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CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 presents the likely direct, indirect, and cumulative impacts on 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. Because the alternatives generally describe overall management emphasis, the environmental consequences are most often expressed in comparative general terms. Separate sections describing irretrievable or irreversible commitment of resources and unavoidable adverse impacts are presented at the end of the chapter.

Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and 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 Section 4.1.1, Analytical Assumptions). Because the ~~Draft~~ Proposed RMP/EIS provides a broad management framework, the analysis in this chapter represents best estimates of impacts because 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.

4.1.1 Analytical Assumptions

Several assumptions were made to facilitate the estimation of the effects of the alternatives. These assumptions are made only for the purpose of analysis and do not represent potential RMP decisions. The assumptions do provide reasonably foreseeable projected levels of development that could occur within the planning area. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative as described in Chapter 2. Following are the general assumptions applicable to all resource categories. Any specific resource assumptions are provided in the Methods of Analysis subheading for that resource.

- Sufficient funding and personnel would be available for implementing the final decision;
- Implementing actions from any of the RMP alternatives would be in compliance with all valid existing rights, federal regulations, BLM 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 professional judgment, based on observation and analysis of conditions and responses in similar areas, are used to infer environmental impacts where data are limited;
- Acreage figures and other numbers used in the analyses are approximate projections for comparative and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations; and

- Acreages were calculated using GIS technology, and there may be slight variations in total acres between resources. These variations are negligible and will not affect analysis.

4.1.2 Types of Effects (Direct, Indirect, and Cumulative)

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 implementing an action or alternative but are usually later in time or removed in distance and are reasonably certain to occur. Cumulative effects are defined below in Section 4.1.3, Cumulative Impacts.

Effects are quantified where possible, primarily by using GIS applications. In the absence of quantitative data, best professional judgment prevailed; impacts are sometimes described using ranges of potential impacts or in qualitative terms. Only management programs with impacts are discussed. The standard definitions for terms referring to impact duration that are used in the effects analysis are as follows, unless otherwise stated:

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

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

4.1.3 Cumulative Impacts

Cumulative effects are defined as the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). Guidance for implementing NEPA (Public Law 91-190, 1970) requires that federal agencies identify the timeframe and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. Effects of past actions and activities on resources are manifested in the current condition of the resource, which is described in Chapter 3 (Affected Environment) for resources on BLM-administered lands.

Cumulative Impact Assessment Methodology

This cumulative assessment is a programmatic, broad-scale, qualitative assessment. The BLM makes both land use planning and implementation decisions. Examples of planning decisions include land use allocations, special designations, and determining which lands would be open or available for certain uses, such as OHV use. Examples of implementation decisions include designating routes for motorized or nonmotorized vehicle travel, specific recreation facilities, and actions that may be taken without preparation of additional environmental documentation. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed.

The land use planning-level decisions that BLM will make regarding this RMP are programmatic decisions based on analysis that can only be conducted on a broad scale. Because of the broad scope, impact analysis of planning-level decisions is speculative with respect to projecting specific activities.

Subsequent documents tiered to this RMP would generally contain a greater level of detail and would be subject to NEPA ~~assessment~~ analysis and compliance. Subsequent tiered activity- and project-level plans are more definitive than plans found in an RMP. An activity-level plan typically describes projects in detail that will lead to on-the-ground action and traditionally focused on single resource programs. A project-specific plan is typically prepared for an individual project or several related projects. Activity plans (such as travel management plans) are generally more site specific and less speculative than the RMP analyses. Project-level plans (such as stream restoration) contain specific proposed actions, and site- or area-specific analysis is conducted. Activity plans may contain information that is as detailed or specific at a project level.

A cumulative impact analysis is based on numerous assumptions. The CEQ guidance limits cumulative impact analysis to important issues of national, regional, or local significance. Therefore, this cumulative impact assessment focuses only on actions and impacts that would potentially be significant.

Projects That Make Up the Cumulative Impact Scenario

For this EIS, the cumulative impact assessment timeframe is from approximately 1980 to 2025, with some exceptions where additional past data are available. This encompasses a range within which data are generally available and forecasts can be reasonably made. This analysis is provided for each resource and is general because decisions about other actions 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.

The geographic area of primary concern is composed of the six Idaho counties in which the Field Office is located: Latah, Clearwater, Nez Perce, Lewis, Idaho, and Adams Counties, which include various land owners (**Table 4-1**). Projects outside this six-county area, however, are also considered if they have the potential to affect resources with broad regional importance.

Table 4-1
Land Ownership in the Planning Area

Land Ownership	Size (Acres)	Percent of Total
BLM	143,830	<2%
Forest Service	5,528,167	63%
Nez Perce tribal lands	94,705	1%
State	444,791	5%
Private	2,581,685	29%
Other	48,019	<1%
Total	**8,841,197**	

Source: BLM 2004a

Public documents and data prepared by federal, state, and local government agencies are the primary information sources for past, present, and reasonably foreseeable future actions. Actions undertaken by private persons and entities are assumed to be captured in the information made available by such agencies. Specific projects with the potential to cumulatively affect the resources evaluated (e.g., water resources, vegetation) are identified below. Projects included in the cumulative impact analysis do not affect all resources equally: Some resources would be affected by several or all of the

described activities, while others would be affected very little or not at all. Cumulative impact analyses are presented in this chapter by resource topic. The projects that make up the cumulative impact scenario were analyzed in conjunction with the impacts of each alternative to determine if they would have any additive or interactive effects on a particular resource.

Land tenure actions since 1981 have resulted in increasing the total area of public lands managed by the CFO from approximately 134,417 acres to 143,826 acres, a 7-percent increase. Land tenure actions of various sizes are occurring and will continue to occur to consolidate BLM-administered lands and facilitate management.

Idaho Statewide Implementation Strategy for the National Fire Plan. The Idaho Department of Lands, in conjunction with the BLM and other federal agencies, signed the Idaho Statewide Implementation Strategy for the National Fire Plan. The implementation plan focuses on fire prevention and suppression, hazardous fuels reduction, restoration of fire-adapted ecosystems, and the promotion of community assistance in fire management (Idaho Department of Lands 2002). The CFO FMP was completed in 2004. This plan, along with the Coeur d'Alene Field Office FMP, was updated as one plan, the North Zone FMP, in 2005 (BLM 2005c).

During 2002, Idaho Department of Lands, in cooperation with federal agencies, disbursed $1.9 million to WUI projects and development of defensible space in Idaho. Additional money was used for hazardous fuels-reduction programs for several communities. Between 2002 and 2005, all planning area counties completed community wildfire protection plans that identify WUI areas. The development of community wildfire protection plans allows counties and communities to determine their current fire hazard risk and to develop effective mitigation to minimize wildland fire risks to persons and property. In addition, implementing community-based fuels-reduction programs gives private landowners opportunities to work with public land management agencies to manage the WUI.

Wildland fires:

- have been suppressed over the past 100 years;
- have burned low amounts of acreage in the Upper Columbia River Basin through the mid-1900s, with an increasing and noticeable trend in increased fire size between 1985 and 1995 (BLM and Forest Service 1997);
- burned three million acres of timberland in western Montana and northern Idaho including the CFO planning area, during the fire of 1910, the largest forest fire in US history (Idaho Forest Products Commission 2005);
- have occurred and will continue to occur over time, and although the number of fire starts on BLM land is relatively small, land ownership in north-central Idaho is fragmented, which increases the potential for fires to cross administrative boundaries and affect BLM-managed lands; and
- outside ~~FMU~~Fire Management Areas (FMAs) designated for wildland fire use are suppressed and will continue to be suppressed to reduce the risk to resource values, private property, and human safety.

Fuels treatments, including prescribed fire, chemical and mechanical treatment, and seeding, have affected vegetation. Fuels treatments, including these methods and wildland fire use, are expected to

increase, potentially affecting vegetation, soil, air, and water resources and reducing the potential for stand-replacing wildfires.

Cyclic insect and disease activity have persisted and will continue to persist in forested stands and rangelands, including bark beetle infestations and root rot in forested stands and grasshoppers in rangelands.

Fish and Wildlife. Populations of some fish and wildlife species are declining in the Pacific Northwest. Declining wildlife and fish species will likely receive increased federal and state agency restoration and conservation efforts.

Listings under the Endangered Species Act. Some flora and fauna species have declined to the level where listing under the ESA became necessary. The Northern Rockies Lynx Amendment Final Management Plan, which establishes guidelines for management of Canada Lynx on certain lands under the authority of the Forest Service and BLM, was completed in 2005. Potential listings under the ESA may occur in the foreseeable future if populations of sensitive species continue to decline; species that may have more potential for listing than other species may include federally listed candidate species and BLM sensitive species. The bald eagle and gray wolf will likely be delisted.

Livestock Grazing. Domestic livestock (cattle, sheep, and horses) have grazed and will continue to graze most of the area, including BLM-administered lands, Nez Perce Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Wallowa-Whitman National Forest lands.

- In the CFO planning area, approximately 24 percent of forage comes from federal lands in Adams County, 4 percent in Clearwater County, 6 percent in Idaho County, 8 percent in Latah County, and less than 1 percent in Lewis and Nez Perce Counties (BLM and Forest Service 1997).
- The North Idaho Range Management Program Plan was completed in 1982. In general, the number of livestock grazing permits/leases issued by the BLM in Idaho has gradually declined over the last several decades, while the number of authorized AUMs has increased slightly (Tetra Tech Inc. 2005).
- In the CFO, 67 percent of grazing allotments are small isolated tracts that are surrounded by large blocks of private lands, typically ranches. The BLM cannot control the season of use or the number of AUMs removed from public lands on isolated tracts without cost-prohibitive measures;
- The BLM will continue to assess all livestock use allotments in Idaho with use of the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). These standards are designed to provide resource measures and guidance needed to ensure healthy, functional rangelands. Livestock use allotments are evaluated to determine if Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) are being met or if significant progress toward meeting them is being achieved. If standards are not being met, the BLM is required to make changes that would help achieve these standards in the future.

Timber has been and is harvested on private, state, federal, and tribal lands in North Idaho, including Latah, Clearwater, Nez Perce, Lewis, and Idaho Counties (in the CFO planning area; Adams County is not included), and Benewah, Bonner, Boundary, Kootenai, and Shoshone Counties (north of and outside the CFO planning area). A total of 10,620 million board feet (MMBF) has been harvested between 1994 and 2003 on:

- private lands: 7,324 MMBF (1994-2003), which is 69 percent of all timber harvested in North Idaho during this period;
- State of Idaho lands: 1,869 MMBF (1994-2003), which is 18 percent of all timber harvested in North Idaho during this period. Additionally, within CFO planning area, 45 MMBF are planned in 2005 and 51 MMBF are planned in 2006 (Idaho State Board of Land Commissioners 2005);
- All National Forests in North Idaho (Clearwater, Payette, and Nez Perce National Forests in the CFO planning area, and the Idaho Panhandle National Forest outside the CFO planning area): 1,201 MMBF of timber and 76 MMBF of fuelwood collected by the public (1994-2003), which totals 12 percent of all timber harvested in North Idaho during this period. Since 1980, the three major National Forests in the CFO planning area have harvested timber as follows:
    - Clearwater National Forest lands: 1,479 MMBF (1980-2002) on 1.8 million acres (Whitehead 2005);
    - Payette National Forest lands: 1,301 MMBF (1980-2004) on 2.3 million acres (Christman 2005); and
    - Nez Perce National Forest lands: 1,387 MMBF (1980-2004) on 2.2 million acres (McGee 2005).
- Tribal lands: 102 MMBF (1994-2003), which is 0.9-percent of all timber harvested in North Idaho during this period; and
- BLM-administered lands: 48 MMBF (1994-2003), which is 0.4-percent of all timber harvested in North Idaho during this period. Between 1992 and 2004, the CFO has sold between 2 and 8 MMBF annually.

The North Idaho Timber Management Plan was completed in 1982. This 10-year timber management program encompassed BLM-administered lands in the CFO and Coeur d'Alene Field Offices.

Timber harvest on National Forest lands has declined substantially in the last 20 years. Similar declines are expected in the CFO planning area unless national direction places more emphasis on timber production from federal lands. Idaho County would suffer the greatest impact if the timber industry continues to decline. However, harvests from private timberlands have increased as a result of declining harvests from federal lands (Forest Service 2004).

Mineral development has occurred continuously in the region for over 140 years. Mining has occurred and continues to occur on BLM-administered lands, Nez Perce Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Wallowa-Whitman National Forest lands.

- In the CFO, Clearwater, Idaho, and Latah Counties' contribution of federal mineral revenues constitute a small percentage of the state's total and, since 2001, have diminished in royalty value and, therefore, diminished returned payments, up through 2004 (Tetra Tech Inc. 2005).
- In the CFO planning area, development of various industrial minerals, including sand, gravel, and aggregate, dimension stone, and limestone, is expected to continue to expand or contract in response to urban growth and construction in Idaho (Parker 2002).

Minerals. In the CFO (on BLM-administered lands), the reasonably foreseeable development of mineral resources is as follows:

- Oil and Gas — Activity over the next 15 to 20 years would continue to be low, with the possible issuance of 1 or 2 geophysical surveys and perhaps the drilling of 1 or 2 exploratory holes. No field development is expected.
- Geothermal Resources — No geothermal resources have been identified, so the potential for developing geothermal resources is low. It is estimated that one or two exploratory wells would be plugged and abandoned.
- Solid Minerals — The potential for the occurrence of solid leasable minerals (both energy and non-energy) has been rated as low to zero. No future activity is anticipated.
- Salable Mineral Resources — It is anticipated the need for salable minerals (primarily sand, gravel, and crushed rock) will increase due to the continued urbanization of northern Idaho. Decorative stone sales to individuals are expected to increase.
- Locatable Mineral Resources — The major commodity of interest would continue to be gold. Both placer mining and the development of underground lode deposits are anticipated. There is a possibility that at least one chemical heap-leaching operation would be permitted on BLM land northwest of Elk City.

Road construction has occurred in association with timber harvesting and mining on BLM-administered lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Wallowa-Whitman National Forest lands. The rate of road building has recently slowed due to less harvesting and mining activity on National Forest and BLM lands when compared with 20 to 30 years ago. This activity is expected to continue at a steady rate on BLM-administered and National Forest lands; the future rate is unknown on private and State of Idaho lands.

Population:

- Idaho's population has risen approximately 29 percent between 1990 and 2000, while the population of the CFO planning area has grown an average of 13 percent (Idaho Department of Commerce and Labor 2004).
- In the CFO planning area, population growth is projected to continue slowly: Between 2000 and 2020, the planning area population is anticipated to grow 11 percent, while Idaho's population is anticipated to grow 35 percent (US Census Bureau 2004).

Recreation has increased, and use patterns and motorized technology have changed.

- Recreation-related visits to Idaho are estimated to continue to increase at an annual rate of 1 to 4 percent (Tetra Tech Inc. 2005).

- Recreational activities, specifically motorized recreational activities, will continue to contribute to soil impacts.
- An increase in the use of developed recreation sites and campgrounds is likely as the population increases.

Noxious weeds have invaded the area, carried by wind, humans, machinery, and animals (pets, livestock, and wildlife). Cooperative weed management activities exist among the counties, private landowners, and government agencies. The ROD for Vegetation Treatment on BLM Lands in Thirteen Western State Decision was completed in 1991. The Coeur d'Alene District Programmatic Noxious Weed Control Decision was completed in 1994. Noxious weed invasion is increasing and will continue, potentially increasing treatment efforts.

Tribal Coordination. Coordination with the Nez Perce Tribe resource management assists in designing projects that help protect treaty rights and tribal interests.

Clean Air Act. US EPA is likely to set $PM_{2.5}$ standards under the Clean Air Act. Air quality in the planning area is seasonally affected by agricultural field burning, forested prescribed burning, and wildland fires.

Water Quality. Timber harvesting, livestock grazing, agriculture, OHV use, and mining have contributed to the impaired water quality of some streams in the CFO planning area.

The IDEQ has established TMDLs for some 303(d) water quality limited streams in the planning areas (in 2000, 2004, and 2005). The TMDLs for the remaining 303(d) water quality limited streams in the planning area will be established by 2007. The BLM has limited opportunity to significantly improve water quality because of several factors, including location and distribution of lands under its management and the amount of land managed within watersheds with impaired water quality.

Access to BLM lands has been restricted by some private landowners and is likely to be increasingly restricted. The demand for access to public lands has increased and will continue to increase with growth in population and recreational use.

Archaeological investigations, illegal activities (e.g., cultural resource site vandalism or collecting), and development and maintenance activities (e.g. grazing, mining, recreation use, OHV use) that adversely affect sites have occurred and will continue to occur.

ICBEMP. The Forest Service/BLM ICBEMP, an extensive study of the Interior Columbia Basin, was initiated in 1997 to develop a scientifically sound and ecosystem-based strategy for management of all BLM and National Forest lands in the Interior Columbia River basin. The ICBEMP was charged with developing a scientifically based broad-scale ecosystem management strategy that may potentially alter the management direction on over 60 million acres of lands administered by the Forest Service and BLM. This study determined that some ecosystems are at risk due to several past and existing impacts. To address these risks, the BLM entered into a 2003 Memorandum of Understanding to implement the ICBEMP. The implementation strategy includes direction to federal agencies to update or develop land use plans to address the following:

- Maintain and promote a healthy, productive, and diverse ecosystem and restore, through a system of prioritization, areas that are degraded;

- Develop an integrated mix of restoration activities to provide for re-patterning succession and disturbance regimes and achievement of sustainable landscape conditions, thereby contributing to the reduction of events such as uncharacteristically large and severe wildland fires;
- Restore natural disturbance patterns in watersheds and hydrologic process to help restore and maintain riparian, aquatic, and wetland habitat;
- Develop integrated weed management strategies; and
- Develop a coordinated multiscale and interagency approach to planning and decision making.

National Forest Plan Revisions. Various National Forests have completed Forest Plan Revisions that establish management guidance for future management of publicly owned lands within the National Forest System. Although they do not make site-specific decisions, the plans supply a path for all individual projects to follow. The revised forest management direction responds to new initiatives such as the National Fire Plan and Healthy Forest Initiative and to concerns about listed species, habitat restoration, and commodity production. The revised Forest Plans differ from the original plans in that they emphasize restoring or maintaining vegetation and watershed conditions and focus on the ecological condition of the forests rather than commodity production.

The Payette National Forest (2.3 million acres) Plan revision was completed in 2003. The travel management plan is expected to be completed in 2006. The Clearwater (1.8 million acres) and Nez Perce (2.2 million acres) National Forests anticipate completing their Forest Plan revisions (under the 2005 Planning Rule) in 2007. The Wallowa-Whitman National Forest (2.3 million acres) is revising its Forest Plan in conjunction with the Malheur and Umatilla National Forests and anticipates completion in 2007. These plan revisions will address access and recreation, wildlife, watersheds and aquatic species, inventoried roadless areas and proposed wilderness areas, vegetation, timber production, fire risk, and social and economic factors.

4.1.4 Incomplete or Unavailable Information

The CEQ established implementing regulations for NEPA requiring that a federal agency identify relevant information that may be incomplete or unavailable for an evaluation of reasonably foreseeable significant adverse effects in an EIS (40 CFR 1502.22). If the information is essential to a reasoned choice among alternatives, it must be included or addressed in an EIS. Knowledge and information is and will always be incomplete, particularly with infinitely complex ecosystems considered at various scales.

The best available information pertinent to the decisions to be made was used in developing 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.

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 that are incomplete include cultural resources (most of the CFO has not been inventoried for cultural resources), paleontological resources, vegetation, wildlife, riparian inventories, and noxious weeds (most of the CFO has not been inventoried for noxious weeds).

This RMP is based on the concept of adaptive management. Thus, it has been built to be dynamic enough to account for changes in resource conditions (e.g., large-scale wildfire), new information and science, and changes in regulation and policies. The RMP may be amended as appropriate to respond to these factors. No incomplete or unavailable information was deemed essential to a reasoned choice among the alternatives portrayed in this EIS.

4.2 RESOURCES

4.2.1 Air Quality

Goal: Comply with laws and regulations to meet public health and safety requirements.

Summary

Air quality management objectives and actions are the same for all alternatives. All prescribed fire and wildland fire use would be used in a manner to minimize degradation of airsheds and would be coordinated with the Montana/Idaho Airshed Group. All authorized public land management activities would meet federal and IDEQ air quality standards and regulations.

Impacts on air quality from forest vegetation management activities include smoke and fugitive dust from roads and equipment, which could affect human health and air quality-related values such as visibility. Because of the generally qualitative nature of the management objectives, a quantitative comparison of alternatives for their impacts on air quality is not feasible. The types of impacts on air quality from these management activities would be similar for all alternatives.

Alternative C would have the least impact on air quality due to its treatment objective (20 percent of FRCC 2 and 3 lands) for fuels which would minimize mechanical fuel treatments, associated transportation impacts and the use of prescribed fire. Alternative C prescribes the most resource protection by allowing the least amount of ground-, water-, and/or air-disturbing management activities. In the long term, the fuel-reduction activities use of wildland fire could reduce the risk of large, stand-replacing wildland fires that frequently result in substantial and uncontrollable air quality impacts. Alternatives B, C, and D all have the potential to decrease air pollutant emissions from Alternative A, current management, with Alternative C having the greatest potential decrease, followed by Alternatives B then D. **Table 4-2** identifies the indicators that were used to analyze effects on air quality under each alternative.

Table 4-2
Comparison of Air Quality Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Changes in National Ambient Air Quality Standards (NAAQS) pollutant concentrations resulting from agency-managed or permitted activities	Short-term effects from forest products management and wildland fire management, (mechanical treatments and prescribed fire) generally are significant air impact increases			
Potential conformance of management actions with the Clean Air Act	Conforms			

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For air quality management, the indicators used for impact analysis are identified in **Table 4-2**, Comparison of Air Quality Indicators by Alternative.

Methods and Assumptions

Idaho's dominant air pollutant is particulate matter from such sources as open burning, industrial and mining emissions, agricultural activities, fugitive road dust, and residential wood burning. Management activities considered most likely to create an effect on air quality include forest vegetation management, wildland fire management, forestry products, and minerals.

Potential impacts on air quality from actions proposed in each alternative were assessed quantitatively (where possible) as a percent change from current levels on the basis of the corresponding changes in proposed management activity (e.g., acreage). Where a management change could not be quantitatively determined, a qualitative assessment of impacts on air quality was provided.

Effects Common to All Alternatives

The primary air quality goal of all alternatives is to comply with all existing laws and regulations to meet health and safety requirements. Management objectives include minimizing degradation of airsheds from wildland fire use and prescribed fire use and through the coordination of these activities with the Montana/Idaho Airshed Group. All other authorized activities on public lands would meet federal and IDEQ air quality standards and regulations. These management objectives would be accomplished through specific management actions, including the use of BMPs and considerations of air quality in Wildland Fire Situation Analysis, Wildland Fire Implementation Plans, and prescribed burn plans. Impacts on air quality from wildland fire management activities include smoke and fugitive dust from roads and equipment. These effects would usually be short term and localized. One of the management objectives for air quality is the reduction of particulate emissions from uncontrolled wildland fires, primarily through suppression. Fire suppression would remain a central strategy for all alternatives; however, wildland fire use, mechanical fuels treatments, and prescribed fire treatments could also be used to varying degrees across the alternatives. Less aggressive suppression tactics, including wildland fire use, would likely result in greater short-term smoke emissions but decreased fugitive dust emissions from roads and vehicles compared to current activities.

Ongoing activities, programs, and/or management in the planning area, besides forest vegetation management, wildland fire management, forestry products, and minerals (addressed below), that have the potential to affect air quality include soils, recreation, livestock grazing, transportation and travel management, lands and realty, and AMLs and HMM activities. These activities could directly affect air quality in the short term by generating fugitive dust, hazardous pollutants, smoke, or other emissions. Due to the widely varied specific conditions, timing, and scale of these activities, reliable quantitative estimates of particulate emissions from these activities cannot be determined; however, implementation of resource protection measures, permitting requirements, and emissions-control strategies, including established BMPs, to mitigate emissions would minimize impacts on air quality.

Effects from Vegetation—Forests Management

Impacts on air quality from forest management activities include smoke and fugitive dust from roads and equipment, which could affect human health and air quality-related values, such as visibility. Smoke resulting from prescribed fire would be mitigated through burning on burn days approved by the Montana/Idaho Airshed Group. Dust caused by vehicle traffic or mechanical equipment activities would be mitigated through fugitive dust BMPs (such as road watering and application of dust palliatives) as appropriate. Impacts typically would be short term and localized. Also see Effects from Forest Products Management, below.

Effects from Wildland Fire Management

Fire management objectives and actions emphasize appropriate management response for suppression actions striving for a maximum of 30 percent of the CFO (43,148 acres) allowed to burn in a 5-year period. Impacts on air quality from wildland fire and its management activities include smoke and fugitive dust from roads and equipment, which could affect human health and visibility. The effects on air quality from smoke and dust caused by wildland fire management activities typically would be short term and localized.

Effects from Forest Products Management

Impacts on air quality from forest products management activities include fugitive dust from use of roads and equipment (e.g., skidders and CATs), road construction, and smoke from broadcast/underburning to reduce hazardous fuels or to prepare areas for reforestation and slash pile burning. The effects on air quality from smoke and dust caused by the management activities typically would be short term and localized. Smoke resulting from prescribed fire and pile burning would be mitigated through coordinating controlled burn activities through the Montana/Idaho Airshed Group.

Effects from Minerals Management

Minerals management activities have the potential to impact air quality everywhere except the Frank Church Wilderness, because mineral activities could occur everywhere but in the Wilderness. Impacts from fluid mineral activities include fugitive dust from roads and equipment and National Ambient Air Quality Standards pollutants originating from equipment (e.g., compressors). Impacts on air quality from development of solid leasable, salable, and locatable minerals activities are primarily fugitive dust from mining activities, roads, and equipment operations. Effects typically would be long term and localized.

Alternative A

Effects from Vegetation—Forests Management

General effects are described under Effects Common to All Alternatives, above. Forest management under Alternative A includes direction on harvest volume, areas treated, and strategy for each forest land classification (intensive, extensive, and custodial management) to meet management objectives, such as maximum timber production, sustained yield timber production, or no timber production (although harvesting could occur for ecological reasons). Alternative A would designate 35,757 acres (35 percent) of forested acres as commercial forest. Alternative A does not include management of forested blocks for DFCs. Also see Effects from Forest Products Management, below.

Effects from Wildland Fire Management

General effects are described under Effects Common to All Alternatives, above. Treatment areas are prioritized by FRCC. Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/ fuels-reduction treatments. Given current management, an estimated 1,950 to 5,950 acres could be treated annually with mechanical treatments and prescribed fire under Alternative A (see Section 4.2.12, Wildland Fire Management).

Because of management controls employed through the Montana/Idaho Airshed Group, smoke from CFO prescribed fire is unlikely to adversely impact Class I visibility areas within the CFO boundary (Hells Canyon Wilderness Area and Selway-Bitterroot Wilderness Area) and the seven other Class I visibility areas near the CFO. Smoke from wildland fires with a wind pattern moving toward Class I visibility areas is very likely to degrade air quality for days to weeks.

Effects from Forest Products Management

General effects are described under Effects Common to All Alternatives, above. Under current management, 35,757 acres are specified as managed for timber production (commercial forest land). The current estimated annual ASQ for timber harvesting, which is 6,600 MBF on 358 acres, would continue.

Effects from Minerals Management

General effects to air quality from minerals management activities are described under Effects Common to All Alternatives, above. Impacts under Alternative A would be limited by continuation of the Wilderness designation, continuation of lands withdrawn from locatable minerals (21,869 acres), management per Alternative A, and compliance with current laws and regulations. Under Alternative A, 131,044 acres would continue to be open to fluid (oil, gas, and geothermal) minerals and solid leasable (energy and nonenergy) minerals leasing with 12,786 acres subject to nondiscretionary closures (same nondiscretionary closure acres for all alternatives). Approximately 131,044 acres would also be open to mineral (salable) materials disposal, with 12,034 acres subject to discretionary WSA closures and 750 acres subject to nondiscretionary closures. Approximately 121,961 acres would be open to locatable minerals.

Alternative B

Effects from Vegetation—Forests Management

General effects to air quality are described under Effects Common to All Alternatives, above. Alternative B designates 40,598 acres (40 percent of forested acres) as commercial forest, 13 percent more than current management. Vegetation management activities under Alternative B would emphasize management for forest health~~vigor~~ or habitat diversity in DFC blocks of 1,000 or more forested acres, which comprise 24,789 acres, which is 24 percent of forested acres and 17 percent of the CFO.

Due to the generally qualitative nature of the resource objectives, a direct comparison of alternatives with respect to impacts on air quality is not workable. However, the nature of impacts on air quality from these management activities would be similar for all alternatives. Also see Effects from Forest Products Management, below.

Effects from Wildland Fire Management

General effects to air quality are described under Effects Common to All Alternatives, above. Under Alternative B, up to 40 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period; an estimated 33,766 acres could be treated under Alternative B (see Section 4.2.12, Wildland Fire Management). Additional areas could be treated outside the WUI. Treatments would be designed to alter vegetation composition, structure, and fuels to recreate historic or maintain desired fire regime behaviors, severities, and patterns. Alternative B would include approximately 1,182 to 3,545 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests).

In the long term, the fuel-reduction activities and use of wildland fire could reduce the risk of large, stand-replacing wildland fires that frequently result in substantial and uncontrollable air quality impacts.

Effects from Forest Products Management

General effects to air quality are described under Effects Common to All Alternatives, above. Alternative B would include 40,598 acres of commercial forest land and would decrease the current estimated annual PSQ by 53 percent (to 3,129 MBF), with an estimated 242 acres treated per year (an estimated 32-percent decrease from current management). Impacts on air quality from these activities are similar to those for Alternative A, with a potential corresponding decrease in emissions (primarily fugitive dust and smoke) from current levels.

Effects from Minerals Management

General effects to air quality from minerals management activities are described under Effects Common to All Alternatives, above. Under Alternative B, effects on air quality from minerals management would be similar to those described under Alternative A, but would be further limited by additional areas with surface use restrictions (leasables and mineral materials), which include 43,590 acres subject to NSO stipulations and 42,403 acres subject to CSU stipulations. The increase in surface use stipulations would decrease emissions, compared to current levels.

Alternative C

Effects from Vegetation—Forests Management

Impacts under Alternative C would be similar to those described under Alternative B and the general effects described under Effects Common to All Alternatives, except that vegetative treatments would emphasize achievement of DFC on timbered tracts that are 500 acres or more in size (comprising 28,087 acres of forested vegetation, or 28 percent of forested acres and 20 percent of the CFO). Also see Effects from Forest Products Management, below. Alternative C would designate 34,611 acres (34 percent) of forested acres as commercial forest, 3 percent less than current management.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that 16,833 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative C (see Section 4.2.12, Wildland Fire Management), 50 percent less than Alternative B. Additional areas could be treated outside the WUI.

Alternative C would include approximately 1,182 to 4,390 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). Under Alternative C, up to 20 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period, half the percentage than under Alternative B. Treatments in areas with FRCC 2 or 3 would be similar to those described under Alternative B, except that Alternative C could use prescribed fire on an additional five percent of the FRCC 2 and 3 lands, slightly more than Alternative B.

Effects from Forest Products Management

Alternative C specifies 34,611 acres of commercial forest land and an estimated PSQ of approximately 3,101 MBF per year. Impacts on air quality from these activities are similar to current impacts (Alternative A), with a potential corresponding decrease in emissions from current levels because of the decrease in harvest volume and acres treated.

Effects from Minerals Management

Under Alternative C, effects on air quality from minerals management would be similar to those described under Alternative B, but would be further limited by additional areas with surface use restrictions (leasables and mineral materials), which include 68,854 acres subject to NSO stipulations and 59,122 acres subject to CSU stipulations. The increase in surface use stipulations would decrease emissions compared to Alternative A. Alternative C specifies the largest acreages for lease stipulations and could, therefore, result in the least amount of impacts on air quality from mining activities.

Alternative D

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B, except that Alternative D would not include treatments to establish DFCs. Alternative D would designate 45,190 acres (45 percent) of forested vegetation as commercial forest, 27 percent more than current management. Impacts would be similar. Also see Effects from Forest Products Management, below.

Effects from Wildland Fire Management

In addition to the effects described above under Effects Common to All Alternatives, Alternative D would allow wildland fire use if the fire would not adversely impact commercial forest land management areas or authorized livestock grazing areas (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). Alternative D would include 45,190 acres of commercial forest land and 135,850 acres of authorized livestock grazing areas, more than under Alternatives A, B, or C. Although the commercial forest land and authorized livestock grazing areas would be larger under Alternative D than under Alternatives A, B, and C, wildland fire could still be used within them, as long as it did not adversely impact them.

Effects would be similar to those described under Alternative B, except that 50,650 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative D (see Section 4.2.12, Wildland Fire Management), 50 percent more than Alternative B and triple that under Alternative C. Alternative D would include approximately 2,870 to 7,597 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). Additional areas could be treated outside the WUI.

