. However, under Alternative C, turnout could be delayed until July 1 or operators could be required to leave pastures early. Adjustment and reductions for fish and riparian habitat would be about the same as described in Alternative B. Protecting additional westslope cutthroat trout streams under this alternative could create numerous limited use riparian pastures. This would increase operator management requirements as well as additional fencing and off-stream water development. The proposal to annually rest one-third of the elk winter range would also reduce AUMs to a greater extent than in Alternative B. This would also require adjustments to management plans and pasture configuration. Closure of the Centennial Valley Wetlands to livestock grazing would affect 19 grazing allotments. Five grazing allotments would be closed and the remaining allotments would be affected by varying reductions in allotted forage. Most of the two year rest or deferment for BLM sensitive plant species habitat should be covered with the other resource protection proposals described above.

The elimination of domestic sheep from mountain mahogany habitat types would have a negligible affect on the existing sheep permits. Current sheep permits would not be affected by the restrictions in identified suitable grizzly bear and wolf habitat areas. Converting cattle permits to sheep permits within the identified suitable habitat would not be authorized.

Under this alternative, temporary restrictions in livestock forage following vegetation treatments would last for a longer period of time, and result in greater temporary reductions in livestock forage that the other alternatives.

MINERALS–LEASABLE

Oil and Gas

Alternative C emphasizes active measures to enhance fish and wildlife habitats. Leasing and exploration on lands administered by the BLM would be severely curtailed under this alternative as compared to Alternatives A, B, and D due to the large number of proposed no lease areas.

Under Alternative C, approximately 80 percent (1,080,596 acres) of federal minerals in the planning area would be unavailable for lease. Approximately 1 percent would be subject to minor constraints, 9 percent to major constraints, and 10 percent could be leased under standard lease terms.

Table 66 shows the number of acres that would be subject to No Surface Occupancy, Controlled Surface Use, and timing limitations stipulations. Approximately 127,687 acres would be available for leasing subject to standard stipulations.

Table 66
Summary of Acres Affected by Oil and Gas Stipulations under Alternative C

Lands unavailable for lease were not removed prior to calculating stipulated acres and therefore acres subject to stipulations for a particular resource may exceed totals of acres identified in **Table 5**.

Type of Stipulation	*Moderate Development Potential Acres*	*Low Development Potential Acres*	*Very Low Development Potential Acres*	*Total Mineral Acres Stipulated*
No Surface Occupancy				
Sage Grouse Breeding Habitat	55,007	198,295	100,152	353,524
Westslope Cutthroat Trout Habitat 90 up to 99% pure	28,972	139,949	131,849	300,770
Fluvial and adfluvial arctic grayling habitats	1,734	26,580	25,321	53,075
Class 1 Fisheries (Blue Ribbon)	11,401	33,309	14,410	59,120
Developed Recreation Sites	153	2,204	646	3,304
Special Recreation Management Areas	7,718	35,856	36,696	80,270
NRHP Eligible Properties/Districts	2,443	19,246	18,475	40,164
Traditional Cultural Properties	1,494	4,791	5,365	11,650
Known or Discovered Special Status Plant Populations	29,152	42,660	50,658	122,470
Wetlands, Floodplains & Riparian Areas	16,887	65,568	93,701	176,156
Active Mass Movement Areas	10,470	6,049	2,257	18,776
Within 1/2 mile of National Historic Landmarks	0	3,947	2,616	6,563
R&PP and 2920 Authorizations	119	1,170	181	1,470
Timing Limitations				
None.				
Controlled Surface Use				
Controlled Surface Use stipulations for TES Species, Vehicle Use Restrictions, VRM Classes, Cultural Resource Inventory, Paleontological Inventory, and Special Status Plant Inventory apply across the entire planning area and acreages were not calculated separately.				
Slopes ≥30%	26,183	65,812	91,104	183,099

Geophysical Exploration

Same as Alternative B.

Phosphates and Other Solids

Impacts and availability would be similar to Alternative B, except development of the minerals available for lease would be limited by provisions to protect other resource values to the greatest degree under this alternative.

MINERALS–LOCATABLE

Alternative C would be the most restrictive in regard to locatable mineral entry and development.

Table 67 lists the areas under Alternative C that are proposed for withdrawal from mineral entry and the portions of those areas with moderate or high mineral potential. Proposed withdrawals would remove less than 1 percent of the planning area from mineral entry under this alternative.

The Axolotl Lakes watershed which lies near a high mineral potential area would be withdrawn from mineral entry. In addition there would be 20 acres withdrawn for the Christnot Mill. Withdrawal of these areas from mineral entry would prohibit future mineral development and potentially inhibit the expansion of adjacent mining operations. This impact would have the greatest impact in areas with moderate to high mineral potential as shown in **Table 67**.

Withdrawing westslope cutthroat trout streams could have a major impact on mining since much of the gold mined in the planning area has been from placer deposits in streams, and as a general rule the gold is found within 100 feet of the centerline of a stream.

Table 67
Proposed Mineral Withdrawals under Alternative C

	Total Acres	*Moderate Mineral Potential*	*High Mineral Potential*
Axolotl Lakes Watershed	1,117	0	41
Beaverhead Rock	120	0	0
Christnot Mill	20	0	20
Developed Recreation Sites	797	0	0
Everson Creek	2,160	0	0
Lewis's Lookout	480	370	0
Lower Madison lands	4,661	1,034	0
Muddy Creek	13,097	18	0
Road Agent Rock	10	0	10
Squirrel Rock	10	0	0
Virginia City	513	0	513
Wedding Ring Rock	10	0	0
Westslope Cutthroat Trout	3,507	50	631

Under Alternative C, the Block Mountain and Centennial Sandhills would be designated as ACECs. Neither area is located in what is considered high or moderate potentially mineralized areas and management would probably have a minor impact on locatable minerals.

Travel management proposed under Alternative C would be the most restrictive to minerals, particularly to claim staking, exploration and casual use. Under this alternative the most miles of roads are closed, resulting in limited or no vehicular access for general exploration or to individual features such as mine adits, shafts and waste dumps.

MINERAL MATERIALS

Alternative C would be the most restrictive to mineral material disposal.

Under Alternative C no additional community pits, exclusive sales or common use areas would be established. Only existing sites would be allowed to operate.

This alternative would reduce the availability of mineral materials from the public lands in the planning area. Not allowing mineral materials sites could in some areas necessitate hauling material long distances thus elevating the cost.

RECREATION

Impacts to Recreation under this alternative are the same as described under Alternative B unless stated otherwise below.

Consideration of wolf and lynx needs and risk factors would have minor impacts to the authorization of approximately six Special Recreation Permits, causing additional stipulations to be added to their permits. Other recreational uses in the areas identified would be affected very little, if at all.

Seasonal road closures around sage grouse leks would discourage the public from accessing the strutting grounds, and slightly reduce the opportunities for wildlife viewing. Motorized public recreational use would be minimally affected by the seasonal closure of these roads since other roads would provide adequate opportunities to access the majority of public lands in the area.

Areas identified for closure to all human activity to benefit wildlife include the BLM lands surrounding the Wall Creek Game Range and a small area around Lima Reservoir. These areas receive very little use during the seasons proposed for closure, and would have minimal effect on recreation use. Wildlife viewing opportunities would be slightly reduced.

Managing an additional 12,000 acres under VRM Class II instead of VRM Class III provides for better retention of

the existing viewshed, which would retain an important component of the recreational experience, especially along the Lewis and Clark National Historic Trail.

Withdrawal of the Axolotl Lakes watershed from locatable mineral entry would provide additional assurance of the long-term protection of this area for recreational uses.

Continuing to identify the Lower Big Hole River corridor as a SRMA would maintain this area as a priority for recreation. There would be very little practical effect on the actual management within this corridor. Undesignating the Big Sheep Creek Back Country Byway would also have very little practical effect on the recreational use along this road, except that an identified location for recreation users to go "driving for pleasure" would be lost.

Establishing a 15 percent reduction in authorized use levels for permitted big game hunting outfitters authorized under Special Recreation Permits would reduce the supply of outfitted hunting opportunities below the level of demand that has been established through historical use. Members of the public desiring this type of opportunity would either go to another area or be denied the opportunity. Providers of this service would have to raise their prices, modify their services, or suffer revenue losses through the reduction in visitor use. These reductions in allocated use would have minimal impact on the potential for conflicts between outfitted and non-outfitted hunters.

Travel Management under this alternative would designate approximately 1,116 miles of existing roads open for public travel across BLM lands. This would amount to just over half of the road mileage currently open to the public being designated open to public motorized access. Although most large blocks of BLM lands would continue to be accessible by motorized vehicles, this alternative would substantially limit motorized travel. Restricting travel to fewer miles of road would increase distances for big game retrieval and lessen backcountry motorized touring. Designated routes in this alternative would continue to emphasize the availability of loop routes for casual motorized use, but would eliminate many spur routes that provide access to overlooks, game scouting locations, and jump-off spots for people to venture further into the backcountry by non-motorized methods. Under this alternative, opportunities for solitude and non-motorized recreation would be increased to the greatest degree of all alternatives, although areas traditionally used for these types of activities have less motorized access.

Closure of all WSAs to snowmobiles would increase the acreage closed to snowmobiles by approximately 65,000 acres to a total of approximately 144,000. Opportunities for quiet winter recreation would be improved in all areas currently open to snowmobiles, but by widely varying degrees over the current situation. Likewise, opportunities for motorized winter recreation would be eliminated in these areas, again impacting motorized recreationists by widely varying amounts depending on the area of the closure.

Axolotl Lakes WSA is the most heavily used area for snowmobile use within the planning area. Closure to snowmobiles would eliminate one to two snowmobile events annually in this area, effectively nullify a long-standing agreement allowing snowmobile trail-grooming through the area to adjoining Forest Service lands, and make snowmobiling illegal in the most heavily used location in this planning area. There would be residual reductions in snowmobile use on the adjoining Forest Service lands since many of the users of those lands gain access from Virginia City through the Axolotl Lakes WSA. Opportunities for non-motorized winter recreational use of this area would be just as dramatically improved by the elimination of long-standing winter motorized use.

Impacts of snowmobile closure on all of the other WSAs would be significantly less. The only other WSA that receives regular snowmobile use, at least legally, is the north end of the Blacktail Mountains WSA. This WSA receives regular, but not heavy, snowmobile recreation use – mostly by surrounding landowners and their guests – primarily due to the dearth of public access to the area. Closure of the other WSAs would result in a nearly negligible reduction in overall snowmobile recreational use within the planning area, since most of those areas are lightly, if ever, used for snowmobiling. The only other WSA that receives regular snowmobile use is the Centennial Mountains WSA, which is already legally closed, but receives regular trespass use that spills over primarily from the Mt. Jefferson area managed by the Forest Service.

Designation of all eight eligible Wild & Scenic River segments would be expected to increase recreational use slightly along each of those segments. Identification and description of those river segments in national publications would bring additional attention to those river segments.

Since the Big Sheep Creek Back Country Byway would be undesignated, interpretation and public demand for "pleasure driving" opportunities would not be provided/met under this alternative.

RENEWABLE ENERGY

See *Lands and Realty* sections.

UTILITY AND COMMUNICATION CORRIDORS

See *Lands and Realty* sections.

FIRE MANAGEMENT AND ECOLOGY

WILDLAND FIRE

Fire suppression strategies under this alternative would allow for the most flexibility to manage fires, with a smaller percentage of fires controlled on fewer acres. The effects of this alternative would be similar to Alternative B, but the risk and exposure to fire fighter and public safety could increase as fires are managed for longer durations. Fire spread and size would also increase since more fine surface fuels would be available because of the reduced livestock use.

Fire would be managed for resource benefits based on specific parameters for areas that are designated as Category D. Areas that have conifer encroachment adjacent to Wildland Urban Interface could decrease the fire suppression effectiveness. Overall, the risk to communities and fire fighter safety is compromised as the amount of available fuel increases near Wildland Urban Interface areas.

The small number of acres that allowed for the removal of forest products would not benefit fire suppression effectiveness. Timber slash created from isolated timber harvest activities could increase the potential for higher intensity wildfires in the short term, but if treated these areas could have a decrease in fire intensity over the long term.

Wilderness Study Areas would maximize the flexibility for fire management strategies. This allows for the opportunity to manage larger fires for resource benefits.

PRESCRIBED FIRE

A minimal change in the structure and composition of forest, rangeland, and riparian vegetation would occur under this alternative. Approximately 7,000 acres of timber harvest and 12,000 acres of aspen treatments would occur. However, rangeland and riparian treatments would occur only on a case-by-case basis.

The number of acres converted to their historical fire regimes from prescribed fire treatments would decrease compared to the other alternatives. There could be a minor decrease in the available fuel if fires are allowed to be managed for resource benefits. Vegetation change could move more acres into condition class 3.

Forest, rangeland, and riparian vegetation would be treated to a lesser extent than Alternatives A, B, and D. On those areas that have treatments, the effects would be similar to Alternative A.

Wildlife concerns such as elk calving or winter range would be mitigated by not treating areas with prescribed fire or treating only a small percentage of those areas. Those areas where fires are managed for resource benefits, wildlife concerns could reduce the size and extent of fires.

Smoke impact from prescribed burning would be similar to Alternative A, but where fires are allowed to burn for resource benefits there could be longer term negative impacts to air quality within the airshed.

There are more acres classified in Visual Resource Management Class III under this alternative. This could have minimal affects to prescribed fire management concerns under this alternative.

FIRE REHABILITATION

Same as Alternative A.

SPECIAL DESIGNATIONS

ACECs

Standard Management Provisions would adequately protect the relevant and important values of 11 of the 13 potential ACECs. Special management (through ACEC designation) would not be necessary to protect these values.

Two of the 13 potential ACECs would be designated under Alternative C. Application of special management provisions for Block Mountain and the Centennial Sandhills would protect relevant and important values and reduce threats within the designated areas. Impacts would be the same as described under Alternative B for these two areas, which comprise an estimated one percent (9,700 acres) of the planning area.

BACK COUNTRY BYWAYS

Under this alternative the Big Sheep Creek Back Country Byway would be undesignated and as a result, an identified location for pleasure driving would be lost.

NATIONAL TRAILS

Under Alternative C, introduction of intrusive visual elements which may affect the integrity of National Historic Trails would be avoided by implementing the following measures:

- Stipulation of No Lease for oil and gas within 1 mile of NHTs
- Avoiding NHTs with designated right-of-way use areas for communication sites and right-of-way corridors for major utility lines.
- Designating the route of the Lewis and Clark NHT as a right-of-way avoidance area.

- Moving the Upper Horse Prairie segment of the Lewis and Clark Trail to a VRM Class II instead of VRM Class III.

WILD AND SCENIC RIVERS

Under this alternative all of the eight river segments would be found suitable for inclusion in the National Wild and Scenic Rivers System. The values for which a river segment is found suitable would be protected and enhanced, which could result in some changes to recreation opportunities or new types of uses in order to ensure the values are maintained. Land uses and developments in existence would be permitted to continue. Impacts under this alternative are not expected to be much different from those described under Alternative A, where the river segments would be managed as eligible and in accordance with the tentative classification. Adherence to the management guidelines for each resource or resource use as described in **Appendix L** would result in negligible impacts for river segments with "Recreational" classifications, and no impact to the segments classified as "Scenic" given management of the Bear Trap Unit of the Lee Metcalf Wilderness and Centennial Mountains WSA where they are located.

WILDERNESS STUDY AREAS

Impacts to wilderness would be the same as Alternative B except for the following;

Wilderness values would be enhanced under Alternative C by the closure of all WSAs to snowmobile use. Opportunities for solitude and primitive types of recreation would be improved in all areas where snowmobile use currently occurs. The most dramatic benefits to wilderness values would be in the Axolotl Lakes WSA where casual snowmobile use occurs. Elimination of snowmobile use would provide opportunities without conflict with snowmobiles for cross-country skiing, snowshoeing, and winter camping.

SOCIAL AND ECONOMIC CONDITIONS

ECONOMICS

Agriculture and Livestock Use

Grazing use would be reduced by an estimated 50 percent. BLM would provide up to 40,469 AUMs of actual use. The impact would vary from one producer to the next depending upon their relative dependence on BLM lands for meeting and effectively managing their grazing needs. It is estimated that up to 197 permittees could be affected. Permittees who experience reductions ~~in~~ or loss of federal grazing privileges would likely respond by restructuring their existing operations, e.g. leasing other private pasture, feeding the livestock, reducing their herd size, leasing their base property to other livestock operators, or run smaller numbers of other operators' livestock through a livestock control agreement.

The effect on individual operators would be influenced by the number of AUMs reduced and the operator's dependency on BLM forage. The reduction of up to 40,469 AUMs from current actual use levels would be spread unequally among an estimated 197 BLM permittees. Economic effects would vary among individual operators.

Overall, the dependency of livestock operators on BLM forage would be reduced under this alternative. BLM would provide about one percent of the total livestock forage necessary to feed the cattle and sheep in Beaverhead and Madison counties. Since grazing on BLM often provides a critical element of the livestock producer's matched complement of grazing, forage, and hay production, even a relatively small change in BLM grazing use in an allotment could have more than a proportional impact on the permittee's livestock operation. The number of livestock operators would be expected to decrease more with this alternative than with the other alternatives. Since there would be a change in grazing preference, the real estate value of base properties could also decline. Livestock grazing on BLM administered public lands would support an estimated total employment of 13 jobs and annual total labor income of $198,000 to the local economy. Total employment and annual labor income related to livestock grazing would decline by up to 13 jobs and $197,000, respectively. **Table 68** displays estimated employment and labor income effects from grazing management.

Forest and Woodland Resources

A Probable Sale Quantity of 700 MBF annually would reflect a 200 MBF decline from the 24-year average BLM timber sale level and 1,400 MBF reduction from Alternative A. This level of production would meet most of the local demand currently estimated by DFO staff for wood materials, but not all demand from the larger region. Annual employment and annual labor income would decline by an estimated 33 total jobs and $850,000 respectively compared to Alternative A. **Table 68** displays estimated direct, indirect/induced, and total employment and labor income effects from timber management on BLM administered public lands. Estimated combined total effect from timber management of BLM public lands on logging, sawmills, and post/poles/log homes economic sectors would be 15 jobs and $425,000 in local labor income.

Timber sales of 700 MBF would be 200 MBF less than past average DFO-BLM timber sales. The BLM would decrease

the proportion of total timber sales in the two counties from about five percent to four percent. Federal revenues from these timber sales would amount to about $0.7 million. Four percent of the receipts from sales of vegetative materials would go to the county from which the sale occurs.

Recreation

Emphasis of non-motorized recreational uses, increased management and protection of wildlife and fish habitats, and designated route closures and use limitations would limit contributions to the economy from users that enjoy motorized recreation (snowmobiling, ATV touring, etc.). This alternative would reduce motorized access and use of DFO lands and would have the greatest reduction in use of these lands for hunting, fishing, and general recreation associated with motorized use. The economic impact of this management scenario on recreation and tourism activity can not be determined.

Decreasing the numbers of permits authorizing outfitted big game hunting operations would reduce the number of outfitted trips on BLM lands, though the economic impact is unknown since other lands could be used for such operations and maintain or even increase such use in Beaverhead and Madison counties. It is estimated that one total (direct, indirect, and induced) job is created per 1,078 visits and each visit generates $19.91 in total (direct, indirect, and induced) local labor income (see **Table 68**). The amount of revenues generated by special recreation use permits and user fees would be unknown.

Employment, Income and Dependency

Total (direct, indirect, and induced) local employment and trends related to mining and oil and gas exploration, development and production would be the same as Alternative A. A reduction in livestock grazing on BLM lands could result in an estimated reduction of employment in the agriculture sector and related business sectors of up to 13 jobs. An annual decrease in timber harvest of 1.4 MMBF would also decrease local and regional employment by an estimated 33 full-time jobs. Local employment related to production from two wells would increase by an estimated two FTE per year as long as both wells continue to produce. Changes in employment related to recreation use cannot be determined. Total employment related to salaried government employment and non-salaried government expenditures would be about 101. Overall, there would be a relatively small net decrease in employment in the two counties, i.e. probably about 0.5 percent net employment change from the 2000 level of 9,541 (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004). See **Table 68** for direct, indirect, and total local employment effects.

Total (direct, indirect, and induced) local labor income and trends related to mining would remain unchanged. **Total local labor income** and trends related to livestock grazing would be reduced by up to an estimated $197,000. Local labor income associated oil and gas exploration, development, and production would be the same as with Alternative A. Local labor income associated with a decline of 33 forestry and related jobs would decrease by an estimated

Table 68
Employment and Labor Income Summary under Alternative C*

Land Use/ Resource Management	*Employment Effect (jobs)*			*Labor Income ($000)*		
	Direct	*Indirect & Induced*	*Total*	*Direct*	*Indirect & Induced*	*Total*
Grazing Management (40,469 AUMs of actual use)	6	7	13	83	115	198
Timber Management (0.7 MMBF total PSQ)						
• Logging, contractors, & camps	4	2	6	113	46	159
• Sawmills (96 %)	4	4	8	120	119	239
• Other (posts/poles/log homes) (3 %)	<1	<1	1	10	17	27
Recreation Use (recreation visits unknown)			1,078 visits per job			$19.91 per visit
Government Expenditures ($3.3 million)						
• Salary response **	34	13	47	2,138	799	2,937
• Non-salary response	33	21	54	752	461	1,213

*Based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004
**Based on 4-year annual average FTE positions per $MM BLM Dillon Field Office Expenditures from Table 49.

$850,000 per year. Labor income related to recreation use would likely increase; however the amount cannot be determined. Total labor income related to salaried employment and non-salaried expenditures would be about $4.2 million. Overall, net decrease in total labor income in the two counties would likely be less than $1.1 million or about 0.8 percent of 2000 total wage and salary and other labor income, i.e. about 0.8 percent of 2000 wages, salaries, and other labor income of $144 million (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004). See Table – for direct, indirect, and total local labor income effects.

The **dependency of the local economy** on mining and oil and gas exploration activities would remain relatively unchanged. The dependency of the local economy on livestock grazing, timber production, and recreation use would decrease more under this alternative than with the other alternatives. The total number of jobs and the total amount of labor income stimulated by casual and authorized uses on BLM land would decrease slightly but not enough to affect dependency of the local economy on economic activity related to BLM resource management. The overall influence of resource management on BLM administered lands would not change local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates).

Compared to Alternative A, **annual government revenues** to the BLM from livestock grazing would decline by up to $58,000, annual government revenues from timber production would decline by $140,000, annual government revenues from mining and oil and gas exploration would remain unchanged; and government revenues associated with recreation use on public lands would increase by an unknown amount. Government revenues from leasing and renting federal minerals for oil and gas production would be the same for all alternatives.

Local Commodity prices and cost of renting alternative pasture/forage would likely increase by an unknown amount.

SOCIAL CONDITIONS

Under this alternative, projected reductions of up to 50 percent of the existing permitted use to provide special status plant habitat, elk forage, and a planning area-wide upland utilization standard in addition to the values identified in Alternative B, would affect almost all of the allotments in the planning area. This alternative has the greatest potential to change the social fabric of the local area, depending upon the ability of various operations to continue ranching with reduced availability of public land forage. Economic effects to ranchers are discussed in the Economics section. Losses in income could result in declines in social well being for affected ranchers, their families and small communities as described under Management Common to All Alternatives.

Alternative C offers the fewest miles of routes designated for motorized use (1,116 miles out of a potential 2,102 miles) and would eliminate many spur routes that provide access to overlooks, game scouting locations, and jump-off spots for people to venture further into the backcountry by non-motorized methods. Road closures in this alternative emphasize wildlife protection. Effects would be similar to Alternative B except this alternative would provide the greatest opportunities for solitude and non-motorized recreation and would further enhance the social well being of groups and individuals who participate in these activities. The potential decline in social well being for those who participate in motorized opportunities or who need motorized access because of physical limitations, would be the greatest under this alternative. See Alternatives A and B for discussions of attitudes toward closing some routes to motorized vehicle use.

This alternative would close additional public land located in five WSAs to snowmobile use, which would limit opportunities for those groups or individuals that participate in snowmobiling. In the Axolotl Lakes area, closure of these areas would create excellent opportunities for cross-country skiing, snowshoeing and winter camping. However, this is currently a popular area for snowmobile use. This alternative would enhance the social well being of recreationists who value quiet and solitude. It would result in a decline in the social well being of those who enjoy snowmobile use.

The responses of people involved in conversations about this topic were mixed. Some indicated the reaction to closures would be negative because they would change the management that was set up when the WSAs were originally designated, the area may experience additional pressure if Yellowstone National Park is closed to snowmobiles, snowmobile use does not hurt the ground and there is no wildlife in the areas during that time of year, there are fewer and fewer places to go for this activity, and people need some place to play. People who indicated the areas should be closed said: BLM should take a more proactive approach in managing these areas, motorized uses are hard on wildlife and destroy wilderness values. Most of the people who discussed this topic indicated that the decision would not affect them personally.

Under this alternative, permits for commercially guided big game hunting would receive a 15 percent across the board decrease. Outfitter days would be below the level of demand that has been established through historical use and could not increase even if an increase in demand were to occur in the future. Some recreationists who historically participated in outfitted recreation in this area would have to go to another area or quit recreating in this manner. To

make up for lost income operators may have to raise prices, modify services or suffer revenue losses. These changes could result in declines in social well being for the operators and recreationists who could not continue the same activities as they had in the past. The number of conflicts between outfitted and non-outfitted recreationists could decline slightly. Few of the people who participated in discussions on this topic indicated the number of outfitter days should decline by a set or "arbitrary level", although some reported conflicts with outfitters.

Coordinating with FWP on establishing use levels at BLM river access sites may reduce the potential for conflicts between recreationists at these sites.

Fish and wildlife habitat management would provide enhanced opportunities for hunting, fishing, wildlife viewing and photography. The visual environment, including Virginia City, would receive more protection than under Alternatives A or D. The Big Sheep Creek Back Country Byway would lose its designation but references to it would remain in guidebooks. Block Mountain would be designated an ACEC which would preserve the area for educational purposes. Overall, there would be positive effects to the social well being of recreationists who prefer solitary, quiet experiences. The social well being of those who feel all roads should be open, or who need motorized access because of physical limitations, would decline.