Treatments would be designed to alter vegetation composition, structure, and fuels to recreate historic or maintain desired fire behaviors, severities, and patterns. Treatments in areas with FRCC 2 or 3 would be similar to those described under Alternative B, except that Alternative D would include 2 to 15 percent mechanical treatments.

Effects from Forest Products Management

Similar to Alternative A, impacts on air quality from forest products management activities include fugitive dust from use of roads and equipment (e.g., skidders and CATs), road construction, and smoke from broadcast/underburning to reduce hazardous fuels and to prepare areas for reforestation and slash pile burning.

Under Alternative D, 45,190 acres are classified as commercial forest land with an estimated PSQ of approximately 4,823 MBF per year. Impacts on air quality from these activities could result in a corresponding decrease in emissions from current levels because of the decrease in harvest volume and acres treated.

Effects from Minerals Management

Under Alternative D, effects on air quality from minerals management would be similar to those described under Alternative B, but would be less limited because of fewer areas with surface use restrictions (leasables and mineral materials), which include 35,045 acres subject to NSO stipulations and 32,013 acres subject to CSU stipulations. The increase in surface use stipulations could decrease emissions compared to current levels.

Cumulative Effects

Despite the increasing population base in northern Idaho, annual average concentrations have remained fairly constant over the past few years and PM_{10} data have shown an improvement over the last 10 years (Stevenson 2004). Historically, smoke has been identified as the primary source affecting air quality and the poorest air quality conditions have been reported from October through December due to biomass burning and atmospheric conditions that trap pollutants.

In the foreseeable future, state-wide implementation of the National Fire Plan and changes in the Clean Air Act could result in increased regulatory restrictions and additional requirements for conformance, as required for all of the proposed alternatives. Increased wildland fires and fuels treatments in the region are particularly likely to adversely affect air quality. As previously noted, the BLM coordinates fire management activities with the Montana-Idaho Airshed Group. A primary mission of the airshed management group is to coordinate fire management activities between participating entities (such as BLM, Forest Service, IDEQ, and others) to ensure that simultaneously occurring actions do not cumulatively result in violations of air quality standards or significant deterioration of air quality, including visibility. Under all alternatives, the BLM's continued participation and coordination with this group would manage cumulative effects on air quality due to fire management actions (including RMP and Forest Plan revisions). Per US EPA rules, the Nez Perce Tribe controls burning on all lands within the reservation boundary.

Future increases in mineral development, timber harvesting, and particularly population in the region could also affect air quality and would present a challenge to air quality management and necessitate assessment of direct and indirect effects on air quality from planned actions to avoid adverse cumulative effects.

Activities within the planning area and in adjacent areas could, when combined with the various proposed RMP alternatives, cumulatively affect air quality and could impact air quality management decisions. The potential effects would be similar for all alternatives. Alternatives B, C, and D would all contribute more to decreased air pollutant concentrations in comparison to Alternative A, with Alternative C having the greatest potential decrease due to low fuel treatment objectives and numerous management actions, mitigation measures, and restrictions, followed by Alternatives B and D. Activities include those related to the Idaho Statewide Implementation Strategy for the National Fire Plan, wildland fire, fuels treatments, timber management, minerals development, population change, the Clean Air Act, and Forest Plan revisions, including the increasing use of wildland fire use on Forest Service lands.

4.2.2 Geology

Recreational aspects of geologic features are discussed under Section 4.3.4, Recreation. Impacts to geology are not addressed because management of resources is not expected to affect geology.

4.2.3 Soils

Goal: Maintain and restore watershed health, soil productivity, and areas of fragile soils.

Summary

The alternatives vary by total potential areas where management activities could cause soil disturbances or result in soil erosion. In general, Alternative C would be most protective of soil resources, followed by Alternatives B, D, and A. However, implementing appropriate BMPs would ensure that long-term impacts on soils would be minimized or avoided under any alternative. **Table 4-3** identifies the indicators that were used to analyze effects on soils under each alternative.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For soils, the indicators used for impact analysis are identified in **Table 4-3**, Comparison of Soils Indicators by Alternative.

Methods and Assumptions

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the CFO, review of existing literature, and information provided by experts in the BLM or other agencies. Impacts are based on the design of the alternatives under consideration. Effects are quantified where possible. In the absence of quantitative data, best professional judgment prevailed. All alternatives must comply with the Clean Water Act and the Idaho Forest Practices Act.

Substantial disturbance of soil, including compaction of soil or changes in vegetative cover, can decrease soil productivity and contribute to increased peak flows. This may result in channel instability and increased sediment transport, thereby degrading water quality, channel structure, and overall watershed health.

The degree of impact attributed to any one disturbance or series of disturbances is influenced by several factors, including location, time and degree of disturbance, existing vegetation, and precipitation.

Table 4-3
Comparison of Soils Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of proposed management activities, including grazing, timber production, fuels reductions, and mineral development	Available for grazing: 122,732 acres	Available for grazing: 105,619 acres	Available for grazing: 101,350 acres	Available for grazing: 135,850 acres
	Timber production: Estimated annual ASQ: 6,600 MBF on 358 acres	Timber production: Estimated annual PSQ: 3,129 MBF on 242 acres	Timber production: Estimated annual PSQ: 3,101 MBF on 191 acres	Timber production: Estimated annual PSQ: 4,823 MBF on 361 acres
	Fuels treatments: 20,000-81,500 acres estimated in 5 years	Fuels treatments: 57,000 acres estimated in 5 years	Fuels treatments: 25,974 acres estimated in 5 years	Fuels treatments: 86,251 acres estimated in 5 years
	NSO constraints: case-by-case basis	NSO constraints: 43,590 acres	NSO constraints: 68,854 acres	NSO constraints: 35,045 acres
	CSU restrictions: case-by-case basis	CSU restrictions: 42,403 acres	CSU restrictions: 59,122 acres	CSU restrictions: 32,013 acres

Source: BLM 2004a

Roads contribute to soil compaction and erosion, particularly in forested areas (Gucinski et al. 2001), so higher road densities would result in more adverse impacts on soils. Roads that receive more traffic are also at greater risk for soil erosion (Smith 2005). BMPs would be implemented under all alternatives to reduce the potential impacts of road construction and maintenance.

Some management activities may involve soil compaction from animals or heavy machinery, direct soil disturbance, or soil displacement (Froelich and McNabb 1993, Forest Service 2003a, Wert and Thomas 1981). Fires that heat soils to high temperatures can volatilize organics and produce a hydrophobic layer that contributes to higher rates of runoff and more soil erosion. Vegetative treatments, including mechanical treatments and prescribed burning, may result in impacts on soils. Implementing BMPs, including soil moisture restrictions for use of heavy machinery and soil temperature limitations for prescribed burning, would reduce potential impacts under all alternatives. BMPs related to grazing, such as rotating grazing locations to avoid long-term soil compaction, would also reduce potential impacts under all alternatives. Fire risk/fuels-reduction projects, which typically involve vegetative treatments and/or low-intensity burns, may result in short-term soil disturbance, but if successful, they would prevent or reduce long-term damage to soils from high-intensity wildland fires. Earth-moving activities related to mineral development may result in long-term commitments of soil resources.

Access roads and surface-disturbing activities would follow the standards, guidelines, and BMPs in PACFISH (BLM and Forest Service 1995) and the MFP Guidelines (BLM 1981a). In addition,

Alternative A would follow the Riparian Management Guidelines (BLM 1985e). Alternatives B, C, and D would follow the guidelines in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (see Volume II~~I~~). However, even properly designed roads would alter hillslope hydrology and concentrate overland flow in some areas. In areas with steep topography (greater than 60-percent slope), these impacts would increase.

Fine-textured soils are more susceptible to water erosion and compaction when wet.

Effects Common to All Alternatives

Effects from Soils Management

All alternatives would require implementing appropriate BMPs to protect soil and water resources. For Alternative A these would include the PACFISH standards and guidelines (BLM and Forest Service 1995), MFP Road Guidelines (BLM 1981a) and Riparian Management Guidelines (BLM 1985e). For Alternatives B, C, and D, these would include the direction listed in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (see Volume II~~I~~). BMPs and potential impacts on soils are described below under each alternative. Similarly, management activities under any of the alternatives must comply with the Clean Water Act, which imposes penalties for water quality degradation from eroded sediments. All alternatives would comply with the Idaho Department of Lands Forest Practices Regulations, the Idaho Department of Water Resources Stream Channel Alteration Regulations, and with EPA and US Army Corps of Engineers regulations relating to the Clean Water Act. These establish additional BMPs, including road, streamside management, timber harvesting, and stream crossing measures. Implementing these BMPs would protect soil resources.

All alternatives would include actions to protect landslide-prone areas and minimize mass wasting. These actions would stabilize soil resources.

Effects from Vegetation—Rangelands Management

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~) would minimize or mitigate potential impacts to soil resources from management of nonforested vegetation under all alternatives. In particular, several standards would limit soil erosion and compaction, including Standard 1 (watersheds), Standard 2 (riparian areas and wetlands), and Standard 3 (stream channel/floodplain), and several would ensure adequate soil crusts and nutrients, including Standard 4 (native plant communities), Standard 5 (seedings), Standard 6 (exotic plant communities, other than seedings), and Standard 8 (threatened and endangered plants and animals). Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~) guidelines would reduce soil compaction and would stabilize soils.

Effects from Wildlife and Special Status Wildlife Management

All of the alternatives would include HMPs to protect wildlife. Where these plans include grazing restrictions and vehicle use restrictions, their implementation would protect soil resources.

Effects from Special Status Plant Management

Management measures to protect special status plant species would have similar soil resources impacts under all alternatives. Plant species protection could involve avoiding activities that disturb soils which would help reduce potential for soil resource impacts.

Effects from Wildland Fire Management

All of the alternatives would allow no more than 30 percent of CFO acres to burn in any 5-year period. Fires that heat soils to high temperatures can volatilize organics and produce a hydrophobic layer that contributes to higher rates of runoff and more soil erosion. Prescribed burning also may impact soils by removing the protective duff layer. Fuel-reduction treatments and wildland fire use could result in short-term soil disturbance, but if successful, it would prevent or reduce long-term damage to soils from high-intensity wildland fires.

Under all alternatives, impacts from wildland fire to soils that are not expected to recover naturally could be mitigated in a cost-effective manner through rehabilitation. Emergency Stabilization and Rehabilitation protocols (described in **Appendix H**, Wildland Fire Management [see Volume II~~I~~]) would be implemented to prevent post-fire resource damage, including severe soil erosion. Rehabilitation of disturbed areas related to fire lines, camps, and other fire suppression activities would reduce potential long-term impacts to soil resources.

Effects from Cultural Resources Management

Soil resources would be protected under all alternatives by restricting ground-disturbing activities to protect cultural resources.

Effects from Forest Products Management

All alternatives would require implementing appropriate BMPs to protect soil and water resources as discussed under effects from soil management above. All alternatives would comply with the Idaho Department of Lands Forest Practices Regulations. Implementing these BMPs would protect soil resources.

Effects from Livestock Grazing Management

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~) would minimize or mitigate potential impacts to soil resources from management of livestock grazing under all alternatives, as described above under Effects from Vegetation—Rangelands.

Effects from Minerals Management

All alternatives would continue the withdrawals on the Lower Salmon River. In total, 21,869 acres of public land (including Wilderness, power site reserves, and Federal Energy Regulatory Commission) and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable minerals. These areas would be closed to locatable mineral activities. Without surface disturbances, impacts to soil resources would not occur in these areas.

Each of the alternatives also would include 12,786 acres closed to leasable mineral activities. The remaining areas open to leasable minerals would be managed differently under each alternative, as described below by alternative.

Each of the alternatives would involve 750 acres of nondiscretionary closures to mineral material disposal. Mineral material disposal would not be allowed in these areas. In addition, discretionary closures for mineral materials would apply to 12,034 acres under each alternative. Activities could be allowed in these areas on a case-by-case basis. Like leasable minerals, mineral material activities would be managed differently under each alternative, as described below.

Effects from Transportation and Travel Management

Roads contribute to soil compaction and erosion, particularly in forested areas (Gucinski et al. 2001), so higher road densities would result in more adverse impacts on soils. Roads that receive more traffic are also at greater risk for soil erosion. BMPs would be implemented under all alternatives to reduce the potential impacts of road construction and maintenance. All of the alternatives would locate roads and trails in a manner to minimize impacts to soils.

Effects from Lands and Realty Management

All of the alternatives would consider land fragmentation in land acquisitions and disposals. (Alternative A would eliminate surface and subsurface inholdings within Management Areas. Alternatives B, C, and D would reduce the number of scattered parcels of public land.) As the CFO became less fragmented, resource management by entire watersheds would be more feasible. Soil resources may be better protected with watershed-scale management.

All alternatives would exclude mining in the withdrawals on the Lower Salmon River. In total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable minerals.

Effects from ACEC/RNA Management

All of the alternatives would prohibit vegetation manipulation in the Lower and Middle Cottonwoods Islands ACEC/RNA, as stated in the HMP, which would prevent impacts to soils. Similarly, no livestock grazing would be authorized in the Captain John Creek or the Skookumchuck ACEC/RNAs, which would prevent impacts to soils.

Effects from Wild and Scenic Rivers Management

All alternatives would ~~involve efforts to renew~~ continue the withdrawal of the Salmon River from Long Tom Bar to the Snake River from mineral entry, which would protect soils from related surface disturbances.

Effects from Wilderness and Wilderness Study Areas Management

Under all alternatives, surface-disturbing activities would be excluded from the Frank Church/River of No Return Wilderness, which would protect soil resources.

Effects from Native American Tribal Uses Management

Consultation with tribes regarding treaty rights, cultural access and use of plants, animals, fish and habitats could result in identifying areas where mineral development actions may need to be modified to accommodate or maintain tribal uses or to avoid resources important to tribes. However, it is unlikely that accommodating tribal uses would impede the anticipated level of mineral development within the CFO in the long term.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

All of the alternatives would protect soils from contamination by requiring cleanup of hazardous materials.

Alternative A

Effects from Soils Management

As described under Effects Common to All Alternatives, Alternative A would continue to implement PACFISH. The standards and guidelines in this management direction would restrict

many management activities in RHCAs, which under this alternative are larger stream buffers than the RCAs under Alternatives B or D. The MFP supplement established 39 prescription watersheds totaling 66,077 acres, which are higher priority for achieving water quality and fish objectives. Many standards and guidelines are designed to protect soil resources.

Alternative A also would implement the 1981 MFP Road Guidelines (BLM 1981a). The road-related BMPs in Alternative A are sufficiently general to allow implementation of the same detailed BMPs as in Alternatives B, C, and D (**Appendix B**, Best Management Practices [see Volume II~~I~~]). Several timber harvest restrictions, which also would protect sensitive soils, would be implemented under Alternative A as part of the PACFISH strategy.

Also as described under Effects Common to All Alternatives, Alternative A would implement the Riparian Management Guidelines (BLM 1985e). These guidelines establish general management objectives for riparian areas, including protecting the water body and adjacent environment to maintain wildlife and fish habitat, water quality, and aquatic resources at a high natural level. The specific management requirements and constraints and specific mitigation measures primarily apply to riparian areas.

Because Alternative A would not include specific direction on field assessments and protection zones for landslide-prone areas, it may not protect soils to the same extent as the other alternatives.

Effects from Water Resources Management

As described under Effects from Soils Management, Alternative A would protect soils to the same extent as other alternatives because activities would follow the PACFISH standards and guidelines, MFP Road Guidelines (BLM 1981a), and Riparian Management Guidelines (BLM 1985e). While these guidelines generally state the same goals as **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (see Volume II~~I~~), they would offer less-detailed management restrictions. Although Alternative A does not specifically include implementation and effectiveness monitoring, BLM Instruction Memorandum ID-2005-065 specifies a program for PACFISH monitoring and adaptive management.

Alternative A gives direction to identify and resolve potential water quality problems (including sediment from eroded soils). Alternative A identifies prescription watersheds to prioritize these areas for active restoration activities.

Effects from Vegetation—Forests Management

Alternative A would not include vegetative treatments to achieve forest vigor and/or habitat diversity in DFC blocks. Instead, vegetation treatments would focus on timber production and are addressed in the Effects from Forest Products Management section.

Effects from Vegetation—Riparian and Wetlands Management

Under this alternative, RHCA buffers totaling 24,290 acres would be implemented to protect riparian areas and wetlands. Activities would be planned and monitored in these areas to prevent damage to riparian areas and wetlands. These restrictions and monitoring efforts, including limiting logging methods to minimize soil disturbance, would protect soil resources under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Alternative A would involve reviewing ongoing activities, and if negative impacts to federally listed species or their habitats were occurring as a result of discretionary actions, the activity would be modified to avoid or minimize adverse impacts to the species and suitable habitats. Also, lands identified for less intensive wildlife management may include controls of vehicle use or other guidelines. Where these activities would involve reducing route density or vehicle use, soil resources would be protected. Where they would involve vegetative treatments to improve range conditions (for example, under Objective 8, Action 2), they could result in short-term soil compaction and soil erosion. However, BMPs would be applied to these treatments to mitigate or minimize potential impacts on soils, especially the adverse effects from the use of roads and heavy machinery. In the long term, improved range conditions would protect soil resources.

Where grazing restrictions are employed to protect wildlife habitat, limiting use of forage in riparian areas would reduce soil compaction in those areas, which would protect soils. Measures to address grazing in riparian areas proposed under Alternative A would be less restrictive than under the other alternatives.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

As described under Effects from Soils Management, Alternative A would protect soils to the same extent as other alternatives because activities would follow the PACFISH standards and guidelines and the Riparian Management Guidelines (BLM 1985e). Alternative A would not emphasize conservation or restoration watershed management. Management plans would be implemented and activities restricted in sensitive areas, and soils would be protected in PACFISH prescription watersheds (39 watersheds totaling 66,077 acres).

Effects from Wildland Fire Management

Wildland fire use would be allowed under Alternative A (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]), which could result in minor short-term impacts to soils but would result in fewer long-term impacts because these treatments would reduce the risk for more damaging wildland fires.

Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/ fuels-reduction treatments. Given current management, an estimated 1,950 to 5,950 acres could be treated annually with mechanical treatments and prescribed fire (see Section 4.2.12, Wildland Fire Management). If more acres were treated under Alternative A than under the other alternatives, then the short-term impacts to soils could involve more potential localized soil compaction and soil erosion, but the long-term impacts would protect soils from larger and more widespread erosion by reducing the risk of large, high-intensity wildland fires. Implementation of BMPs (such as ceasing operations during wet soil conditions) would reduce the potential for short-term impacts.

Effects from Cultural Resources Management

Where OHV limitations were employed to protect cultural resources, soil resources would be protected under Alternative A.

Effects from Visual Resources Management

Soil resources would be protected in areas with ground-disturbance restrictions, including VRM Classes I and II. Alternatives A and B would include 12,704 acres of VRM Class I and 41,195 acres of VRM Class II.

Effects from Forest Products Management

The current estimated annual ASQ is 6,600 MBF on 358 acres under Alternative A (see Section 4.3.1, Forest Products). A total of 35,757 acres of commercially viable forest would be included in the commercial timber base. The remaining commercially viable forest would be considered custodial and would not be managed for timber, although harvesting could occur for other ecological reasons. Because the most timber would be extracted under this alternative, potential impacts to soils (including soil compaction, erosion, and loss of nutrient cycling) would be greatest under Alternative A.

Treatments focused on timber production would include harvests involving log landings, skid trails, temporary roads, and vegetation removal. These treatments could result in soil compaction and soil erosion. Because BMPs are not specifically defined for timber harvests in the MFP Road Guidelines (BLM 1981a) or the Riparian Management Guidelines (BLM 1985e), potential impacts to soils, including soil compaction and soil erosion, would be more likely under this alternative than under the other alternatives. However, continued implementation of PACFISH would protect soils, particularly in RHCAs (24,290 acres) and prescription watersheds (39 watersheds totaling 66,077 acres).

Alternative A would include an estimated annual timber harvest ASQ of 6,600 acres and 1,530 to 4,800 acres of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). These vegetation treatments could result in soil compaction and soil erosion.

Effects from Livestock Grazing Management

In addition to the Effects Common to All Alternatives, Alternative A would consist of 122,732 acres, 168 allotments with a total 7,~~204~~ 200 AUMs available for livestock authorizations. All alternatives would follow the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~), which would protect soil resources.

Effects from Minerals Management

In addition to Effects Common to All Alternatives, under Alternative A, restrictions could be applied on a case-by-case basis during review of a proposed activity to protect resources, including soil resources. These stipulations would protect soil resources beyond that of the standard lease/permit.

Effects from Recreation Management

Alternative A would include 26,682 acres of SRMAs. To the extent that these areas would limit road construction or use or other ground-disturbing management activities to provide nonmotorized and other types of recreation opportunities, soil resources would be protected. The other alternatives would include more acres of SRMAs, providing more soil protection.

Alternative A also would include 33,197 acres of nonmotorized ROS designations (including 14,381 acres Primitive and 26,206 acres Semiprimitive Nonmotorized). In Primitive and Semiprimitive

areas, soils would not be impacted by mechanized and motorized vehicle uses. Because Alternative A would include a slightly smaller area where these uses were restricted, more soils would be open to potential impacts.

Effects from Renewable Energy Management

There would be no impacts to soils from renewable energy management. This alternative would not specify that biomass be emphasized.

Effects from Transportation and Travel Management

Alternative A would include the largest area (85,308 acres) Open to yearlong, cross-country motorized travel. An additional 40,437 acres would be Limited to existing routes. The Closed areas would be very similar in all alternatives, with 18,054 acres under Alternative A and 18,069 acres under the other alternatives. Because unlimited, cross-country motorized use would be most damaging to soils, resulting in soil compaction and erosion, Alternative A would have the most adverse impacts on soil resources.

There are approximately 341 miles of routes on BLM lands, approximately 68 miles (20 percent) of which are located within Open areas but are closed to motorized vehicles yearlong. Within Limited areas, approximately 43 miles are open yearlong. However, 13 of the 43 miles do not have legal public access so likely receive little or no use. Additionally, about 40 miles are closed yearlong in Limited areas. Route restrictions and closures would protect soil conditions by reducing or eliminating traffic, which could contribute to localized erosion of the roadbed, particularly when such use occurs on native-surface roads during wet periods.

Effects from ACEC/RNA Management

Alternative A would not allow timber harvest or vegetation treatments but would allow livestock grazing in the Wapshilla Ridge ACEC/RNA. Soils would not be impacted from timber harvesting. The potential impacts to soils from livestock grazing are described above under Effects from Vegetation—Rangelands Management and under Effects from Livestock Grazing Management.

Alternative A would not allow timber harvest in the Captain John Creek ACEC/RNA except for disease and insect control. Alternative A would not allow ground-disturbing activities in the Long Gulch ACEC/RNA, which would prevent impacts to soils.

Alternative A would protect 3,956 acres of Craig Mountain as an ACEC. Timber would be removed only when necessary to protect resource values. Maximum protection to resources would be followed during any timber extraction. No new rights-of-way or road construction would be allowed. Alternative A would maintain the Elk City Dump/American Hill Lake ACEC. OHV use would be excluded, and ground-disturbing activities would not be allowed, which would protect soil resources.

Alternative A would include provisions to protect soil resources, including requiring yarding methods that would not disturb soils for timber harvests on slopes greater than 50 percent.

Effects from Wilderness and Wilderness Study Areas Management

If Congress were to release the WSAs from wilderness consideration, Alternative A would not specifically protect these WSAs from surface disturbances, and impacts to soil could occur.

Alternative B

Effects from Soils Management

The BMPs and standards and guidelines established in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (under Alternative B) (see Volume II~~I~~) would be similar to the PACFISH and 1981 MFP Road Guidelines under Alternative A. Some of the BMPs and standards and guidelines for roads have been updated in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) to reflect improved understanding of the effects of roads on soil erosion and sedimentation. The separate section of BMPs related to timber harvesting activities under Alternative B would mitigate potential impacts to soil from landings, skid trails, temporary roads, and vegetation removal. The specific mention of these activities under Alternative B would result in fewer impacts to soils from timber harvest activities than under Alternative A.

Guidelines that would be established under Alternative B would apply to both riparian and upland areas. In addition, they would include standards and guidelines related to grazing management, recreation management, mineral management, fire management, and lands, none of which would be covered specifically under Alternative A. Alternative B would prioritize management of conservation and restoration watersheds totaling 64,481 acres, 2 percent less than the prescription watersheds in Alternative A. Multiscaled assessments, including watershed analyses, are described under Alternative B. In addition, adaptive monitoring would occur under Alternative B. All of these additional measures would better protect soils (particularly upland soils) under Alternative B than under Alternative A.

In addition to BMPs, Alternative B would include reclamation efforts to mitigate adverse impacts to soils and water resources on impacted sites. Specific field assessments would be required to protect landslide-prone areas. Where these areas were identified, Alternative B would include field-verified protection zones, which would be managed to identify landslide-prone areas. Because Alternative A would not include specific direction on field assessments and protection zones for landslide-prone areas, it may not protect soils to the same extent as the other alternatives. Similarly, Alternative B would include specific directions for evaluating potential risks of mass wasting before project implementation. Management activities would be limited if the project interdisciplinary team determined that they may increase potential slope failures. These measures would provide increased protection to soil resources beyond the actions in Alternative A.

Effects from Water Resources Management

Alternative B would include implementation and effectiveness monitoring, which would reduce the potential for impacts to soils. While Alternative A gives direction to identify and resolve potential water quality problems (including sediment from eroded soils), Alternative B gives updated direction to address current regulations. Alternative A identifies prescription watersheds, and Alternative B identifies restoration watersheds to prioritize these areas for active restoration activities. Under Alternative B, plans for identifying and resolving potential water quality problems (including sediment from eroded soils) would be updated to address current regulations. Alternative B identifies and prioritizes activities in restoration watersheds. These actions would protect soil resources.

Effects from Vegetation—Forests Management

Alternative B would include vegetative treatments to achieve forest health ~~vigor~~ and/or habitat diversity in 1,000-acre DFC blocks comprising 24,789 acres, which is 24 percent of forest land and 17 percent of the CFO. Management would focus on large trees and old growth areas. These timber harvests could result in localized soil compaction and erosion. However, BMPs and standards and guidelines described in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (see Volume II~~I~~) would be applied to these activities to mitigate or minimize potential impacts, resulting in few anticipated effects to soils.

Effects from Vegetation—Weeds Management

Invasive species affect soil stability. Many invasive broadleaves have taproots, and invasive annual bromes are shallow rooted. These plant forms replace native bunchgrass vegetation that is mainly composed of plants with fibrous root systems that root to a deeper depth. Either invasive plant type increases erosion potential. Action to control invasive species promotes and maintains native plant communities with root systems more prone to holding soil in place. Weed-control actions and rehabilitation treatments would thereby improve soil stability and nutrient cycling in the long term. There may be short-term impacts associated with projects such as soil disturbance during treatment.

Effects from Vegetation—Rangelands Management

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~) includes standards related to weed management that would ensure adequate soil crusts and nutrients. These include Standard 4 (native plant communities), Standard 5 (seedings), and Standard 6 (exotic plant communities, other than seedings).

Effects from Vegetation—Riparian and Wetlands Management

Under this alternative, RCA stream buffers totaling 22,847 acres would be implemented to protect riparian areas and wetlands. Activities would be planned and monitored in these areas to prevent damage to riparian areas and wetlands. These restrictions and monitoring efforts, including ensuring that vegetation treatments maintain riparian management objectives at a minimum, as well as limitations related to roads, grazing, recreation, minerals, fire, and lands, would protect soil resources. In general, larger areas that are protected in buffers or RCA stream buffers provide protection to more soil resources. RCA stream buffers under Alternative B would be 14 percent smaller than the RHCA buffers under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Protecting riparian areas under Alternative B would include preventing adverse impacts to water quality. Soil erosion would be managed to achieve this goal. Measures to address grazing in riparian areas under Alternative B would be more restrictive than under Alternative A. Alternative B would go beyond grazing restrictions by implementing appropriate management and conservation measures to promote the maintenance or enhancement of habitats for rangeland. If riparian grazing limitations were implemented to protect wildlife habitat, such measures could include limiting riparian grazing by season or restricting stream bank use, less soil compaction would occur than under Alternative A.

In addition, no net increase in routes designated open for motorized use would be allowed on 101,526 acres in specific areas, which would protect soil resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

To the extent that promoting conservation and restoration and precluding long-term degradation for special status fish under Alternative B would involve reducing sediment to streams by stabilizing soil erosion, this action would improve soil conditions. Similarly, restricting activities in RCA stream buffers under Alternative B would protect soil resources within those buffers.

Managing conservation watersheds would minimize soil erosion by performing regular maintenance on existing roads and trails. Managing restoration watersheds could include active management to restore hydrologic and biological functions. If these activities reduced soil compaction and soil erosion and increased nutrient cycling, they would impact soil resources. The greater the area that would be managed as conservation and restoration watersheds, the greater the potential improvements to soil. Alternative B would identify ~~32~~ 28 restoration and ~~1~~ 3 conservation watersheds totaling 64,481 acres, 2 percent less than the prescription watersheds in Alternative A.

Effects from Wildland Fire Management

In addition to the effects described above under Effects Common to All Alternatives, Alternative B would restrict wildland fire use in the Elk City, Clearwater, and portions of the Salmon ~~FMU~~FMAs (**Figure H-2**, Areas Available for Wildland Fire Use—Alternative B [see **Appendix H** in Volume II~~I~~]).

Under Alternative B, up to 40 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period; an estimated 3,766 acres could be treated under Alternative B (see Section 4.2.12, Wildland Fire Management). Treatments would be designed to alter vegetation composition, structure, and fuels to recreate historic or maintain desired fire behaviors, severities, and patterns. Alternative B would include approximately 1,182 to 3,545 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). The short-term impacts to soils could involve potential soil compaction and soil erosion, but the long-term impacts would protect soils by reducing the risk of large, high-intensity wildland fires.

Standards and guidelines and BMPs described in **Appendices F** (Aquatic and Riparian Management Strategy) and **B** (Best Management Practices) (see Volume II~~I~~) would be applied to these treatments to mitigate or minimize potential impacts on soils, especially those from the use of prescribed fire and heavy machinery. The standards and guidelines allow for avoiding wet seasons. Fuels-reduction treatments would emphasize biomass utilization. Removal of biomass could result in long-term reductions in soil nutrient cycling.

Alternative B also would not allow livestock grazing for a minimum of two growing seasons in prescribed burn areas, which would reduce the potential for soil compaction, particularly where soils are most fragile from burn activities.

Fuel treatments that would be restricted or prevented under Alternative A could occur in WUIs in VRM Class I and II areas given safety and infrastructure risks under Alternative B. These treatments could result in more short-term soil compaction and soil erosion and long-term soil protection, as described above under Effects from Wildland Fire Management.

Effects from Cultural Resources Management

Geomorphic relationships would be assessed. Conducting geomorphic analyses for cultural sites might protect soil resources by improving the understanding of soil characteristics and formation processes at these sites. The information could be used to improve management of soil resources.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Effects would be similar to those described under Effects from Vegetation—Forests Management. Alternative B would include 40,598 acres of commercial forest land and would decrease the current estimated annual PSQ by 53 percent (to 3,129 MBF), with an estimated 242 acres treated per year (an estimated 32-percent decrease from current management). Because less timber would be extracted under this alternative than under Alternative A, potential impacts to soils (including soil compaction, erosion, and loss of nutrient cycling) would be less.

Effects from Livestock Grazing Management

In addition to the Effects Common to All Alternatives, Alternative B would consist of 105,619 acres, 166 allotments with a total ~~6,254~~6,263 AUMs available for livestock authorizations. In general, fewer acres of livestock grazing would result in more soil protection, including lower rates of soil erosion and compaction.

Effects from Minerals Management

In addition to Effects Common to All Alternatives, under Alternative B, NSO restrictions would apply on 43,590 acres, CSU restrictions would apply on 42,403 acres, and TLs would apply in deer and elk winter range and fawning and calving areas, and in bald eagle winter feeding areas. As a result, fewer potential adverse impacts (such as soil erosion or compaction) from mineral leasing would be likely under this alternative than under Alternative A. Mineral material disposals could be subject to the same restrictions as leasable minerals, on a case-by-case basis. In general, fewer potential adverse impacts (such as soil erosion or compaction) from mineral material disposal would be likely under this alternative than under Alternative A.

Effects from Recreation Management

Alternative B would include 55,201 acres of SRMAs. This alternative would include more acres of SRMAs than Alternative A, providing more soil protection. Alternative B also would include 42,695 acres of nonmotorized ROS designations (including 6,200 acres Primitive and 36,495 acres Semiprimitive Nonmotorized), which is more than Alternative A. In these areas, soils would not be impacted by motorized vehicle uses. Because Alternative B would include a slightly larger area where these uses were restricted, fewer soils would be open to potential impacts.

Effects from Renewable Energy Management

Alternative B would emphasize biomass. If vegetation treatments increased under these alternatives, potential impacts to soils could also increase, as described under Effects from Vegetation—Forests Management.