Groups and individuals who would give a very high priority to resource use would feel not enough resource use, such as timber or mineral production, would be allowed on public lands under this alternative. Many of these people are very concerned about local economics including providing jobs from resources such as wood products off public lands. They may also perceive a growing fire danger and feel potential wood products are going to waste because they are not being harvested. See Alternative A for a discussion of why this is important to these individuals and groups.

Groups and individuals who would give a very high priority to resource protection would probably feel the resources they are concerned about such as wildlife, riparian and water would be most adequately protected under this alternative. However, some of these people indicated that, for some goals like proper functioning condition of riparian areas, things will not change overnight and BLM should take the time to do it right. Some also said that the preservation of the local ranching community is very important to preserving open space. Therefore, this alternative may produce some unacceptable consequences for some of the people who would give a very high priority to resource protection. There may be some concern within these groups that few ACECs are being designated (because the proposed management would protect these areas in other way). See Alternative A for a discussion of why these resources are important to these groups and individuals.

Under this alternative, due to fuel loads increasing over time, the size and extent of wildfires under extreme conditions would increase, creating conditions that decrease the ability to effectively manage fires and exposing fire fighters and communities to safety risks. The potential effects would be similar to Alternative A.

TRIBAL TREATY RIGHTS (including BLM Critical Element Native American Religious Concerns)

Under Alternative C, two Land tenure adjustment categories are established, Category 1 lands are designated for retention, and Category 2 lands are designated for retention or limited or limited land adjustment actions within the Dillon Field Office Area. Land tenure adjustments would be conducted only to acquire lands that meet the defined acquisition criteria including lands with higher resource values and that provide better public access.

Under this alternative potential impacts to tribal treaty rights from land tenure adjustments could be expected to be negligible.

Travel management under Alternative C designates 1,116 miles of roads across BLM as open for OHV use and is therefore more restrictive than that proposed in any of the other Alternatives. Motorized access to resources for tribal use would be the least in all alternatives but opportunities for solitude are the greatest.

IMPACTS FROM ALTERNATIVE D

RESOURCES

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Under Alternative D, cultural resource management plans would be prepared and implemented on a case-by-case basis. In addition, non-Section 106 cultural resources inventory would be conducted as time allows based on a statistically valid sample within priority watersheds. It is difficult to determine how much non-Section 106 inventory would be conducted under this alternative. Based on current levels, it is doubtful that any time could be devoted to non-project oriented inventory. Considerably more indirect impacts to cultural resources are likely than with Alternative A, B or C because of the level of proposed vegetation treatment.

Direct impacts to cultural resources from mechanical rehabilitation/restoration or prescribed fire projects would be mitigated. However, given the size of the area proposed for treatment, Alternative D is likely to have an increased potential for indirect or inadvertent impacts on cultural resources than with Alternative A, B or C.

VRM designations I and II would provide indirect protection from visual intrusions. Fewer acres (30,397 acres) would be designated VRM Class II than in Alternatives A and C, and approximately the same as in Alternative B.

Designating WSAs as right-of-way avoidance areas would protect cultural resources within WSA boundaries. No other areas would be designated right-of-way avoidance areas. This alternative therefore provides more protection than Alternative A, but less protection than alternative B and C.

Dropping the Ruby Reservoir from a SRMA designation is not expected to diminish the indirect and inadvertent impacts to any cultural resources that may occur there. The designation of two new SRMAs (South Pioneers and Rock Hills) would attract additional recreational activity and increase the potential damage to any cultural resources that may occur within, or in close proximity to, these proposed SRMA areas. Consequently the indirect effects would be greater under this alternative than Alternatives A and C, and the same as Alternative B.

Under Alternative D, five of the thirteen ACECs would be specifically designated for the protection and preservation of cultural and historic resources values. Cultural resource values that may occur within the other eight proposed ACECs would be protected indirectly by proposed management that would limit surface disturbing activities.

Under Alternative D, none of the eight eligible river segments would be recommended as suitable for WSR nomination; no additional protections would be provided to cultural resources that occur along the eligible river segments.

Release of the Tobacco Root Tack-On WSA would be the same as Alternative B and C.

FISH AND WILDLIFE

Fish

Impacts from Alternative D would be similar to those described under Alternative A with the addition of increased timber production. Impacts from forest and woodland vegetation treatments would be the greatest in alternative D. By treating large areas throughout the planning area there is greater risk of fish habitat being degraded. Implementation of this alternative may preclude fish habitat from reaching the DFC. Primary impacts to habitat would come from sedimentation and increased runoff.

Habitat improvements such as pool construction and cooperative actions with FWP on water leasing would improve water flows, and keeping water in fish habitat that contains Special Status Species.

Increasing forest product production from 3,000 to 51,000 acres could increase the risk of impacts to fish habitat from increasing sediment and runoff associated with timber harvest activities. The degree of impact would depend on location and size of the harvest unit, soil type, topography, and mitigation measures used. Some benefit to fish habitat may be gained from the 14,000 acres of proposed treatments to restore aspen if the treatments occur in riparian zones. Increased water infiltration could occur with reductions in conifers which may increase hydrologic functions in some watersheds.

Management of most of the 13 areas as designated ACECs would have minor effects on overall fish habitat. Special management of the Big Sheep Creek Basin and the Westslope Cutthroat ACEC would improve habitat conditions for fish that exist within the boundaries. Restricting some types of surface disturbing activities in the Centennial Mountains, Muddy Creek/Big Sheep Creek ACECs could protect fish values where they occur in these areas.

With over half the planning area in Fire Management Category B, fire suppression activities would generate most of the impacts associated with fire management. Sediment impacts could be mitigated by setting buffers near drainages to reduce sediment reaching streams.

Wildlife

Forest treatments that would occur under this alternative would increase habitat fragmentation by reducing patch size and adding temporary roads in all forest types. These actions could displace substantial amounts of winter big game from security and winter thermal habitat. The effects of managing conifer encroachment under this alternative would the same as alternative B but would be more wide-spread across the planning area.

Improved wildlife habitat conditions resulting from aspen restoration would be the same as Alternative B except that effects would occur over a larger area of the planning area. The most benefit may occur if treatment areas are larger and concentrated in a general area.

Treating denser sagebrush communities (class 5) and up to 30,000 acres of mountain shrubs would remove cover on spring and winter habitat for sage grouse, mule deer, antelope, elk and numerous other species. These changes can be

short-term (in fire sprouted or mountain big sage) or long-term (in xeric shrub habitats).

Removing conifers from only aspen riparian communities and allowing other riparian communities to progress toward conifer types within site potential would reduce deciduous woody canopy within these systems. Many wildlife species dependent on deciduous shrubs and trees would be displaced from these areas. Although these changes would be subtle and relatively long-term, they could affect a substantial amount of riparian habitat DFO-wide.

Impacts from livestock grazing would the same as under Alternative A, except additional projects such as fencing to meet desired future conditions for riparian habitats could impact wildlife movement. Impacts from vegetation post-treatment management are the same as those described in Alternative A.

Impacts from oil and gas leasing to wildlife are similar to those described in Alternative B, except that elk calving, bighorn sheep habitat, and raptor breeding habitat would be protected through standard lease terms rather than timing limitation or no surface occupancy stipulations. Ferruginous hawk nesting habitat would be protected with a timing limitation rather than combined with a no surface occupancy stipulation. A no surface occupancy stipulation would still be applied to bald eagle breeding habitat to protect nesting, but a timing limitation outside of this area would not be required.

Travel management would designate 70 percent of the existing roads in the planning area as open to motorized travel. Many designated roads are concentrated in important, open sagebrush habitats that support numerous sagebrush dependent species, particularly sage grouse. Travel on these roads would cause localized, seasonal displacement of wildlife. Allowing mid-day game retrieval using restricted roads may result in some big game displacement. This impact would be more pronounced in open sagebrush types than in forested areas. Impacts from snowmobile use are the same as described in Alternative A.

PALEONTOLOGICAL RESOURCES

Impacts to paleontological resources are similar to cultural resources.

SOILS

Soil erosion caused by forest management activities and fire treatments would be greatest because the largest number of acres would be treated under this alternative.

Impacts to soil from streambank erosion would be less than other alternatives over the long term since the least number of miles of stream would be FAR and NF.

Soil erosion from travel on open roads would be greater than Alternative B and C but less than A, because Alternative D would still result in some existing roads being closed.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (including BLM Critical Element Threatened and Endangered Species)

Treatment of sagebrush stands with canopy >25 percent (Class 5) may remove the densest, tallest stands of sagebrush that provide important winter habitat for sage brush dependent species.

Listed or sensitive species may not derive as much benefit from aspen restoration projects in Alternative D as under B and C where restoration efforts occur outside the Centennial Valley. The potential occurrence of grizzly bear and lynx is greatest in the Centennial Valley and around the Gravelly Range, so aspen restoration outside those areas would not benefit those species. Benefits to other special status species would depend entirely on occurrences across the Field Office. Benefits to migratory birds would be the same as under Alternatives B and C.

Impacts from management of migration corridors and linkages would be the same as described in Alternative A. Impacts from oil and gas leasing to wildlife would be similar to Alternative B except less protection would be provided for bald eagles and ferruginous hawk nesting areas.

Travel management would designate approximately two-thirds of the existing roads in the planning area as open to motorized travel. Road density within the area expected to receive grizzly bear use is approximately one-half mile open road per square mile on public land, which is within the suggested guidelines for maintaining grizzly bear security (one mile of open road per square mile). Actual road densities are higher within this area when considering all ownerships but all of those roads also may not be accessible to the public. The same guideline applies to roads in migration corridors and linkage areas.

Management of most of the 13 areas as designated ACECs would have minor effects on Special Status Species animal habitat. Protections provided by special management of the Centennial Mountains ACEC, the Centennial Valley Wetlands ACEC , and the Ferruginous Hawk nesting area ACEC would be the same as under Alternative B.

SPECIAL STATUS FISH (including BLM Critical Element Threatened and Endangered Species)

Management actions proposed under Alternative D would have similar impacts as those described under Fisheries, Alternative D. Designation of the WCT ACEC would lead to accelerated improvement in WCT habitat containing population with greater than 99 percent genetic purity.

SPECIAL STATUS PLANTS (including BLM Critical Element Threatened and Endangered Species)

Alternative D is similar to A in that it is driven by the requirements of individual Special Status Species plants and would emphasize maintenance rather than restoration or enhancement other than in designated ACECs. The requirement of pre-disturbance field inventories would provide better protection for individual Special Status Species plants than they would currently receive (under Alternative A).

As in Alternatives A and B, some impacts to Special Status Species plant populations and habitats would occur until site-specific watershed or allotment plans are implemented.

Approximately 300 additional miles of roads are open to motorized travel under alternative D as compared to alternatives B and C. After Alternative A, these additional open roads would create the greatest potential for weed seeds to be transported into Special Status Species plant habitats by vehicles.

The riparian and wetland habitats in Big Sheep Creek Basin ACEC would be managed to restore and enhance populations of Idaho Sedge and Alpine Meadowrue. Restorating willows along select stream reaches and possible subsequent colonization by beavers would aid in raising local water tables and stabilizing stream systems. Coordinating with Montana Fish, Wildlife and Parks to pursue water leasing could further restore wetland habitat across the Big Sheep Creek Basin. These management actions would also benefit other Special Status Species plants.

Even though the special management for the Westslope Cutthroat Trout, Centennial Mountains and Centennial Valley Wetlands ACECs was not designed specifically to protect SSS plants, the habitat of several special status species would be protected by management actions implemented for fish and wildlife habitat.

VEGETATION—FORESTS AND WOODLANDS

The proposed treatment acres are the same acres included under the *Resource Uses – Forest Products* section.

The impacts to forest and woodlands are similar to those described in Alternative B except as discussed below.

This alternative would treat the most acres of forest and woodlands. It would emphasize treatment in urban interface areas, as well as the low, mid and upper elevation forest. It would treat up to 34 percent of all forest lands (including 14,000 acres of aspen) and a little over 60 percent of the forest base acres. The effects of treating aspen in this alternative would differ from Alternative B only in the area affected, and that restoration efforts would be scattered around the Field Office rather than concentrated. This alternative would be the most effective in achieving the DFC, through successional changes that would restore vigor and vegetation production, and increase harvest. The potential for conflict with other resources is higher in this alternative.

As with Alternative B, some forestland within WSAs could be managed where such treatment would enhance wilderness values.

As described in Alternatives A and B, lynx habitat management would affect treatment implementation, on estimated 17,000 acres in this alternative. This effect would be double that of Alternative A. Management of potential lynx habitat could have a minor to major negative effect for forest restoration efforts on almost 20 percent of the base acres, by limiting treatment schedules to a maximum of 15 percent of the acres in a given LAU over a 10 year period. This effect would be almost double that of Alternative B. The remainder of special status animal species habitat would have negligible to moderate effects on treatments.

The impacts from Vegetation: Invasive Species and Noxious Weeds would be the same as Alternative B.

Up to 71 percent of forest and woodland treatment areas in the base acres could be constrained by big game habitat concerns. **Table 69** summarizes the number of acres and corresponding percent of forest-woodland acres and base acres where treatments may be affected by these other resources.

Table 69
Effects on Forest/Woodlands and Forest Products from Alternative D Management Provisions

Resource/Resource Use	*Acres Affected*	*% Base Acres **	*% All Forest/Woodlands ***
Big Horn Sheep	34	<1	<1
Big Horn Sheep	3,163	4	2
Elk Calving	11,553	14	8
Elk Winter	43,855	53	29
Antelope (Yearlong)	30,629	37	21
Bald Eagles	1,111	1	<1
Lynx	15,074	18	10
WCT	487	<1	<1
Peregrine Falcon	515	<1	<1
VRM I or II	5,499	7	4
Total Acres Treated by Alternative (Includes Aspen)	51,000	61	34

* The total base acres available for mechanical treatment are estimated at approximately 83,000 acres (does not include WSAs and wilderness).
** The total forest and woodland acres in the Dillon Field Office are estimated to be approximately 149,000 acres (includes WSAs and wilderness).

VEGETATION—INVASIVE AND NON-NATIVE SPECIES, including NOXIOUS WEEDS (BLM Critical Element)

Same as Alternative A.

VEGETATION – RANGELAND

Under this alternative the effects on rangeland vegetation would be the same as under alternative A and B, but the scope, scale and degree would be relatively greater. Overall habitat health and diversity would increase.

VEGETATION – RIPARIAN AND WETLAND (BLM Critical Element)

Some riparian areas would be affected by treatments to remove conifers and use prescribed fire to restore aspen stands, primarily in the Centennial Valley where the most extensive stands occur. However, treatments would move these areas toward desired future condition. Allowing riparian habitats to progress successionally to conifer habitat types could result in a reduction of deciduous willow types and would slow progress toward the DFC. Although conifer types support a variety of plants and wildlife species, loss of willow types would generally reduce diversity. Conifer habitat types on sites that were once dominated by aspen or willow have reduced herbaceous ground cover that would lead to increased vulnerability of streambanks.

Other impacts to riparian habitat under this alternative are the same as those described under Alternative B except progress toward DFC would be slower (20-50 years).

VISUAL RESOURCES

Impacts to visual resource would be the same as Alternative B, except as described below. The Lewis and Clark National Historic Trail would not be designated as an avoidance area, but relevant and important values would be protected by ACEC special management.

Removing conifer in non-forested habitat type using prescribed and natural fire, mechanical treatments or other tools would have a short term minor impact on visual resources. Forest treatments of approximately 47,000 acres in this alternative should not exceed VRM objectives over the long term because most treatments would be in VRM Class III. Treatments to xeric, mesic and mountain shrub would have a short term minor impact on visual resources but should not affect visual quality.

WATER (including BLM Critical Element Water Quality, Surface and Ground)

This alternative would have the greatest potential for short term direct impacts to water quality resulting from reduction of surface cover from vegetation treatments and management of forest products, as well as other surface-disturbing activities such as mining.

RESOURCE USES

FOREST PRODUCTS

Aspen restoration, and the associated decline in the Probable Sale Quantity (PSQ) from 9.6 MMBF to 5.9 MMBF, would likely occur within the life of this plan. Overall this alternative would increase conifer volume production and aspen restoration.

Access to firewood would be restricted to a greater degree than Alternative A, but less than Alternatives B and C. Placing the majority of the DFO lands in Fire Management Categories B and C could allow wildland fire to function in a more natural role. Impacts would be similar to Alternative B except that fewer restoration treatments would occur. Restoration would depend upon the number and intensity of fire events. The use of prescribed fire would be similar to Alternative A but applied to the largest area of all the alternatives.

Special management of 13 ACECs could require relocation or redesign of projects and forest treatments that provide forest products.

Release of the Tobacco Root Tack-On WSA would allow for forest management activities that could provide additional wood products.

LANDS AND REALTY

Impact to Lands and Realty would be the same as Alternative B, except as described below.

The types of impacts from Forest and Woodland management would be the same as Alternative A. However, in comparison to the other alternatives, this alternative would likely require the most need for access.

For special status species, the degree of impacts on land use authorizations would be the same as Alternative B.

This alternative has the highest number of total acres in VRM classes III and IV (697,669 in III and 44,752 in IV), and the least number of total acres in the more visually sensitive VRM classes I and II. This alternative would likely be the least limiting overall for authorizing facilities through land use authorizations.

Special management of the thirteen areas designated as ACECs under this alternative could affect lands and realty actions. Impacts associated with 8 of the 13 areas are described in Alternative B, and would be the same under this alternative. These include Beaverhead Rock, Block Mountain, Blue Lake, Centennial Mountains, Centennial Sandhills, Everson Creek, Muddy Creek/Big Sheep Creek, and the Virginia City Historic District.

- **Big Sheep Creek Basin** (2,393 acres within overall 25,990 acre area) – the impacts associated with the management of this area would be the same as those identified for Block Mountain and Blue Lake in Alternative B. In addition, one of the corridors proposed under Lands and Realty in Alternatives B, C, and D would traverse this area and already contains an existing power transmission line. Use of the corridor in this area for future rights-of-way facilities would not be precluded, but such proposed facilities may require mitigation or adjustment of location within the corridor to prevent degrading the values attributed to this area.

- **Centennial Valley Wetlands** (17,388 acres) - the impacts associated with the management of this area would be the same as those identified for Block Mountain and Blue Lake in Alternative B.

- **Ferruginous Hawk Nesting Area** (114,300 acres) – the need to protect hawks by 1) restricting uses between March 1 and September 1 where necessary, and 2) limiting motorized travel within the area to designated routes as displayed in Alternative D and only between August 1 and March 1, could affect the construction of facilities normally permitted through land use authorizations such as rights-of-way, leases, and permits. Proposals for various types of land use authorizations that adversely affect hawks would need to be delayed, mitigated, sited in alternative locations, or possibly abandoned. A short segment of one of the right-of-way corridors proposed under Alternatives B, C, and D traverses the very easternmost portion of this hawk nesting area just south of Clark Canyon Reservoir. This would not preclude use of the corridor, but it would be an area along the corridor where the proposed construction of right-of-way facilities may need to be delayed or sited in alternative locations within or possibly just outside the corridor. It should be noted that there is already an existing power transmission line within this corridor.

- **Westslope Cutthroat Trout Habitats** (1,934 acres; 74 miles). Proposed facilities may require mitigation or adjustment of location to prevent degradation of Westslope Cutthroat trout habitat.

Under this alternative, approximately 14 percent of the planning area, including all WSAs, would be designated as right-of-way avoidance areas.

Impacts related to land ownership adjustment would generally be the same as Alternative B, although excluding the exercise of the right of eminent domain for access purposes would make this alternative slightly less flexible than Alternative B (but more flexible than Alternative C) in accomplishing land ownership adjustment goals.

Impacts associated with access would be the same as Alternative C.

LIVESTOCK GRAZING

The same amount of acres would be available for grazing as described in Alternative B and impacts would be similar to Alternative B. Impacts related to changes in AUMs and grazing management as a result of watershed assessments would be similar to those described under Alternative A.

MINERALS–LEASABLE

Oil and Gas

Alternative D would provide the second most opportunities for oil and gas leasing and development on lands administered by the BLM.

Under Alternative D, approximately 11 percent (143,857 acres) of federal minerals in the planning area would be unavailable for lease. This includes the Bear Trap Wilderness, nine Wilderness Study Areas, federal minerals underlying ARS lands, and lands within the boundaries of National Historic Landmarks. Approximately 61 percent would be subject to minor constraints, 8 percent to major constraints, and 20 percent could be leased under standard lease terms.

Table 70 summarizes the number of acres that would be affected by No Surface Occupancy, controlled surface use, and timing limitation stipulations under this alternative. Approximately 272,168 acres would be available for leasing under standard lease terms.

Geophysical Exploration

Same as Alternatives B and C.

Phosphates and Other Solids

Impacts and availability would be similar to Alternative B, except development of the minerals available for lease would be the least restricted by provisions to protect other resource values under this alternative.

MINERALS–LOCATABLE

After Alternative A, Alternative D would be the least restrictive to locatable mineral mining opportunities. Alternative D would be very similar to Alternative A, except:

- 40 acres, including nine acres in a moderate mineral potential area, would be withdrawn from mineral entry at Lewis's Lookout.
- The Centennial Mountains area would not be withdrawn.

Table 71 lists the areas under Alternative A that are proposed for withdrawal from mineral entry. Only the Road Agent Rock and Virginia City areas have high mineral potential within the areas proposed for withdrawal.

Management of two of the 13 ACECs that would be designated under this alternative would potentially limit exploration and development of locatable minerals. Significant placer and hardrock mining has occurred around Virginia City, which is located in a high mineral potential area and could see considerable mining in the future. The ACEC for Westslope Cutthroat Trout Habitats that contain greater than 99 percent pure populations would affect placer mining; much of the gold mined in the planning area has been placer gold found in stream beds. The operator would be required to follow special mitigating measures in order to protect the unique resource of this ACEC. This could be a moderate to major impact depending on the measures required.

VRM classifications allow the most flexibility in this alternative, with the highest number of acres in Class III (696,725 acres) and Class IV (44,752 acres) among the alternatives.

After Alternative A, Alternative D would be the most advantageous to minerals, particularly to claim staking, prospecting and casual use. About 1,465 miles of roads would be open to travel, with additional roads available in mineralized areas compared to Alternatives B and C. This gives the best access to the areas where mineral activity might occur. Some roads are only open on a seasonal basis but still provide access.

MINERAL MATERIALS

Alternative D would be very similar to Alternative A however under this alternative BLM would actively seek out potential sites and would develop the sites as the need and demand arose.

Alternative D would increase the availability of mineral materials from public lands. Under this alternative approximately 129,163 acres would be closed to mineral material disposal in the Bear Trap Wilderness area and all Wilderness Study Areas. The remainder of the planning area or 772,941 acres would remain open to mineral disposal.

Table 70
Summary of Acres Affected by Oil and Gas Stipulations under Alternative D

Lands unavailable for lease were not removed prior to calculating stipulated acres and therefore acres subject to stipulations for a particular resource may exceed totals of acres identified in **Table 5**.

Type of Stipulation	*Moderate Development Potential Acres*	*Low Development Potential Acres*	*Very Low Development Potential Acres*	*Total Mineral Acres Stipulated*
No Surface Occupancy				
Sage Grouse Strutting Grounds (leks)	456	2,773	1,047	4,276
State Game Ranges (4)	11,839	5,414	1,373	8,626
Bald Eagle Nesting/Breeding	6	5,733	3,953	9,692
NAWCA/IMWJV wetland projects	2,197	1,447	0	3,644
Within 1 mile of Peregrine Falcon Breeding Territories	0	20,103	13,488	33,591
NRHP Eligible Properties/Districts	19	706	513	1,238
Traditional Cultural Properties	8	26	47	81
Known Paleontological Sites/Locales	26	408	50	484
Known or Discovered Special Status Species				
Plant Populations	26,252	19,910	39,425	85,587
National Historic Landmarks	2,197	1,447	0	3,644
R&PPs and 2920 Authorizations	119	1,170	181	1,470
Timing Limitations				
Sage Grouse Winter/Spring Range	22,086	49,383	26,778	98,247
Sage Grouse Breeding Habitat	35,007	198,295	100,152	353,524
Big Game Winter Range	120,000	372,124	281,765	773,889
Waterfowl Production Molting Areas	0	15,938	66	16,004
Ferruginous hawk nesting areas	7,333	52,802	3,869	64,004
Controlled Surface Use				
Controlled Surface Use stipulations for TES Species, Vehicle Use Restrictions, VRM Classes, Cultural Resource Inventory, Paleontological Inventory, and Special Status Plant Inventory apply across the entire planning area and acreages were not calculated separately.				
90-100% pure westslope cutthroat trout habitat	479	2,002	2,721	5,202
Fluvial and adfluvial arctic grayling habitat	20	1,353	4,331	5,704
Class 1 Fisheries (Blue Ribbon)	5,103	17,755	8,757	31,525

Table 71
Proposed Mineral Withdrawals under Alternative D

	Total Acres	*Moderate Mineral Potential*	*High Mineral Potential*
Beaverhead Rock*	120	0	0
Everson Creek*	8,608	0	0
Lewis's Lookout	40	9	0
Road Agent Rock	10	0	10
Squirrel Rock	10	0	0
Virginia City*	513	0	513
Wedding Ring Rock	10	0	0

*The proposed withdrawal of these areas is considered "special management" as part of the ACEC designations under this alternative, rather than standard management of the alternative.

New locations for community pits, exclusive sales and common use areas would be considered on a case-by-case basis.

RECREATION

Impacts under this alternative would be the same as in Alternative A, except as described below.

Consideration of grizzly bear needs and risk factors would affect recreation as described under Alternative B.