Effects from Transportation and Travel Management

Unlike Alternative A, Alternative B would include no areas Open to yearlong, cross-country motorized travel. A total of 125,729 acres would be Limited to designated routes. Within Limited

areas, approximately 206 miles of routes would be open yearlong. However, almost half of these (100 miles) would not have legal public access so these would receive little to no use. An additional approximately 107 miles would be restricted in Limited areas, the majority (93 percent) of these being closed yearlong to motorized use. Route restrictions and closures would protect soil conditions by reducing or eliminating traffic, which can contribute to localized erosion of the roadbed. Because cross-country motorized use would be most damaging to soils, resulting in soil compaction and erosion, Alternative B would have less adverse impacts on soil resources because there would be no Open areas.

Alternative B would involve updating route designations annually, developing outreach materials for public distribution, and enforcing restrictions. Educated recreation users would be more likely to observe closures and other limitations, particularly with increased enforcement measures. Effects of recreation, including potential soil erosion, also would be monitored. The comprehensive planning, communication, enforcement, and monitoring efforts would protect soil resources more than under Alternative A. In addition to the Effects Common to All Alternatives, Alternative B would add soil stability as a criterion for future route designation. This consideration would protect soils beyond the general guidance described under Alternative A.

In addition, unneeded roads and trails would be decommissioned with emphasis on restoration and conservation watersheds. Alternative B would identify ~~32~~ 28 restoration and ~~1~~ three conservation watersheds totaling 64,481 acres, 2 percent less than the prescription watersheds in Alternative A.

Effects from Lands and Realty Management

In addition to the effects described above under Effects Common to All Alternatives, Alternative B would use conservation easements to protect resources, including soils. This alternative also would mitigate and rehabilitate damage to soil resources from unauthorized activities on public lands.

Effects from ACEC/RNA Management

Alternative B would not protect Craig Mountain or the Elk City Dump/American Hill Lake as ACECs. Management activities in these areas could impact soils. Alternative B would allow timber harvest and vegetation treatments but no livestock grazing in the Wapshilla Ridge ACEC/RNA. Alternative B would allow timber and vegetative treatments in the Captain John Creek ACEC/RNA. Alternative B would recommend expanding the Lower Salmon River ACEC by 3 percent (from 15,702 acres to 16,199 acres). No new road construction would be allowed in this ACEC under any alternative. Alternative B would involve vegetation treatments in the Lower Salmon River ACEC. Impacts on soils from timber harvest and vegetation treatments are described under Effects from Vegetation—Forests and Effects from Forest Products Management. Alternative B would include vegetative treatments in the Lucile Caves or Skookumchuck ACEC/RNAs to support long-term improvement of ecological condition. These treatments could have localized, short-term impacts to soils, including soil compaction and erosion.

Alternative B would limit soil disturbance in the Lower and Middle Cottonwoods Islands ACEC/RNA, which would prevent impacts to soils. Vegetation treatments would be allowed that support long-term achievement of ecological goals and objectives for native vegetation and soil resources.

In the Long Gulch ACEC/RNA, Alternative B would only allow ground-disturbing activities that would not result in long-term adverse impacts to MacFarlane's' four-o'clock and suitable habitat.

These activities could result in localized soil compaction and erosion related to ground-disturbing activities.

Under Alternative B, construction of hydroelectric facilities would not be allowed in the Upper or Lower Lolo Creek ACECs, which would prevent impacts to soils. Under Alternative B, roads also would be decommissioned and new roads would not be allowed within 300 feet of Lower Lolo Creek or on slopes greater than 50 percent. Vegetative treatments would include maximum protection to protect soils.

Alternative B would create an ACEC in the East Fork American River and Upper Lolo Creek. Ground disturbance would be minimized on slopes greater than 40 percent in the East Fork American River ACEC, and vegetation treatments would incorporate soil protection measures. Alternative B also would require that timber harvest roads be decommissioned within three years of construction. No new road construction would be allowed within RCA stream buffers in the East Fork American River ACEC.

Overall, Alternative B could allow some short-term impacts to soil resources if long-term benefits would occur to ecological condition and soil resources, and would support achievement of objectives for which the ACEC or ACEC/RNA designation was made.

Effects from Wilderness and Wilderness Study Areas Management

In addition to Effects Common to All Alternatives, if Congress were to release the WSAs from wilderness consideration, Alternative B would continue to protect these areas from surface disturbances.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B, except that vegetative treatments would emphasize achievement of DFC on timbered tracts that are 500 acres or more in size, comprising 28,087 acres, which is 28 percent of forested vegetation or 20 percent of the CFO) and would involve more preservation of large trees and old growth areas than under Alternative B. Treating existing contiguous forests would protect soil resources by adding nutrients, establishing contiguous duff layers, and increasing surface roughness, which would reduce soil erosion. Each of these actions would stabilize soils and contribute to nutrient cycling, resulting in long-term protection to soils.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that RCA stream buffers under Alternative C would be largest (covering 27,624 acres), which would provide the most protection to soils.

Effects from Wildlife and Special Status Wildlife Management

Protecting riparian areas under Alternative C would include reducing utilization beyond the levels that could occur under other alternatives. This reduction in riparian grazing to protect wildlife habitat would result in less soil compaction.

The areas in which no net increase in vehicle use of roads or trails would be allowed would be smaller under Alternative C (75,772 acres) than under Alternative B (101,526 acres); however, Alternative C would also decrease vehicle use on some roads and trails on 38,733 acres, which, overall, would provide protection of soil resources on 11 percent more areas (114,505 acres) than Alternative B (101,526 acres).

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that RCA stream buffers would be larger under Alternative C, resulting in more soil protection. Also, Alternative C would include 3 conservation and ~~40~~ 37 restoration watersheds totaling 68,359 acres, 3 percent more than prescription watersheds in Alternative A.

Effects from Wildland Fire Management

In addition to the effects described above under Effects Common to All Alternatives, Alternative C would not restrict wildland fire use in any areas, unlike Alternatives B and D (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). Effects would be the similar to those described under Alternative B, except that, under Alternative C, up to 20 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas, 16,833 acres, could be treated in any 5-year period (see Section 4.2.12, Wildland Fire Management), 50 percent less than Alternative B. Treatments in areas with FRCC 2 or 3 would be similar to those described under Alternative B, except that Alternative C would increase the use of prescribed fire for fuels reduction and include up to 20 percent prescribed burning, slightly more than Alternative B. Alternative C would include approximately 1,182 to 4,390 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). Alternative C proposes a higher combined level of prescribed burning and mechanical treatments than Alternative B; therefore, it would have potentially higher short-term impacts. Overall, Alternative C would also include reduced potential long-term protection of soils and greater risk of wildland fire impacts than Alternative B.

Effects from Cultural Resources Management

Effects would be the same as those described under Alternative B.

Effects from Visual Resources Management

Soil resources would be protected from impacts in areas with restricted ground-disturbing activities, including VRM Classes I and II. Alternative C would include 26,945 acres of VRM Class I and 46,753 acres of VRM Class II, the most of the alternatives.

Effects from Forest Products Management

Effects would be similar to those described under Effects from Vegetation—Forests Management. Alternative C would include 34,611 acres of commercial forest land (less than Alternative A) and would decrease the current estimated annual PSQ by 53 percent (to 3,101 MBF, less than Alternative A), with an estimated 191 acres treated per year (an estimated 47-percent decrease from current management). Fewer trees would be extracted per acre. Alternative C would involve less biomass removal than under the other alternatives, which would allow for more soil nutrient cycling in the long term.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except that a smaller area (101,350 acres in 145 allotments) would be available for livestock grazing and fewer AUMs (6,020) would be permitted under Alternative C than under the other alternatives.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that, under Alternative C, NSO restrictions would apply on 68,854 acres (more than the other alternatives), and CSU restrictions would apply on 59,122 acres (more than the other alternatives). As a result, fewer potential adverse impacts (such as soil erosion or compaction) from mineral leasing would be likely under this alternative than under the other alternatives. Mineral material disposals could be subject to the same restrictions as leasable minerals, on a case-by-case basis. In general, fewer potential adverse impacts (such as soil erosion or compaction) from mineral material disposal would be likely under this alternative than under the other alternatives.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B, except that Alternative C would include 3 conservation and ~~40~~ 37 restoration watersheds totaling 68,359 acres, 3 percent more than the prescription watersheds in Alternative A. These watersheds provide improved management opportunities for watershed restoration, particularly when cooperative management is undertaken with the Forest Service, Idaho Department of Fish and Game, and other partners.

Unneeded roads and trails would be decommissioned, with emphasis on restoration and conservation watersheds totaling 68,359 acres, 3 percent more than the prescription watersheds in Alternative A.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except for the following differences. Alternative C would protect Craig Mountain as an ACEC. In Craig Mountain ACEC, timber would be removed only when necessary to protect resource values. Timber harvest would

incorporate resource protection measures. New road construction for timber harvest would be temporary, decommissioned within three years of construction, and seeded/planted with native species. Alternative C also would exclude livestock grazing, which would prevent potential future impacts to soils.

~~Alternative C would not allow construction of hydroelectric facilities in the Upper Lolo Creek ACEC, which would protect soils from localized impacts. This alternative would also require non-ground-based yarding methods on slopes greater than 50 percent. Roads not needed for long-term management would be decommissioned. These actions would improve soil conditions.~~

Alternative C would create the ~~Upper Lolo Creek ACEC,~~ Partridge/Elkhorn~~,~~ and Little Salmon ACECs, which would minimize new road construction. Roads constructed for forest management would be decommissioned within three years of construction. Prescribed burning or vegetation treatments would be applied to achieve DFCs. The potential impacts of these activities are described under Effects from Vegetation—Forests Management and Effects from Forest Products Management.

Overall, Alternative C would create more ACECs than the other alternatives. Ground-disturbing activities would be minimized in these areas; therefore, soils would be most protected under Alternative C.

Effects from National Trails Management
Effects would be the same as those described under Alternative B.

Effects from Wilderness and Wilderness Study Areas Management
Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management
Effects would be the same as those described under Alternative B.

Effects from Water Resources Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management
Effects would be similar to those described under Alternative B, except that Alternative D would not include treatments to establish DFCs.

Effects from Vegetation—Weeds Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management
Effects would be similar to those described under Alternative B, except that RCA stream buffers would be the smallest under Alternative D (20,710 acres). Smaller areas would provide the least protection to soil resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management
Effects would be similar to those described under Alternative B, except that RCA stream buffers would be the smallest under Alternative D, providing the least protection to soils. Also, Alternative

D would include ~~1~~ three conservation and ~~27~~ 24 restoration watersheds totaling 52,118 acres, 21 percent less than the prescription watersheds in Alternative A, resulting in less emphasis for restoration activities in some watersheds and less improvement of soil resources.

Effects from Wildland Fire Management

In addition to the effects described above under Effects Common to All Alternatives, Alternative D would allow wildland fire use if the fire would not adversely impact commercial forest land management areas or authorized livestock grazing areas (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). Alternative D would include 45,190 acres of commercial forest land and 135,850 acres of authorized livestock grazing areas, more than under Alternatives A, B, or C. Although the commercial forest land management and authorized livestock grazing areas would be larger under Alternative D than under Alternatives A, B, and C, wildland fire could still be used within them, as long as it did not adversely impact them.

The types of effects would be similar to those described under Alternative B, except the overall program impacts could be greater under Alternative D. under Alternative D, up to 60 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas (50,650 acres) could be treated in any 5-year period, 50 percent more than under Alternative B and three times more than Alternative C. Treatments would be designed to alter vegetation composition, structure, and fuels to recreate historic or maintain desired fire behaviors, severities, and patterns. Treatments in areas with FRCC 2 or 3 would be similar to those described under Alternative B, except that Alternative D would include 2 to 15 percent mechanical treatments. Alternative D would include approximately 2,870 to 7,597 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests). Alternative D proposes a higher combined level of prescribed burning and mechanical treatments than Alternative B; therefore, it would have higher potential of resulting in short-term impacts to soil resources than Alternative B. Alternative D would also include the most potential long-term protection of soils in reduced risk of wildland fires.

Effects from Cultural Resources Management

Effects would be the same as those described under Alternative B.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except that Alternative D would include 7,205 acres of VRM Class I and 36,180 acres of VRM Class II, the least of the alternatives.

Effects from Forest Products Management

Alternative D would include 45,190 acres of commercial forest land and would decrease the estimated PSQ by 27 percent (to 4,823 MBF) with an estimated 361 acres treated per year (an estimated 1-percent increase from Alternative A).

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except that a larger area (135,850 acres in 170 allotments) would be open to livestock grazing and more AUMs (~~8,540~~8,549) would be permitted under Alternative D than under the other alternatives.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that, under Alternative D NSO restrictions would apply on 35,045 acres (more than Alternative A), and CSU restrictions

would apply on 32,013 acres (more than Alternative A). As a result, more potential adverse impacts (such as soil erosion or compaction) from mineral leasing would be likely under this alternative than under Alternatives B or C and fewer would be likely than under Alternative A. Mineral material disposals could be subject to the same restrictions as leasable minerals, on a case-by-case basis. In general, more potential adverse impacts (such as soil erosion or compaction) from mineral material disposal would be likely under this alternative than under Alternatives B or C and fewer would be likely than under Alternative A.

Effects from Recreation Management

Effects would be similar to those described under Alternative B, except that under Alternative D access routes would be improved in the Craig Mountain WMA, which could potentially result in impacts to soil, including soil compaction and erosion.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B, except that Alternative D would include 23,189 acres Open to yearlong, cross-country motorized travel, an area 25 percent the size of that under Alternative A. An additional 102,542 acres would be Limited to designated routes. Within Limited areas, approximately 179 miles of routes would be open yearlong. However, almost half of these (82 miles) would not have legal public access so these would receive little to no use. An additional approximately 107 miles would be restricted in Limited areas, the majority (93 percent) of these being closed yearlong to motorized use. Route restrictions and closures would protect soil conditions by reducing or eliminating traffic, which can contribute to localized erosion of the roadbed. Because cross-country OHV use would be most damaging to soils, resulting in soil compaction and erosion, Alternative D would have more impacts on soil resources than Alternatives B and C because Alternative D would designate Open areas. Alternative D would have less potential impacts on soils resources than Alternative A.

Alternative D would include ~~1~~ three conservation and ~~27~~ 24 restoration watersheds totaling 52,118 acres, 21 percent less than the prescription watersheds in Alternative A. These watersheds provide improved management opportunities for watershed restoration, particularly when cooperative management is undertaken with the Forest Service, Idaho Department of Fish and Game, and other partners. Unneeded roads and trails would be decommissioned, with emphasis on restoration and conservation watersheds, fewer than under Alternatives A, B, or C.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that Alternative D would allow livestock grazing in the Wapshilla Ridge ACEC/RNA. Potential impacts to soils from livestock grazing are described under Effects from Vegetation—Rangelands Management and Effects from Livestock Grazing Management. Alternative D would not continue ACEC designation of the Lower Lolo Creek ACEC. As a result, without such restrictions, soils could be impacted by road construction, ground-based yarding, mineral entries, or other activities.

Overall, Alternative D would protect the fewest ACECs and ACEC/RNAs and would involve the most potential ground-disturbing activities, such as roads and vegetative treatments, in areas that would be restricted under the other alternatives. As a result, the potential impacts to soils would be greatest under this alternative.

Effects from National Trails Management

Effects would be the same as those described under Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

Limited mass movements, localized erosion (caused by roads and other concentrated uses), and soil compaction (in heavily-grazed allotments, log landings, and roads) have occurred and continue to occur in the planning area. However, the extent of adverse soil impacts has decreased since 1981 because of reduced road construction and improved road construction methods, reduced timber harvesting and improved timber management practices, and positive watershed restoration efforts, including road obliteration, undersized culvert removal or replacement, and revegetation. Improved land management as a result of federal requirements for listed fish also has contributed to reduced erosion during the past decade. As management restrictions, particularly those on federal lands, have focused more on watershed conditions, activities have been restricted and BMPs have been developed to protect soil resources. This trend would continue in the future.

Several foreseeable future actions are expected within the planning area that would impact soils. More soils under federal management would be protected if the trend of increasing public lands (7 percent since 1981) continues (Forest Service 2003b). As more fuels treatments (including areas affected by insect and disease) occur in the CFO and on adjacent lands under the National Fire Plan and other programs, short-term, localized effects to soils could occur. The long-term benefits to soils if treatments successfully prevent large, high-severity fires would outweigh these potential short-term impacts. The combination of the reduced timber harvest activities near the CFO and more environmental regulations would result in few effects to soils (particularly on public lands) in the future. Similarly, future effects to soils from road construction would decrease on federal lands because better BMPs are available to reduce effects to soils. Timber and road BMPs are less protective of soils on private and State of Idaho lands, and future activities in these areas could result in effects to soils. The long-term effects of livestock grazing would result in soil compaction and erosion in areas of concentrated use. Efforts to control noxious weeds would continue, reducing invasive plants, which can have dramatic and irreversible effects on soil productivity and erosion because of changes in soil characteristics. If commodity prices increase and mining activities increase in the future, potential effects to soils would also increase. Drilling one or two exploratory oil and gas holes or geothermal wells or increased salable mineral activities could involve localized effects to soils. Trends of increasing population in the CFO will likely result in greater demand for infrastructure, including roads, as well as for forest products, minerals, and recreation activities, all of which could result in increased effects to soils. Along with population, recreation use is increasing, resulting in greater potential effects to soils. The BLM's efforts to implement BMPs and monitor their effectiveness, combined with efforts to concentrate OHV users to established trails, could reduce potential effects to soils from recreation uses. Federal listing of fish has resulted in additional conservation and restoration measures for soil, particularly on federal lands or federally funded

projects. The BLM lands that occur in prescription (Alternative A) or conservation/restoration watersheds (Alternatives B, C, and D) that are in common with Forest Service would realize indirect effects for soil conservation measures that occur on Forest Service lands. Implementing the revised Payette National Forest Plan would protect soil resources because management standards and guidelines emphasize restoring or maintaining watershed conditions, including soil resources. Other adjacent forest plans are expected to provide similar protection for soil resources.

Alternatives A and B would be less likely to affect soil resources than Alternative D. Alternative C would be more protective of soil resources than the other alternatives. Because of the protective measures adopted on the CFO under Alternative C, when compared to the other alternatives, Alternative C would mitigate potential effects to soils from other past, present, and reasonably foreseeable future actions. Alternative D would be more likely to affect soil resources than the other alternatives, potentially resulting in measurable soil erosion and soil compaction in the CFO.

4.2.4 Water Resources

Goal: Manage water resources to protect beneficial uses and to meet or exceed state and federal water quality standards. Maintain or improve the chemical, physical, and biological integrity of water resources.

Summary

The alternatives vary in their contributions to improving or impacting water quality. As summarized in **Table 4-4**, Alternative C is most favorable for protecting beneficial uses of water and maintaining and/or improving water quality, followed by Alternatives B, A, and then D. Increased levels of fuel treatments in Alternatives B and D would result in short-term impacts to water quality while reducing the potential for stand-replacing fires and potential impacts from these fires in the long term.

The BLM's ability to influence future conditions in watersheds, including those that affect water resources, is limited because of scattered and minority land ownership in many watersheds. Therefore, impacts on water resources are highly influenced by other landowners, and particularly by the Forest Service in forested areas. The BLM, Forest Service, and other entities have coordinated and would continue to coordinate under all alternatives to identify regional objectives and approaches to restoring and protecting aquatic habitat and water quality in initiatives such as the ICBEMP and PACFISH and other more-localized planning efforts. Emphasis for water and fisheries conservation and restoration management would occur in prescription watersheds (Alternative A) and conservation and restoration watersheds (Alternatives B, C, and D). **Table 4-4** identifies the indicators that were used to analyze effects on water resources management under each alternative.

Table 4-4
Comparison of Water Resources Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Miles of PFC[1]	Continued gradual long-term increases in riparian miles and acreage in PFC	More rapid increases in miles and acreage in PFC than Alternative A	More rapid increases in miles and acreage in PFC than Alternative B	More rapid increases in miles and acreage in PFC than Alternative A
Road density in RHCAs and RCAs (higher road density is associated with greater impacts on water resources)[1]	No decrease in road density proposed	Reduced road density relative to Alternatives A and D	Reduced road density relative to Alternative B	Slightly higher road densities relative to Alternatives A and B
Acres disturbed by proposed management activities within RHCAs and RCAs	Acreage disturbance limited by Riparian Management Guidelines, PACFISH, MFP Supplement	Acreage disturbance limited by Riparian Management Guidelines, PACFISH, MFP Supplement	Less disturbance than Alternatives A and B	Slightly more disturbance than Alternatives A and B

[1]Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For water resources, the indicators used for impact analysis are identified in **Table 4-4**, Comparison of Water Resources Indicators by Alternative.

Methods and Assumptions

Impacts on water resources are assessed based on both quantitative and qualitative criteria. For example, it is generally expected that alternatives that would involve ground-disturbing activity would have a potentially adverse impact on water quality because sediment could be transported from the disturbance site to a nearby waterbody. Qualitatively, impacts would be expected to be greater with more ground disturbance, or when the disturbance occurs in sensitive areas, such as areas with steep slopes, existing landslide deposits, or in RHCAs (Alternative A) or RCA stream buffers (Alternatives B, C, and D). Under all Alternatives, potential adverse impacts from land uses that could occur in sensitive riparian habitats or landslide prone areas would be avoided or minimized.

Road density, or changes in road density, is used as a quantitative indicator of the indirect impacts of erosion on water quality. Geology and slope, in addition to distance from a waterbody, influence the impacts of roads on water quality. Therefore, even if the analysis is limited to disturbed acres or road density within RHCAs or RCAs, these are only imperfect indicators of the potential for effects on water quality.

PFC is an indirect indication of the effects of current management on bank condition, which can relate to water quality via sediment and temperature attributes if bank erosion is a significant source of sediment and/or bank cover is important to providing shade.

It is assumed that water quality requirements would be achieved through the use of BMPs and by working with the IDEQ in the future development of Water Quality Restoration Plans. Additionally, reclamation actions would continue on some historically mining-impacted lands. These actions, together with implementing Water Quality Restoration Plans or the establishing of TMDLs, are expected to improve water quality.

Existing roads within the CFO would continue to erode from motorized use and natural processes, resulting in impacts to water quality in adjacent streams.

Within the planning area, it is assumed that poor bank vegetation can be a key factor in streambank and floodplain stability. Consequently, it is assumed that improved ecological condition and proper functioning riparian habitats would lead to improved floodplain, channel, and streambank stability and reduced bank erosion.

It is assumed that Alternative A would involve the most ground-disturbing activities (e.g., more acres, miles of road) compared to the other alternatives, and that Alternative C would have the least. Alternative B would have less ground-disturbing activities than Alternative D. This assumption takes into consideration RHCA/RCA widths; prescription, conservation, and restoration watersheds; timber harvest; proposed ACEC/RNAs; land use acres or miles of disturbance; BMPs; and various land use restrictions.

Effects Common to All Alternatives

Effects from Air Quality Management

Air management actions would generally consist of compliance with existing regulatory requirements. These could indirectly benefit water resources, where this compliance resulted in reductions in soil erosion (dust creation) or reductions in air emissions that could result in deposition of pollutants (such as metals or other chemical contaminants from mining operations) on soils or in waterbodies downwind of a source. No adverse impacts on water resources would occur from air management actions under any alternatives.

Effects from Soils Management

Conditions that affect soil erosion also tend to impact water resources. Soil erosion is a natural process, and all streams function to transport eroded sediments. The amount of sediment a stream can move depends on factors that vary with location and time, such as the velocity and turbulence of the stream and the abundance and size of the sediment particles. For a given stream segment and time of year, the sediment load carried by the stream tends to fall within a characteristic range, just as rainfall and runoff do. Nutrients, metals, and other chemicals in the soils can also be transported to streams and influence surface water quality.

As shown in Chapter 3, **Table 3-3** (303[d] Listed Waterbodies with BLM Lands in Watershed), sediment and temperature are two of the most common sources of stream impairment in the CFO. In many cases, the historic data for a given stream segment are not sufficient to establish the normal range of conditions.

Management under all alternatives could impact rates of soil erosion and therefore could affect water quality and the hydraulic characteristics of streams. BMPs are interventions designed to minimize the impacts of human activities on water quality caused by discharge of sediment or chemical constituents. BMPs are operating procedures designed to minimize the impacts of human activities on water quality. Since the effectiveness of BMPs vary, and since they are seldom 100 percent effective, the net impact on water quality that would result from activities that introduce chemical contaminants to soils, or that affect soil erosion rates, would depend on the type, duration, and amount of activity.

Identifying landslide prone and other sensitive land types, avoiding these areas, and prioritizing the reclamation or obliteration of existing roads in such areas would help to reduce the potential for sediment delivery to streams from these areas. These actions would not necessarily prevent slope failure, but they could benefit water quality by reducing the frequency and severity of landslides, and by preventing pollutants from being introduced in landslide-prone areas where they could have a higher potential for release. Assessing naturally occurring failures for potential stabilization and/or restoration could reduce sediment impacts on waterbodies. For some sites, such as mine or mill tailings piles on steep slopes, short-term or emergency stabilization of the tailings and the slopes on which they are deposited may be desirable as an interim measure to prevent water quality impacts until more permanent solutions can be implemented.

Effects from Water Resources Management

There are few watersheds within the planning area that are managed predominately by the BLM. However, subwatersheds where the BLM has significant management responsibility are outlined in **Appendix C**, Conservation and Restoration Watersheds (see Volume II~~I~~). Vegetative management, mineral development, and road building all affect watershed conditions and the quality of surface water and groundwater on BLM-managed lands. How these uses are managed could be affected by managing water resources to maintain nonimpairment standards and to promote conditions that enhance beneficial uses.

Implementing BMPs related to road construction and maintenance, timber harvesting activities (**Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]), fire prevention activities, noxious weed control, and other management actions would minimize or prevent soil erosion, slow runoff, and minimize discharge of chemicals or nutrients to surface and groundwater. As a result, impacts on surface water quality would be minimized, and the potential for flooding and extreme fluctuations in stream flows would be reduced. Activities that convert vegetation cover (e.g., timber harvest) or intercept and route water (e.g., roads) could affect, dependent on the level of disturbance, retention of water within watersheds. This would promote groundwater recharge and increased soil moisture, contributing to more stable stream flow regimes. BMPs are seldom 100 percent effective. Since BMPs would be implemented in response to, or in conjunction with, activities that alter watershed conditions, such as general construction and excavation activities, road construction, timber harvesting, and mining activities, the net impacts on water resources from implementing BMPs would depend not only on the appropriateness of the BMPs, and the skill with which the BMPs are applied, but on the volume and nature of the activity requiring implementation of BMPs. Therefore, while BMPs are expected to have similar effectiveness under all alternatives, per unit linear distance or land area on which they are applied, the resulting net benefit or impact on water resources would vary by alternative because of differences in the amount of land subject to alteration. Differences in the net impacts of each

alternative are discussed under effects from other resource management (e.g., Effects from Wildland Fire Management), below.

Compliance with state and federal requirements to protect groundwater would be pursued under all alternatives, even if not specifically included in them. The likelihood of success in meeting this objective could vary somewhat among the alternatives, but the impacts would be the same if successful.

Effects from Vegetation—Weeds Management

Weed-control actions could have direct or indirect impacts on water quality. Direct effects would include the use of herbicides, which could be carried by runoff to a stream or other waterbody or could infiltrate soils and percolate to groundwater. Integrated weed-control methods would be used. Indirect impacts to water quality could also occur as a result of temporary soil disturbance during treatment activities. Nonpersistent herbicides would be used in sensitive areas (e.g., near water bodies) to avoid potential impacts to water quality. Chemical applications would be conducted by trained personnel and designed to minimize the potential for impacts on water. Invasive plants can create or exacerbate conditions that reduce water quality. Reduction of total acres impacted by invasive plants would benefit water quality.

Among the potential control measures would be manual removal, which has the potential for disturbing soils. These activities would be conducted using BMPs (**Appendix B** in Volume II~~I~~) to reduce the potential for impacts on surface water. Another control measure that could be used is avoidance of ground-disturbing activity as a means of preventing the introduction of weeds. This would reduce the potential for soil erosion and for impacts on water quality.

Effects from Vegetation—Rangelands Management

Nonforested lands represent about 30 percent of the CFO. Idaho Standards for Rangeland Health (BLM 1997a) (**Appendix A** in Volume II~~I~~) would continue to be applied to management of these lands under all alternatives. These would benefit water resources because these standards are designed in part to reduce soil erosion and restore damaged soils and vegetation cover.

Effects from Vegetation—Riparian and Wetlands Management

Riparian areas would be managed to maintain them in PFC or to move them toward PFC. Alternatives B, C, and D rely on the Aquatic and Riparian Management Strategy (**Appendix F** in Volume II~~I~~) and its associated standards and guidelines to achieve PFC. A similar strategy exists under Alternative A with use of PACFISH (BLM and Forest Service 1995), Fisheries and Water Quality Objectives and Sediment Budgets (BLM 1985d), designated prescription watersheds, and identification of desired conditions for fisheries and water quality. Water resource management emphasis for all alternatives is identified in prescription, conservation, or restoration watersheds, which vary by alternative. Alternative A identifies a goal of improving one-half of the streams in poor condition within 15 years. However, there is no guarantee that the causes of current less-than-PFC conditions are within BLM-administered lands, or could be solved by BLM management actions. Nor is it necessarily feasible for BLM to ensure that surface and groundwater, which may be impacted by upstream or upgradient sources, would comply with Idaho water quality standards.

Effects from Wildlife and Special Status Wildlife Management

Many actions implement existing requirements to identify and protect special status species habitat. Habitat protection could involve restrictions on other land uses, which would help reduce potential

water resources impacts. Improvements in wildlife habitat, such as measures that increase vegetation cover density, could also reduce soil erosion potential and indirectly reduce water quality impacts.

Effects from Special Status Plants Management

Management measures to protect special status plant species would have similar water resources impacts under all alternatives. Plant species protection could involve avoiding activities that disturb soils or would otherwise adversely impact the sensitive plant species. Avoidance or limitations on soil-disturbing activities would help reduce potential for water resources impacts.

Effects from Wildland Fire Management

Wildland fire can result in substantial water resources impacts in a short time period. Fire can reduce soil infiltration rates, resulting in less retention of water and more runoff, leading to increased soil erosion and larger peak flows. Loss of vegetation also contributes to these effects. Fires create openings where snow and ice accumulate to greater depths than in forested areas. These openings can produce high runoff during short periods of rapid thawing, resulting in soil erosion and high peak flows. Excessive sediment delivery to stream channels can result in water quality impacts for long periods of time, while sediment-clogged channels can cause flooding. Similarly, chemical products of wood combustion are carried into streams with runoff.

All alternatives call for limiting the use of prescribed fire so that the combination of prescribed fire and wildfire would burn no more than 30 percent of CFO acres (about 40,000 acres) during any 5-year period. By comparison, as indicated in Section 3.2.12, Wildland Fire Ecology and Management, a total of about 26,000 acres of BLM-managed lands burned during the 20-year period from 1983 to 2002. While prescribed fire can be contained on BLM-managed land, wildland fires cannot. Large fires could affect even larger amounts of Forest Service lands or privately owned lands. For example, the 26,000 acres represented about 2 percent of the total acreage burned within the planning area during the period. Thus, the effects on water resources managed by BLM could be influenced more by fires on other lands within the watershed than by fires on BLM lands. Based on these figures, the 30-percent maximum (which is equivalent to about 8 times the recent historic rate) provides a great deal of flexibility to BLM in the use of prescribed fire to reduce fuel or as a tool in promoting a desired mix of woodland species. Prescribed fire generally has less impact on water resources than uncontrolled fire. Prescribed fire can be managed to remove excess fuel selectively, leaving desired species (for example, ~~P~~ponderosa pine) intact. The effects on water resources if prescribed fire were used to the maximum extent allowed during a given five-year period would be much less than if uncontrolled fire accounted for most of the burned acreage. By burning some of the excess fuel under controlled conditions, the more devastating effects of uncontrolled fires, and the potential for them to spread to adjacent areas, are lessened. Prescribed fire effects would be dependent on severity of burn, particularly within riparian areas and if excessive stand replacement would occur at a watershed level. Overall, under all alternatives, this is not anticipated.

Effects from Cultural Resources Management

Protection of cultural resource sites could indirectly benefit water quality to the extent that soil-disturbing activities, such as road construction and resource extraction, are limited. Such benefits would generally be negligible at a watershed level because of the small area attributed to cultural resource management restrictions.

Effects from Paleontological Resources Management

Protecting paleontological resources could indirectly benefit water quality to the extent that soil-disturbing activities, such as road construction and resource extraction, are limited. Such benefits would be discountable at a watershed level because of the small area attributed to paleontological resource management restrictions.

Effects from Forest Products Management

Timber harvest activities, including construction of permanent and temporary roads, can adversely affect water quality; vegetation cover reduction and soil disturbance can expose soils to enhanced erosion and increased sediment delivery to streams. The largest source of erosion in most harvesting operations is ground disturbance and drainage alteration that occurs from building roads to access trees.

BMPs would be implemented to mitigate or reduce impacts. Site-specific impacts and mitigation measures would be identified in the plans and documentation required prior to each timber harvest. For purposes of this RMP, assuming that all areas are similar, the combined impacts on water resources associated with each of the alternatives would be primarily a function of the number of acres to be harvested.