Management of forest-woodland vegetation and forest products could cause both direct and indirect impacts to recreation. Depending on the locations and intensity of forest treatments, harvest activities and prescribed fire treatments, recreational use could be displaced in the short-term and possibly in the long-term. If harvest activities are located to avoid popular areas for recreation use, the impacts of these activities on recreation would be minimal. Indirect impacts to recreational use could also result from the impacts of forest treatments on wildlife and fisheries. The degree of impacts would again depend on the locations and intensity of the treatments. If big game populations (especially elk) are displaced to adjacent USFS lands, recreational hunting opportunities would still be available in the area, even if not on BLM lands. However, if treatment activities displace elk populations across the continental divide, regional hunting opportunities decrease. Potential impacts to fisheries, primarily in small, remote stream reaches could reduce opportunities for backcountry fishing and increase crowding on other streams.

Visual Resource Management impacts would be similar to Alternative B, with additional protection of the viewshed by moving the majority of the lands into a Class III area rather than Class IV as in Alternative A. Approximately 44,752 acres would be managed as VRM Class IV under this alternative, compared to 18,412 acres under Alternative B. This would allow the viewshed in those areas to be substantially changed from the existing condition, potentially affecting recreational users' experience. However, since the majority of the planning area has been managed as Class IV for the last 20 years with minimal impacts to the viewshed, the potential for major changes is slight.

Impacts from Lands & Realty Management and Recreation Management would be the same as under Alternative B.

Authorized commercial use levels for big game hunting would be permitted in locations where none is currently authorized, creating additional opportunities for the public to enjoy this type of experience without creating conflicts or additional competition with existing operations, or causing additional crowding in areas currently receiving this type of service. However, it would eliminate the non-outfitted public's opportunity to choose to hunt in an area that is free of commercially outfitted activities, and could increase the number of conflicts between outfitted and non-outfitted hunters.

Designating 1,465 miles of existing roads as open to motorized travel across BLM lands would leave approximately 70 percent of the existing open roads officially open for public travel, though many of those routes can still not be accessed across private or other agency lands. Many of those road segments identified as closed to public motorized use under this alternative are currently inaccessible to the public. Other roads identified for closure would only eliminate duplicate routes to essentially the same location. Roads not identified as open to the public, but considered "existing" routes (showing up on the current map of existing vehicle routes) could be used for game retrieval under this alternative. This would substantially reduce the potential impacts to the public of having these routes closed to general public use.

Overall, impacts to recreational motorized vehicle use would be minor. Loop routes would be preserved for the use of most recreational motorized users, and many spur routes would maintain opportunities to access overviews, game spotting locations, and "jump-off" locations to access non-motorized backcountry recreation opportunities.

RENEWABLE ENERGY

See impacts described for Land Use Authorizations in the *Lands and Realty* section.

UTILITY AND COMMUNICATION CORRIDORS

See impacts described for Land Use Authorizations in the *Lands and Realty* section.

FIRE MANAGEMENT AND ECOLOGY

WILDLAND FIRE

Fire suppression strategies under this alternative would allow for the least amount of flexibility to manage fires, but more fires could be controlled at small acres. The effects of this alternative would be similar to Alternative B, with a decrease in the risk and exposure to fire fighter and public safety.

The risk of large, high intensity wildfire would be reduced by treating approximately 51,000 acres in the forest and restoring fire return intervals in the rangeland vegetation. The suppression effectiveness would increase as these areas are treated. By reducing conifer encroachment on a case-by-case basis across the planning area and 30,000 acres of shrubland habitats within or adjacent to Wildland Urban Interface, fire suppression effectiveness would increase and reduce the risk to these communities. This alternative reduces the risk to communities and fire fighter safety.

The removal forest products would maximize the effectiveness of fire suppression on those acres that are identified above. An increase in timber slash created from timber harvest activities could increase the potential for higher intensity wildfires in the short term , but if the slash is treated, these areas would have a decrease in fire intensity over the long term.

Wilderness Study Areas would allow fire management capabilities similar to Alternative B.

PRESCRIBED FIRE

The number of acres converted to their historical fire regimes would increase more than the other alternatives. The available fuel to burn would decrease over the long term. All vegetation condition classes would be treated within them. Vegetation change would move the most acres into condition class 1 and 2.

Compliance with the required guidance, laws, regulations, and policies for cultural resources are adhered to prior to implementing a prescribed burn project. The demand for cultural clearance would require more involvement than the other alternatives, therefore may delay project completion.

The effects from forest, rangeland, and riparian vegetation treatments would be greater than in the other alternatives. There would be an increase in workload associated with the number of acres treated. On those areas where treatments occur, the risk to fire fighter and the public safety would be reduced.

Wildlife concerns such as elk calving or winter range affect approximately 44,000 acres in potentially treated areas. Unit location and timing of the treatments could effect project scheduling.

Smoke created from prescribed burning and wildland fire would have greater impacts to air quality within the local Airshed as Alternative B. An increase in particulate matter and emissions would occur die to the increase in potential acreage burned.

Visual Resource Management concerns would have similar impacts as Alternative B.

FIRE REHABILITATION

Impacts would be the same as Alternative B.

SPECIAL DESIGNATIONS

ACECs

All of the potential ACECs would be designated under this alternative and special management provisions would be applied to an estimated 25 percent (227,067 acres) of the planning area. In general, application of special management provisions would protect relevant and important values, preventing irreparable damage and reducing threats within the designated areas.

As a result of special management, 9,241 acres would be removed entirely from locatable mineral development (Beaverhead Rock, Everson Creek, and Virginia City), though subject to valid existing rights. A plan of operations would be required for mineral development within any of the areas not withdrawn from locatable mineral entry.

Prohibiting aerial weed spraying across 3,433 acres (Big Sheep Creek Basin, Centennial Sandhills) would result in initial protection of sensitive plant values. Long-term impacts from increasing weed infestations would be possible if additional site-specific measures are not implemented.

Certain uses and/or activities including right-of-ways, road building, or recreational uses would be limited on most of the remaining ACECs, causing relocations or possibly abandonment of newly proposed facilities such as powerlines, communication tower sites, and roads. None of these types of uses would be allowed in the 120 acres around Beaverhead Rock.

Research activities would result in documentation of condition and trends of relevant and important values. Subsequent management adjustments could have as yet unknown impacts on uses or activities.

BACK COUNTRY BYWAYS

Impacts under this alternative would be the same as for Alternatives A and B.

NATIONAL TRAILS

Measures taken to avoid introducing intrusive visual elements that may affect the integrity of designated NHTs would be more limited under this alternative compared to Alternatives B and C, which could result in potential for greater visual impacts, though mitigation measures would still be applied.

WILD AND SCENIC RIVERS

Impacts under this alternative would be the same as described under Alternative B.

WILDERNESS STUDY AREAS

Impacts under this alternative would be the same as described under Alternative B.

SOCIAL AND ECONOMIC CONDITIONS

ECONOMICS

Agriculture and Livestock Use

Economic impacts from livestock use under this alternative would be similar to those described under Alternative A.

Forest and Woodland Resources

A Probable Sale Quantity of up to 5.9 MMBF annually would increase overall timber volume in the two-county area by 5.0 MMBF compared to the past 24-year average. It also would exceed currently estimated local area demand for DFO-supplied wood materials. Although the industry as a whole has been contracting with fewer firms and fewer workers, it is possible that higher levels of timber production could stimulate expansion in the size of the area's wood products industry. At the current size of the wood products industry in the two-county area, this higher level of production would likely be absorbed by large processing facilities in the larger region. Employment and annual labor income would increase by an estimated 87 jobs and $2. 3 million respectively compared to Alternative A. **Table 72** displays estimated direct, indirect/induced, and total employment and labor income effects from timber management on BLM administered public lands. Estimated combined total effect from timber management of BLM public lands on logging, sawmills, and post/poles/log homes economic sectors would be 135 jobs and $3.6 million in local labor income.

Timber sales of 5.9 MMBF would reflect more than a 6 fold increase compared to the past average DFO-BLM timber sales. The BLM would also increase the proportion of total timber sales in the two counties from about 5 percent to 25 percent. Federal revenues from these timber sales would amount to about $5.9 million. Four percent of the receipts from sales of vegetative materials would go to the county from which the sale occurs.

Recreation

Impacts under this alternative would be similar to those described in Alternative A, except an increase in big game outfitting permits could result in increased economic contributions into the local economy from businesses associated with this activity. It is estimated that one total (direct, indirect, and induced) job is created per 1,078 visits and each visit generates $19.91 in total (direct, indirect, and induced) local labor income (see **Table 72**). The amount of revenues generated by special recreation use permits and user fees would be unknown.

Employment, Income and Dependency

Total (direct, indirect, and induced) local employment and trends related to livestock grazing, mining, and oil and gas exploration, development, and production would be the same as Alternative A. An annual average increase in timber harvest of 3.8 MMBF would also increase local and regional employment by an estimated 87 jobs. Employment related to recreation use would likely increase. However the amount cannot be determined. Total employment related to salaried government employment and non-salaried government expenditures would be about 101. Overall, net increase in employment in the two county area would be about 0.9 percent of the 2000 employment levels of 9,541 (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004). See **Table 72** for direct, indirect, and total local employment effects.

Table 72
Employment and Labor Income Summary under Alternative D*

Land Use/ Resource Management	*Employment Effect (jobs)*			*Labor Income ($000)*		
	Direct	*Indirect & Induced*	*Total*	*Direct*	*Indirect & Induced*	*Total*
Grazing Management (80,938 AUMs of actual use)	12	14	26	166	229	395
Timber Management (5.9 MMBF total PSQ)						
• Logging, contractors, & camps	34	21	55	950	389	1,339
• Sawmills (96 %)	30	40	70	1,011	1,001	2,012
• Other (posts/poles/log homes) (3 %)	4	6	10	88	142	230
Recreation Use (recreation visits unknown)			1,078 visits per job			$19.91 per visit
Government Expenditures ($3.3 million)						
• Salary response **	34	13	47	2,138	799	2,937
• Non-salary response	33	21	54	752	461	1,213

*Based on data from USDA, Forest Service, Beaverhead Deerlodge Draft Forest Plan Revision, IMPLAN analysis, Sept. 15, 2004
**Based on 4-year annual average FTE positions per $MM BLM Dillon Field Office Expenditures from Table 49.

Total (direct, indirect, and induced) labor income and trends related to livestock grazing, mining, and oil and gas exploration on public lands would also be the same as with Alternative A. Local labor income associated with oil and gas exploration, development, and production would be the same as Alternative A. Labor income associated with additional full-time forestry jobs would increase by an estimated $2.3 million per year. Labor income related to recreation use would likely increase, however the amount cannot be determined. Total labor income related to salaried employment and non-salaried expenditures would be about $4.2 million. Overall, net increase in total labor income in the two county area would likely be about 1.7 percent of 2000 total wage and salary and other labor income, i.e. about 1.7 percent of 2000 wages, salaries, and other labor income of $144 million (Beaverhead and Madison County Community profiles, Sonoran Institute, 2004). See **Table 72** for direct, indirect, and total local labor income effects.

The **dependency of the local economy** on the livestock industry, timber production, mining, and oil and gas exploration, and recreation activities would remain relatively unchanged. The total number of jobs and the total amount of labor income stimulated by casual and authorized uses on BLM land would increase slightly but not enough to affect dependency of the local economy on economic activity related to BLM resource management. The overall influence of resource management on BLM administered lands would not change local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates).

Government revenues to the BLM from timber production would increase by $380,000 compared to Alternative A. Revenues from livestock grazing, mining, and oil and gas exploration and development on public lands would be the same as with Alternative A. The amount of revenues generated by special recreation use permits and user fees would be unknown.

Commodity prices and cost trends of renting alternative pasture/forage, timber sale, and recreation opportunities would not change.

SOCIAL CONDITIONS

Effects to livestock permittees would be the same as for Alternative A.

Under Alternative D, an additional 200 miles of road (1,465 of a potential 2,102 miles) would be designated for motorized use over Alternative B, mostly providing additional access into mineralized areas with potential for development. Limited motorized travel would also be allowed on closed routes to retrieve game during hunting season. This alternative would provide benefits to groups or individuals pursuing activities such as mining and hunting and could enhance their social well being. Those interested in motor-

ized recreation would benefit more under this alternative than Alternative B but less than A. Allowing limited motorized travel for game retrieval would address concerns about this activity, particularly for hunters with limited mobility. The opportunities for recreationists who prefer to participate in quiet non-motorized activities would be more than for A but less than for B and C. See Alternatives A and B for attitudes about closing designated routes.

Reaction to the game retrieval proposal was mixed. Some opposed the idea because this travel could spread weeds, establish new roads when people do not stay on the designated route, hurt the solitude, beauty and wildlife, would be used as an excuse to go on closed roads for any reason, need to have a place to go where there are no vehicles, and because it would be very difficult to enforce. Others supported the proposal "for a limited distance", or for certain times during the day, because they do not currently see much abuse.

Under this alternative, permits for commercially guided big game hunting would be increased in parts of three Outfitter Permit Areas (OPAs). Two of these OPAs are currently unoccupied by outfitters. In the currently unoccupied OPAs, this alternative could create additional opportunities for the public to be able to enjoy this type of experience without creating conflicts or additional competition with existing operations or causing additional crowding in areas currently receiving this type of service. However, under this alternative, outfitter days could increase even if there is not an increase in demand. This could affect current outfitters if there is not enough business for all outfitters. The effects to outfitters if their business declines would be the same as in Alternative C. This alternative would also eliminate the non-outfitted public's opportunity to choose to hunt in an area that is free of commercially outfitted activities and could create conflicts between outfitted and non-outfitted hunters in those areas. It could also create additional conflicts in the OPA where the permits would increase in an already occupied OPA.

When conflicts increased between outfitted and non-outfitted hunters, the social well being of all involved could decline. Few of the people who participated in discussions on this topic indicated the number of outfitter days should increase.

Wildlife and fish habitat management would continue to provide opportunities for hunting, fishing, wildlife viewing and photography. Conflicts between recreationists would remain unchanged or increase and opportunities for solitude would be less available than under Alternatives B and C. The visual environment would be protected as it has been in the past, but not as stringently as in Alternatives B and C. The Big Sheep Creek Back Country Byway would retain its designation but interpretation would increase to enhance the public's understanding of the area. Block Mountain would be designated an ACEC which would retain this area for educational purposes. Overall, there would be negative effects to the social well being of recreationists who prefer solitary, quiet experiences and positive effects to the social well being for recreationists who prefer motorized experiences.

Groups and individuals who would give a very high priority to resource use would favor this alternative because the highest levels of wood product production, potential for mineral development, and livestock grazing would be allowed on public lands. Also, additional access is available into most potentially high-moderate mineralized areas. However, they may be concerned that all 14 ACECs would be designated for protection under this alternative. See Alternative A for a discussion of why resource use is important to these individuals and groups.

Under this alternative, the groups and individuals who would give a very high priority to resource protection would feel that wildlife and water resources were not being protected. They may be particularly concerned about the amount of wood product production in this alternative. See Alternative A for a discussion of why these resources are important to these groups and individuals.

Under this alternative, the potential for large, high intensity wildfires would be reduced which in turn would reduce the risk to communities and fire fighters. This would reduce the potential effects from wildfire as described under Alternative A. This alternative would meet the public preference for active fire management.

TRIBAL TREATY RIGHTS (including BLM Critical Element Native American Religious Concerns)

The impacts to Tribal Treaty Rights from land adjustment under Alternative D would be the same as described under Alternative B. Motorized access to resources for tribal use is less restrictive than that proposed in Alternatives B and C, but more restrictive than access provided in Alternative A.

CUMULATIVE IMPACTS

RESOURCES

No cumulative impacts were identified for the following resources: Geological Resources, and Wild Horses and Burros.

AIR QUALITY (BLM Critical Element)

Smoke from prescribed and/or wildland fires burning on state, federal, and private land in Southwest Montana and Idaho could cause air quality to deteriorate in the local airshed. Large wildland fires or escaped prescribed fires could occur simultaneously, resulting in an increase in air quality degradation caused by separate events. Dust generation from unpaved federal, state, and county roads would add to the particulates contributed by smoke.

CULTURAL RESOURCES (including BLM Critical Elements Cultural Resources and Native American Religious Concerns)

Cumulative impacts to cultural resources could occur through incremental degradation of the resource base from a variety of sources which reduce the information and interpretive potential of historic and prehistoric properties, or which affect traditional cultural values important to Native Americans. Other regional resource, land use, and economic development planning efforts could affect the types and intensity of uses on private, state, or other federal lands within the planning area and could therefore potentially affect the regional cultural resource data base. Development of lands that are not protected by federal or state cultural resource statutes and regulatory protections could decrease the regional resource base and potentially limit management options within the planning area. Restrictions on recreational activities in other areas, regional population growth, and increases in current levels of resource extraction and development may increase the use intensity within the planning area, potentially affecting cultural resources. Coordinating with regional planning actions could help protect important cultural resource values.

FISH AND WILDLIFE

Fish

A continuation of current water and land use practices, from private, state and other federal agencies will continue to affect fish habitat within the planning area. Cumulative impacts from water diversions and reservoir draw downs for irrigation include increased water temperatures resulting in the loss of habitat in many streams and rivers within the planning area. Higher intensity livestock use and timber harvest on lands upstream from BLM would continue to be a concern due to sediment and water quality issues which influence the quality of fish habitat downstream from the source. Bioaccumulation of heavy metals within the aquatic food chain could impair fish populations.

Wildlife

Although only minor amounts of sagebrush treatment are proposed on public lands, continued modification of sagebrush on other ownerships would cumulatively reduce the availability and quality of that habitat. Cumulative effects on riparian habitats are much more localized and site-specific due to the scattered land ownership on most streams, though livestock grazing and upland vegetation treatments on all ownerships could lead to riparian habitat concerns. Management changes that are implemented on BLM lands to improve riparian conditions could also improve condition on lands of other ownerships if the same management is applied to those lands. If some uses are restricted or eliminated on BLM lands, it could cause increased use on adjacent ownerships which would lead to degradation of the riparian conditions on these lands. Effects on public land wetland habitats in the Centennial Valley and Big Sheep Creek basin would be compounded by off site water diversions and Lima Reservoir irrigation drawdowns that restrict water availability to maintain wetland vegetation and wildlife uses.

Forest management activities outlined in Alternative B and D may lead to timber harvest occurring on adjacent private and State of Montana lands that would use roads left in place on BLM if they suit the activity on adjacent lands. Such activities may reduce big game hiding cover, increase road density and increase the overall impacts of the treatments on BLM lands because they would be effectively larger in scale. There may also be some cases where vegetation treatments such as prescribed fires and fuel reduction projects that may have a similar cumulative impacts that would extend to adjacent ownerships because it would be more economical to have their land treated at the same time that the public lands are treated.

Overall, significantly less human “presence” on public lands proposed under Alternative C would provide a wider availability of relatively undisturbed habitats. However this may put increased pressure on adjoining lands to accommodate current uses, particularly for livestock grazing and forest products. Fewer designated open roads on public lands may result in more access routes being developed on adjoining ownerships to bypass public land closures. Increased residual herbaceous cover resulting from actions to protect other resources may create more fine fuels and increase the risk of wild fire.

Cumulative effects from forest and vegetation treatments in Alternative C would be essentially the same as under Alternative B but would be less widespread with fewer acres of treatment proposed.

Cumulative effects under Alternative D would be similar to those described under Alternative A.

PALEONTOLOGICAL RESOURCES

Impacts would be similar to those described in the *Cultural Resources* section.

SOILS

Roads and trails that exist on shallow soils would continue to erode until all the soil is gone and only bedrock is left exposed. If mitigation measures are implemented, the rate of accelerated erosion would slow, but unless the site is restored to its original potential, erosion would continue to degrade the site. Once vegetative cover is removed, topsoil is removed and in many cases, subsoil is lost and the soil's ability to maintain this protective cover becomes greatly diminished.

Site potential and soil productivity could be reduced over time by management activities on BLM or adjacent lands that result in a loss of soil surface material.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS (including BLM Critical Element Threatened and Endangered Species)

Cumulative impacts result from actions on adjoining ownerships that affect habitat availability and levels of disturbance. The greatest factor influencing special status animal species in the planning area is the scattered land ownership. Since most of the species of concern are wide ranging, activities on adjoining ownerships may compromise or enhance efforts on public lands. Limiting domestic sheep authorizations in grizzly bear and wolf habitat on public lands to reduce potential depredations and mortality risks may be compromised by continued uses on adjoining ownerships. Increased human activity as a result of subdivision and facility development in the Maiden Rock-Big Hole corridor may have a minor effect on winter bald eagle use and potential reoccupancy of a peregrine eyrie at Maiden Rock.

While public land road densities in migration corridors are minimized, open roads on other ownerships may increase risks to wildlife using these corridors, depending on whether roads are accessible to the public and the amount of use they receive.

SPECIAL STATUS FISH (including BLM Critical Element Threatened and Endangered Species)

Impacts would be the same as those described under Fish in the *Fish and Wildlife* section.

SPECIAL STATUS PLANTS (including BLM Critical Element Threatened and Endangered Species)

The primary uses and management practices on lands adjacent to BLM would have the greatest potential for impacting special status plant populations and habitats. Adjacent ownerships that have been converted to hayland or cropland or that are overgrazed provide little opportunity for population expansion.

De-watering of streams for irrigation and development of springs and headwaters of small streams for livestock watering alters the hydrologic cycle and contributes to a reduction in riparian and wetland habitat that supports the special status riparian plants. Trampling of spring sources and streambanks by livestock and wildlife also contributes to lowered water tables and a diminution of wetland habitat. Loss of riparian and wetland habitat would likely result in population declines of species such as Alkali primrose and Alpine meadowrue.

VEGETATION – FORESTS AND WOODLANDS

Timber harvest activities would continue on private, State of Montana lands, and USFS lands, adjacent to BLM lands and associated cumulative effects from Alternatives B and D would be greater than Alternatives A or C. Roads built to access forest treatment units on BLM lands may lead to timber harvest occurring on adjacent private and State of Montana lands that would use roads left in place on BLM if they suit the activity on adjacent lands. Such activities may reduce big game hiding cover, increase road density and increase the overall impacts of the treatments on BLM lands because they would be effectively larger in scale.

In Alternatives A and C, forest vitality and stand structure would decline in WSAs. This decline could involve epidemic insect infestations, extensive wildfire or other larger scale disturbances, and would have a corresponding short term or longer effect on adjacent forest and woodlands outside of WSAs regardless of ownership. This in turn would have adverse effects upon other resource values.

VEGETATION – INVASIVE AND NON-NATIVE SPECIES, INCLUDING NOXIOUS WEEDS (BLM Critical Element)

The spread of invasive plant species, including noxious weeds, would be controlled in some areas and spread more rapidly in others. Factors affecting the spread or control of

invasive species include: the frequency and amount of motorized traffic and recreational use on public lands in the planning area, development occurring on private lands adjacent to BLM lands, and the type of control actions taken on federal, state and private lands. Any actions that limit the treatment of noxious weeds on public lands may limit the effectiveness of treatments on other ownerships. The cumulative effects of reducing the effectiveness of control on noxious weeds and invasive species could decrease the amount and availability of native forage for livestock and wildlife, and contribute to soil erosion, and increased sediment loads in streams.

VEGETATION – RANGELAND

Proposed treatments have the potential to affect plant communities by changing the relative abundance of species within plant communities, the relative distribution of plant communities, and the relative occurrence of seral stages of those communities. Proposed treatments could improve or impair wildlife habitat, soil, and water resources, and riparian/wetland habitats, and those improvements or impairments could extend to other adjacent ownerships.

The impacts from adjacent land owners would involve livestock grazing, habitat manipulation and invasive species. Changing levels of livestock use on public lands could cause changes in grazing practices on private land. A reduction of the time or numbers of livestock that are permitted on public lands could lead to increased or longer duration of use on private lands. This could lead to a decline in the ecological condition of these lands and reduce the wildlife habitat quality provided on them.

VEGETATION – RIPARIAN AND WETLAND (BLM Critical Element)

The scattered public land pattern in the planning area increases the potential for cumulative impacts from actions on BLM lands, both within individual and between different grazing allotments, and on adjoining ownerships. Public ownership is rarely continuous along an entire stream length and so habitat conditions vary and may be quite fragmented. Management changes that are implemented on BLM lands to improve riparian conditions could also improve condition on lands of other ownerships if the same management is applied to those lands. If some uses are restricted or eliminated on BLM lands, it could cause increased use on adjacent ownerships which would lead to degradation of the riparian conditions on these lands. These impacts would be the greatest in Alternative C and the least in Alternative A.

VISUAL RESOURCES

Continued timber harvest on DNRC and USFS lands, and the occurrence of wild and prescribed fires on adjacent lands would continue to affect the visual features of form, line, color, and texture at the landscape level. These changes will influence the design of similar projects on adjacent BLM lands where repeating these basic elements is an objective of the visual resource management class where the project is implemented.

WATER (including BLM Critical Element Water Quality, Drinking/Ground

Under all alternatives water quality should improve over the long-term through management actions proposed in the alternatives and as a result of participating in cooperative planning efforts on a watershed basis with other land management agencies and private landowners. Actions on adjacent ownerships that produce sedimentation or nutrient loading into streams that then flow through BLM administered lands or inappropriate storage containers, small dumps or other potential sources of contamination from activities on non-BLM lands could impact water quality in certain instances. Impacts from a decrease in water quantity over the long term from activities and diversions on adjacent lands should be negligible in comparison to current flows since most basins in the planning area are closed to additional appropriation. Short-term cumulative impacts could occur as the result of drought. However changes in any flow regime across BLM lands could result from actions taken on other jurisdictions.

RESOURCE USES

No cumulative impacts were identified for the following resource uses: Renewable Energy; Travel Management and Transportation and Facilities. Impacts related to Travel Management are described under the *Recreation* section. Impacts related to Utility and Communication Corridors are described under the *Lands and Realty* section.