Effects from Livestock Grazing Management

In the CFO, season-of-use restrictions and riparian use standards decrease the impact of livestock grazing in sensitive channel types, thereby mitigating some grazing impacts. Annual monitoring of riparian area use in the CFO shows that impacts have been reduced to acceptable levels in most areas. These riparian use standards would apply under all alternatives. Grazing animals can impact water quality by altering the quantity and quality of vegetation cover, disturbing soils and vegetation in riparian areas, altering overland flow patterns by creating trails that conduct runoff, compacting soils, and contributing to nutrient and pathogen loading to surface water. As water and forage areas shrink during the summer, effects become increasingly localized and concentrated. If animals have access to streams and springs, these areas can become impacted.

Carrying capacities have been determined to minimize adverse impacts; however, it is often difficult to manage livestock use because of fragmented ownership. Generally such use is in conjunction with unfenced private lands. Overall, because of small amounts of BLM ownership in many watersheds (less than 1 to 5 percent), livestock grazing at a watershed level would typically have negligible impacts on water resources under current management (Alternative A). No additional impacts are expected under Alternatives B, C, and D, which would maintain current management or would reduce grazing lease acreage.

Effects from Minerals Management

Despite the relatively large land area available for mineral development, leasable mineral potential within the CFO is generally low. Potential for precious metals is high within limited areas. Salable mineral resources are widely distributed. Based on this, the most likely source of future impacts on water resources from mineral management would be, as in the past, from lode gold and silver mining operations in the Elk City and Marshall Mountain Mining Districts and from placer (recreational) mining in the Salmon River, Clearwater River, and American River areas.

Leasable minerals and mineral materials activities have the potential to affect water resources through soil disturbance, modification of surface drainage patterns, road construction, transmission

line construction, drilling and installation of wells, groundwater extraction, wastewater generation and management, hazardous material storage, use, and disposal, and other activities associated with fluid mineral development and production. Impacts could include degradation of surface water or groundwater quality, depletion of groundwater resources, alteration of surface drainage patterns or runoff quantity, and flooding. These impacts would occur under all alternatives, but the net impact on water resources would depend on the amount of land developed, site-specific conditions, and the type of mineral resource involved. Site-specific impacts could vary widely. The impacts of each lease would be analyzed in a site-specific NEPA documentation.

The impacts on water resources from locatable mineral exploration and development could vary greatly depending on location, type of mineral, and size of operation. Impacts can include discharge of contaminants to surface water; leaching of heavy metals, acids, or other mineral constituents from tailings piles to groundwater or surface water; impacts on groundwater levels from dewatering operations, chemical spills, air deposition of particulates, or other chemicals from ore processing operations; and more generic impacts from installation of utilities, road construction, and other ancillary activities. Modern mining operations must conform to federal and state environmental laws, such as the Clean Water Act, Resource Conservation and Recovery Act, ESA, and others. Even with these laws and their implementing regulations, large-scale locatable mineral development involves major environmental risk associated with the storage of tailings, management of water from dewatering operations, and management of chemicals used in the processing of ore. After completion of mining activities, site restoration may require many years, is likely to be costly, and may encounter problems that were not anticipated at the onset of operations. For example, it is difficult to estimate the ultimate size of the operation. Site-specific impacts would be evaluated and reviewed during the permitting process. At the programmatic level, the potential for impacts to occur would be related to the amount of land available for development and the nature of the restrictions on development. In addition to current mining exploration and development, future AML investigations may reveal possible impacts to water quality from AML sites in the Elk City or Marshall Mountain areas.

Under all alternatives, 121,961 acres would be subject to the operation of the mining laws (locatable mineral exploration and development) and 21,869 acres would be withdrawn from the mining laws. All alternatives would open 131,044 acres to the mineral laws (leasable minerals and mineral materials) and close 12,786 acres. The BLM's control over how mineral operations impact water resources can be reduced because lands managed by the BLM are scattered and discontinuous. A single mining operation may extend over lands under both private and public ownership.

Effects from Recreation Management

The impacts of recreation on water resources depend on the nature and intensity of recreational use. Some recreational activities are more likely to impact water resources than others. For example, motorized vehicle use can lead to soil erosion or drainage problems and introduce potential for fuel spills or releases. Motorized vehicles also increase accessibility of remote sites and can increase intensity of use (for example, more visitors can visit remote sites, bring more equipment and supplies, and stay longer in one place). High-intensity use concentrated on a limited area can result in adverse impacts, while low-intensity use tends to cause negligible adverse impacts. Recreational use tends to displace other uses, resulting either directly or indirectly in greater protection of water resources. Impacts of recreation management on water resources could include increased demand for potable water in areas of limited supply; water quality impacts from increased erosion from use

of trails, facilities, or construction and maintenance of roads; and introduction of contaminants to surface water or groundwater from sanitary waste disposal (pathogens and nutrients) or from boating (for example, releases of gasoline or additives such as methyl tertiary-butyl ether in surface water). Increased recreational access to remote areas can cause small adverse impacts on water resources that might not be considered significant in another context. For example, a recreational use might not result in exceedance of numerical water quality criteria but might still conflict with the state antidegradation policy.

Increased public awareness of the value of high-quality water for recreation could lead to increased demand for protection of water resources, or the protection of other resources (such as wildlife) that depend on high-quality water resources.

Under all alternatives, the BLM would attempt to acquire more lands to increase access to recreation sites and for conservation easements. Acquisition of lands could enhance the BLM's ability to manage the lands for improved recreational value. This could result in fewer competing uses and in more protection of water resources.

Effects from Transportation and Travel Management

Under all alternatives, about 100,861 acres (70 percent) would be Open to over-snow motorized use, and 24,779 acres (17 percent) within the Craig Mountain WMA would be managed for over-snow motorized travel limited to designated routes, dependent on a minimum of 18 inches of snow cover.

Effects from National Trails Management

Protection of 21 miles of National Trails could result in restrictions on some land uses that would indirectly reduce the potential for water resources impacts.

Effects from Wild and Scenic Rivers Management

The Salmon River from Long Tom Bar to the Snake River would continue to be managed to protect outstandingly remarkable values unless redirected by Congress. This would continue to provide protection of water quality on this 112-mile segment and would also support other protections of upstream segments consistent with protection of the 112-mile segment.

For all segments found suitable, the BLM is mandated by the WSR Act to maintain or enhance water quality. The majority of areas found suitable for inclusion in the NWSRS are already managed as riparian buffer zones under the Riparian Management Guidelines (BLM 1985e), Fisheries and Water Quality Objectives and Sediment Budgets (BLM 1985d), and PACFISH (BLM and Forest Service 1995). The remaining areas would be managed as such under the Aquatic and Riparian Management Strategy (**Appendix F** in Volume II~~I~~), but would receive another layer of protection by being managed to protect the outstandingly remarkable values of each suitable segment.

Effects from Wilderness and Wilderness Study Areas Management

Continued management of 750 acres under the Wilderness Act and management of 12,034 acres of WSAs under BLM's Interim Management Policy for Lands under Wilderness Review would continue to provide a high degree of protection to water resources within these areas by restricting activities that could cause impacts.

Effects from Native American Tribal Uses Management

No specific effects have been identified from management actions regarding Native American tribal uses. The BLM would continue to consult with tribes regarding treaty rights, cultural access and use of plants, animals, fish and habitats. Consultation could result in identifying areas where watershed restoration actions or timing of actions could need to be modified to accommodate tribal uses. However, it is unlikely that accommodating tribal uses would be inconsistent with water resource goals in the long term.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Compliance with state and federal laws and regulations relating to hazardous material management, including AML, should provide an effective minimum level of water resources protection. These regulations require reporting spills and leaks, investigating and remediating uncontrolled hazardous waste sites, reporting hazardous material use, and proper waste generation and disposal. To the extent that BLM procedures ensure compliance with these laws and regulations, water resources would be protected to the extent practicable. Remediation efforts would continue on AML and hazardous materials sites. Protective measures placed on these sites after clean-up (e.g., closing them to motorized vehicles, withdrawing them from mining laws, designating them as ACECs) would benefit water resources. Continued monitoring and maintenance of AML cleanup sites would also benefit water quality by ensuring that the measures continue to be effective.

Alternative A

Effects from Soil Resources Management

Implementing the MFP Road Guidelines (BLM 1981a), Fisheries and Water Quality Objectives (BLM 1985d), Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995) would continue to help prevent water quality impacts from soil disturbance. Although the guidelines do not reflect the most recent standards and practices, under current management, the BLM would implement necessary additional BMPs for soil-disturbing activities.

Effects from Water Resources Management

Among the federal and state requirements for water resources would be compliance with the Clean Water Act, which involves complying with federal and state numerical water quality standards, and will increasingly involve complying with state TMDL implementation plans for watersheds with impaired waterbodies. While the state is responsible for implementing provisions of the Clean Water Act, ultimate authority for enforcement is with the US EPA. The effectiveness of compliance may be influenced by the level of human activity and development that occurs under the alternatives. Alternative A would result in the highest potential for conflict with state and federal water quality regulations, because it involves the fewest restrictions on human activities in watersheds.

The objective of protecting water quality by focusing on watershed function is the same for all alternatives, but would differ in its implementation. Under Alternative A, streams would be managed to maintain or restore designated beneficial uses and to achieve delisting of impaired waterbodies. There are no specific actions identified to meet this objective other than those discussed above. However, within the scope of developing plans to alleviate watershed problems, the issue of water quality impairment and potential threats to water quality could be addressed.

In the course of attempting to meet the objective of maintaining fish habitat by pursuing water quality and watershed quality objectives, and supplementing current water quality objectives with

updated objectives and criteria, potential impacts on water quality from BLM management actions could be prevented or reduced.

Effects from Vegetation—Forests Management

Forest management can impact surface and groundwater quality and quantity by influencing soil and slope stability, runoff and infiltration rates (retention of moisture within upper watersheds), nutrient and other chemical loading to waterbodies, and channel morphology, among other factors. Dense vegetation protects soils from direct impact by raindrops and slows runoff. Roots of trees and other plants anchor soils. Organic debris that covers the forest floor also retains moisture and slows runoff. By contrast, reduction in vegetation cover, such as from fire or timber harvesting, can result in abrupt increases in soil erosion, with potentially long-lasting water quality impacts.

About 70 percent (over 100,000 acres) of the CFO is forested. About 25 percent of the forested land would be commercial forest land subject to management to maximize timber production, and about 12 percent of the forested land would be managed for sustained yield timber production. The remaining 63 percent of the forested land would be managed custodially (not for timber production, although harvesting could occur for ecological reasons). Timber harvesting is important to the socioeconomic base of north-central Idaho, so management of forested lands is an important consideration of forest management. The recent trend has been to manage forests to emphasize fire prevention and wildfire suppression, particularly within the WUI. The rural WUI comprises 94,093 acres of CFO-managed lands, and the urban WUI 33,584 acres. Lack of management has resulted in increases in stand density and fuel and resultant fire hazard.

About 90 percent of the CFO forest lands are classified as FRCC 2 and 3, while the remaining 10 percent are in FRCC 1. Lands in FRCC 2 and 3 and within the WUI would be given the highest priority for treatments under Alternative A. Under Alternative A, in order to meet National Fire Plan and MFP goals, between 4,000 and 16,300 acres per year would need to be treated using both prescribed burn and non-fire treatment methods. If these rates are achieved, the risk of severe fires would be reduced, consequently reducing the potential for water resources impacts.

Effects from Vegetation—Riparian and Wetlands Management

Establishing riparian management units and implementing Riparian Management Guidelines and BMPs in them would help to reduce the potential for water quality impacts from other actions. In addition, the Fisheries and Water Quality Objectives (BLM 1985d), identification of prescription watersheds (66,077 acres), and PACFISH (BLM and Forest Service 1995) would provide additional riparian conservation and protection measures. Among the protective actions are establishing and maintaining riparian buffers to control water temperature and to reduce sediment impacts.

The development of Aquatic Management Plans provides protection of aquatic habitat, resulting in reduction in the potential for water quality impacts.

Maintaining or improving riparian condition would help protect water quality. Riparian vegetation shades streams and helps to maintain lower temperature water. Streams that are in PFC reflect, by definition, a state of dynamic equilibrium between the channel and the range of flows carried by the channel, meaning that bank and channel erosion is minimized. Runoff and stream flow conditions within the watershed may not be entirely under BLM management, and upstream conditions can affect the condition of segments of streams or wetlands on BLM lands. Therefore, it is not necessarily feasible to achieve PFC in all riparian areas on BLM land.

Effects from Wildlife and Special Status Wildlife Management

Alternative A would identify use-restriction areas and specific actions based on wildlife habitat, and specifically calls for improving range conditions over a 20-year timeframe. Use restrictions and improving range conditions to support wildlife, as well as other actions under Alternative A that target improvements in wildlife habitat, could indirectly improve or protect water resources by reducing erosion. These effects have not been quantified by surface water monitoring and would not necessarily be observed as improvements in PFC, since rangelands and other wildlife habitat areas extend beyond riparian areas.

Alternative A identifies 13 areas for intensive wildlife management and development of HMPs. Their allocation primarily to wildlife management provides some indirect protection of water resources because it would exclude or limit incompatible uses, some of which could involve potential short-term impacts on water resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Imposing use restrictions in sensitive areas would help to protect water quality by limiting actions that could pollute or degrade water quality. In addition, the Fisheries and Water Quality Objectives (BLM 1985d), identification of prescription watersheds (66,077 acres), identification of DFCs for fisheries management, and PACFISH (BLM and Forest Service 1995) would provide additional riparian and aquatic conservation and protection measures. Studies to identify water quality objectives and developing and implementing aquatic HMPs to manage aquatic species habitat would indirectly improve water quality to the extent that their ultimate implementation improved aquatic habitat.

Effects from Wildland Fire Management

Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/fuels-reduction treatments. Treatment areas are prioritized by FRCC (with no specific treatment acreages or percentages specified). Alternative A calls for FRCC 2 and FRCC 3 forested lands in WUI areas to be treated first, followed by FRCC 1 lands in WUI areas. FRCC 2 and 3 lands are the most prevalent; they also represent the greatest hazard to municipal/urban areas. Given current management, an estimated 1,950 to 5,950 acres could be treated annually under Alternative A (see Section 4.2.12, Wildland Fire Management).

Alternative A would seek to return vegetative communities outside the WUI to their historic fire regime and to FRCC 1 conditions. If this were accomplished, it would reduce the potential for severe or stand-replacing fires on BLM lands, with an accompanying reduction in potential water resources impacts.

Under Alternative A, fire suppression methods would be based on resource values. Fire would be used for a variety of utilitarian functions, including disposal of slash, preparing areas for reforestation, improving browse, or reducing competition among vegetation species. Management techniques would be used to meet resource objectives. Protection of water quality, either directly or indirectly, could be among the objectives for selection of a given fire management technique.

Effects from Visual Resources Management

More acreage in higher VRM classifications (VRM I or II) would limit authorized activities, resulting indirectly in protection of water resources.

Effects from Forest Products Management

Timber harvest activities, including construction of permanent and temporary roads, can adversely affect water quality, since reduction in vegetation cover and soil disturbance can expose soils to enhanced erosion and increased sediment delivery to streams. For example, implementation of PACFISH (BLM and Forest Service 1995) has provided additional measures to avoid or minimize timber harvest impacts on water resources.

The most significant source of erosion in most harvesting operations is the ground disturbance and drainage alteration that occurs as a result of building roads to access the trees. It is estimated that about 80 to 90 percent of the increased sediment yield typically results from the erosion associated with roads.

In the CFO another potential source of erosion from timber harvest is changes to timing and magnitude of peak stream flows due to increases in snow accumulation and melt rate in canopy openings. A dense forest canopy, such as on uncut (or unburned) slopes, tends to limit the amount of snow that accumulates on the ground. The streams in forested watersheds become adjusted to the annual range of variation in runoff associated with the particular pattern of vegetation coverage in the watershed. Timber harvesting, road construction, and fire alter the established pattern of vegetation cover. After harvest, snow and ice accumulate in the new openings and clearings that have been created. Depending on the intensity of tree removal and on snowfall conditions, the additional water stored in the watershed in these areas can be substantially greater than under pre-harvest conditions. When the snow melts, which tends to happen faster in clearings than in the shade of trees, the excess runoff is carried to stream channels, where most of the erosion occurs as the channels widen and deepen to accommodate the excess flow.

Alternative A would allow any harvest method to be used on northeast-, north-, or northwest-facing slopes. The maximum allowed clearcut would be 60 acres, with the average clearcut expected to be about 20 acres (based on the MFP [BLM 1981a]). Selective or partial cutting would be allowed on all other slopes. On slopes exceeding 35 percent, or on fragile sites (based on Timber Production Capability Classification), no ground-based yarding methods may be used. Post-harvest site preparation for reforestation would be done by manual, fire, or chemical methods. These specifications provide a standard level of protection for soils and water quality.

Alternative A would strive for full stocking on 90 percent of reforested areas within 5 years in intensive management areas, and within 10 years in extensive management areas. Stocking is a measure of the actual density of trees relative to the density that fully occupies the growth potential of the land, and full stocking is 100 percent or more. Full stocking density decreases as the forest matures. From a water resources perspective, stocking provides an indirect indication of the degree to which the forest canopy can be expected to intercept precipitation. Higher stocking levels for forests of comparable age, composition, and location would generally be associated with lower potential for water quality impacts from soil erosion.

Effects from Livestock Grazing Management

Under Alternative A there would continue to be 168 allotments, containing 122,732 acres in grazing leases and providing 7,~~204~~ 200 AUMs. This is less than the 7,661 AUMs called for in the 1981 MFP. In 1982, BLM identified 49 allotments that needed improvement of unsatisfactory conditions. Assessments have now been completed on 99 of the 168 allotments. These results suggest that

improvements in resource condition have occurred since 1982. Under current conditions, most riparian areas inventoried were found to be in PFC (see Chapter 3, Section 3.2.8, Vegetation—Riparian and Wetlands), also supporting the conclusion that conditions have been improving under current management, and that there have been less than significant effects on water resources from grazing in recent years in most areas. Additional data will be obtained as the remaining assessments are completed.

Effects from Minerals Management

Impacts on water resources would be reduced through application of standard lease stipulations, since Alternative A does not adopt the 1989 Uniform Format for Oil and Gas Lease Stipulations. Alternative A has the greatest potential for impacts on water resources, since it involves the fewest restrictions on mineral activity.

The impacts on water resources from salable minerals would be generally less than for locatable minerals. Most of these mineral operations are small and relatively simple. Impacts would typically include generation and discharge of contaminated surface water or water from dewatering operations, discharge of sediment, potential for spills or releases of petroleum products or other chemicals, and alteration of drainage patterns. The potential for these impacts would be reduced by complying with existing federal and state laws and regulations. The impacts on water resources from leasable mineral operations could be similar to those described for locatable minerals. However, based on the historically low level of activity involving leasable minerals in the CFO and the geologic environment that is unfavorable for the presence of leasable minerals, impacts from this resource are anticipated to be very low.

Effects from Recreation Management

Each of the alternatives establishes the same SRMAs involving the same number of acres. The alternatives differ in the management emphasis within the SRMAs and on non-SRMA lands. Alternative A prioritizes developing intensive management for Salmon River and Clearwater River SRMAs and managing the remaining SRMAs at a lower, extensive level of management until activity plans are completed.

Commercial permits in SRMAs prioritized for intensive management would be coordinated through the state licensing board for outfitters and guides. Alternative A would consider competitive use and organized group recreation permits on a case-by-case basis. While giving the BLM the opportunity to restrict activities through the permit process, Alternative A includes few actual restrictions. Such restrictions could protect water resources in sensitive areas or during periods of intensive use.

Effects from Renewable Energy Management

Among the impacts on water resources that may result from developing geothermal and other renewable energy resources are short-term impacts on water quality during construction, including soil disturbance in construction sites; road construction; and construction of transmission lines and associated structures. Potential long-term impacts on water resources could occur from: operation of geothermal power plants, depending on the type, size, and location of the plants, relating to increased consumption of surface water or groundwater; waste generation and storage; removal of vegetation cover for conversion of biomass; and extraction and injection of geothermal fluids.

Under Alternative A, only standard lease stipulations would apply. While these would provide a minimum level of protection as required by laws such as the Clean Water Act, management options to control or reduce site-specific impacts on resources would be limited.

Effects from Transportation and Travel Management

Potential impacts on water resources would continue and could increase due to motorized vehicle use, which would include use of existing roads and trails and cross-country travel within Open and Limited designation areas.

Water quality impacts could occur from soil disturbance along trails and from increased recreation use of riparian areas. The total number of miles of roads, and the road density, is an indirect indicator of the potential impacts on water resources of roads.

Vehicle use restrictions and temporary or permanent closure would help reduce impacts on water resources.

Alternative A calls for identifying unspecified mitigation measures to avoid adverse effects on water quality and fish habitat. This would help to reduce impacts on water quality.

Effects from Lands and Realty Management

Alternative A calls for identifying correctable natural and manmade hazards on public lands and for identifying unauthorized dump sites requiring rehabilitation. Rehabilitation of these lands would improve existing water quality and reduce potential for future degradation of water quality.

Non-federal land would be considered for acquisition if it contained important and/or unique resource values, provided access to public lands, eliminated inholdings in special designation areas, or consolidated ownership in areas identified for retention. Acquisitions to meet these criteria could help to improve the BLM's ability to effectively manage water resources, leading directly or indirectly to improvements in water quality or protection of water resources.

Maintaining the withdrawal of 26,594 acres adjacent to the Salmon River from mineral entry would reduce the potential impacts on water quality associated with mineral development, which can include exposure of tailings to leaching by surface water, and soil erosion of roads and tailings, both resulting in surface water quality impacts.

Effects from ACEC/RNA Management

Protecting specific blocks of land as ACECs and RNAs would restrict the types of activities that could occur within these areas, reducing the potential for impacts on water resources. Under Alternative A, 25,600 acres would be protected as ACECs and/or RNAs. The 30-acre Elk City Dump/American Hill Lake ACEC would protect the public from adverse water quality impacts that may be attributed to hazardous materials buried at an old dump and mining site. Management actions would include implementation of reclamation actions and ongoing water quality monitoring efforts.

Effects from Wilderness and Wilderness Study Areas Management

Alternative A includes no specific management in the event that WSAs are released by Congress from wilderness consideration. If released, the areas would revert to adjacent land management with

no special status, with protection of water resources afforded by the Clean Water Act and other relevant statutes.

Effects from Watchable Wildlife Viewing Sites Management

Actions to maintain or improve wildlife habitat resources would indirectly provide protection of water resources, since measures that protect habitat typically also protect water quality. Developing wildlife viewing sites could increase public access to remote areas and could indirectly encourage increased recreational use that leads to adverse impacts on water quality. Such impacts would be prevented or reduced by ensuring that any future development is consistent with the objective of improving habitat and by implementing appropriate BMPs.

Alternative B

Effects from Soils Management

Implementing BMPs for soil-disturbing activities (e.g., road construction, construction site preparation) and reclamation of existing sites where soil erosion has impacted water quality would help reduce or prevent impacts on water quality from soil erosion.

Alternative B proposes that site-specific studies would be conducted in areas of potentially unstable slopes, including all areas with slopes in excess of 55 percent, and that a minimum 100-foot protection zones would be implemented around landslides and landslide-prone areas. These actions would result in reduced soil-disturbing activity within the protection zones, with the indirect result that sediment delivery to streams would not be increased by human activity. Alternative B would not increase the potential for slope failure relative to Alternative A.

Effects from Water Resources Management

Although the implementation of BMPs to limit nonpoint source pollution would be the same under all of the alternatives, Alternative B would be more protective of water quality than Alternative A because there would be more restrictions on human activities (e.g., mineral lease stipulations) that have a potential to impact water quality than under Alternative A.

The objective to protect water quality by focusing on watershed function is the same for all alternatives, but Alternative B has greater potential than Alternative A for success in achieving the objective. Alternative A focuses on data-gathering activities to identify problems and develop plans to alleviate problems, while Alternative B identifies specific actions that focus on achieving improved water quality.

Alternative B would be similar to Alternative A in calling for managing streams to meet the objective of restoring water quality supportive of identified beneficial uses, except that Alternative B also specifies that BLM would cooperate with adjacent landowners and others in order to meet the objective. Cooperative efforts are likely to benefit water resources that are partially managed by the BLM because BLM lands are widely dispersed and because in many watersheds, the BLM manages only a small percentage of the watershed. This cooperation already occurs under Alternative A.

Identifying opportunities for removal of hazardous materials and nonessential structures from floodplains would not be precluded under Alternative A, but it is more likely to be accomplished where specifically called out in Alternative B. Removal of hazardous materials might include historical materials, such as mine or mill tailings, as well as illegally dumped materials and materials

that were inadvertently placed in the floodplain because of lack of delineation of the floodplain boundaries. To the extent that hazardous materials or nonessential structures are actually removed, water quality impacts could be reduced or prevented. Alternative B does not identify methods other than removal, such as isolating or encapsulating hazardous materials in place within the floodplain. It is not clear, therefore, whether such alternative actions might be considered if it was determined that the opportunity for removal does not exist based on cost.

Effects from Vegetation—Forests Management

Alternative B differs from Alternative A mainly in the intensity of management and the degree of specificity with which goals for DFC of forest habitat are defined. The DFC is based on the estimated range of historic variability in the distribution of tree sizes and ages. Blocks over 1,000 acres would be managed to meet the DFCs to improve forest health and vigor in **Appendix D** (Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]); these areas account for 24,789 acres, which is 24 percent of forest land or 17 percent of the CFO (**Figure 6**, Desired Future Condition Blocks—Alternative B [see Volume IV of the Cottonwood Draft RMP/EIS]). The DFC for Alternative B includes 10 percent old forest, and a moderate percentage of large trees. Stand structure distribution in Alternative B is intended to move further toward the historic range of variation, which is absent under Alternative A. An increase in forest maturity to improve habitat would occur as a result of harvesting fewer large trees. This could indirectly reduce impacts of timber production on water quality (mainly temperature and sediment).

Old growth management goals are included for each DFC management area. Treatments that reduce fuel and reduce the frequency and severity of wildland fires would reduce the impacts of fires on water quality. Short-term impacts on water quality could occur as a result of the treatment. For example, chemical applications could impact water quality, and vegetation removal activities could increase erosion.

Although the emphasis of implementing timber harvest activities to maximize economic return in areas of high risk for stand mortality greater than 30 percent is on capturing an economic value, there would be an indirect impact from reducing the potential for accumulation of fuel and fires by reducing the potential for impacts on water resources associated with fires. There would be short-term impacts on water resources as a result of soil disturbance associated with timber harvesting activities.

Effects from Vegetation—Riparian and Wetlands Management

Appendix F (see Volume II~~I~~) describes the Aquatic and Riparian Management Strategy that would be used to achieve the objective of improving degraded riparian and wetland vegetation and habitat diversity. Under Alternative B, RCA stream buffers would total 22,847 acres, 14 percent more area than RHCAs under Alternative A.

Appendix C (Conservation and Restoration Watersheds [see Volume II~~I~~]) identifies emphasis watersheds for conservation and restoration actions and achievement of DFCs. Alternative B would include ~~1~~ three conservation and ~~32~~ 28 restoration watersheds totaling 64,481 acres, 2 percent less than prescription watersheds under Alternative A.

The RCAs would receive special management per the standards and guidelines listed in **Appendix F**, Aquatic and Riparian Management Strategy (see Volume II~~I~~). These standards and guidelines generally call for additional studies to identify the impacts of management actions on riparian habitat

within RCA stream buffers before projects are undertaken, and for certain restrictions to be implemented to protect the riparian resources. Protecting riparian resources in this way would also protect water quality and reduce hazards from flooding.

Effects from Wildlife and Special Status Wildlife Management

Alternative B would strive to improve the ecological condition status of native grassland and to support winter and spring range areas of game animals with emphasis in the Craig Mountain WMA and Rattlesnake Ridge areas. Improving grassland could help to reduce the potential for soil erosion impacts on water quality.

Alternative B targets forested contiguous areas greater than 1,000 acres as priorities for attainment of DFC. As discussed under Effects from Vegetation—Forests Management, attainment of DFC status would help reduce the potential for impacts on water resources.

Alternative B calls for development of new HMPs and other activity plans, without specifying which areas would be targeted.

Riparian areas would be protected, helping to reduce impacts on water resources (see similar actions and impacts in the discussion of Effects from Vegetation—Riparian and Wetlands Management).

Alternative B identifies 12 areas (101,526 acres) for no net increase in motorized vehicle use of roads or trails on BLM lands. This is a more specific restriction than under the corresponding action in Alternative A, and it targets some different, or more specific areas, than those identified for development of HMPs under Alternative A.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Conservation easements and land acquisitions to support special status fish could help to protect water quality through additional management actions such as limitations on use of these lands.

Alternative B would promote actions that support good quality aquatic habitat. Since good water quality is an integral element of good-quality aquatic habitat, this action would help to protect or improve water quality. Activities that promote good quality aquatic habitat are not specified in the alternative, but might include creating buffer zones, removing roads, revegetation projects, and removing hazardous materials sites, among other actions.

Alternative B calls for designing and promoting activities that maintain high-quality habitats in ~~1~~ three conservation watersheds, and that help to achieve DFCs in ~~32~~ 28 restoration watersheds totaling 64,481 acres, 2 percent less than prescription watersheds under Alternative A. Among the elements of DFCs are water quality, channel condition, and flow and hydrology. The Aquatic and Riparian Management Strategy (**Appendix F** in Volume II~~I~~) identifies default buffer widths and land use restrictions to protect water quality and fish habitat. These actions would help protect and restore water quality.

Effects from Wildland Fire Management

Many of the actions under Alternative B would be similar to those under Alternative A. However, Alternative B relies less on wildfire and prescribed fire. A total of 33,766 acres could be treated under Alternative B (see Section 4.2.12, Wildland Fire Management). However, Alternative B relies less on wildfire and prescribed fire than Alternative A. Alternative B allows treatment of 40 percent

of CFO FRCC 2 or 3 lands (moderate to high risk) WUI areas in any 5-year period, of which 5 to 15 percent can be fire. Chemical and/or biological treatments would be used on up to 36 percent of CFO lands. Chemicals would be applied under restricted conditions, by trained personnel, to minimize the potential for impacts.

In addition to emphasizing non-fire methods of reducing fuel loads, Alternative B would encourage the use of biomass generated by fuels-reduction projects as a source of fuel for energy production or other uses. Reduced use of fire as a fuel management tool would probably reduce potential for short-term impacts on water resources from soil erosion resulting from vegetation loss, although biomass collection may involve substantial potential for soil disturbance from roads and equipment use.

Alternative B allows for the potential of 2 to 6 percent of the FRCC 2 and 3 treatments to be completed with mechanical operations. Although the type of impacts from mechanical operations would be similar, the maximum application of mechanical treatments would be 50 percent less than proposed in Alternative A, resulting in consummately less potential impacts to water resources.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Alternative B identifies an annual timber harvest potential of 3,129 MBF from a commercial forest land base of 40,598 acres. The commercial forest land base is larger than under Alternative A and would allow timber harvesting on 13 percent more acres that would not be managed for timber production under Alternative A. The reduction in PSQ by over 50 percent would result in less ground disturbance and, subsequently, less potential for impacts on water quality relative to Alternative A. However, timber production would be approximately 53 percent lower than under Alternative A.

Alternative B would allow any harvest method to be used on all lands. This is a more-flexible approach than Alternative A, which limits the methods that can be used based on slope and slope aspect. The greater flexibility would allow more clearcutting, for example, than under Alternative A and would allow the use of ground-based equipment on slopes greater than 35 percent. The actual treatment systems used would be determined by the BLM through evaluation of site-specific harvest plans. While this flexibility presents greater risk that soil erosion and water quality impacts would occur than under Alternative A, it also gives the BLM a greater role in identifying the site-specific conditions that need to be addressed. Thus, the BLM may also conclude that low-impact methods be used on slopes of less than 35 percent if the conditions warrant. The impacts on water resources would depend on site-specific conditions. Modeling tools would be used to predict the site-specific impacts and to identify appropriate measures to avoid impacts.

As with harvesting, Alternative B would not restrict the available methods for reforestation. All projects would be designed to achieve full stocking on 90 percent of the reforested area within 5 years. The shorter overall timeframe relative to Alternative A corresponds to the lack of distinction between lands designated for intensive versus extensive management under Alternative B. The production goal under Alternative B is 54 percent lower than under Alternative A. This could result in reduced potential for impacts on water resources than under Alternative A, but the actual impacts would depend on site-specific management decisions.

Alternative B would adopt the BMPs for road construction (**Appendix B**, Best Management Practices) and the Aquatic and Riparian Management Strategy for Alternative B (**Appendix F** [see Volume II~~I~~]). Implementing these guidelines would help prevent or reduce the impacts on water resources.

Effects from Livestock Grazing Management

Under Alternative B, three allotments currently not leased and where grazing is not compatible with other management objectives would be retired. One allotment would be added to solve an administrative issue resulting from an acquisition in an area being historically grazed by a lessee. In total, two allotments would be removed from livestock grazing, resulting in 166 allotments, ~~6,254~~6,263 AUMs (an almost 1,000-AUM reduction), and 105,619 acres (an almost 15,000-acre reduction). There would be no change in impacts on water resources compared to Alternative A.

Effects from Minerals Management

Impacts on water resources from leasable minerals and mineral materials would be lower than under Alternative A because of the identification of lands open to leasing/sale but subject to surface use restrictions (stipulations) in addition to those on the standard lease/permit form. Under Alternative B, 43,590 acres would be subject to NSO stipulations; 42,403 acres would be subject to CSU stipulations, which would restrict certain types of activities; and an unknown number of acres would be subject to TL stipulations, which would place seasonal limitations on some activities. Among other foreseeable restrictions would be NSO stipulations on land within 0.25-mile of river segments suitable for inclusion in the NWSRS. These restrictions on use, particularly the NSO stipulations, would greatly reduce the potential impacts on water resources relative to Alternative A. Some stipulations would not be defined until site-specific studies were completed prior to leasing, but many of the stipulations would be established based on existing studies and knowledge of the existing resources. The increased foreknowledge of the restrictions on any given lease would help to focus industry attention on the least-restricted areas, reducing the risks (and costs) of planning and permitting, and could result in somewhat increased interest in those areas, compared to current conditions. However, because leasable mineral potential in the CFO is low overall, the actual differences in level of impact on water resources between Alternatives A and B would also likely be small. The same may not be true for mineral materials, as the future need for this resource is anticipated to increase with population growth in the CFO.

Site-specific mitigation measures and BMPs developed during project review would be used in conjunction with the lease/permit stipulations to reduce potential impacts on water resources.

Effects from Recreation Management

Alternative B would manage the Lolo Creek SRMA for activities that would have a low impact on water resources (nonmotorized, primitive uses), with an emphasis on whitewater boating and fishing. Therefore, Alternative B would probably be more protective of water quality in the Lolo Creek SRMA than Alternative A.

Alternative B would provide additional restrictions on commercial use permits compared to Alternative A. It would close some areas to competitive use permits. It would establish parameters for organized group recreation permits in SRMAs. These actions would probably result in a small amount of additional protection of water resources compared to Alternative A.

Effects from Renewable Energy Management

Under Alternative B lease stipulations would apply to fluid mineral leases, including geothermal leases, as described above. Similar stipulations would also apply to other renewable energy leases. The stipulations would greatly reduce the potential for impacts on water resources by restricting activities or timing of activities that could impact water quality, and by limiting the area open to leasing. Many of the sensitive habitat areas would also be areas in which water resources are most sensitive to degradation.

Effects from Transportation and Travel Management

No lands would be Open to year-round cross-country motorized travel, and 125,729 acres would be managed for motorized use Limited to designated routes. The action puts more emphasis on evaluating site-specific issues when defining vehicle use restrictions. Within Limited areas, approximately 205 miles of routes would be open yearlong, which equates to an average route density of 1.05 miles per square mile in Limited areas. An additional approximately 107 miles would be restricted in Limited areas, the majority (93 percent) of these being closed yearlong to motorized use.

Obliterating roads and trails not needed for long-term management could have short-term impacts on water quality associated with soil disturbance but would result in reduced impacts over the long term, from revegetation, return to a natural drainage pattern, improved infiltration, and reduced erosion from road use and maintenance.

Environmental considerations would be included in future route designation modifications, which would help to ensure that road construction and use do not adversely impact water resources.

Alternative B calls for annual monitoring of the effects of the travel plan on resources. Among the problem areas to be monitored would be soil erosion, sediment and water quality, riparian and wetland impacts, and restoration/rehabilitation project effects. Monitoring would identify and document problems, causes, and the effectiveness of solutions. These actions would increase the detection of any impacts on water resources to occur.

Road management guidelines/BMPs (**Appendix B**, Best Management Practices [see Volume II~~I~~]) would help prevent or reduce impacts on water quality.

Effects from Lands and Realty Management

Alternative A calls for identifying correctable natural and manmade hazards on public lands and for identifying unauthorized dump sites requiring rehabilitation. Although there is no similar action specified in Alternative B, these actions are implied by compliance with existing laws and regulations. Therefore, the effects would be the same or similar to Alternative A.

A total of 30,098 acres would be outside of areas identified as management blocks and would be considered for disposal on a case-by-case basis. Alternative B calls for using land exchange or disposal to reduce scattered parcels that are difficult to manage, and to acquire lands with high public resource value. Transfers and acquisitions could be used to improve the BLM's ability to effectively manage water resources, among the other public values of interest, leading directly or indirectly to improvements in water quality or protection of water resources. Alternative B is similar to Alternative A in this respect.

Alternative B calls for using withdrawals to protect high-value resources. An example is renewing the existing withdrawal on the Lower Salmon River and expanding that withdrawal. Withdrawals from uses that conflict with maintaining water quality objectives would reduce the potential for impacts on water quality.

Effects from ACEC/RNA Management

As under Alternative A, protecting specific blocks of land as ACECs would restrict the types of activities that could occur within these areas, reducing the potential for impacts on water resources. Under Alternative B, all but one of the current ACECs under Alternative A would be maintained (Craig Mountain ACEC [3,956 acres] would not). Within these maintained ACECs, specific actions affecting water resources in each would differ, as indicated by the following:

- 401 acres of Wapshilla Ridge (would allow maintenance timber harvests, permanently exclude grazing by retiring the grazing allotment containing the ACEC [although the area is available for grazing, it has not been leased for the past eight years], and allow prescribed burning and wildland fire use). These measures would have impacts as described above for each resource;
- 43 acres of Lower and Middle Cottonwoods Islands (would prohibit any soil or vegetation disturbance that does not support long-term improvement of ecological condition). This would better protect water resources than Alternative A;
- 1,321 acres of Captain John Creek (would allow limited timber harvesting to address disease or insect control and to achieve DFC and would allow limited vegetation treatments). These actions would have impacts as described above for each resource;
- 47 acres of Long Gulch (would allow no ground-disturbing activities that would impact MacFarlane's four-o'clock). This would reduce the potential for impacts on water quality;
- 18 acres of Skookumchuck and 136 acres of Lucile Caves (would use integrated pest management to control nonnative vegetation. This is a slight departure from Alternative A, which prohibits herbicide spraying). Integrated pest management allows discretion on the part of BLM to identify the best technologies and methods to control weeds;
- 3,678 acres of Lower Lolo Creek (Alternative B would develop a strategy to restore riparian and floodplain areas in Cottonwood Flats and provide custodial management of forest lands). These measures would provide additional protection to water resources if they further restricted land uses; and
- Lower Salmon River (Alternative B would increase the acreage in the ACEC by 497 acres relative to Alternative A to 16,199 acres).

In addition to the actions under Alternative A, Alternative B would protect ~~three~~ four additional sites as ACECs: 5,759 acres on the Salmon River east of Riggins; 570 acres on the East Fork American River, including restricting ground disturbance on slopes greater than 40 percent; 1,625 acres of Upper Lolo Creek, including requiring yarding methods to be utilized for timber harvest activities on slopes over 35 percent, obliterating roads not needed for long-term management, development of a restoration strategy of riparian /flood-prone areas in Cottonwood Flats, and a recommended mineral withdrawal; and 6,356 acres on the American River for preserving historical mining sites. Implementing these additional ACECs would restrict other uses within the area, reducing potential for future impacts on water.

Effects from Wilderness and Wilderness Study Areas Management

Under Alternative B, if Congress released WSAs from wilderness consideration, specific management would be implemented. This would provide a somewhat lesser degree of protection of water resources than if areas were managed as wilderness, but it would be more protective than if WSAs were released under Alternative A.

Effects from Watchable Wildlife Viewing Sites Management

The impacts of Alternative B would be similar to those of Alternative A, except that Alternative B would provide formal documentation and identification for wildlife viewing areas, expanding public information efforts, and promoting cooperative management efforts. Such efforts could result in further indirect protection of water resources but could also increase intensity of recreational use and associated impacts on water resources.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

All of the water resource management actions are intended to reduce or prevent impacts on water resources. The potential for the water resource management actions to have the desired result would be greater under Alternative C, because Alternative C places the most restrictions on human activities that could adversely impact water resources. For example, Alternative C identifies larger default buffers for RCA stream buffers, more restoration and conservation watersheds (68,359 acres), larger land areas subject to NSO mineral lease stipulations, the largest number of acres in ACECs, and the fewest acres for land-disturbing actions, among other restrictions on development.

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B, except that Alternative C identifies a DFC consisting of a higher percentage of larger trees and more old forest than Alternative B. Blocks over 500 acres would be managed for DFC and account for 28,087 acres of forested vegetation (**Figure 7**, Desired Future Condition Blocks—Alternative C [see Volume IV of the Cottonwood Draft RMP/EIS]). This could indirectly reduce impacts of timber production on water quality (mainly temperature and sediment).

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that Alternative C includes wider default widths for RCA stream buffers (covering 21 percent more area than Alternative B and 14 percent more than Alternative A) and 6 percent more conservation and restoration watersheds (totaling 68,359 acres). This would afford somewhat more protection of water quality than under Alternative B.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described under Alternative B, except that Alternative C would add the Lower Salmon River to areas that emphasize management of native grassland to support winter and spring range areas of game animals. The larger area under this type of management would have a greater potential to reduce soil erosion impacts on water quality than Alternatives A and B.

Alternative C targets forested contiguous areas greater than 500 acres as priorities for attainment of DFC, totaling 28,087 acres. By targeting smaller areas than Alternative B, 3 percent more CFO lands would come under this management, resulting in greater indirect protection of water resources.

Riparian areas would be protected as described for Alternative B; however, as described in Effects from Vegetation—Riparian and Wetlands Management, Alternative C includes wider RCA stream buffers than Alternative B and wider RHCAs than Alternative A. These actions would help to protect water resources more than Alternatives A or B.

Alternative C identifies five of the areas (38,733 acres) targeted in Alternative B for no net increase in motorized vehicle use of roads or trails, for a decrease in motorized vehicle use. This would provide greater protection of water resources from erosion impacts resulting from road use.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that Alternative C would be applied to 6 percent more watershed acreage than Alternative B, as indicated in **Appendix C**, Conservation and Restoration Watersheds (see Volume II~~I~~), and 3 percent more than prescription watersheds under Alternative A. This would result in more opportunities for improvements in water quality than under Alternatives A or B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that 20 percent (16,833 acres) of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative C (see Section 4.2.12, Wildland Fire Management), 50 percent less than Alternative B and 80 percent less than Alternative A. Alternative C would include approximately 1,182 to 4,390 acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests).

Chemical and/or biological treatments could be used on up to 20 percent of CFO lands. Chemicals would be applied under restricted conditions, by trained personnel, to minimize the potential for impacts.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except Alternative C would assign more acres to more-stringent VRM classes. Specifically, Alternative C would have more than twice as many acres in VRM Class I than Alternative B, slightly more in VRM Class II, and less in VRM Class III. Alternative C also would have more acres in VRM Classes I and II than Alternative A. The shift toward more-stringent VRM classes would result in more restrictions on the authorized land uses, indirectly reducing the potential for water resources impacts.

Effects from Forest Products Management

The impacts would be similar to the impacts of Alternative B. Compared to current management, the commercial forest land base would be reduced by about 3 percent, and annual estimated timber production would be about 53 percent lower, resulting in less potential for impacts on water resources.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except Alternative C would reduce the total number of allotments to 145 (from 168 in Alternative A), 101,350 acres, and 6,020 AUMs. The reduction in allotments would include removing vacant allotments that are not currently being used. There would be no change in impacts on water resources compared to Alternative A or B.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except impacts on water resources would be lower than under Alternative B because more open lands would be subject to surface use restrictions. Under Alternative C, 68,854 acres would be subject to NSO stipulations, and 59,122 acres would be subject to CSU stipulations. As indicated for Alternative B, the overall leasable mineral potential in the CFO is low, so the actual differences in level of impact on water resources between Alternatives B and C would also likely be small.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

The effects of obliterating roads and trails not needed for long-term management would be similar to those described for Alternative B, except that under Alternative C, the areas where this action would occur would be expanded to include 6 percent more watershed acreage than Alternative B, as identified in **Appendix C**, Conservation and Restoration Watersheds (see Volume II~~I~~), and 3 percent more than prescription watersheds under Alternative A.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except:

- Alternative C would increase the existing Craig Mountain ACEC to 23,342 acres, an almost five-fold increase from Alternatives A and B. Custodial timber harvesting would be allowed to achieve desired size classes. New roads for timber harvesting would be decommissioned. These actions would provide additional protection of water resources compared to Alternatives A and B;
- On 570 acres on the East Fork American River, vegetation treatments would be reduced and vegetation and aquatic condition/trend monitoring would be conducted every 10 years. The impacts on water resources would be similar but slightly less than Alternative B because of the additional restrictions on timber harvesting and additional monitoring;
- ~~Alternative C would designate 1,625 acres of Upper Lolo Creek as an ACEC and restrict timber harvesting on slopes over 50 percent, recommended a mineral withdrawal, obliterate roads not needed for long-term management, and develop a restoration strategy for riparian/floodplain areas in Cottonwood Flats. These actions would help to reduce the potential for impacts on water resources;~~

- 576 acres of the Partridge/Elkhorn area would be managed to protect natural processes, old growth ~~P~~ponderosa pine stands, and Idaho BLM sensitive species. Management measures would include minimizing new road construction and removing timber roads. These actions would help to protect water resources; and
- 590 acres of the Little Salmon River would be managed for a similar purpose and in a similar way to the Partridge/Elkhorn area, above.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

All of the water resource management actions in Alternative D are intended to reduce or prevent impacts on water resources. The potential for the water resource management actions to have the desired result would be less under Alternative D than under Alternative A, because Alternative D has smaller RCA widths, fewer conservation and restoration watersheds (21 percent less than prescription watersheds under Alternative A), and more potential for ground-disturbing actions.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative A.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except Alternative D would have a slightly higher potential for water quality impacts overall. Under Alternative D, fewer conservation and restoration watersheds would be designated (21 percent less than prescription watersheds under Alternative A).

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described under Alternative B, except Alternative D would be somewhat less protective overall, based on the RCA widths and priority watersheds listed in **Appendices F** (Aquatic and Riparian Management Strategy) and **C** (Conservation and Restoration Watersheds) (see Volume II~~I~~).

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except Alternative D would have smaller RCA widths and fewer conservation and restoration watersheds (21 percent less than prescription watersheds under Alternative A). Alternative D would have higher potential for overall water quality impacts than the other alternatives.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that 50,650 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year

period under Alternative D (see Section 4.2.12, Wildland Fire Management), 50 percent more than Alternative B and triple that under Alternative C. Additional areas could be treated outside the WUI. Alternative D would include approximately 2,870 to 7,597acres annually of mechanical treatments and prescribed fire (see Section 4.2.5, Vegetation—Forests).

Chemical and/or biological treatments would be used on up to 36 percent of CFO lands. Chemicals would be applied under restricted conditions, by trained personnel, to minimize the potential for impacts.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except Alternative D would shift more acres to less-stringent VRM classes. There would be about half as many acres in VRM Class I as in Alternative B, slightly fewer acres in VRM Class II, and about 10,000 more acres in VRM Class III. Alternative D also would have more acres in less-stringent VRM classes than Alternative A. Based on acreage, VRM under Alternative D would indirectly have the largest impacts on water resources among the alternatives.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B. Compared to current management, the commercial forest land base would be reduced by about 26 percent, and annual estimated timber production would be about 27 percent lower, resulting in less potential for impacts on water resources.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except that under Alternative D, 135,850 acres consisting of 170 allotments and 8,54~~0~~9 AUMs would be available for livestock grazing. The increase in AUMs would result in increased potential for impacts on water resources overall because a greater number of streams would be accessed by livestock ~~(more streams would be impacted)~~. While the acres per AUM are similar for all alternatives, the carrying capacity of the land varies; because Alternative D involves more acres than the other alternatives, livestock grazing under Alternative D is likely to have the greatest impact on water resources among the alternatives.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except impacts on water resources would be slightly greater than under Alternative B, because slightly fewer lands would be subject to surface use restrictions. Under Alternative D, 35,045 acres would be subject to NSO stipulations and 32,013 acres would be subject to CSU stipulations.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative A, except that Alternative D would include 23,189 acres Open to yearlong, cross-country motorized travel, an area 25 percent the size of that under Alternative A. An additional 102,542 acres would be Limited to designated routes. Within

Limited areas, approximately 179 miles of routes would be open yearlong. However, almost half of these (82 miles) would not have legal public access so these would receive little to no use. An additional approximately 107 miles would be restricted in Limited areas, the majority (93 percent) of these being closed yearlong to motorized use. Route restrictions and closures would indirectly protect water resources by reducing or eliminating traffic, which can contribute to localized erosion of the roadbed and can ultimately increase sediment in water bodies. Because cross-country OHV use would be most damaging to soils, resulting in erosion that could reach water bodies, Alternative D would have more potential indirect impacts on water resources than Alternatives B and C because Alternative D would designate Open areas. Alternative D would have less potential indirect impacts on water resources than Alternative A.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that Alternative D would not include the following:

- The Lower Lolo Creek ACEC, which is included in Alternatives A, B, and C;
- The East Fork American River ACEC, which is included in Alternatives B and C; and
- Designation of the American River Historic Sites District ACEC, which is included in Alternatives B and C.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

Past sediment, erosion, and associated water quality and drainage impacts have resulted from mining activities, road construction and maintenance, and to a lesser extent grazing and agricultural use. Nearly all of the projects listed in Section 4.1.3, Cumulative Impacts have in the past or would in the future contribute to a cumulative effect on water resources in the region. Many of these projects include a component intended to reduce or prevent effects on water resources or to reverse past effects.

Many of the Cottonwood RMP management actions parallel or are designed to be implemented in coordination with other projects. The cumulative effect would be the increased protection, maintenance, or restoration of water quality and the designated beneficial uses of water in the region. This general cumulative effect would occur under each of the alternatives with small variations in the magnitude of the effect, especially within the CFO, resulting from the different emphases of the alternatives. The projects that fall within this category of impact include land tenure actions, the Idaho Statewide Implementation Strategy for the National Fire Plan, wildland fire management strategies, fish and wildlife conservation measures, and implementation of the ESA, the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** in Volume II~~I~~), the ICBEMP, and resource-protection measures in the National

Forest Plan revisions. Other projects or regional trends could impact water resources unless mitigated by implementing BMPs, complying with existing laws and regulations, or designing measures specifically to address water resources impacts.

In the foreseeable future, fuels management actions that disturb soil or remove vegetation could result in short-term effects on water quality but are expected to reduce the risk of more potential for stand-replacing fires and potential effects on water resources in the long term. These fire management actions include fuel-reduction measures such as prescribed burns, thinning, slash removal, herbicide treatments, or wildland fire use. Similarly, management that emphasizes allowing natural processes such as fire to proceed with minimal human intervention could substantially affect water resources over time but would reduce short-term effects on water resources. Fire management on National Forest and private land is an example of an area where the cumulative effects of fire management decisions (whether to suppress fire, reduce fuel, or minimize human intervention) would influence outcomes on regional water resources to a much greater extent than the individual decisions associated with BLM management, because BLM manages relatively few acres of forest in the planning area.

Timber, grazing lands, and mineral resource management actions throughout the region would have similar effects to those described above for the Cottonwood RMP alternatives. Timber-harvesting activities on Idaho Department of Lands and private lands are not as protective as on federal lands and, as such, could have greater impacts to water resources. In the case of timber management, Forest Service management actions under the National Forest Plans and revisions are much more influential on regional water resource outcomes than BLM actions, due to the vastly larger amount of land area in the National Forests. However, BLM and the Forest Service are constrained by the same set of rules and guidelines to protect water resources, wildlife habitat, and threatened and endangered species and other resources. In addition, BLM and the Forest Service increasingly coordinate their plans and management actions to achieve common objectives for any given watershed, including actions that emphasize watershed-scale planning and actions such as the ICBEMP or PACFISH that emphasize regional-scale planning. Thus, cumulative effects on regional water resources resulting from forest management practices would increase protection of water resources. This would occur by monitoring effects to allow implementation of corrective measures and by employing effective adaptive resource management. Differences in the level of emphasis on timber productivity under each of the Cottonwood RMP alternatives would result in relatively minor differences in the cumulative regional effects on water resources due to the relatively small BLM land ownership and the general consistency in management between the BLM and Forest Service.

A high potential for the occurrence of locatable minerals continues to exist in historic mining districts in the CFO. The activity level for this resource is anticipated to be relatively low but usually is dependent on commodity prices and thus hard to predict. Mineral material sites could have the greatest potential to impact water resources because the potential for increased activity related to mineral materials is higher than any of the other mineral types. Although past mining activity has resulted in moderate to substantial effects on water resources at some sites, notably in the Elk City and Marshall Mountain areas, future mining activity would result in fewer effects, because current laws and regulations provide a higher level of protection for water and other resources, and because more substantial planning of mineral development with increased financial assurances for reclamation is required.

No net increase in roads is expected on BLM lands, however, road construction and use to facilitate timber harvest, recreational access, and (to a lesser extent) mineral development will continue to occur throughout the region. In recent years this activity has slowed, techniques for road building have improved, and regulatory and planning restrictions on roads across ownerships have become more effective in reducing water resources effects. Therefore, the contribution of road construction and use to the cumulative effects on water resources would gradually decrease over time.

Population growth can put increased demand on water resources. In the CFO planning area, land uses, such as residential development, urban growth, changing land uses, vegetation treatments, and agricultural demands are having various impacts on water supply. Such impacts may affect water quality, flow regimes, peak flows, and available water supply. ~~Population growth can put increased demand on water resources. In the CFO region, high quality water supplies are plentiful in most areas. Increased municipal demand is not expected to stress the available supply, and there is limited agricultural and industrial demand.~~ Regional demand for electric power, including hydroelectric power, is increasing, but there is intense public resistance to siting new dams in the region, and most feasible sites have already been developed. Protecting migratory fish and preserving Wild and Scenic Rivers also preclude the siting of new dams.

Grazing and agriculture are important land uses in the region, and both can contribute to water quality effects. Agriculture on BLM lands is minimal. Agricultural use contributes to soil erosion and sediment and nutrient delivery to streams. Grazing can also contribute to soil erosion and increased delivery of sediment, nutrients, and pathogens to streams.

The cumulative effects on water resources under each of the Cottonwood RMP alternatives would be similar and would generally parallel the effects each of the alternatives alone. Overall, Alternative C would contribute the greatest to protecting beneficial uses of water and maintaining and/or improving water quality, followed by Alternatives B, A, then D. Independent of BLM discretionary management, improvements in water resources are likely to continue in response to increased regulation of water resources under the Clean Water Act and other legislation.

4.2.5 Vegetation—Forests

Goal: Manage forests to maintain or improve forest health, composition, structure, diversity consistent with site potential, and Historical Range of Variability.

Summary

Forested vegetation would be affected most by fire management and forest vegetation management. Restrictions on management activities for the protection of other resources, primarily visual quality and special status species, would affect the level, location, and effectiveness of forest management actions to improve forest health.

From the standpoint of managing forest stands for maintenance or improvement of vigor, Alternative A would provide the greatest benefit, followed by Alternatives D, B, and then C. All alternatives would allow for managing forest stands for structural diversity. Alternative C would require management for structural diversity on the greatest area. The DFC blocks in the WUI would be managed for the identified structural goals. Alternatives A and D would not have required structural management areas (DFC blocks), although Alternative D would provide for the management of existing old growth stands in the WUI for presuppression old growth characteristics,

provided they would not prevent attainment of the fuels-reduction goals. **Table 4-5** identifies the indicators that were used to analyze effects on forest management under each alternative.

Table 4-5
Comparison of Vegetation—Forests Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of treatment through forest products removal in 15 years	5,700	3,129	3,101	4,823
Range of acres of mechanical and prescribed[1] fire per year	1,530 to 4,886	1,448 to 4,343	1,448 to 5,377	1,448 to 6,204
Percent change in acres of treatment[1] through fuels reduction compared to Alternative A (current management)	0%	-11.1%	+10.0%	+26.9%

Source: BLM 2004a

[1]Acres for fuel treatment include mechanical and prescribed fire. Acres of prescribed fire for Alternative A were derived from **Appendix H** (Wildland Fire Management) (see Volume II~~I~~), **Table H-2**, multiplied by 72% because approximately 72% of the acres in CFO are forested. Alternatives B, C, and D are based on 103,394 acres of forested vegetation in FRCC 2 or 3, multiplied by the percentage treated in 5 years, divided by 5 to derive annual acres. Chemical and seeding fuel-reduction activities are not typically implemented in the forested environment.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For forested vegetation, the indicators used for impact analysis are identified in **Table 4-5**, Comparison of Vegetation—Forests Indicators by Alternative.

Methods and Assumptions

This analysis is based on the following methods and assumptions:

- Social and economic opportunities will be accomplished following vegetation management objectives and actions, and effects are included in the vegetation management discussion;
- Nondisturbance buffers for raptor nests is assumed to mean no human activity during times when nests are being used and not to mean that no vegetation or soil disturbance around a nest at other times;
- Because forested vegetation makes up 70 percent of the CFO, 70 percent of acres treated for FRCC under wildland fire management would occur in forested vegetation types. Types of treatments (mechanical, chemical, seeding, and prescribed fire) would occur in the same distribution in forested types as specified in **Appendix H**, Wildland Fire Management (see Volume II~~I~~);
- For quantitative comparison of fuel-reduction treatments, the percent compared to Alternative A was calculated assuming the maximum amount of treatment in any five-year period for all alternatives;
- For calculating change due to wildland fire management and forest products, it is assumed that goals can be achieved while meeting other management action requirements, and that budget and staffing level would be sufficient to achieve treatment goals;

- For qualitative discussions on impacts from management direction for everything except wildland fire management, actions and objectives for other resources will override fire management goals unless otherwise specified. For example, it is assumed that protecting visual quality will override improving forest health and, therefore, treatments for forest health will be modified to protect visual quality. In the WUI, exceptions will be made for wildland fire management, so this assumption does not apply to wildland fire management in the WUI; and
- Effects are predicted for 20 years from the time the RMP is initially implemented.

Effects Common to All Alternatives

Effects from Air Quality Management

In Idaho, methods used by land management agencies and private landowners to meet air quality standards have been in force since the 1980s, and the BLM's past experience is that daily restrictions on burning to protect air quality may affect the prescribed burning program by reducing opportunities to burn in any given year. However, it is not expected that they would completely prevent implementation and accomplishment over the 20-year planning period. All prescribed fire and wildland fire use would be used in a manner to minimize degradation of airsheds and would be coordinated with the Montana/Idaho Airshed Group.

Effects from Soils Management

Soil protection measures could affect where and what type of vegetation management activities can occur. Protection measures for soil stability and erosion would affect forest management by preventing implementation of treatments in areas determined to have slope instability, including a 100-foot slope distance buffer on these areas.

Effects from Water Resources Management

The effects on forested vegetation would be the same as those described under Effects from Vegetation—Riparian and Wetlands Management for each alternative.

Effects from Aquatic Resources, Fish and Special Status Fish Management

The effects on forested vegetation would be the same as those described under Effects from Vegetation—Riparian and Wetlands Management for each alternative.

Effects from Special Status Plants Management

Modifying actions to avoid impacts on listed or sensitive species or their habitat could alter vegetation management treatments. This could preclude reaching management goals, such as reducing stand density or improving forest health in specific areas (stands).

Effects from Wildland Fire Management

Reducing FRCC would indicate an improvement in forested vegetation. A reduced FRCC would mean that species composition and stand density would be corrected, and insect and disease activity would be reduced to endemic levels. A reduced FRCC represents resilience after wildland fire and resistance to insect and disease epidemics that would indicate improved forest health.

Effects from Forest Products Management

In all alternatives, forest products management actions (including precommercial thinning and timber harvesting) would be tools to improve forest health, including species composition and stand density.

Effects from Livestock Grazing Management

Grazing effects on forests are caused by livestock foraging or trampling planted trees, causing seedling mortality or growth deformity. Areas where seedlings are planted for reforestation would be closed to grazing for a minimum of two years. They could be closed longer if the seedlings are not large enough to withstand grazing use. Grazing in dry conifer types can encourage grazing encroachment by reducing grass competition.

Effects from Transportation and Travel Management

Roads that are closed to motorized travel yearlong could eventually become overgrown with vegetation or could otherwise become impassible because of cut or fill failures, culvert removal, or fallen timber; these areas may not be available for use for forest health monitoring and may increase the cost of forest vegetation management actions. Roads that are obliterated or recontoured would have the same effect.

Effects from Wild and Scenic Rivers Management

Management of the outstandingly remarkable values of river segments found suitable for inclusion in the NWSRS could increase visual quality protection, which could direct or eliminate treatments that would improve forested vegetation.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations could place higher treatment priority in areas not previously identified or limit actions in planned treatment areas.

Alternative A

Effects from Vegetation—Forests Management

Alternative A would designate 35,757 acres (35 percent) of forested acres as commercial forest. Treatment acres in this area would improve forest health, desired stand structure, and vigor. This is discussed under Effects from Forest Products Management, below.

Adopting the Idaho Forest Practices Act would reduce fuel loads on treated acres and ensure adequate stocking levels are restored following regeneration harvesting. Both of these activities would improve forest health and resilience.

Treatments in FRCC 3 and FRCC 2 would improve forest health, species composition, and stand densities and would decrease insect- and disease-affected trees. Treatments that restore FRCC 1 would allow forests to be more resilient. Over time, fire would be able to play more of its natural role.

Treating dry ponderosa pine, dry conifer cover types, and whitebark pine would reduce stand densities. Reducing density in overstocked stands would reduce stress due to competition for water, light, and nutrients and would reduce the susceptibility to insect attacks, disease, and the risk of

stand-replacing fire. These vegetation types also need mineral soil and sunlight to reproduce. Reducing stand density would promote ponderosa pine and whitebark pine regeneration.

Effects from Vegetation—Riparian and Wetlands Management

RHCAs could modify the location of some forested vegetation treatments which could impact overall forested vegetation management objectives for forest health and vigor by limiting areas of treatment. In Alternative A, these account for 12,048 acres, or 12 percent of the total forested vegetation acres.

Effects from Wildlife and Special Status Wildlife Management

Modifying actions to avoid impacts on listed species or their habitat could alter forest management treatments. In some cases, this could preclude reaching management goals, such as reducing stand density or improving forest health (Graham et al. 2004).

Maintaining cover-to-forage ratios in areas identified for intensive wildlife management would reduce forest cover in some areas, but not to the extent that it would affect overall forest health or species composition.

A 100-yard nondisturbance buffer around active raptor nests results in 6.5 acres for every active nest. This could affect timber harvesting or prescribed burning activities in the spring and early summer, but it would not preclude these activities from occurring. Prohibiting disturbance in a 100-foot buffer around "active raptor nests" could and has resulted in limiting activities between February 1 and August 1, which is the spring and summer burning and timber harvesting season, making it more difficult and expensive to accomplish goals.

Effects from Wildland Fire Management

Alternative A would result in 1,530 to 4,800 acres of forest being treated by prescribed fire or mechanical fuel reduction per year (**Table 4-5**, Comparison of Vegetation—Forests Indicators by Alternative), which would improve forest health and species composition.

Wildland fire use, where it would be allowed, would reduce stand densities and, in some cases, improve species composition (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

Meeting VRM Class II guidelines would limit the scope of logging, thinning, or prescribed burning activities, which account for between 31 and 49 percent of the treatments proposed (based on acres). Meeting Class II guidelines also would prohibit treatments and prescriptions (e.g., clearcutting) that would change the visual character. In the dry conifer type, encroachment of Douglas-fir is the reason composition and vigor need improvement, and the only way to remove them without increasing fuel loadings would be to log, thin, and in some limited instances, use prescribed fire. Approximately 31 percent of the forested acres would be in VRM Classes I or II in Alternative A (**Table 4-6**) and could not be treated effectively to improve forest ~~vigor~~ health or species composition due to visual quality management.

Table 4-6
VRM and Forested Vegetation under Alternative A

	VRM I	VRM II	VRM III	VRM IV
Forested Vegetation Acres	8,235	23,707	47,367	21,689
Percent of Total Vegetation Acres	8%	23%	47%	21%

Source: BLM 2004a

Effects from Forest Products Management

No acreage goals are established in Alternative A, but recent treatment levels have been approximately ~~380~~ 358 acres annually, which would be approximately 5,700 to 7,600 acres over the next 15 to 20 years. This represents 6 to 8 percent of forested vegetation in the CFO.

Limitations on the size and shape of cutting units could affect forest vegetation by making forest management more costly and reducing patch sizes. Limitations in the MFP on use of silvicultural systems based on aspect could reduce the ability to implement the appropriate silvicultural system for the stand conditions present.

Effects from ACEC/RNA Management

Prohibiting timber harvest and prescribed burns could eliminate the opportunity to improve forest health, species composition, and stand densities in ACECs. These areas are small relative to the remainder of forested vegetation in the CFO; therefore, impacts would be localized. The largest ACECs would not prohibit vegetation treatments, although protecting scenic values could restrict treatments, as described under Effects from Visual Resources Management, above.

Alternative B

Effects from Soils Management

Soil management actions could indirectly impact vegetation by influencing when and how wildland fire is managed. Effects are discussed further under Effects from Soils Management under the Wildland Fire Management section (Section 4.2.12).