FOREST PRODUCTS

Timber harvest activities would continue on adjacent private, State of Montana lands, and USFS lands, and associated cumulative effects from Alternatives B and D would be greater than Alternatives A or C. Timber harvest occurring on adjacent private and State of Montana land would result in use of roads left in place on BLM if they suit the activity on adjacent lands. Such activities may preclude or delay implementation of BLM forest management options until effects associated with activities are mitigated or are

no longer a factor. For example, clear cutting on lands directly adjacent to BLM may preclude any forest management activity on BLM until big game hiding cover is reestablished.

LANDS AND REALTY

The number of land use authorizations, particularly rights-of-way and permits, is a function of demand for these uses. Additional future development of adjacent federal, state, and private lands would likely result in additional requests for and approval of land use authorizations for facilities such as roads, utilities, and communication sites.

The "Beaverhead County Resource Use Plan" (July 2001) indicates that it is the county's goal to have no net loss of private land as a result of government agency land ownership adjustments. Even though land exchange would be the preferred means of land ownership adjustment, such a position could affect the land ownership adjustment program within this particular county by even more strongly favoring land exchanges and outright disposals of public land over purchases of private land. It should be noted that the "Madison County Comprehensive Plan" (February 1999 Update) has no similar stated goal involving the net loss of private lands in government agency land ownership transactions.

Existing or future decisions by some private land owners to deny public and BLM administrative use of traditional access routes to public lands could interfere with the ability of the public to use the public lands and the BLM to administer them. Such actions could result in the need for additional access easements or land ownership adjustments in order to secure legal and physical access.

For Alternatives B, C, and D, the designation of right-of-way avoidance and exclusion areas on BLM lands, along with similar restrictions on right-of-way development on adjacent lands, particularly National Forest system lands, would have a cumulative effect of reducing routing options for right-of-way facilities such as utilities and roads.

LIVESTOCK GRAZING

Management changes that are implemented on BLM lands to improve rangeland conditions could also improve condition on lands of other ownerships if the same management is applied to those lands. If some uses are restricted or eliminated on BLM lands, it could cause increased use on adjacent ownerships which would lead to degradation of the rangeland conditions on these lands.

The future management for sage grouse habitat has the greatest potential to impact livestock grazing across jurisdictions. Changes for management for any wildlife species by FWP has the potential to change livestock grazing. Alternative C proposed the greatest amount of change in livestock grazing and therefore would have more cumulative impacts than the other alternatives.

MINERALS–LEASABLE

Oil and Gas

The cumulative impacts to oil and gas resources would be the continued removal of the resources by producing wells on leases with the fewest restrictions and lowest operating costs. The cumulative impact to federal leases would be a reduction in lease value resulting from stipulations and regulations. The cumulative impacts to lease developments would result from a reduction in wells drilled on leases encumbered with stipulations, an increase in wells drilled on leases with minimal constraints, and an increase in operating costs because of land use decisions, lease stipulations, and regulations. Restrictions on federal leases could impact the leasing and development of adjacent non-federal leasable minerals. If an exploration company cannot put a block of leases together because of restrictions on federal leasable minerals, the private or state minerals may not be leased or developed either. Leasing of federal minerals on the other hand, could encourage the leasing of private or state minerals.

Solid Leasables

Leasing solid minerals is discretionary on the part of BLM. Impacts to other resources could cumulatively result in an area not being leased or mitigation of impacts could cumulatively become too costly to justify mining the leasable mineral. Other cumulative impacts would be similar to those listed in Oil and Gas.

Geophysical Exploration

Impacts from the closure of areas to geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition in an area. Lack of or incomplete geophysical data could effect leasing or lease development decisions. The number of leases sold and the number of wells drilled could be reduced because of the lack of data.

MINERALS–LOCATABLE

Impacts to locatable minerals that are individually minor may cumulatively reduce exploration and production of commodities from public lands. Factors that effect mineral extraction and prospecting include but are not limited to such things as permitting and permitting delays, regulatory policy, public perception and concerns, travel management,

transportation, mitigation measures, proximity to sensitive areas, low commodity prices, taxes, housing and other necessities for workers and many other issues. Many of these issues BLM has no control over. Issues within the control of BLM are discussed earlier in this chapter. Most of these issues result in additional costs and/or permitting delays that can individually or cumulatively add additional costs to projects.

Public land that currently has no public access could reduce the amount of mineral exploration and development that may occur. Permission from land owners to cross private land to access public land is sometimes denied and could result in mineralization not being discovered and developed. Mineral resources in other ownerships may not be developed if the adjacent public lands are withdrawn from mineral entry because the deposit may not be economically feasible to develop if it crosses ownership and only a portion is available for development.

Overall, Alternative C would be the most restrictive to mineral developments and could result in the most cumulative impacts. It proposes the most acres be withdrawn from mineral entry, the most areas closed to motorized travel, the most road restrictions and the highest protection to other resources. Alternative C would be followed by Alternative B. It contains ACEC nominations that propose mineral withdrawals. Alternative A and D are similar with Alternative D being the least restrictive.

MINERAL MATERIALS

Cumulative impacts on saleable mineral materials would be similar to those described for Locatable Minerals. The major difference is that saleable mineral minerals are discretionary and the permit could be denied. Adoption of Alternative C could have the effect of moving materials sites to jurisdictions other than BLM, including private lands.

RECREATION

Two decisions affecting snowmobile use in the Greater Yellowstone areas will impact winter recreational use in the Centennial Mountains. Both Yellowstone National Park and the Beaverhead-Deerlodge National Forest have been confronted with the need to decide on the future of snowmobiling within their respective jurisdictions. Regardless of the outcome of those agency decisions, due to the high level of controversy, there are likely to be subsequent decisions made through the judicial process which will affect the future of snowmobiling in this region for the life of the plan. The eventual outcome, either in Yellowstone National Park or the Mount Jefferson area of the National Forest, will affect winter recreational use in the Centennial Mountains, which is currently closed to snowmobiles. If Mount Jefferson is closed to snowmobiles, the elimination of this “destination location” and the concomitant predictable loss of snowmobile rental businesses in Island Park and West Yellowstone would reduce snowmobile use in Mount Jefferson, and therefore on BLM lands in the Centennial Mountains.

Continued management of area reservoirs for irrigation without regard to fisheries needs, if combined with an extended drought would severely impact fisheries, and therefore recreational use of rivers for sport fishing. In this case, projected increases in demand for recreational use of public lands over the life of the plan would be reversed, or at best stagnated.

Private lands sold for purposes other than commodity production, and continued development of unincorporated areas could negatively impact the public’s ability to access public lands. Although many private landowners currently allow public access across their lands, many others do not. Large tracts of land that are subdivided and taken out of commodity production are likely to be more restricted, especially toward public access. As the number of landowners is increased in any given area, there is an increased likelihood that someone will deny public access across the land. These impacts are expected to be somewhat lessened by the continued interest of conservation-related organizations in purchasing conservation easements which often limit future development of private lands.

Montana Fish, Wildlife and Parks recently completed the work of a River Recreation Advisory Council, which made “Recommendations for Managing Recreation on Rivers and Streams in Montana to the FWP Commission. Although there are no specific decisions made in the Final Report (July 10, 2003), it suggests that more intensive management of some of Montana’s rivers will be required in the near future. Also implied in the report is that some type of limitations or allocations of use or users could occur. The BLM has been working along with FWP to ensure coordinated management of rivers. Future management of river use is expected to protect quality recreation opportunities along these rivers, but is also certain to require certain restrictions and limitations that will concern some users, and in some ways compromise their river recreation experience by reducing the feeling of freedom often associated with river use.

Future timber harvest on DNRC lands is expected to negatively impact backcountry and wilderness-dependent recreation opportunities, especially where harvest activities occur on isolated state land sections surrounded by BLM lands, and even more so on “inholdings” within wilderness study areas. Development of new roads to access harvest areas will create increased access into areas that were previously inaccessible to motorized use, reducing opportunities for solitude, but increasing the availability of public lands for other types of recreation. Noise from equipment and logging traffic and smoke from burning slash will negatively

impact recreational use for the duration of harvest activity. Dependent on the type of harvest (clear cut vs. selective cut), visual impacts could negatively impact naturalness and scenic values which are integral components of most recreationists' experience.

Previous and ongoing travel planning efforts by both the BLM land Forest Service have resulted in changes to travel patterns and opportunities for recreational OHV users by limiting motorized use either to existing or designated routes. These changes have decreased the number of routes available for motorized use and may have concentrated off-road, cross-country travel into areas specifically designated for such activities. Although these changes represent a reduction from the immediate existing situation, the total mileage of vehicle routes open to motorized travel is likely to be similar to what existed 10 to 20 years ago before the dramatic increase in OHV use resulted in substantially more vehicle routes on public lands.

FIRE MANAGEMENT AND ECOLOGY

WILDLAND FIRE

Under the previous or current Fire Management Plans, fire suppression strategies emphasized suppressing all wildland fires to keep the cost and acres to a minimum. With the development of new Fire Management Plans across agencies to address the National Fire Plan and related policy changes, the Strategies to address fire suppression and wildland fuel treatment related activities would be more consistent across agency boundaries.

Residential development and population increases could create more Wildland Urban Interface Areas. Additional interface areas could increase potential ignition sources, the need for fire protection services, and the potential need for fuel treatments. Residential development and population growth could also result in an increase the number of recreational users and create the potential for more human-caused ignitions on public lands. As a result, an increase in these activities would also add risk to fire fighter and public safety.

Implementation of fire management strategies outside of Wildland Urban Interface areas that allow for greater flexibility to manage fires than historical management would potentially move more acres into historical fire condition classes has across federal ownerships. This could be limited, however, due to ownership and management constraints. Aggressive suppression on state and private lands would keep most fires small, but would not allow for landscape level modifications to reduce potential fire severity.

PRESCRIBED FIRE

Compared to the present level of prescribed fire treatments, there would be an increase of treatments over the long term across federal lands. As a result more acres would be converted back to historical fire regimes and a reduction of fuel loadings would occur. Where treatments have been implemented, future fire intensity and severity could be reduced. Urban interface areas would be the highest priority for treatment. This could increase conflicts with visual concerns, smoke emissions, and funding for these projects.

REHABILITATION

Under the current direction individual fire rehabilitation plans are completed on a case-by-case basis requiring development from those resources that are directly impacted from the fire. Once the Emergency Fire and Rehabilitation handbook is completed new guidance will supersede the existing rehabilitation guidance. This will need to be incorporated into future fire management planning. Over the short term fire rehabilitation could be required on those fires that have resource damage that warrants it. However, as fuel conditions change and the severity of fires increase, fire rehabilitation could be required across all agency boundaries.

SPECIAL DESIGNATIONS

No cumulative impacts were identified for National Recreation Areas or Wilderness.

ACECs

Impacts from activities implemented on adjacent land not managed by BLM could create additional cumulative impacts to relevant and important in an indirect fashion. Lack of weed prevention on adjacent land could impact relevant and important special status plant values, and exercise of water rights could result in impacts to water or wetland-based values.

BACK COUNTRY BYWAYS

Use of the designated Big Sheep Back Country Byway route by the public could result in impacts to landowners and residents adjacent to the route, in particular increased traffic in a fairly remote area resulting in requests for assistance, especially in times of bad weather. Use of the route would require consistent maintenance of the route by Beaverhead County, since the route is a county road, possibly resulting in cost increases to Beaverhead County beyond regular county maintenance.

NATIONAL TRAILS

In general, resource management decisions or actions on State, private, and other Federal lands have the potential to affect designated National Historic Trails in the planning area, particularly since segments of both NHTs in the planning area are designated primarily across private lands and potential cumulative impacts are difficult to estimate.

WILD AND SCENIC RIVERS

Potential impacts to outstandingly remarkable values from present or future projects or actions on lands within or adjacent to the study corridors would be considered to be negligible to nonexistent because of the existing protections under current laws, regulations and policies. Water related projects on streams within the study corridors have had an influence on natural stream flows, but not to the extent to alter free-flowing nature. New, future projects that could be developed upstream from eligible segments and off of BLM administered lands do have some potential to alter the free-flow of the study segments.

WILDERNESS STUDY AREAS

If Yellowstone and Grand Teton National Parks eliminate, or significantly restrict snowmobile use within their lands, illegal snowmobile use that currently occurs in the Centennial Mountains WSA is likely to decrease. The attraction of Yellowstone National Park, in particular, as a destination location for snowmobile riders most likely draws large numbers of out-of-state recreationists to this area who are likely to also use the Mount Jefferson area, which is the destination location for most riders who trespass into the closed area of the Centennial Mountains WSA near Hell Roaring Creek. There is some chance that local or regional snowmobile riders could increase their use of the area in the Centennial Mountains due to the loss of opportunities to ride in the National Parks, but their overall use numbers are small compared to the out-of-state use attracted to the Yellowstone area.

If the Beaverhead-Deerlodge National Forest closes the Mount Jefferson area to snowmobile use, it is likely to decrease illegal use of the Centennial Mountains area regardless of any actions the Park Service may take at Yellowstone and Grand Teton. If both the National Parks and the USFS continue to allow snowmobile use in these areas, illegal snowmobile use is likely to increase substantially within the Centennial Mountains as riders of the more powerful new machines continue to be attracted to the challenges in the Mount Jefferson area and stray into nearby BLM lands closed to snowmobile use.