Effects from Vegetation—Forests Management

Alternative B designates 40,598 acres (40 percent of forested acres) as commercial forest. Treatment within these areas would improve vigor.

The DFC blocks over 1,000 acres that would be managed to improve forest health and vigor account for 24,789 acres (24 percent) of forest land in Alternative B, of which 3,718 acres (25 percent) are commercial forest land. These areas would be managed to meet the DFCs in **Appendix D** (Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]), which specifies a minimum level of large trees that would be retained. In 15 years, management of commercial forest lands could be used on an estimated 3,718 acres (15 percent of the DFC block acres) to achieve this goal. The remaining 85 percent would be constrained by other resources values such as VRM, RCA, and wild and scenic river suitability, making achievement of DFC more difficult or even impossible. Leaving large trees would increase the large tree component and, when these trees are healthy and represent the appropriate species composition for the site, would maintain forest health. However, where the large tree component is not in the appropriate species

composition for the site, the large tree component would be retained for a while, but the health and vigor of the stands could decline. Trees growing on sites where natural disturbance historically limited their presence or in dense stands are more susceptible to insects and disease because they are under stress due to competition for resources. Eventually, this could result in increased fuel loadings in some areas.

Treatments to enhance forest vigor would improve forest health, species composition, and stand densities, and would decrease insect- and disease-affected trees. Treatments would allow forests to be more resilient after wildland fires (Graham et al. 2004). Over time, fire would be able to play more of its natural role.

Managing species composition and canopy closure of large trees to promote ponderosa pine and western larch would, over the long term (more than 50 years), increase the amount of old growth in these forest types, which is currently lacking. Treatments could increase the amount of large Douglas-fir. However, Douglas-fir old growth in northern Idaho is not particularly long lived, unlike coastal Douglas-fir. By the time it reaches 230 years, it is exceedingly susceptible to Douglas-fir bark beetles and drought (Powers et al. 1999).

Managing old growth in municipal watersheds to maintain or contribute to the restoration of pre-fire suppression characteristics could reduce fuel loads in old growth stands, making them more resilient after fire, and, in some cases, allowing them to survive fire.

Capturing the value of forest products would remove dead, dying, diseased, and stressed trees from forests. Depending on the agent, this could improve forest health in some areas by removing insects before they can attack other trees and reduce stress on remaining trees. In all forests, this would reduce forest fuels.

Effects from Vegetation—Riparian and Wetlands Management

RCAs could modify the location of some forested vegetation treatments but would not impact overall forested vegetation management objects for forest health and vigor. However, buffers on fish-bearing streams total 72 acres for every mile of stream, and permanent non-fish-bearing streams equate to 36 acres for every mile of stream. In Alternative B, these account for 11,362 acres or 11 percent of the total forested vegetation acres, compared to 12 percent in Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Effects of avoiding impacts on listed species would be similar to as those described for Alternative A. In addition, specific management actions included in Alternative B for wildlife would have the following effects: maintaining bald eagle roosting and nesting habitat and snag-dependent species habitat; avoiding or minimizing adverse impacts on game and nongame species; buffering active raptor nests; and minimizing adverse impacts to wildlife travel corridors and fragmentation of habitats would all impact vegetation management actions to improve forest health, reduce FRCC, reduce fuel loadings, improve tree species composition, and reduce stand densities. These effects vary from very little, where goals and objectives could still be achieved but treatments are less extensive and cost more; to completely prohibitive, where treatments to improve forest health, FRCC, fuels and species composition could not be accomplished and forest health would continue to decline. Additionally, listed (threatened, endangered, and BLM sensitive) species change, which could substantially increase the extent of these effects, depending on the species listed and subsequent requirements for protection.

The effects of implementing **Appendix D** (Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]) are described under Effects from Vegetation—Forests Management, above.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

BMPs to avoid or minimize adverse impacts to aquatic and riparian habitats could affect where some treatments occur, what method is used, or treatments' effectiveness. Changing management direction to contribute to recovery or conservation of special status species could affect the location, method, and effectiveness of some vegetation treatments, but the extent to which this could occur is unknown.

The effects of implementing **Appendix F** (Aquatic and Riparian Management Strategy [see Volume II~~I~~]) are addressed under Effects from Vegetation—Riparian and Wetlands, above.

Effects from Wildland Fire Management

Fuels reductions are intended to reduce stand-replacing wildland fires and make fire suppression easier to accomplish. Alternative B would result in 1,448 to 4,343 acres of forest being treated by prescribed fire or mechanical fuel reduction per year compared to a maximum of 4,886 acres in Alternative A (an 11-percent decrease) (**Table 4-5**, Comparison of Vegetation—Forests Indicators by Alternative), which would result in less improvement to forest health and species composition. Details of the extent of treatment are included in the Effects from Wildland Fire Management in the Wildland Fire Management section (Section 4.2.12) for Alternative B.

Wildland fire use, where it would be allowed, would reduce stand densities. In some cases, it would improve species composition (**Figure H-2**, Areas Available for Wildland Fire Use—Alternative B [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

An estimated ~~233~~ 242 acres would be treated annually in this alternative, which would be approximately 3,495 to 4,660 acres over the next 15 to 20 years. This represents approximately 3 to 5 percent of forested vegetation in the CFO. Treatments would be a tool to restore appropriate species composition and stand density, improve forest health and vigor, restore desired stand structure, and achieve other vegetation management goals. However, only 3 to 5 percent would result in only a slight improvement or achievement of accomplishing the DFC through timber management.

Effects from Renewable Energy Management

Biomass projects would be designed to improve species composition, reduce density and improve vigor. Biomass removal for renewable energy could eventually affect forested vegetation by making it more feasible to treat stands of small trees by creating a market for the smaller diameter material (Forest Service 2005b).

Effects from ACEC/RNA Management

Size of ACECs and ACEC/RNAs would increase from 25,600 acres in Alternative A to ~~34,528~~36,153 acres in Alternative B, including over 1,000 acres of old growth forest that would be

protected. The larger ACECs (Lower Salmon River at 16,199 acres and American River Historic Sites District at 6,356 acres), as well as some smaller areas, would be managed to meet DFC or support long-term ecological health, which would improve forest conditions.

Alternative C

Effects from Soils Management

Effects would be the same as those described for Alternative B.

Effects from Vegetation—Forests Management

Alternative C would designate 34,611 acres (34 percent) of forested acres as commercial forest, where timber harvesting could be used to improve forest health and restore desired stand structure. Effects would be similar to those described for Alternative B, except for the following.

The DFC blocks over 500 acres that would be managed to improve structural diversity account for 28,087 acres of the 100,990 acres (28 percent) of forested vegetation, of which 2,809 acres are commercial forest land. These areas would be managed to meet the DFCs in **Appendix D** (Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]), which specifies a minimum level of large trees that would be retained. In 15 years, management of commercial forest lands could be used on an estimated 2,809 acres (10 percent of the DFC block acres) to achieve this goal. The remaining 90 percent would be constrained by other resources values such as VRM, RCA, and wild and scenic river suitability, making achievement of DFC more difficult or even impossible.

Alternative C would maintain twice the percentage of old growth and would increase the minimum percentage of large-sized trees (greater than 20 inches diameter) by 5 to 15 percent in the dry conifer types. Where the large tree species composition is not appropriate for the sites, large tree components would still remain, but treatments would not improve the health and vigor of forested stands. Trees growing on sites where natural disturbance historically limited their presence are more susceptible to insects and disease and do not grow as well as appropriate species because they are under more stress.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described for Alternative B, except that RCA stream buffers on permanent non-fish-bearing streams would amount to 55 acres for every mile of stream. In Alternative C, these account for 13,994 acres, or 14 percent of the total forested vegetation acres, compared to 12 percent in Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described for Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described for Alternative B. Impacts from implementing **Appendix F** (Aquatic and Riparian Management Strategy [see Volume II~~I~~]) are described under Effects from Vegetation—Riparian and Wetlands, under Alternative B above.

Effects from Wildland Fire Management

Fuels reductions could reduce stand-replacing wildland fires and make fire suppression easier to accomplish. Alternative C would result in 1,182 to 4,390 acres of forest being treated by prescribed fire or mechanical fuel reduction per year compared to approximately 4,886 in Alternative A (a 10-

percent increase) (**Table 4-5**, Comparison of Vegetation—Forests Indicators by Alternative), which would improve forest health and species composition. Details of the extent of treatment are included in the Effects from Wildland Fire Management in the Wildland Fire Management section (Section 4.2.12) under Alternative C.

Wildland fire use could be used much more extensively as all fires would be considered for wildland fire use (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). In some cases, this could result in reduced understory and decreased stand density, which would be an overall benefit for forest vegetation. In other cases, it could result in stand-replacing fire in dry forest types, trees killed by uncharacteristically severe fire or old growth where it is not desired, which would not meet DFC goals or improve vigor.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative A, except approximately 44 percent of the forested vegetation would be classified as VRM Class I or II in Alternative C (**Table 4-7**), compared to approximately 31 percent in Alternative A (a 42-percent increase), limiting effective treatments that could improve stand density and forest vigor, particularly in the dry conifer types.

Table 4-7
VRM and Forested Vegetation under Alternative C

	VRM I	VRM II	VRM III	VRM IV
Forested Vegetation Acres	14,503	29,807	34,999	21,680
Percent of Total Vegetation Acres	14%	30%	11%	21%

Source: BLM 2004a

Effects from Forest Products Management

Forest products management would treat an estimated 191 acres annually in Alternative C, which would be approximately 2,955 to 3,940 acres over the next 15 to 20 years. This represents approximately 3 to 4 percent of forested vegetation in the CFO. By removing over-represented species, dead and dying or insect-infested trees, and reducing the number of trees per acre, treatments would be tools to restore appropriate species composition and stand density, improve forest vigor, restore desired stand structure, and achieve other vegetation management goals. However, only 3 to 4 percent would result in only a slight improvement or achievement of accomplishing the DFC through timber management.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Size of ACECs and ACEC/RNAs would increase from 25,600 acres in Alternative A to 60,661 acres in Alternative C. Effects would be similar to those described under Alternative B, except that more areas (including Craig Mountain at 23,342 acres) would be managed to meet DFC or support long-term ecological health, which would further improve forest conditions.

Alternative D

Effects from Soils Management

Effects would be the same as those described for Alternative B.

Effects from Vegetation—Forests Management

Alternative D would designate 45,190 acres (45 percent) of forested vegetation as commercial forest. Under Alternative D, there would be no requirements for meeting DFCs in large blocks of 1,000 acres or more. The BLM could consider the appropriate species composition of large trees on all areas, and more acres would be treated to achieve historic conditions. Alternative D would not specifically protect large trees, so the large tree component of forests could be reduced where treatments occur. All WUI projects implemented under the authority of the Healthy Forests Restoration Act would support and maintain old growth forests.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to as those described for Alternative B. In Alternative D, these account for 10,301 acres or 10 percent of the total forested vegetation acres, compared to 12 percent in Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described for Alternative B, except that retaining a higher percentage of large trees (as described in **Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]) would not apply to any areas in Alternative D, which would allow the BLM to consider the appropriate species composition in all treatment areas. This could result in more acres with appropriate species composition and, therefore, better forest health.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described under Effects from Vegetation—Riparian and Wetland Management, above.

Effects from Wildland Fire Management

Fuels reduction is intended to reduce stand-replacing wildland fires and make fire suppression easier to accomplish. Alternative D would result in 2,870 to 7,597 acres of forest being treated by prescribed fire or mechanical fuel reduction per year, compared to 4,886 acres in Alternative A (**Table 4-5**, Comparison of Vegetation—Forests Indicators by Alternative), which would result in the greatest improvement to forest health and species composition. Details of the extent of treatment are included in the Effects from Wildland Fire Management in the Wildland Fire Management section (Section 4.2.12) for Alternative A.

Wildland fire use, where it would be allowed, would reduce stand densities. In some cases, it would improve species composition (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

Effects would be similar to those described for Alternative A, except that approximately 21 percent of the forested vegetation would be classified as VRM Class I or II in Alternative D (**Table 4-8**), which would comprise 33 percent fewer restricted acres than currently under Alternative A.

Table 4-8
VRM and Forested Vegetation under Alternative D

	VRM I	VRM II	VRM III	VRM IV
Forested Vegetation Acres	2,856	19,546	56,907	21,679
Percent of Total Vegetation Acres	3%	18%	58%	22%

Source: BLM 2004a

Effects from Forest Products Management

Forest products management would treat ~~340~~ 361 acres annually in Alternative D, which would be approximately 5,100 to 6,800 acres over the next 15 to 20 years. This represents approximately 5 to 7 percent of forested vegetation in the CFO. Treatments would be tools to restore appropriate species composition and stand density, improve forest health and vigor, restore desired stand structure, and achieve other vegetation management and timber production goals.

Effects from Livestock Grazing Management

Effects would be similar to those described under Effects Common to All Alternatives; however, additional grazing allotments would be included in Alternative D, which would expand the effects of livestock grazing on forested vegetation.

Effects from Renewable Energy Management

Effects would be the same as those described for Alternative B.

Effects from ACEC/RNA Management

Size of ACECs and ACEC/RNAs would decrease from 25,600 acres in Alternative A to 23,924 acres in Alternative D. Effects would be similar to those described under Alternative B, except that neither the American River Historic Sites District (6,356 acres) nor the Uppoer Lolo Creek (1,625 acres) would ~~not~~ be designated and would thereby not be managed to support long-term ecological health, which would not result in improved forest conditions.

Cumulative Effects

Effects of past actions, natural events, and region-wide decisions (e.g., fire, logging, insect and disease, road construction, and ICBEMP) that have affected forests are documented in Chapter 3 (Affected Environment). In summary, forest vegetation species composition and structure have been altered and are generally outside their historic range. Logging and fire suppression have had the greatest effects, although wildland fire and insect and disease outbreaks have contributed significantly.

Cumulative effects would be similar among the alternatives. Effects on forested vegetation from any of the Cottonwood RMP alternatives would be overshadowed by reasonably foreseeable stand-replacing fire, continued fire suppression made necessary by WUI and intermingled landownership, and large-scale insect and disease outbreaks that would continue over the life of the RMP. Effects on forested vegetation from management accomplished by other landowners could affect forested vegetation on public lands. When activity fuels are not treated adequately, fuel hazard can increase on adjacent lands and affect fire intensity and severity on public lands. However, fuel treatments and

hazardous fuels are expected to increase on adjacent Forest service and State lands in response to community wildfire protection plans.

Revision of the Nez Perce, Clearwater, and Idaho Panhandle National Forests Plans could result in more or less treatment of adjacent areas; because no decisions have yet been made, the effects are not known. There has been a downward trend in treatment acres for several years. This trend is expected to continue because of endangered species protection and other regulatory restrictions. The Payette National Forest Plan reduces acres of treatment on Forest Service lands adjacent to the CFO. Wildland fire management on Forest Service lands will be determined in the Forest Plan decision, particularly areas where wildland fire use may occur. The BLM will need to coordinate with the Forest Service on all wildland fire use projects. Wildland fire use on Forest Service lands could allow stand structure and density of forests on public lands to continue to remain or move outside historic conditions.

Additionally, a Forest Service decision to increase the level of wildland fire use or prescribed fire, along with agricultural field burning, could impact the BLM's ability to use wildland fire and prescribed fire for forested vegetation management because of air quality concerns and meeting the air quality requirements. This could postpone or eliminate fuel reductions or vegetation treatments that use fire to improve forest structure and density.

Insects have and will continue to cause mortality in all conifer forests. Insect infestations can be exacerbated by inappropriate management, which could affect public lands. Additionally, a lack of appropriate treatment or lack of wildfire suppression or fuel-reduction treatments can cause more mortality on public lands when wildland fire or insects spread. These effects could affect stand structure and density.

Maintaining and protecting old growth is a growing issue for all public land managers in the region. Plans on adjacent public lands could result in more acres with large tree and old growth components over the long term. However, in some areas, a lack of treatment to protect dry conifer old growth would result in a loss of acres with large tree and old growth due to insects, disease, and wildland fire. In the past, the BLM did not specifically manage for old growth, and future management for such is precluded by logging of large tree components. In some areas, this effect would continue for the next 200 to 300 years.

Population increases are likely to expand the WUI, which in turn could alter forest management, taking the emphasis off restoring historic composition and structure and focusing more on fuel reduction. Depending on the forest type, these are sometimes the same thing. Additionally, the Idaho Statewide Implementation Strategy for the National Fire Plan could alter forest management in the WUI as more money becomes available and mitigation plans are implemented. These activities could result in stand structure changes but probably no species composition changes.

4.2.6 Vegetation—Weeds

Goal: Prevent establishment of new invasive plant species and reduce infested acreage of established invasive plant species.

Summary

Overall, management under Alternative D would yield the highest potential for weed introduction or spread of existing populations, and Alternative C would yield the lowest potential, followed by Alternative B then Alternative A. The factors that most differentiate one alternative from another in terms of their potential for weed infestation are the degree to which areas are open to OHV use, amount of lands available for herbicide treatments, and the amount of acreage available for ground-disturbing activities. **Table 4-9** identifies the indicators that were used to analyze effects on weeds under each alternative.

Table 4-9
Comparison of Weeds Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Potential for increases or decreases in new weed populations and density and extent of existing populations	Potential for occurrences would increase	Potential for occurrences would stay at current levels or would decrease	Greater potential than Alternative B for occurrences to decrease	Greater potential than Alternative A for occurrences to increase

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For Vegetation—Weeds management, the indicators used for impact analysis are identified in **Table 4-9**, Comparison of Weeds Indicators by Alternative.

Methods and Assumptions

Effects are conditions that change the potential for weed infestation or spread. Effect determinations are based on reasonably predictable responses of weed species to a variety of conditions. Reasonably predictable responses include the following:

- Weeds often exploit disturbed areas and are adept at outcompeting many native species;
- Most actions that disturb soils or vegetation will increase the potential for weed infestation;
- Weed infestation will often follow transportation routes, making roadsides and trails prime habitat for weeds and making vehicles prime vectors for the spread of weeds;
- Rangelands are particularly prone to weed infestation due to disturbances from grazing livestock; and
- Weeds thrive in ecosystems that are out of balance, either from a hydrological or vegetative perspective.

Although many specific populations of weed species are known in the CFO planning area, the entire area has not been inventoried. Therefore, it is difficult to predict which species, if any, may arise in a given area, or to calculate the exact degree to which the CFO is affected. The analysis below focuses on explaining how existing or proposed management actions may contribute to the spread or management of weed populations. This analysis is based on the following assumptions:

Impacts were assessed according to the following assumptions:

- Weeds are most likely to thrive in disturbed areas, including burned areas, along road cuts or in staging areas, and where soils have been disturbed by OHV, equestrian, livestock, or hiker use;
- Current trends in plant succession/vegetation would continue;
- Vegetation communities would be maintained with a mix of species composition, cover, and age classes;
- Changes in weed potential would occur commensurate with changes in PSQ since logging activities contribute to extensive soil disturbance;
- Noxious and invasive weeds would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the CFO planning area, recreational activities, wildlife and livestock grazing and their movements, and surface-disturbing activities;
- Noxious and invasive weeds would further expand into native plant communities, and disturbances to these communities would expand opportunities for the spread of nonnative invasive plant species;
- As use of BLM lands increases over the life of this RMP, levels of funding for weed control will also increase;
- The CFO will continue to participate in Cooperative Weed Management Areas, ensuring cooperative weed control efforts with other land management agencies;
- Total control of the spread of noxious weeds is unlikely under any alternative;
- The BLM would continue to treat noxious and invasive weeds and pests on public land, as stipulated within other BLM permits and authorizations; and
- Weed and pest control would be carried out in coordination with the appropriate county, weed and pest control district, and owners of adjacent property.

Effects Common to All Alternatives

Effects from Soils Management

Management actions under which the BLM would identify, ~~map~~record, and avoid effects on sensitive land types would reduce the potential for weed infestation by reducing the potential for soil disturbance. Prioritizing existing roads and assessing naturally occurring failures for restoration would allow the BLM to build realistic weed management measures into restoration planning, reducing the potential for weed infestation.

Effects from Water Resources Management

Activities implemented as a way to maintain or increase water quality are likely focused on decreasing soil and vegetation disturbance and would generally reduce the potential for weed introduction and spread. Review of new or ongoing activities involving water resources management would allow the BLM to assess the degree to which actions contribute to or diminish weed infestations, leading to formation of appropriate weed management actions.

Effects from Wildlife and Special Status Wildlife Management

Review of new or ongoing activities for effects on wildlife habitat caused by discretionary actions would allow the BLM to assess the degree to which actions contribute to or diminish weed infestations, leading to formation of appropriate weed management actions.

Effects from Vegetation—Riparian and Wetlands Management

Establishing riparian management units consistent with Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) (Alternative A) and the Aquatic and Riparian Management Strategy (Alternatives B, C, and D) (**Appendix F** [see Volume II~~I~~]) would restrict actions within established buffer zones to those that would result in enhanced or maintained conditions. Actions that may be restricted include those that may cause a long-term increase in weed potential by disturbing vegetation or soils or by allowing for greater weed seed distribution.

Locating recreation sites in "non-critical" aquatic and terrestrial habitats would minimize disturbance in sensitive riparian areas, reducing weed potential in such areas.

Effects from Aquatic Resources, Fish and Special Status Fish Management

Developing a coordinated plan to maintain fisheries habitat, water quality, and riparian areas along the Salmon and Snake Rivers would include managing for weeds. Management measures may include treatments to reduce or control weed populations and to reduce the potential for new infestations in these areas, as well as restoration of ecological conditions that would favor native species over weeds.

Effects from Special Status Plants Management

Reviewing ongoing discretionary activities for impacts to plants that are federally listed or are listed as an Idaho BLM sensitive plant, or their habitats, and modifying actions to avoid impacts to such plant species would require identifying and minimizing those actions that may favor weed production. Such actions would include those that result in increased soil or vegetative disturbance or distribution of weed seeds, or actions that change the soil moisture regime at the expense of listed plants. Reviewing and modifying proposals for new projects to minimize effects on listed or otherwise sensitive plants would require project proponents to create weed management plans to avoid adverse impacts.

Effects from Cultural Resources Management

Management of cultural resources would have minor and short-term effects on vegetation resources. Management actions focus on avoiding and protecting cultural sites, which in turn decrease surface-disturbing activities, such as limiting OHV use, on or near such sites. Excavations of cultural resource sites disturb the soil surface, which increases the opportunity for the establishment of noxious and invasive weeds. However, the area of disturbed surface associated with cultural site excavations is minimal.

Effects from Forest Products Management

Discouraging grazing in areas that are being reforested after harvest until seedlings have reproduced may reduce weed potential in such areas by minimizing disturbance that could favor weeds and by reducing foraging of seedlings, thereby providing them with an enhanced competitive advantage over weeds.

Use of BMPs and preventative measures including contract stipulations to clean all equipment, perform post project weed inventories and, if needed, treatment of the project area, and use of some sale receipts to fund this treatment would allow BLM to control new weed infestations in areas that have been disturbed by management actions or during harvests.

Restricting timber management activities in RHCAs or RCA stream buffers to only ecological restoration or salvage activities would remove a large potential source of soil and vegetation disturbance as well as weed seed introduction throughout this habitat type, thereby lowering the weed threat throughout riparian areas.

Weed potential can be seen as a function of ~~PSQ~~site disturbance. Higher PSQ means that more harvest activities may take place under that alternative than under alternatives offering lower PSQ. Such activities include construction of access roads, yarding, slash removal, and post-operation treatments. Allowing use of any site preparation or ground-based yarding methods, including use of skidders, on areas with slopes less than 35 percent or unless specifically prohibited by site-specific direction would allow for extensive soil and vegetation disturbance, as well as high potential for weed seed transport. The effects of such high-impact methods would be spread throughout the harvest area, since skidders may need to travel on a variety of routes to bring felled timber to the landings. Weed potential in these areas is very high compared to areas where lower-impact yarding methods are used, such as areas where slopes exceed 35 percent. Soil disturbance and weed threat would be reduced if yarding occurred during the winter when ground is snow-covered or frozen, or if helicopters were used for yarding rather than skidders. Weed potential in these areas is reduced because weeds have less of a competitive advantage in forested areas compared to other cover types.

Complete or partial clearcuts are vulnerable to weed infestation due to disturbances incurred during forest products removal and the wholesale changes in amount of sunlight and moisture retention.

Effects from Livestock Grazing Management

Livestock may disturb soil and vegetation and contribute to weed infestations or may be used a tool to control them, dependent on level of grazing use and existing ecological condition of grazed areas. Weed seeds can attach to animals or be ingested. They can then be transported to other areas, where they are spread by the animal physically removing the seed or fruit or through droppings. Areas where animals concentrate and disturb the soil are particularly vulnerable to infestations of noxious and invasive weeds. ~~Minor disturbance caused by livestock also provides seed coverage for rehabilitation on steep slopes.~~Livestock grazing can be used as a tool to manipulate and improve plant community composition. Livestock can transport seeds and fruits of native and nonnative species to other areas by physically removing the seed or fruit, or through the deposition of fecal matter. Although this can increase weed potential in rangelands, it also serves as a tool for distribution of seeds of native plants into areas that are otherwise difficult to access. Grazing plans that promote healthy rangelands and vegetation create conditions resistant to the spread of noxious and invasive weeds.

Continued compliance with Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would provide a framework under which the BLM would minimize effects from grazing livestock.

Effects from Minerals Management

Exploration and development operations associated with minerals typically disturb some level of vegetation. These disturbances result in increased weed potential, including import and export of weed seeds. Areas closed to the mineral laws and areas withdrawn from the mining laws would reduce the weed potential from mineral activities equally across all alternatives. Reclamation would be necessary for reestablishing desired vegetation on disturbed areas.

Effects from Recreation Management

Recreational activities can introduce and spread noxious and invasive weed seeds from vehicles, shoes, clothing, and recreational equipment. As recreation use increases, people from outside the area could bring in noxious and invasive weeds, including new invasive species. Recreation activities that occur in undisturbed and remote areas have the potential to distribute weed seeds into weed-free areas. Education activities implemented as part of an integrated weed management program may assist the BLM in locating new invasive plant populations found by the recreating public.

Effects from Renewable Energy Management

All alternatives propose to allow some development of renewable energy projects, which could introduce weed seeds or produce soil disturbance that favors weeds. Development of such projects may include construction of staging areas for chippers or other heavy equipment, construction of access roads, and timber harvest practices that could disturb soils and vegetation.

Effects from Transportation and Travel Management

OHV use would result in impacts on vegetation, such as loss of vegetation cover and density and composition changes. OHV users would introduce and spread noxious and invasive weed seeds from their vehicles, shoes, clothing, and recreational equipment. As OHV use increases, people from outside the area could bring in noxious and invasive weeds, including new invasive species. OHV activities in undisturbed and remote areas have the potential to distribute weed seeds into weed-free areas.

Other types of travel, including by foot, horse, or bike, cause fewer impacts, although all have the potential to disturb soils or allow for weed seed transport. Horses in particular have a high capacity for introducing weed seeds from manure into previously unaffected areas. Groups of horses may also create significant soil and vegetation disturbance in areas where they are tethered overnight, increasing the weed potential in confined areas.

Implementation of a travel plan and management of vehicles and other travel methods may restrict disturbance to known routes. Focused monitoring and control of new weed locations along active travel corridors would be more effective in reducing the establishment and spread of new weeds.

Effects from Lands and Realty Management

Lands and realty management actions, such as construction of rights-of-way or leasing actions, often result in surface disturbance, which increases the lands' susceptibility to weed invasion or spreads existing weed patches. Incorporation of requirements for weed control and rehabilitation into rights-of-way and other realty management actions would reduce the incidence of new weed introductions due to this program. Timely reclamation of disturbed areas diminishes the probability of weed proliferation in these areas. Failure to comply with existing weed control stipulations would increase weed abundance and proliferation. Right-of-way exclusion areas would reduce weed potential over ~~totaling~~ 11,622 acres. ~~would reduce weed potential over that amount of land.~~

Effects from Wild and Scenic Rivers Management

Managing the Salmon River to protect its outstandingly remarkable values and free-flowing conditions would ensure that BLM lands within the river corridor would remain closed to activities that would affect the visual or functional landscape of this waterway. This would minimize activities that commonly increase weed potential, including mining, timber harvest, OHV use, and livestock grazing, thus lowering the weed potential in this area.

Management of the outstandingly remarkable values of river segments found suitable for inclusion in the NWSRS could reduce weed potential because the chance of disturbing activities would be reduced. Activities that commonly increase weed potential, including mining, timber harvest, OHV use, and intensive livestock grazing, would be minimized, lowering the weed potential in this area.

Effects from Wilderness and Wilderness Study Areas Management

Managing 750 acres of the Frank Church/River of No Return Wilderness and 12,034 acres of WSAs would minimize activities that would normally increase weed potential. By continuing to restrict mining, timber extraction, and OHV use, weed potential would be maintained at current levels, assuming management occurs for weeds from sources such as hikers and equestrians.

Effects from Native American Tribal Uses Management

No effects have been identified from management pertaining to Native American tribal uses. The BLM would continue to consult with tribes before starting actions that could affect tribal values, including the possibility for an action to increase weed potential in areas that could contain resources significant to tribes in the area. The use of chemical treatments could be prohibited in some areas determined to be plant collection areas through Native American consultation. Similarly, consultation could provide locations where weeds control should be focused so Native Americans can have more access to desirable plants.

Alternative A

Effects from Soils Management

Implementing MFP Road Guidelines (BLM 1981a) and 1985 Riparian Management Guidelines (BLM 1985e), restoring abandoned roads, and restoring naturally occurring failures would reduce weed potential from road construction and other soil disturbing activities.

Effects from Water Resources Management

Managing 42 sixth-code HUC watersheds as prescription watersheds would involve controlling invasive species that may affect habitat quality or water quality, leading to increased management of such species.

Effects from Vegetation—Forests Management

Potential for weeds increases as the level of disturbance increases, although weeds have less of a competitive advantage in a forested environment than in other cover types and rarely result in total site occupancy. Although forest management actions would generally employ a weed management plan for affected areas, any increase in disturbance would increase the BLM's burden for future weed management. Due to this concern, contract stipulations implementing preventative measures are a part of harvest actions and a portion of the sale receipts are held for weed monitoring and control. Rehabilitation of the disturbed site is also implemented, further reducing the disturbance impacts and potential for weed introduction and spread. Intensive management means more management than in areas managed extensively or custodially, translating to greater vehicular traffic and more soil disturbance. This increases the weed threat on 24,257 intensively managed acres, relative to the weed threat on 11,500 acres of extensively managed land, and 37,549 acres of land managed on a custodial basis (not be managed for timber, although harvesting could occur for ecological reasons). Actions to treat FRCC 2 and FRCC 3 forested lands in WUI lands would partially focus on weed control to reduce the fire threat. A short-term effect would occur in the form of increased weed potential in treated areas due to increased soil disturbance and increased use

of vehicles that could introduce or spread weed seeds. A long-term impact would occur in the form of decreased weed potential in WUIs due to less frequent or less intense fires and a healthier forest community.

Effects from Vegetation—Weeds Management

Continued participation with Cooperative Weed Management Areas and following BLM guidance would allow the BLM to contain new weed outbreaks and maintain current conditions within designated weed control focus areas. However, greater use of BLM lands is expected over time, which would increase potential for weed introduction and spread, and also increase the potential for soil and vegetative disturbance, thereby increasing the weed threat. Identifying areas where rehabilitation or restoration would be cost effective and successful would allow the BLM to prioritize weed management strategies given the weed control resources at hand.

Use of biological controls may assist BLM ecologists in controlling select weed species on a limited basis. Grazing livestock such as goats and sheep, as well as released insects, have been used successfully to control leafy spurge *(Euphorbia esula)* and may be used to reduce or control existing weed populations.

Effects from Vegetation—Rangelands Management

Current management is consistent with Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]), which amended the MFP (BLM 1981a) in 1997 and are designed to maintain rangeland health. Because of lack of grazing management control on many small allotments, current conditions and trends would probably continue for weed infestations and weed control would be dependent on adjacent land owners. These conditions would apply to 122,732 acres of grazed rangelands.

Effects from Vegetation—Riparian and Wetlands Management

Implementing BMPs and riparian management guidelines would lead to lower rates of disturbance in areas that would be protected as riparian management units. Although designating RHCAs totaling 24,290 acres would not completely protect riparian zones from disturbance, such designation would require that activities in riparian buffers would be minimally disruptive to soils and vegetation, thus lowering the potential for weed establishment. Restricting timber harvest along Class I streams would remove a significant amount of potential disturbance in such areas, lowering the possibility of weed infestation in these areas. Weed infestation can be sufficient by itself to cause poor function in riparian zones by reducing vegetative diversity, canopy diversity and structure, and causing altered fire regimes and water retention rates. Therefore, improving 7.75 miles of streams in poor condition to fair or better condition would necessitate weed management plans in affected areas, leading to greater management control over weeds in these areas.

Effects from Wildlife and Special Status Wildlife Management

Reviewing ongoing discretionary actions to assess impacts on listed species habitat would include assessing changes in the potential for weed infestation, leading to the opportunity for greater management control over weed populations. Environmental review of new federal actions proposed within listed species habitat would include assessment of potential for weed increase and would include measures to mitigate for such increases, if found.

Improving range conditions over 8,803 acres and developing HMPs for 13 specific areas would require implementing measures to restore or enhance native or desirable plant communities. Doing

so would require controlling weeds, which would be accomplished by extending current management measures to these areas. Over time, this would lead to a reduction in both the number and extent of weed populations.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Identifying actions that may occur in areas identified for various levels of aquatic management would include assessment of increased potential for weed infestation arising from those actions. This would allow the BLM to create or require actions to reduce the weed threat arising from those actions, or to eliminate actions that may increase weed populations.

Effects from Special Status Plants Management

Protecting the Long Gulch and Skookumchuck populations of MacFarlane's four-o'clock would require the BLM to create a weed management plan for these populations. Such a plan would include measures to minimize disturbance, possibly limiting access by hikers and grazing livestock, and restricting use of OHVs. If the population were threatened by existing weed populations, the plan would include weed-eradication measures for these management areas.

Effects from Wildland Fire Management

Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/fuels-reduction treatments. Given current management, an estimated 1,950 to 5,950 acres could be treated annually with mechanical treatments and prescribed fire under Alternative A (see Section 4.2.12, Wildland Fire Management). Under any wildfire control scenario, suppression activities and fuels treatment actions have the potential to spread weed seeds or create conditions that favor weeds. Striving for control status in one operational period would require an aggressive suppression response that may result in greater soil disturbance or use of vehicles than other, less-aggressive methods. This higher level of disturbance and higher number of vehicles would lead to greater weed potential. Rehabilitating effects of fire would include a revegetation/weed management plan to ensure that burned areas respond with a majority of native or desirable plant species and a minimum of noxious weed species. Therefore, in some areas, short-term weed potential may increase, but long-term weed potential may decrease as a result of better habitat quality. Areas that are already affected by species that thrive in post-burn conditions, such as cheatgrass, may experience long-term increase in weed potential as a result of wildland fire use.

Implementation of hazardous fuels-reduction projects that are consistent with fuels treatment priorities would use inventories, post-burn treatments, and native species where they would meet revegetation goals for greater management control of weeds throughout burned areas.

Use of nonfire fuel-management strategies to help maintain or improve range conditions would necessitate weed removal, using herbicides, biocontrols, or other methods. Under Alternative A, 1,700 to 10,680 acres could be treated annually to reduce weeds and reduce hazardous fuel conditions. This would ultimately reduce the weed threat while causing little disturbance that would increase the weed threat.

Effects from Visual Resources Management

Weed potential can be seen partially as a function of the amount of acreage in various VRM categories. In general, alternatives that have more acres in VRM Classes I and II have lower weed potential than those that have more acres in VRM Classes III and IV since disturbance potential is minimized in Class I and II areas. Exceptions to this are in VRM Class I and II areas along CFO

rivers, where climate and ecosystem changes have allowed for weed infestations. This alternative has a moderate weed potential due to the number of acres in VRM Classes I and II.

Effects from Forest Products Management

Possible effects of forest products management are summarized under Effects Common to all Alternatives, above. Such actions would be restricted in 24,290 acres of riparian buffers under this alternative. At 6,600 MBF per year, the estimated annual ASQ would be highest under this alternative.

Effects from Livestock Grazing Management

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) contain standards that, if met, would allow for greater control of invasive weeds. These standards stipulate that a measure of proper range health is that invasive weed species are not increasing and that grazing measures must be designed to assist in containing weed species. Because of lack of grazing management control on many small allotments, current conditions and trends would probably continue for weed infestations and weed control would be partially dependent on adjacent landowners' management actions. Under this alternative, improvements planned for grazed rangelands include implementing noxious weed control on 1,900 acres, which would lower weed potential in these areas.

Effects from Minerals Management

Keeping public lands within 0.25-mile of the Salmon River withdrawn from mineral entry would reduce ~~mineral~~mining -related weed potential on approximately 18,532 acres of land by reducing the potential for soil and vegetation disturbance and changed drainage and erosion patterns and by reducing potential for weed introduction from vehicles. Although all alternatives would designate 131,044 acres of CFO lands as being open to leasing, this alternative is not subject to mineral lease stipulations that include NSOs. Lack of NSOs can increase the weed potential. Requiring that all mineral actions remain subject to site-specific mitigation measures developed during environmental review would require mining operators to prepare site-specific weed control plans.

Effects from Recreation Management

Under Alternative A, the CFO would continue to manage the Lower Salmon River—Scenic, the Lower Salmon River—Recreational, and the Clearwater River SRMAs (totaling approximately 26,682 acres). Management actions pertaining to SRMAs may result in greater recreational use of these areas, thus increasing weed potential by increasing soil and vegetation disturbance and increasing potential weed seed vectors. Increases in management of such areas would offset these effects by ensuring that SRMA management plans address weed potential and include measures to minimize such risk. Measures may include steering users away from areas that have high weed potential or closing sensitive areas.

A Special Recreation Permit process used to accommodate commercial, competitive, or organized group activities allows the BLM to monitor activities that may contribute to increased weed potential, thereby having greater opportunity to prepare specific weed control and revegetation plans, if needed.

Activities occurring in areas designated as ROS classes Primitive or Semiprimitive Nonmotorized are more likely to be low impact and lead to less soil and vegetation disturbance than activities occurring

under other ROS classes. Activities in these areas include hiking, backpacking, and kayaking. Under current management, 33,197 acres are managed according to these ROS guidelines.

Effects from Transportation and Travel Management

Under this alternative, the BLM would manage 85,335 acres as Open to cross-country motorized vehicle travel. Open designations greatly increase the potential for soil and vegetation disturbance and for weed seed introduction, thereby greatly increasing weed threat. This alternative would also manage 40,437 acres designated as Limited to existing routes. The weed potential in Limited areas would be lower than under the Open designation, since effects on soil and vegetation beyond existing conditions would be relatively minimal. Areas designated as Closed further lower the opportunity for weed potential because most motorized travel is prohibited except for specific routes that have been grandfathered in for. Controls on vehicle use on lands identified for less intensive use would give the BLM greater control over potential weed vectors.

Effects from Lands and Realty Management

Acquiring road easements may change weed potential if acquired roads need to be modified for BLM purposes. Any alterations that would occur outside of the established roadbed would increase soil disturbance, thereby increasing weed potential. All roads acquired through easements are assumed to be compatible with BLM road design requirements.

Effects from ACEC/RNA Management

Keeping public lands within 0.25-mile of the Lower Salmon River withdrawn from mineral entry would reduce ~~mineral~~ mining related weed threats on 15,072 acres by minimizing the potential for soil and vegetation disturbances and for changes in soil moisture retention.

Protecting particular areas as ACEC/RNAs by the following actions would reduce or maintain the weed potential in a number of ways: prohibiting timber harvest in some areas, water development, road construction, rights-of-way, or salt placement; initiating intensive allotment management plans for certain areas; conducting intensive vegetation and botanical inventories and recording~~mapping~~ specific habitat types; and restricting timber harvest methods on areas with over 50-percent slopes.

BLM control over weed infestation would increase by minimizing soil and vegetation disturbance, by managing livestock, and by giving the BLM a better overall picture of existing conditions from which to base monitoring. The area affected by these actions would total 25,600 acres and would include Wapshilla Ridge, Lower and Middle Cottonwoods Islands, Captain John Creek, Long Gulch, Lucile Caves, Skookumchuck, and Craig Mountain.

Restricting herbicide use in Long Gulch, Skookumchuck, and in the vicinity of Lucile Caves would impede weed-control efforts over a minimum of 513 acres and lead to increased weed potential in areas where herbicide applications would normally be used to control weeds.

Effects from Watchable Wildlife Viewing Sites Management

Actions designed to maintain or improve wildlife habitat along 235 miles of the Salmon and Snake Rivers and on 24,200 acres of Craig Mountain WMA would require creation of an HMP, a component of which would be a weed management plan. This could lead to actions that would assist in the control of weeds.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Restoring AMLs and streams that have been degraded by past mining practices would include revegetation, restricted site access, and improved soil conditions. All of these measures would diminish the potential for weed infestation and spread.

Alternative B

Effects from Geology Management

Increasing public access to and recreational use of unique geological features would increase the potential for weed seed transport and for soil disturbance that favors the establishment of weeds over Alternative A. At the same time, increasing public awareness of geological features offers an opportunity to educate the public about the effects of weeds and the methods by which they are spread and established.

Effects from Soils Management

Effects would be similar to those described under Alternative A. Also, although increased soil disturbance control measures under this alternative would help to prevent weed infestation, BMPs as written are not sufficient to prevent the spread or establishment of weeds. BMPs for soil disturbance do not directly address measures to reduce the possibility of weed infestation, such as frequent monitoring of disturbed areas. The BLM would combine these measures with project-specific weed control measures to reduce the potential for weed infestation to a manageable level.

Effects from Water Resources Management

Effects would be similar to those described under Alternative A. Also, promoting activities that help achieve DFCs in 3~~2~~28 restoration watersheds would include controlling weeds and reducing occurrences of actions that promote their spread and establishment. Over time, these measures would result in greater control of weeds in restoration watersheds.

Effects from Vegetation—Forests Management

In general, treatments may involve thinning, tree extraction, revegetation with desirable species, use of fire, use of chemicals to control undesirable species, or some combination of these actions. Many of these actions result in disturbance during application of the treatment, leading to such conditions as disturbed soils and vegetation that favor weeds. Although this could cause a short-term impact by increasing weed potential in treated areas, treatments are also designed to increase forest health and restore the balance of species and resources found in a normal healthy forest. Achieving this goal would lead to lower weed potential in treated areas in the long term.

Effects from Vegetation—Weeds Management

Under Alternative B, the BLM would increase cooperative efforts in Cooperative Weed Management Areas to develop and implement annual treatment strategies. Implementing prevention activities as part of field activities would reduce the extent to which weed seeds are spread to other areas. Rehabilitating treated areas, combined with monitoring such areas, would decrease weed potential. Supporting education and awareness efforts would help to diminish the weed threat by enlisting the public's help in avoiding activities that disturb soils or vegetation or that contribute to weed seed spread.

Outside of Cooperative Weed Management Areas, management focus would emphasize implementing weed control goals into other resource goals. For example, a large component of

watershed restoration planning would be weed control planning within the watershed. Travel management planning would continue to implement measures to reduce weed infestation. Although rehabilitation of treated areas would continue in selected areas outside of Cooperative Weed Management Areas, monitoring rehabilitated areas would not necessarily be a component of the rehabilitation. Under both scenarios, the BLM would gain greater control over weed introductions and establishment than it would have under Alternative A.

Under all action alternatives, the BLM would implement BMPs designed specifically to reduce the weed threat associated with project actions. Implementing these BMPs before, during and after projects would reduce weed potential relative to current management by repairing disturbed soils and revegetating where needed, and by taking measures to reduce weed seed spread through vehicle transportation.

Effects from Vegetation—Rangelands Management

Yearly monitoring and the assessment of rangelands would allow the BLM to determine the extent to which noxious and invasive weeds are present in CFO rangelands. Data gathered during monitoring would be used to develop weed management strategies and goals in cooperation with Cooperative Weed Management Areas, leading to greater control over weeds in the CFO.

Implementing actions to convert nonnative plant communities to desired plant communities would result in more acres of native grasslands, contributing to a more stable ecosystem over time in localized areas. This condition could lead to a more natural fire regime, decreased or stabilized soil erosion rates, and more natural moisture retention.

Effects from Vegetation—Riparian and Wetlands Management

Improving riparian conditions would involve, in part, controlling weeds, restoring native plant communities, and restricting activities that contribute to soil or vegetation disturbance. Under this alternative, buffer areas would be reduced by 6 percent compared to Alternative A, leading to reduced protection and therefore greater weed potential.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described under Alternative A. Additionally, efforts to maintain or improve ecological conditions in native grassland plant communities for wildlife habitat benefits would necessitate controlling invasive species in such areas, particularly on Craig Mountain and Rattlesnake Ridge.

Implementing appropriate riparian management strategies to prevent adverse impacts on riparian areas, fish habitat, and water quality, may include specific riparian grazing season of use and stream bank use criteria. Such management would ensure that riparian areas are not overgrazed or grazed during sensitive times of the year or during vulnerable seral stages, contributing to more stable riparian areas and thus lower weed potential.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described under Effects from Wildlife and Special Status Wildlife Management.

Effects from Special Status Plant Management

New management plans or updates to existing plans to properly manage MacFarlane's four-o'clock and Spalding's silene *(Silene spaldingii)* would identify and ameliorate threats to these populations, including threats from invasive weeds. Implementing control measures for invasive weeds in the vicinity of populations of these species would result in greater chances of survival of these populations and result in increased control of noxious weeds.

Effects from Wildland Fire Management

Treating CFO lands to move them into a lower FRCC (for example, FRCC 3 to FRCC 2) would result in lower potential for stand-replacing wildfire, thus lowering weed potential in these areas in the long term. However, short-term effects, in the form of increased weed potential, could arise from the treatments themselves, assuming that they would increase soil disturbance and vehicular traffic.

Under Alternative B, up to 40 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period; an estimated 33,766 acres could be treated under Alternative B (see Section 4.2.12, Wildland Fire Management). Use of prescribed fire would increase short-term, disturbance-related weed potential but, combined with suspension of livestock grazing until objectives are met, would decrease long-term weed potential due to enhanced conditions favoring native species in areas that are in relatively good ecological health. Alternative B would include approximately 1,182 to 3,545 acres annually of mechanical treatments and prescribed fire Use of mechanical treatments would have similar effects as use of prescribed fire.

Use of chemical and or biological controls would reduce the potential for short-term, disturbance-related effects compared to prescribed fire and mechanical treatments, while having similar effects on long-term weed potential. Chemical and/or biological treatments would be used on up to 36 percent of CFO lands with the annual treatment range of 844 to 6,078 acres. This is 44 percent less than Alternative A. Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/fuels-reduction treatments; however, current management emphasis and budget is focusing on the WUI. Chemicals would be applied under restricted conditions, by trained personnel, to minimize the potential for impacts.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Estimated PSQ under this alternative would be 3,129 MBF, as opposed to an estimated annual ASQ of 6,600 MBF under Alternative A. Therefore, weed potential would be lower than under Alternative A. Vegetation treatments in RCA stream buffers would be allowed, but only if they result in restored or enhanced ecological conditions, resulting in lowering of weed potential.

Allowing all harvest systems on the commercial land base of 40,598 acres could increase weed potential compared to Alternative A, where certain restrictions would decrease or maintain weed potential.

Effects from Livestock Grazing Management

Reducing AUMs by approximately 15 percent and allotments by approximately 12 percent compared to Alternative A would not reduce overall weed potential since reductions would occur on lands that

are not currently grazed. Overall, existing trends and conditions are expected to continue on these allotments.

Ensuring that Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) are being met would require that weeds are not compromising value and function of rangelands and that grazing levels are such that they do not contribute to an increase in weed potential.

Effects from Minerals Management

Lands designated as NSO would not allow most of the mineral operations that include a permanent presence of equipment or structures, and operations would be limited in areas designated as CSU. Therefore, weed potential is decreased in these areas due to lower potential for soil and vegetation disturbance, as well as less chance of weed seed introduction due to vehicle traffic.

Approximately 43,590 acres open to leasable and salable minerals activities would be subject to NSO stipulations, and 42,403 acres would be subject to CSU stipulations, decreasing the weed threat relative to Alternative A on that amount of land since there are no similar restrictions under Alternative A.

Reduction in weed potential from use of appropriate site-specific mitigation measures would result in the same effects as Alternative A.

Effects from Recreation Management

The acreage of SRMAs managed under this alternative would increase to 55,201 acres, a 28,519 acres increase in comparison to Alternative A. SRMA designations would account for 38 percent of the planning area and would be subject to intensive recreation management. Overall, effects would be the same from SRMA management as described under Alternative A.

Providing developed recreation facilities only when necessary to protect resources may include such development for weed control. However, increases in recreational uses such as camping that are not accompanied by increases in developed facilities may contribute to greater weed spread by forcing users into casual camping or other use arrangements. This could allow for greater weed potential than under current management since it could create soil and vegetative disturbances in areas that are not managed and may be spread over a larger area than if developed facilities were available.

Under this alternative, an additional 9,498 acres would be managed as Primitive or Semiprimitive Nonmotorized. As a result, the weed threat, as discussed under Alternative A, would further decrease.

Effects from Renewable Energy Management

Consideration of suitable sites for renewable energy projects would include appropriate NEPA analysis, including potential for weed infestation from any proposed project. All renewable energy projects would include use of BMPs designed to reduce soil disturbance or weed seed introduction. Affected areas would be revegetated at the completion of the project, and BLM would conduct follow-on weed monitoring as appropriate.

Effects from Transportation and Travel Management

Reclassifying 85,308 acres as Limited to designated routes rather than Open to cross-country motorized vehicle use would drastically reduce the potential for weed infestation relative to Alternative A by reducing soil disturbance and diminishing the possible extent of weed seed spread. The area designated as Closed to OHVs is approximately the same throughout all alternatives, so weed potential in these areas is the same. Efforts to decommission or obliterate roads and trails that are no longer needed would reduce these important weed vectors, thereby reducing the threat of weed seed transport and also vehicular disturbance of soils and vegetation, thereby reducing disturbance-related weed potential.

Allowing for future route modifications would allow the BLM to close certain travel routes if it became clear that resources were being damaged beyond an acceptable level. One indicator of such damage would be if weed infestations increased significantly. Considering the possibility of effects on resources, including changes in weed potential, would affect the BLM's decision making process in terms of designating new travel routes in the future and would include effects of increasing weed potential on actions that could affect soils, vegetation, watersheds, and other resources. Also, establishing kiosks at primary trailheads and posting signs at other main access points would help to reduce weed potential by giving the BLM opportunity to educate the public about the effects of weeds and the role of their actions in either contributing to or reducing weed potential.

Annual monitoring of travel routes would allow the BLM to assess weed infestation before new populations became uncontrollable or before disturbances had a chance to contribute significantly to the spread of established populations. If needed, measures would be taken as a result of monitoring to reduce weed potential. All of these factors contribute to decreased weed potential relative to Alternative A.

Effects from Lands and Realty Management

Effects on weed potential from land exchanges cannot be determined since it is not known if current management on lands that could be acquired is superior or inferior to BLM management in terms of controlling factors that affect weed potential.

Avoidance zones would occur in areas that are already given a fairly high level of protection from activities that cause soil and vegetation disturbance and would not affect weed potential. However, weed potential could be lowered by consolidating rights-of-way and encouraging applicants to co-locate rights-of-way with other rights-of-way. Overall, this would reduce the amount of land that is disturbed, lowering the weed potential.

Effects on lands not designated as exclusion or avoidance areas would be those described under Alternative A.

Effects from ACEC/RNA Management

Keeping public lands within 0.25-mile of the Salmon River withdrawn from mineral entry would reduce mining-related weed threats on 6,785 acres by minimizing the potential for soil and vegetation disturbances, and changes in soil moisture retention.

Protecting particular areas as ACEC/RNAs by such actions as authorizing timber harvest only to support maintenance of timber stand health and achievement of management objectives would increase the weed potential in harvested areas due to increased soil and vegetation disturbance and

changes to soil moisture retention. Instituting vegetation treatments in grasslands and forests, including prescribed burns and use of wildland fire, would lead to a short-term increase in weed potential as a result of creating hot dry conditions that favor weeds. However, long-term effects on weed potential would result if treatments resulted in healthier grasslands and forests with more native species that would be more resistant to weed infestations.

In all areas, using integrated pest management measures would create lower weed potential by giving the BLM numerous options for weed control, allowing it to adapt its weed-control approach to a variety of conditions and instituting a speedier response to new weed outbreaks.

Effects from measures to preserve MacFarlane's four o'clock and Spalding's silene would be similar to those described under Alternative A.

This alternative does not rule out allowing new rights-of-way or road construction at Craig Mountain. The effect from either of these actions would be increased weed potential.

Under this alternative, minimizing ground disturbance on slopes greater than 40 percent in the East Fork American River ACEC would decrease weed potential from soil disturbances in these areas. Weed potential would further decrease as a result of vegetation treatments performed to enhance resource values on 570 acres. Decommissioning roads within three years after construction would decrease weed potential in this area, although constructing them in the first place would increase weed potential.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be similar to those described under Alternative A. Also, supporting efforts that designate new high-value wildlife viewing areas would require the BLM to maintain this habitat to a high degree, which would include developing and instituting a weed management plan. Also, supporting efforts that provide information and educational material regarding wildlife viewing would allow the BLM to incorporate educational information about weeds, which would increase public awareness of this problem.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be similar to those described under Alternative A. Also, restricting all closed and remediated sites as NSOs would reduce the future weed potential from mining or other uses.

Alternative C

Effects from Geology Management

Effects would be the same as those described under Alternative B.

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B, except that DFC blocks under Alternative C would be 500 acres (totaling 20 percent of the CFO) rather than 1,000 acres (17 percent of the CFO).

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, except the extent of actions to promote native plant community health would expand to include Salmon River and canyon grasslands, increasing the area where the weed potential would decrease.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except RCA areas would increase by 21 percent over Alternative B (and 14 percent over Alternative A), decreasing the weed potential in these areas.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that acres of conservation and restoration watersheds would increase by 6 percent over Alternative B and by 3 percent over prescription watersheds in Alternative A. Restoration and conservation of these areas would include reducing the possibility of actions that contribute to weed spread, including actions that disturb soil and vegetation, increase erosion, or allow for greater potential for import of weed seeds. Therefore, weed potential would decrease in these areas.

Effects from Special Status Plant Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that each unplanned fire would be evaluated for its potential for wildland fire use (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). This differs from Alternatives B in that it increases the potential to use wildland fire for resource objectives throughout the CFO, potentially increasing resource benefits, including long-term weed control efforts. Also, use of prescribed fire to treat various FRCC classes would potentially increase by 5 percent, resulting in an increase in weed potential in the short-term in these areas but followed by a long-term decrease in weed potential due to a healthier ecosystem. Up to 16,883 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative C (see Section 4.2.12, Wildland Fire Management), 50 percent less than Alternative B. Treated FRCC 2 and 3 areas, including those treated for weeds by biological or chemical methods, would decrease by 16 percent relative to Alternative B, reducing the chances of reaching long-term weed management goals.

Alternative C would include approximately 1,182 to 4,390 acres annually of mechanical treatments and prescribed fire. This is a 24-percent increase compared to Alternative B.

Effects from Visual Resources Management

Disturbance potential under this alternative would be lowest compared to other alternatives, due to there being the highest number of acres in VRM Classes I and II. Therefore, weed potential due to this type of management is lowest among all alternatives.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, however, weed potential under this alternative would be lowest compared to other alternatives, due to it offering the lowest PSQ (3,101 MBF) on the smallest commercial land base (34,611 acres).

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B. However, there could be a reduction in weed potential by reducing AUMs by a further 3 percent and grazed lands by a further 4 percent compared to Alternative B. Alternative C would reduce overall weed potential due to grazing impacts to the greatest degree of any alternative.

Effects from Minerals Management

Effects would be the same as those described under Alternative B, except NSO areas would increase by 25,264 acres (58 percent), and CSU areas would increase by 16,719 acres (39 percent), decreasing the weed potential from mining ~~mineral~~ related disturbances to the greatest degree of any of the alternatives.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the similar to those described under Alternative B. Also, striving for a decrease in motorized vehicle use on BLM-controlled lands, roads or trails in Sheep Creek, Hat Creek, Denny Creek, and other specified areas would increase the area where weed potential from OHV-related disturbances would decrease.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Increasing the Craig Mountain ACEC by 19,386 acres would increase management and decrease certain types of disturbing uses, including mining, over this amount of land relative to Alternative A.

Similar to Alternative A, allowing lands within the ACEC to be classified for custodial management would increase the short-term weed potential but would decrease the long-term weed potential.

Minimizing new road construction and obliterating old roads and assigning high priority for control of undesirable nonnative vegetation using integrated pest management methods would decrease the

weed potential in this area and in others where similar management is applied, to the lowest of any alternative.

Effects from Watchable Wildlife Viewing Sites Management
Effects would be the same as those described under Alternative B.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management
Effects would be the same as those described under Alternative B.

Alternative D

Effects from Geology Management
Effects would be the same as those described under Alternative B.

Effects from Soils Management
Effects would be the same as those described under Alternative B.

Effects from Water Resources Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management
Weed control measures that would occur under forest management or enhancement actions described under Alternatives A, B, and C would not occur under this alternative; therefore, weed potential would increase relative to the other alternatives.

Effects from Vegetation—Weeds Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management
Effects would be similar to those described under Alternative B, except RCA areas would decrease by 9 percent from Alternative B (and 15 percent from Alternative A), lowering management levels and increasing weed potential.

Effects from Wildlife and Special Status Wildlife Management
Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management
Types of effects would be similar to those described under Alternative B, except that acres of restoration and conservation watersheds would decrease by 19 percent from Alternative B and by 21 percent from prescription watersheds under Alternative A. Restoration and conservation of these areas would include reducing the possibility of actions that contribute to weed spread, including actions that disturb soil and vegetation, increase erosion, or allow for greater potential for import of weed seeds. Therefore, weed potential would decrease in these areas relative to Alternative A, but to a lesser degree than Alternatives B and C.

Effects from Special Status Plant Management
Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

This alternative would treat the greatest amount of acreage. Effects would be similar to those described under Alternative B, except that 50,650 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative D (see Section 4.2.12, Wildland Fire Management), 50 percent more than Alternative B and triple that under Alternative C. Alternative D would include approximately 2,870 to 7,597 acres of mechanical treatments and prescribed fire and 844 to 6,078 acres of biological or chemical treatments annually.

Much of this chemical treatment intended to reduce weed populations and to move FRCC 3 lands into FRCC 2, or FRCC 2 lands into FRCC 1. This alternative would allow for chemical or biological weed treatments on 80 percent more land area than under Alternative C and the same area as Alternative B, lowering the weed potential from this type of action the most of any alternative.

Effects from Visual Resources Management

Disturbance potential under this alternative would be highest compared to other alternatives, due to there being the lowest number of acres in VRM Classes I and II. Therefore, weed potential due to this type of management is highest among all alternatives.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B; however, weed potential under this alternative would be highest compared to other alternatives because it would offer the highest PSQ (4,823 MBF).

Effects from Livestock Grazing Management

This alternative would offer a 16-percent increase in AUMs and increase the grazed area by 13,118 acres relative to Alternative A. Although grazing density would not be greater, possible effects, including soil disturbance, defoliation and crushed banks in riparian areas, and weed seed transport, would be spread over a wider area. Weed potential from grazing-related effects would be highest under this alternative. However, existing range trends and conditions would probably continue, because these allotments have been vacant and have not been grazed for over a decade. A large amount of these areas identified for grazing are intermingled with The Nature Conservancy and Idaho Department of Fish and Game lands, which at present do not have plans to graze lands they administer.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that weed potential would increase as NSO areas decrease by 8,545 acres (20 percent) and CSU lands decrease by 10,390 acres (25 percent). Alternative D would be more restrictive than Alternative A because of NSOs and CSUs, which would not apply under Alternative A where weeds are managed case by case. Alternative D has the second-highest weed potential from mining-related effects, second to Alternative A.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B. Under this alternative the BLM would continue managing 23,189 acres as Open to cross-country motorized travel yearlong, which would increase weed potential relative to Alternatives B and C, and to a lesser degree than under Alternative A. Increased weed potential would occur as a result of increased soil and vegetation disturbance and higher possibility of weed seed transport from OHVs.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that use of livestock grazing to accomplish management goals in ACEC/RNAs could allow for increased introduction of weed seeds.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be the same as those described under Alternative B.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

Past, present, and reasonably foreseeable actions that are relevant to weed management in the cumulative impact area include land tenure changes, wildland fire use and suppression, fuel and vegetation treatments, minerals management, population growth, urban development, recreational use, OHV use, stream and watershed restoration activities, regional planning efforts, weed management efforts, and grazing. The types of impacts that have occurred and would continue to occur from weed infestations include loss of plant diversity, loss of wildlife habitat, loss of soil integrity, changes in fire intensity and water retention rates, and reduced ecosystem function.

Several proposed actions in the Cottonwood RMP would address FRCC classes and work to move FRCC 3 areas into FRCC 2 or 1. Many areas that are in FRCC 3 are degraded primarily because of weed infestations, and chemical weed treatments are proposed that would reduce this effect. Such measures are proposed in other land management plans, and are helping to create a regional approach to weed control, limited resources in all areas mean that, at best, these measures would slow the rate of weed infestation, or reduce weed threat in particular areas of concern. Consistent with other regional plans, areas where open OHV use would be allowed would be further restricted under all Cottonwood RMP alternatives, except Alternative A. Although increasingly more OHVs are used throughout the cumulative impact area, the trend towards concentrating them into designated areas would enhance weed management efforts in most habitat types by reducing the extent of disturbance and seed spread.

Cumulative effects would be similar among the alternatives. Alternative A would contribute to more regional cumulative effects resulting from land tenure adjustments, open OHV use, and wildland fire suppression. In general, Alternatives B, C, and D would provide more management measures than Alternative A that would directly or indirectly reduce the potential for cumulative impacts.

4.2.7 Vegetation—Rangelands

Goal: Maintain or improve rangeland plant community health (diversity, composition, function, and vigor) relative to site potential.

Summary

Actions under most resource categories have the potential to affect rangeland vegetation. In general, actions under Alternative C would have the greatest potential to maintain or improve rangeland plant community health, followed by Alternative B, and then Alternative A. Actions under Alternative D would have the greatest potential to negatively affect rangeland vegetation. **Table 4-10** identifies the indicators that were used to analyze effects on rangeland vegetation management under each alternative.

Table 4-10
Comparison of Vegetation—Rangelands Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Change in acres of mid-elevation shrub, mountain shrub, perennial grasslands, and grazed forested areas	Acres of these cover types are not projected to change	Changes may occur as a result of treatments, but those changes would affect various cover types differently	Changes may occur as a result of treatments, but to the least degree of any alternative	Changes may occur as a result of treatments, to the greatest degree of any alternative
Change in composition and structure	No change	May increase amount of native vegetation	May increase amount of native vegetation and decrease tree encroachment into grasslands	No change
Potential for increases in weed infestation	Potential for occurrences would increase	Potential for occurrences would stay at current levels or would decrease	Greater potential than Alternative B for occurrences to decrease	Greater potential than Alternative A for occurrences to increase

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For nonforested vegetation, the indicators used for impact analysis are identified in **Table 4-10**, Comparison of Vegetation—Rangelands Indicators by Alternative.

Methods and Assumptions

Impacts are determined by assessing which actions, if any, would change vegetation structure or composition, decrease the extent of rangeland vegetation, allow for increased dominance of invasive weeds, affect habitat value for wildlife species, or decrease grazing potential.

Impact analysis and conclusions are based on interdisciplinary team knowledge of the planning area and of interaction among different management activities, and on scientific literature. The effects of each action on vegetation resources are quantified when possible; however, many impacts must be qualitatively assessed when suitable data are not available. The following assumptions were made for the purpose of this analysis:

- Seeding on rangeland habitat for restoration purposes would use a native seed mix, or a mix of native seeds and approved nonnative species;
- Current trends in plant succession/vegetation would continue;
- Noxious and invasive weeds would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the CFO planning area, recreational activities, wildlife and livestock grazing and their movements, and surface-disturbing activities;
- Biocontrol would continue and potentially expand;
- Noxious and invasive weeds would further expand into native plant communities, and disturbances to these communities would expand opportunities for the spread of nonnative invasive plant species; and
- Many actions that would occur within the CFO would be subject to BMPs. Although BMPs are designed to minimize the effects of projects, they generally cannot eliminate all impacts. This impact analysis assumes that BMPs will minimize but not eliminate possible effects.

Effects Common to All Alternatives

Effects from Soils Management

Canyon grasslands are considered a sensitive land type since they are relatively scarce in the CFO. Identifying and recording~~mapping~~ such areas, designing projects to avoid or minimize the potential for adverse effects on sensitive land types, and restoring or obliterating unneeded roads would minimize potential for effects on this cover type, including mass wasting and erosion.

Effects from Water Resources Management

Effective watershed management would result in healthy and diverse plant communities, including rangelands. The restriction of surface disturbance around wetland/riparian areas, perennial surface waters, identified floodplains, and ephemeral channels would further protect vegetation from disturbance. Considering water quality standards and watershed guidelines during construction of other program projects would assist in achieving the desired plant and litter cover objectives.

Effects from Vegetation—Forests Management

Impacts to nonforested areas from forest and woodlands management would be indirect and would relate to treatments and the need to access treatment areas through rangelands. Fire treatments that reduce the chances of stand-replacing wildfire in forested areas would reduce the chances of such fires in rangelands as well. Fire treatments that occur at edges between rangelands and forested areas could decrease the occurrence of forest encroachment into rangelands. Treatments that require constructing access roads, fire breaks, or staging areas in rangeland areas would affect this habitat by allowing for greater weed dispersal, soil disturbance, loss of vegetation, and habitat fragmentation.