SOCIAL AND ECONOMIC CONDITIONS

No cumulative impacts were identified for Environmental Justice, Health and Safety regarding Abandonded Mine Lands, Debris Flows or Hazardous Materials, or Indian Trust Resources.

ECONOMICS

Reduced AUMs in Alternatives B and C would place additional grazing pressure on private lands and/or increase the demand for hay or other forage alternatives. Expanding recreational demand across all alternatives could increase opportunities for private sector business growth.

SOCIAL CONDITIONS

Adoption of Alternative B or C could add to the concern of some residents about increasing government control over public lands. Very small towns that are experiencing continued population decline and are highly dependent on agriculture could find their population decline accelerated under Alternatives B and C. In addition, the potential loss of open space, if ranches were sold and developed in some manner, could add to the ongoing loss of open space under these alternatives.

Adoption of Alternatives A or D could contribute to an increasing concern regarding wildlife, fisheries, special status species, water and riparian resources, and forest and woodlands, to individuals and groups who place a high priority on protection of these resources.

TRIBAL TREATY RIGHTS

In general, resource management decisions or actions on State, private, and other federal lands which affect Dillon Field Office resources such as water quality, riparian habitat, forage for wildlife, other vegetation, or land tenure and access have the potential to affect resources which are important to the pursuit of tribal treaty rights on BLM lands in the planning area. If resources become scarce in the planning area and /or on adjacent Federal lands, competition between Indians and non-Indians for these resources may increase.

IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES

RESOURCES

There are no irretrievable or irreversible commitments identified for the following resources: Air Quality, Geological Resources, Special Status Animals, Visual Resources, and Wild Horses and Burros.

CULTURAL RESOURCES

Management measures provide a systematic and proactive means to address direct impacts on cultural resources from authorized projects and activities. Mitigation through data recovery investigations at archaeological sites would recover information pertinent to current research concerns, but would also permanently remove the resource from future research and interpretive use, which would constitute an irretrievable and irreversible commitment of these resources. Any management actions that cause the inadvertent destruction of a cultural resource or make them susceptible to illegal collection could lead to the loss of these resources and would be an irretrievable and irreversible commitment of these resources also.

FISH AND WILDLIFE

Fish

Actions that alter an aquatic community sufficiently enough to change the potential of a particular stream, or give an exotic species a competitive advantage over a native species may represent an irretrievable or irreversible impact.

Wildlife

Activities that alter a vegetation community sufficiently enough to change the potential of a given site, or give another species a competitive advantage over native vegetation, may represent an irretrievable or irreversible impact to wildlife habitat. This could particularly apply if invasive species such as cheatgrass become established in drier habitats following timber harvest or prescribed burning. This could occur under all alternatives whether from proposed vegetation treatments or natural events. Nonfunctional riparian habitats with degraded channels, and vegetation communities dominated by upland shrub and herbaceous plant species such as sagebrush, Kentucky bluegrass and dandelions, have lost natural diversity and productivity that may not be restored. The persistence of nonfunctional riparian and wetland habitats is likely to occur to some degree under all alternatives.

PALEONTOLOGICAL RESOURCES

There would continue to be impacts on paleontological resources associated with unauthorized activities such as OHV use, dispersed recreation, grazing, and vandalism. Unauthorized activities, dispersed activities, and natural processes could cause unmitigated impacts on paleontological resources that would exceed the significance threshold for impacts for these resources.

SOILS

Erosion of shallow soils could result in irretrievable and irreversible commitment of a resource, since once soils have eroded down to bedrock it could take thousands of years for new soils to form.

SPECIAL STATUS SPECIES—BIRDS AND MAMMALS

One of the criteria for designating special status species is to prevent the irretrievable loss of species and their habitat. None of the actions identified under any alternative are expected to result in any such losses. Implementation of conservation measures and strategies for all ESA listed species, and sage grouse and westslope cutthroat trout, could enhance habitat conditions sufficiently that DFO management could contribute to regional efforts that may preclude the need for listing, or lead to delisting.

SPECIAL STATUS FISH

Loss or decline in quality of aquatic habitat occupied by special status fish species could cause a population to die out and this may represent an irretrievable or irreversible impact.

SPECIAL STATUS PLANTS

Irreversible impacts to individual special status plants or isolated populations may occur as a result of surface disturbing activities such as mineral extraction, project or road construction and maintenance, livestock salt placement, mechanical rangeland treatments and seedings. Pre-project botanical inventories and associated mitigations identified under alternatives B, C, and D would minimize, but not eliminate these impacts to sensitive species because not all individual plants or populations may be found during a site inspection.

Introduced plant species such as cheatgrass and Kentucky bluegrass will continue to invade native habitats and compete with special status plants. While actual rates of spread or invasion into native plant communities are unknown, it is reasonable to assume that alternatives that allow the greatest amount of surface disturbing activities, including fire and livestock grazing would provide the greatest opportunity for invasion by introduced species. If the disturbance is of a frequency, duration or intensity that allows conversion of native plant communities to communities dominated by introduced species, irretrievable or irreversible loss of habitat may result.

VEGETATION – FORESTS AND WOODLAND

A decrease in the amount of forest and woodland vegetation resulting from vegetation treatments could be considered an irreversible, but not irretrievable, commitment of resources given the time required to regenerate this vegetation.

VEGETATION – INVASIVE AND NON-NATIVE SPECIES, including NOXIOUS WEEDS

Loss of habitat for plant and animal species and loss of the forage for current and future wildlife and livestock would occur where control of noxious weeds is limited. Limited control of weeds could result in soil loss which would reduce the site potential of an infested area. Recovery to existing conditions would not be possible even with a major influx of resources for weed control. Site preparation and seeding would not bring the site back to full potential.

VEGETATION – RANGELAND

Loss of native forage to invasive species, although not necessarily permanent, would be an irretrievable loss of the resource because of the number of years needed to restore native vegetation. The incremental degradation of rangeland within the planning area from the effects of drought, over-utilization, and the spread of invasive plant species could be an irreversible loss of the resource.

VEGETATION – RIPARIAN AND WETLAND

The loss of riparian function can compromise the ability of these areas to resist degradation. Habitats in nonfunctional condition may have sustained sufficient degradation that they may no longer be capable of being restored to original site potential. If this change has resulted in significant soil loss through channel down cutting or incisement, or if riparian/wetland obligate plant species have been replaced by facultative or upland species, these may represent irretrievable and irreversible impacts that cannot be corrected even through costly reconstruction efforts.

WATER

Irretrievable or irreversible commitment of water resources could occur if implementation of any of the alternatives altered channel morphology of particular streams so they could not restore themselves through natural processes, or be restored through other measures.

RESOURCE USES

There are no irretrievable or irreversible commitments identified for the following resource uses: Recreation, Renewable Energy, Travel Management, and Transportation and Facilities. Commitments from management of Utility and Communication Corridors are discussed under the *Lands and Realty* section.

FOREST PRODUCTS

Fire suppression in low to mid elevation forest and woodlands has led to the accumulation of fuels, and makes these forests more susceptible to stand replacing fires. The loss of forest products from stand replacing fires would be considered an irreversible, and in some instances, irretrievable commitment of resources if the fire burned extremely hot over a long time. Harvest of timber would also reduce the available timber resource and be considered an irretrievable commitment.

If aspen continue to decline in the planning area they may become rare to non-existent in some watersheds, and would not be able to be restored.

Whitebark pine may become non-existent in some upper elevation areas since disturbances needed for regeneration would only be created through wildfire events that are typically suppressed and blister rust infestations may kill many of the remaining stands at lower elevations.

LANDS AND REALTY

BLM lands or interests in lands disposed of through the land ownership adjustment program would likely be unavailable to the BLM for the life of the plan or longer and represent an irretrievable commitment of resources.

Not designating right-of-way corridors for electric transmission lines/pipelines and use areas for communication fa-

cilities could result in a greater likelihood that other land use developments occurring during the life of the plan may preclude or restrict the location of these types of right-of-way facilities. Conversely, designating the two right-of-way corridors and five right-of-way use areas as outlined in Alternatives B, C, and D, could preclude or restrict the management potential for certain programs where activities proposed within these areas are deemed to interfere with their use as right-of-way corridors/use areas.

For Alternatives B, C, and D in which right-of-way avoidance and exclusion areas have been identified, the designation of such areas would essentially preclude the issuance of new rights-of-way in these locations.

LIVESTOCK GRAZING

The incremental degradation of rangeland within the planning area from the effects of drought-and the spread of invasive plant species could be irreversible.

MINERALS–LEASABLE

Oil and Gas

Production of oil and gas results in the irretrievable and irreversible loss of those natural resources. Produced water associated with oil and gas production may or may not be an irretrievable or irreversible loss. The produced water may be used for a beneficial purpose or used in an enhanced recovery method. Most, if not all, surface disturbance and use can be restored though proper reclamation techniques.

Solid Leasables

The extraction of solid leasable minerals would be a permanent loss of the resource.

MINERALS–LOCATABLE

The removal of minerals from public lands would be a permanent loss of the resource.

The withdrawal of areas from locatable mineral entry would cause an irretrievable loss of mineral extraction during the life of the plan. Some of the proposed withdrawals fall in high and moderate mineral potential areas (see **Tables 59, 63, 67 and 71**).

A mineral withdrawal that lies within or adjacent to a larger ore body could also prohibit mining of the larger ore body. For example a withdrawn area may lie within an economic open pit perimeter. All or portions of the ore body may not be mined because the mineral withdrawal restricts the opening or expansion of the pit.

Proposed land exchanges could also result in an irreversible and irretrievable loss of minerals for extraction by the general public. Public lands transferred to other ownership would no longer be available for mineral extraction by the general public unless the federal government retains the mineral rights. BLM many times acquires lands in land exchanges; however, these lands are sometimes acquired with stipulations that prohibit mineral extraction.

MINERAL MATERIALS

The extraction of mineral materials from lands within the planning area would be a permanent loss of the resource.

Alternative C would have the greatest impact on mineral materials by closing the entire planning area to mineral material disposal except for currently authorized sites. This would essentially eliminate the availability of mineral material from public land managed by the BLM and be considered an irretrievable commitment for the life of the plan. As existing pits are depleted or closed for various reasons they would not be replaced. Acquisition of gravel, rip-rap, building stone and other commodities would need to be extracted from private or other lands.

FIRE MANAGEMENT AND ECOLOGY

The risk of losing key ecosystem components could occur if condition class 2 and 3 areas are not treated prior to a high intensity wildfire burning in these areas. If the hazardous fuels are not treated the risk of loss to life and property is higher as rural growth expands the Wildland Urban Interface. The severity and location of large scale fires would require more funding to deal with both suppression and fire rehabilitation costs.

SPECIAL DESIGNATIONS

There are no irretrievable or irreversible commitments anticipated for any of the programs under this section, including ACECs, Back Country Byways, National Recreation Areas, National Trails, Wild and Scenic Rivers, Wilderness, and Wilderness Study Areas.

SOCIAL AND ECONOMIC CONDITIONS

There are no irretrievable or irreversible commitments anticipated for the following programs, including Econom-

ics, Environmental Justice, Health and Safety regarding Abandoned Mine Lands, Debris Flows, and Hazardous Materials, Indian Trust Resources, and Social Conditions.

TRIBAL TREATY RIGHTS (including BLM Critical Element Native American Religious Concerns)

Any irretrievable or irreversible commitments related to tribal treaty rights would be associated with cultural resource management and are described in that section.

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are impacts that remain following the implementation of mitigation measures, or impacts for which there are no mitigation measures. Some unavoidable adverse impacts occur as a result of proposed management under one or more of the alternatives, while others are a result of public use of the BLM-managed lands within the planning area. Potential unavoidable adverse impacts are generally long-term and difficult to quantify.

While measures are in place to identify threats to cultural resources and prioritize management actions, some impacts would be unavoidable. There would continue to be impacts to NRHP-eligible, unevaluated, and undiscovered cultural resources associated with dispersed recreation activities, OHV use, vandalism, and other types of activities not authorized by BLM. Natural processes such as erosion and natural decay or deterioration could also result in unmitigated damage to cultural resources.

Vegetation treatments and other authorized activities as well as unauthorized travel could cause short term displacement of wildlife during the activity or treatment, and while the treated area regenerates or recovers. There could be short term increases in stream sedimentation and soil erosion from these activities as well. Decreases in the quantity and quality of forage could also result from these activities.

Unauthorized travel on or off roads could cause soil compaction and loss of protective vegetative cover, thereby increasing soil erosion. Weeds introduced by these and other management activities could cause a reduction in canopy coverage and leave soils subject to increased erosion as well. Any facility developments, including but not limited to recreation sites, livestock water and other range improvements, and utility and road facilities, that are not properly restored even after mitigation measures are applied could result in increased soil erosion.

Changes in the amount of recreational visitation and associated duration and patterns of use could result in increased conflicts between users and unanticipated changes in resource conditions.

Large scale, stand replacing wildland fires that are expected to occur within the planning area over the life of the plan could quickly change the scenic quality of the landscape without regard to visual resource objectives. Scarring of the landscape could also result from unauthorized cross-country travel.