Effects from Vegetation—Weeds Management

Rangelands are particularly prone to weed infestation due to disturbances from grazing livestock. Livestock can also transport weed seeds in their feces or by having them attached to their coat.

Weed management under all alternatives would affect nonforested vegetation areas equally by reducing or controlling the degree to which desirable plants would have to compete with weeds.

Effects from Vegetation—Rangelands Management

Meeting the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would require, in part, that existing native plant communities were maintained and that nonnative plant communities were appropriate for the site. Other parameters to ensure that vegetative health and proper function of rangelands are being maintained are included in the standards and guidelines. The BLM is currently meeting the goals stated in these standards and guidelines.

Effects from Vegetation—Riparian and Wetlands

Riparian areas/wetlands cover only a small amount (approximately 2 percent) of rangelands in the CFO. Livestock are likely to be found in these areas much of the time, because, the riparian vegetation is most likely to be green and lush even during the summer months; these areas are where livestock's water supply is located; and riparian zones are cooler than associated uplands. Management of these areas would affect rangelands by requiring range management practices, primarily livestock grazing, do not cause degradation of these riparian areas. The BLM would monitor livestock use of such areas and adjust livestock use as necessary to comply with Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). This would ensure that no adverse effects occur to riparian areas from grazing livestock.

Effects from Wildlife and Special Status Wildlife

Striving to maintain or improve ecological condition status of native grassland communities or rangelands to benefit wildlife would affect rangelands by increasing management efforts to maintain appropriate native vegetation cover and diversity, weed control, and effects from grazing.

Effects from Aquatic Resources, Fish and Special Status Fish Management

Developing a Salmon and Snake Rivers coordinated plan to maintain fisheries habitat, water quality, and riparian areas would require management of sediment from upland sources. Such management would affect rangelands by requiring that range management practices, including livestock grazing, fire management, road construction, or weed management, would not increase the potential for erosion. Measures to control erosion would require maintenance of adequate range conditions including plant cover and density, as well as proper species composition.

Effects from Special Status Plants Management

Protection of certain special status plant species would indirectly affect rangelands. Populations of special status plant species found in grasslands, including MacFarlane's four-o'clock and Spalding's silene, Tolmie's onion *(Allium tolmiei var. persimile)*, Jessica's aster *(~~Asteraceae~~ Aster jessicae)*, green-band mariposa lily *(Calochortus macrocarpus var. maculosus)*, broad-fruit mariposa lily *(Calochortus nitidus)*, and Palouse goldenweed *(Haplopappus liatriformis)*, would be preserved by such measures as grazing restrictions, increased weed management efforts, increased monitoring, travel restrictions, and creation of specific management plans. To the degree that populations of these species occur in rangelands of the CFO, this increased management would result in healthier grassland communities and increased preservation of such areas.

Effects from Cultural Resources Management

Excavations of cultural resource sites disturb the soil surface, which increases the opportunity for noxious and invasive weeds to become established. However, the amount of disturbed surface associated with cultural site excavations is minimal, and these sites are reclaimed immediately.

Effects from Livestock Grazing Management

Direct effects on rangeland vegetation from livestock grazing management actions include the removal of forage by livestock, which could alter the amount, condition, and vigor of vegetation in grazed areas. Impacts from livestock grazing usually occur over a long duration of use during the growing season, resulting in lower vigor of desired species and a change in species composition. Salting areas and bed grounds often have disturbed soil and a loss of plant cover, which results in localized areas dominated by invasive plants. Such effects are most likely to occur in areas where management is inadequate. The BLM range management program is consistent with Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) and allows BLM land managers to adjust grazing levels as needed to meet resource goals. The BLM monitors range conditions as needed to establish appropriate grazing levels to meet the standards and guidelines. This level of management is adequate to ensure proper range conditions.

Livestock grazing can be used as a tool to manipulate and improve plant community composition. Livestock can transport seeds and fruits of native and nonnative species to other areas by physically removing the seed or fruit, or through the deposition of fecal matter. Although this can increase weed potential in rangelands, it also serves as a tool for distribution of seeds of native plants into areas that are otherwise difficult to access. Grazing plans that promote healthy rangelands and vegetation create conditions resistant to the spread of noxious and invasive weeds.

Grazing management strategies, such as rotation, deferment, rest from use, and the manipulation of season of use and grazing intensity, would be implemented to manage composition, cover, and the vigor of vegetation. These provide rest periods for plant growth and seed production to maintain plant vigor. The objective of these strategies is to maintain or reach rangeland standards for upland plant communities.

Effects from Minerals Management

Minerals management actions would result in the localized removal of vegetation during both exploration and development work. Mineral development actions would also ~~fracture~~ fragment continuous vegetation communities, change plant community structure and diversity, and alter vegetation landscapes. Long-term impacts would mostly be associated with the location and design of roads. Increased erosion and decreased vegetation cover would occur from soils compaction and the channelization of surface runoff in ruts and road ditches. Areas below mid-slope roads become drier, which reduces plant productivity and can potentially change species composition. Similar impacts would occur for leasable, locatable, or mineral materials.

Effects from Recreation Management

Although occurrence of recreational activities may be increased in SRMAs compared to Extensive Recreation Management Areas, management of these areas is intensified to reduce potential effects. This effect is common to all alternatives, although under current management, fewer acres would be managed as SRMAs than under other alternatives.

Actions occurring in areas designated as Primitive and Semiprimitive Nonmotorized generally have the lowest impact and the least potential to affect rangeland vegetation. Actions occurring in areas that allow motorized recreation have a higher potential to affect rangeland vegetation.

Effects from Renewable Energy Management

Renewable energy development actions could fracture continuous vegetation communities, change plant community structure and diversity, and alter vegetation landscapes. Long-term impacts would mostly be associated with the location and design of roads. Increased erosion and decreased vegetation cover would occur from soils compaction and the channelization of surface runoff in ruts and road ditches. Effects to rangeland vegetation could arise from actions such as geothermal or wind energy projects.

Effects from Transportation and Travel Management

OHV use and road construction would result in impacts on vegetation such as loss of vegetation cover, change in density, and composition changes. OHV users would introduce and spread noxious and invasive weed seeds from their vehicles, shoes, clothing, and recreational equipment. As OHV use increases, people from outside the area would bring in noxious and invasive weeds, including new invasive species. OHV activities in undisturbed and remote areas have the potential to distribute weed seeds into weed-free areas, to disturb soil, and to fragment habitat. Such effects can diminish the value of rangeland forage and increase the degree to which the BLM must manage the lands. **Table 4-11** shows the acres of nonforested and rangeland vegetation that would be Closed, Limited, and Open to motorized travel under each alternative. Potential for effects is greatest in areas designated as Open; and therefore greatest under current management and lowest under Alternatives B and C.

Table 4-11
Acres of Rangeland Vegetation Affected by Travel Designations

Travel Area	Alternative A	Alternative B	Alternative C	Alternative D
Open	11,171	0	0	3,159
Limited	11,461	22,638	22,638	0
Closed	3,895	3,895	3,895	3,895

Source: BLM 2004a

Under all alternatives, approximately 340 miles of roads exist. The existence of roads leads to direct effects including loss of rangeland vegetation and also serve as vectors for weeds. Under all alternatives, the effect of the presence of roads is equal.

The greatest amount of unrestricted road access would be allowed under current management, with fewer miles of unrestricted roads available under the action alternatives. Therefore, potential for effects from use of roads, including introduction of weed seeds, is least under the action alternatives.

Effects from Lands and Realty Management

Installing utility systems and other rights-of-way actions would result in short-term vegetation removal until the area has been reclaimed. Native grasses and forbs may dominate reclaimed sites initially, assuming both that healthy conditions existed prior to disturbance and that revegetation seed mixes contained only native species. Areas where weeds populations were established prior to disturbance, where weed seeds may have been introduced by equipment, or areas adjacent to weed-

infested areas, may be more prone to initial colonization by weeds. In all cases, areas that have been disturbed for rights-of-way or other lease actions would be more prone to weed infestation and would require greater monitoring than nondisturbed areas. Long-term impacts would mostly be associated with constructing access routes.

Effects from Native American Tribal Uses Management

Tribal interests include treaty rights, tribal sovereignty, freedom of religion, protection of sacred and archaeological sites, and contemporary political and social rights, including economic viability. Coordinating with the Tribe on these tribal interests may affect the extent, timing, and type of vegetation management.

It is unlikely that such interests would affect the long-term objective to improve range vegetation, because the BLM has a long-standing practice of consulting with tribes on projects affecting public lands. The BLM would continue to solicit input from tribes on future projects, which would reduce, if not eliminate, the effect on vegetation resources.

Alternative A

Effects from Soils Management

Alternative A would prioritize restoration of existing roads on sensitive land types; this would result in improved habitat conditions in any habitat where this type of action occurred. Road closures would minimize potential for soil compaction, weed distribution, and vegetation disturbance.

Designing projects to avoid or minimize adverse effects on sensitive land types may help to protect rangelands, since canyon grasslands may be considered sensitive.

Effects from Water Resources Management

Effective watershed management would result in healthy and diverse plant communities. Considering water quality standards and watershed guidelines during construction of other program projects would assist in achieving the desired plant and litter cover objectives. Managing 39 sixth-code HUC watersheds (66,077 acres) as prescription watersheds would focus management actions on factors such as those that cause erosion or invasive weed species infestation, indirectly allowing for enhanced rangeland vegetation conditions.

Effects from Vegetation—Weeds Management

Weed treatment and prevention would affect native plant communities in rangelands by reducing competition, particularly for grasslands that are especially susceptible to weed infestation. Maintaining Cooperative Weed Management Areas throughout the planning area would allow the BLM to coordinate weed control efforts on a scale that includes surrounding lands, lowering the potential for weed infestation occurring as a result of weeds imported from other areas. Measures proposed under Cooperative Weed Management Areas may include restrictions on grazing in rangelands where it is clear that grazing is contributing to weed spread. Therefore, maintaining Cooperative Weed Management Areas may result in lowered weed potential in rangelands that lie within these areas.

Although identifying weed-affected areas that may be successfully restored would help the BLM prioritize funding that is available for such actions, this action itself prescribes no activities that would have a direct effect on rangeland health.

Effects from Vegetation—Rangelands Management

Managing lands to meet the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) helps to maintain plant community composition and can be used to increase the health and diversity of natural vegetative systems. Meeting standards and guidelines would ensure that BLM rangelands are maintained in or restored to target ecological health in regards to plant diversity and degree of weed infestation.

Effects from Vegetation—Riparian and Wetlands

This alternative offers 2,128 acres of riparian areas to grazing livestock (out of 122,732 acres of rangelands). The riparian/wetlands acres would be 1.73 percent of the total rangeland acres.

Effects from Wildlife and Special Status Wildlife Management

Some listed species, including several birds, and other wildlife such as deer rely on rangelands throughout all or part of their lifecycle; these species may be affected by loss or degradation of habitat. Periodic review of ongoing activities would reveal the extent to which these activities may be affecting listed species' habitat in rangelands, allowing the BLM to prioritize management actions to preserve such habitat. This action in itself would not constitute a direct effect but would allow more direct approaches to rangeland management to occur. Modifying actions that occur as a result of reviewing rangeland habitat conditions would result in direct effects, including lower rates of soil and vegetation disturbance and loss.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Identifying actions that may occur in areas targeted for intensive or less intensive aquatic management may reveal range activities that contribute to erosion or sedimentation. Because erosion and sedimentation occur in areas where range conditions have been degraded, identifying such actions may precipitate management actions that would improve range conditions.

Effects from Special Status Plants Management

Potential effects are listed under Effects Common to all Alternatives. In addition, this alternative would designate the Long Gulch and Skookumchuck populations of MacFarlane's four-o'clock as areas to be protected, indirectly protecting the rangelands in which they are found.

Effects from Wildland Fire Management

Limiting burned acres to 30 percent of the CFO over a given 5-year period may result in reduced use of prescribed fire during periods when wildfires burn large amounts of land. While use of prescribed fire has potential use for management in rangelands that are in good or excellent ecological conditions, burning in poor or fair condition rangelands may result in increased nonnative species infestations. This could reduce the potential benefits produced by prescribed fires, including more diverse grassland conditions and reversal of woodland encroachment into grasslands or shrublands. Suppressing wildfires within one operational period would require an aggressive response that may increase disturbance of rangeland soils and vegetation.

Use of non-fire fuel management strategies would include chemical applications, biological treatments, and/or seedings of between 1,700 and 11,200 acres annually. Since these treatments are designed for weed control, such actions would improve conditions where they were applied by reducing competition between range species and weeds and lowering wildfire potential.

Effects from Visual Resources Management

Under Alternatives A, 53,899 acres would be protected under VRM Classes I and II. Activities in VRM Class I and II areas would be restricted to those that do not result in significant disturbance, which would provide protection to rangelands in these categories by limiting the degree of mining, timber extraction, or road construction that could occur there. Effects would include less fragmentation of habitat, less direct loss of rangeland, and less disturbance than could occur in VRM Class III and IV areas.

Effects from Livestock Grazing Management

Under current management, 122,732 acres are allotted for grazing. Possible effects of livestock grazing are listed under Effects Common to All Alternatives.

Implementing improvements, including constructing additional fences, spring developments, cattle guards, and noxious weed control, would affect 52,854 acres of rangeland vegetation by allowing the BLM greater control over grazing livestock. These improvements would allow the BLM more opportunities for rangeland rest and rotation, increasing the possibility of keeping livestock out of sensitive areas. Vegetation improvements would result from lowered competition from noxious weed infestation.

Lowering AUMs by 12 percent over 5 years would be commensurate with reductions in grazed areas, and allow for improved rangeland vegetation conditions. However, these benefits would be negated by raising AUMs by 13 percent later in the life of the RMP.

Implementing appropriate actions that would result in maintenance of conditions according to standards identified in the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would improve rangeland health. Effects would include lowered grazing pressure, improved native plant communities, and a vegetation matrix appropriate to its situation.

Effects from Minerals Management

Under this alternative, 131,044 acres of the CFO would remain open to leasing subject to the standard lease form. Potential effects are described under Effects Common to All Alternatives. Effects of mineral activity in rangeland areas may be reduced in ACECs due to NSO stipulations, depending on proposed management of each area.

Effects from Recreation Management

This alternative would designate 33,197 acres as Primitive or Semiprimitive Nonmotorized. Areas under these designations have the lowest potential for effects of any ROS class. This alternative would designate 26,682 acres as SRMAs, under which recreational activities would be more heavily monitored. Potential effects of recreational activities include habitat fragmentation, introduction of weeds, and increased unauthorized road and trail construction. Effects would increase from increased OHV use over time. These effects are described under Effects from Transportation and Travel Management.

Considering competitive or organized group recreation permit applications on a case-by-case basis would allow the BLM to reduce effects on sensitive rangeland vegetation, including canyon grasslands or other vegetation types, by not permitting such activities or by inserting stipulations that would cause such events to avoid sensitive range types.

Effects from Transportation and Travel Management

Under this alternative, 85,308 acres would remain Open to cross-country motorized travel. Therefore, current effects described under Effects Common to All Alternatives would continue or increase over time.

Considering temporary or permanent closure of all dead-end roads or roads with an expected duration of use of five years or less would allow the BLM to prioritize closures but would have no effects on its own since it proposes no direct actions. Under this alternative, approximately 39 miles of roads would be subject to restrictions on motor vehicle use. This relatively low amount of restricted access would lead to increased potential for the types of impacts listed under Effects Common to All Alternatives.

Road easement acquisition occurring after development of activity plans may allow better access to BLM-administered land for rangeland management, which could improve rangeland conditions.

Effects from Lands and Realty Management

Outside of rights-of-way exclusion areas, rangeland vegetation could be affected by lands and realty actions. Impacts could occur if rights-of-way, leases, or permits ran through rangeland areas, resulting in fragmentation, loss of vegetation from access roads or maintenance of the rights-of-way, and introduction of weeds.

Effects from ACEC/RNA Management

Protecting canyon grasslands of Wapshilla Ridge would minimize actions that could disturb rangeland and nonforested vegetation on 401 acres. Salt licks or water supplies would be placed outside of the area and new rights-of-way and roads would be restricted, resulting in less soil and vegetation disturbance, less direct loss of rangeland, and less potential for weed distribution.

Similar effects would occur by protecting Palouse prairie of the Lower and Middle Cottonwood Islands as an ACEC/RNA (43 acres), canyon grasslands and associated habitat types in Captain John Creek (1,321 acres), and habitat for MacFarlane's four-o'clock in Long Gulch (47 acres), Lucile Caves (404 acres) and Skookumchuck (18 acres).

NSO-1 stipulates that no surface occupancy would occur within ACECs or RNAs. This would reduce the potential for impacts described under Effects Common to All Alternatives, to the degree that rangelands are found within ACEC/RNAs.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

AMLs contain severely degraded vegetative communities due to the high level of disturbance they have experienced from past mining practices. Rehabilitating AMLs in rangeland areas would include restoration of soils and vegetation, resulting in better quality habitat.

Alternative B

Effects from Soils Management

Effects would be the same under this alternative as described under Alternative A. In addition, implementing BMPs for soil-disturbing activities would reduce potential for future effects by minimizing road building and retention to only those roads that are necessary. Doing so would minimize existing effects such as erosion and weed seed introduction by eliminating and restoring unnecessary roads or by improving design of existing or planned roads.

Effects from Water Resources Management

Effects would be similar to those described under Alternative A. In addition, restoring watersheds and subwatersheds may improve rangeland conditions by requiring actions that would reduce erosion, weed potential, or deforestation.

Effects from Vegetation—Weeds Management

Under Alternative B, the BLM would increase cooperative efforts in Cooperative Weed Management Areas to develop and implement annual treatment strategies. This alternative increases management of weeds in rangeland and other areas over Alternative A. Implementing prevention activities as part of field activities would reduce the extent to which weed seeds are spread to other areas. Rehabilitating treated areas, combined with monitoring of such areas, would decrease weed potential. Supporting education and awareness efforts would help to diminish the weed threat by enlisting public help in avoiding activities that disturb soils or vegetation or that contribute to weed seed spread in rangeland areas.

Outside of Cooperative Weed Management Areas, management focus would emphasize implementing weed control goals into other resource goals. For example, a large component of watershed restoration planning would be weed control planning within the watershed. Travel management planning in rangeland areas would continue to implement measures to reduce weed infestation. Although rehabilitation of treated areas would continue in selected areas outside of Cooperative Weed Management Areas, monitoring of rehabilitated areas would not necessarily be a component of the rehabilitation. Under both scenarios, the BLM would gain greater control over weed introductions and establishment than under Alternative A.

Effects from Vegetation—Rangelands Management

Yearly monitoring and assessment of rangelands would allow BLM to determine if they are meeting standards and to adjust management as needed to maintain range conditions. Adjustments may include changes in grazing practices or increased weed management.

Effects from Vegetation—Riparian and Wetlands

Livestock grazing would be permitted on 1,880 aces of riparian areas (out of 105,619 acres of rangelands) under Alternative B. The riparian/wetland acres would be 1.78 percent of the total rangeland acres and would be 11.65 percent less than offered for grazing under Alternative A. Therefore, potential grazing related effects are lower under this alternative than under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Promoting sensitive species conservation through land tenure adjustments, conservation easements, restoration projects, and cooperative planning may result in more or improved rangeland in the CFO if targeted species rely on rangeland habitat.

Maintaining or improving ecological condition of native grassland communities in important winter and spring range areas may result in greater diversity of native plants and a reduction in weeds and disturbed areas.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Implementing BMPs to avoid or minimize adverse effects to aquatic and riparian habitats may require altering practices that contribute to erosion in rangeland areas within the same watershed. These practices may pertain to grazing, timber extraction or treatment, or vehicle use. Effects of

altering practices in rangeland areas may include enhanced health or preservation of rangeland areas. Under this alternative, ~~32~~ 28 watersheds would be considered restoration watersheds and ~~1~~ three would be designated~~ a~~ conservation watersheds (totaling 64,481 acres), 2 percent less than prescription watersheds under Alternative A. Increased management of weeds, erosion, and other land disturbances in these watersheds would lead to increased rangeland health to the extent that rangelands occur in these watersheds. A total of 22,847 acres would be protected as RCA stream buffers, meaning that 1,443 fewer acres would be protected as such compared to Alternative A.

Effects from Special Status Plants Management

Protecting listed and BLM sensitive plant populations would protect rangelands to the extent that they occur there. Species such as Spalding's silene, Tolmie's onion, Jessica's aster, green-band mariposa lily, broad-fruit mariposa lily, and MacFarlane's four-o'clock are found within rangeland and may require special management actions, including cessation of grazing, increased weed control measures, and restrictions on travel in areas where they are found. This would indirectly lead to preservation of range habitat.

Land acquisitions, exchanges, or conservation easements to support listed species populations may increase the amount of rangeland within the CFO.

Effects from Wildland Fire Management

Under Alternative B, up to 40 percent of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period; an estimated 33,766 acres could be treated under Alternative B (see Section 4.2.12, Wildland Fire Management). Alternative B would include approximately 1,182 to 3,545 acres annually of mechanical treatments and prescribed fire.

Short-term effects would include increased weed potential due to soil and vegetation disturbances associated with fire control, as well as loss of forage in burned areas, although some of these effects would be offset by use of BMPs and implementation of a weed management plan to minimize soil and vegetation disturbance.

Using mechanical and prescribed fire treatments on 1,182 to 3,545 acres of FRCC 2 and 3 lands annually would improve rangeland conditions in terms of weed control to the degree that such treatment occurred in rangeland cover types. Long-term effects would be lower weed potential and greater diversity of native plant species. Although short-term effects would include greater weed potential due to soil and vegetation disturbance associated with the treatments themselves, these effects would be offset by use of BMPs to minimize disturbance.

Chemical and biological treatments could be used on 844 to 6,078 acres annually would improve rangeland conditions in terms of weed control to the degree that these treatments occurred in rangeland areas. Using these treatments for weed control instead of mechanical methods or fire minimizes disturbance of soils and other vegetation, thereby eliminating the ground disturbing factors.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Livestock Grazing Management

This alternative allows for a relatively low number of AUMs (~~6,254~~6,263) and allotment acres (105,619), and therefore has a relatively low potential for direct effects relative to current management. Possible effects are listed under Effects Common to All Alternatives. Under this alternative, the vacant Craig Mountain, vacant Wapshilla Ridge, and vacant Corral Creek allotments would be eliminated; and spring grazing on the Lyon Bar allotment would be discontinued. Because AUMs would decrease commensurate with reductions in total allotments, effects would result from having fewer acres grazed compared to Alternative A. Effects of assigning management levels (high or low) to other allotments would be that the BLM would have greater control over factors that affect rangeland vegetation, including number of AUMs and specific areas that should be closed to grazing to achieve resource goals.

Continuing to implement measures to ensure that Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) are being met would maintain rangeland health relative to other alternatives.

Effects from Minerals Management

This alternative offers the same amount of land open to locatable minerals (121,961 acres) and leasable minerals (131,044 acres) but has more rangeland (11,516 acres) covered by NSO or CSU stipulations than under current management. Therefore, potential effects as described under Effects Common to All Alternatives, above, would be lower than under Alternative A.

Effects from Recreation Management

All action alternatives would have the same number of acres (55,201) in SRMAs; therefore, effects from recreational activities would be the same on these lands across all action alternatives.

This alternative has more acres in areas classified as Primitive or Semiprimitive Nonmotorized than under current management; therefore, the potential for effects on rangeland vegetation from motorized or other high-impact recreational activities would be lower under this alternative than under current management.

Effects from Renewable Energy Management

Supporting development of electrical generating capabilities from biomass may lead to more development in rangeland areas. Development may be in the form of facilities or roads, both of which could increase the types of effects described under Effects Common to All Alternatives.

Effects from Transportation and Travel Management

Under this alternative there would be no areas designated as Open so no rangeland would be open to cross-country motorized travel. Motorized travel would be Limited to designated routes, which would lead to lower potential for disturbing rangeland vegetation and soils, lowering the potential for weeds to become established and for weed seed transport. Under this alternative, approximately 107 miles of roads would be subject to restrictions on motor vehicle use. Effects would include lower weed potential, which would lead to more stable vegetation communities, greater species diversity, and more normal fire potential and vegetation response. Assuming that the rate of new road construction does not increase, decommissioning, restoring, and obliterating obsolete roads would reduce road density, resulting in more rangeland vegetation, less weed potential, and less disturbance from vehicle use.

Use of signage, kiosks, press releases, and other public outreach materials to explain reasons for OHV closures and limited designation areas would increase public awareness of the effects of travel in sensitive areas, potentially lowering the effects to rangeland from this use.

Developing and implementing monitoring schedules and protocols to use on chosen trails would allow the BLM to determine effects from OHV use and to make adjustments as necessary. This would allow for greater control over travel practices that affect rangeland vegetation, as described under Effects Common to All Alternatives, above. Results would be lowered potential for effects on rangeland vegetation, including lower weed potential and lower direct loss of vegetation.

Implementing Road Management Guidelines would manage variables that cause erosion, changes in drainage patterns, and weed potential. Although many of these variables are addressed under current management, road guidelines codify the management practices so that they can be used on each project. Results of implementing these guidelines would be lower erosion and weed potential.

Effects from Lands and Realty Management

Consolidating landholdings through exchanges or disposal would allow for more efficient rangeland management. Management practices such as preparation of weed management strategies, prescribed burning, and grazing plans would be more efficiently planned for contiguous lands.

Consolidating linear rights-of-way and communication sites would reduce the amount of rangeland and other cover types that are dedicated to rights-of-way. This would reduce potential for direct loss of rangeland and other effects described under Effects Common to All Alternatives, above, relative to current management.

Effects from ACEC/RNA Management

Using integrated pest management to eliminate nondesirable vegetation would improve rangelands in areas where that practice occurred.

Protection measures for MacFarlane's four-o'clock would have the same effects as those proposed under Alternative A, although management of rangelands would be reduced slightly by reducing the Lucile Caves ACEC/RNA by 268 acres. Designating the Salmon River and Upper Lolo Creek ACECs may increase the number of acres of rangeland managed with ACEC restrictions, resulting in a higher level of management than under current management and less potential for effects.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be similar to those described under Alternative A, except some rangelands may be designated as NSOs due to contamination, which would result in decreased potential for disturbances to soils or vegetation in these areas.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except that acres of conservation and restoration watersheds would increase by 6 percent over Alternative B and by 3 percent over

prescription watersheds under Alternative A. This would potentially increase the amount of rangelands receiving additional restrictions on disturbance factors.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, except increased management of canyon grasslands may result in enhanced or maintained sensitive rangeland communities. Increased management may include greater weed control efforts, greater restrictions on grazing, and restrictions on travel in such areas.

Effects from Vegetation—Riparian and Wetlands

Livestock grazing would be permitted on 1,765 aces of riparian areas (out of 101,350 acres of rangelands) under Alternative C. The riparian/wetland acres would be 1.74 percent of the total rangeland acres and would be 17.06 percent less than offered for grazing under Alternative A and would be less than under any other alternative. Therefore, potential grazing-related effects would be least under this alternative.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described under Alternative B. In addition, increased management of grasslands in the Lower Salmon River area for big game species could result in better rangeland conditions, including higher diversity of native plant species and reduced or maintained levels of weeds.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that acres of conservation and restoration watersheds would increase by 6 percent over Alternative B and by 3 percent over prescription watersheds under Alternative A. To the extent that these watersheds contain rangeland vegetation, conditions in rangelands would improve relative to current management and to a greater degree than under Alternative B. Improvements could include less erosion, better water retention, less soil compaction if grazing was reduced, and lower or maintained levels of weeds.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that 16,883 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative C (see Section 4.2.12, Wildland Fire Management), 50 percent less than Alternative B. Alternative C would include approximately 1,182 to 4,390 acres annually of mechanical treatments and prescribed fire. This could result in reduced long-term rangeland health by reducing the area treated, but it could also possibly reduce the chances for short-term weed infestation by reducing disturbance related to fire control. Rangeland health may be affected by using prescribed fire to treat up to 100 percent of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas over a 20-year period; however, this is the least of all alternatives. Therefore, potential for increased rangeland health in the long term in the form of diminished weed potential, increased native plant diversity, and reversal of tree encroachment into rangelands would be lower than all

other alternatives. Potential to increase rangeland health through prescribed fire treatments is greatest in rangelands that are in good condition and are attaining the standards specified in the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). Rangelands that are already weed infested or otherwise disturbed may not benefit from such treatments, and such treatments may favor weeds in those cases.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except that the amount of VRM Classes I and II would increase by approximately 30 percent. Acres in VRM Classes I and II would increase about 37 percent from current management, decreasing potential for disturbance of rangelands over this amount of land.

Effects from Livestock Grazing Management

This alternative allows for the lowest number of AUMs (6,020) and allotment acres (101,350), and therefore has lower potential for direct effects relative to Alternative A. Possible effects are listed under Effects Common to All Alternatives, above.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that NSOs in nonforested rangeland areas would increase to 18,058 acres, an increase of approximately 28 percent over Alternative B. This would decrease the potential for mining ~~mineral~~ related effects relative to Alternatives A and B.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same under this alternative as described under Alternative B, except that this alternative would include Craig Mountain and American Hills Lake ACECs. In addition, the BLM's efforts to decrease motor vehicle use of roads and trails on 38,733 acres would reduce potential for direct loss of vegetation and weed seed introduction in these areas.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that rangeland in ACEC/RNAs would increase by 1,630 acres.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except that acres of conservation and restoration watersheds would decrease by 19 percent from those in Alternative B and by 21 percent from prescription watersheds under Alternative A, potentially reducing the amount of rangeland restored as a result of this program.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands

Livestock grazing would be permitted on 2,324 aces of riparian areas (out of a total of 135,850 acres of rangelands) under Alternative D. The riparian/wetland acres would be 1.71 percent of the total acres and would be 9.21 percent more than offered for grazing under Alternative A and would be more than any other alternative. Therefore, potential for grazing-related effects is highest under this alternative.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same under this alternative as described under Alternative B, except that acres of conservation and restoration watersheds would decrease by 19 percent from those in Alternative B and by 21 percent from prescription watersheds under Alternative A, potentially reducing the amount of rangeland restored as a result of this program.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be the same under this alternative as described under Alternative B, except that use of wildland fire for resource benefits would decrease. This could affect rangeland restoration efforts and may allow for greater encroachment of tree species into grasslands.

Effects would be similar to those described under Alternative B, except that 50,650 acres of the CFO classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated in any 5-year period under Alternative D (see Section 4.2.12, Wildland Fire Management), 50 percent more than Alternative B and triple that under Alternative C. Alternative D would include approximately 2,870 to 7,597 acres annually of mechanical treatments and prescribed fire. With chemical treatments proposed on up to 36 percent of these areas as well, many of the treatments would be geared towards weed control. Such increased treatments may decrease the amount and density of weed

populations in rangelands of the CFO to a greater degree than Alternative C (80 percent more), the same as Alternative B, and less than Alternative A (57 percent less).

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except that the amount of VRM Classes I and II would decrease by approximately 6 percent. Acres in VRM Classes I and II would decrease about 20 percent from current management, increasing potential for disturbance of rangelands over this amount of land. Because the amount of rangeland in VRM Classes I and II would be lowest under this alternative, the potential for disturbance-related effects is highest.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except that AUMs (8,54~~0~~9) and acres within allotments (135,850) would increase to the highest amount of any alternative. Therefore, the potential for grazing-related effects is highest under this alternative, although the majority of acres proposed for grazing is intermingled with Idaho Department of Fish and Game and The Nature Conservancy lands and currently are vacant.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that NSOs in rangeland areas would increase to 11,782 acres, slightly reducing the potential for effects relative to Alternative B but to a much lesser degree than Alternative C. The least amount of area would be subject to CSU stipulations, which could reduce the amount of protection of rangelands.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Under this alternative, 23,189 acres would be Open to cross-country motorized travel, which would create the highest potential for disturbance-related effects, including increased erosion and weed potential, to rangeland of any alternative except for Alternative A.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that rangeland areas in ACEC/RNAs would increase by 1,630 acres. In addition, potential use of livestock to achieve resource objectives in Wapshilla Ridge may lead to an increase in grazing-related effects on rangeland to the degree that it exists there. Effects may include short-term increases in weed potential followed by long-term decreases as ecological health of such areas increases.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

Rangeland vegetation types are of increasing importance because much of what was historically grassland and shrubland of the cumulative impact assessment area has been converted to other cover types or has been heavily grazed. For example, much of the Palouse prairie has been converted to farmland.

Much of the range vegetation of the CFO is noncontiguous, meaning that it is heavily affected by management actions aimed at other resources. Past, present, and reasonably foreseeable actions that are relevant to range management include land tenure changes, wildland fire and wildland fire use and suppression, fuel and vegetation treatments, timber harvest, minerals management, population growth, recreational use, OHV use, watershed restoration activities, regional planning efforts, weed management efforts, and grazing. The types of impacts that have occurred and would continue to occur include loss of plant diversity, loss of soil integrity, changes in seral stage, reduction of forage for livestock and wildlife, changes in fire regime, and reduced ecosystem function.

Consistent with other regional plans, areas where cross-country OHV use is allowed would be further restricted or eliminated under all of the Cottonwood RMP alternatives, except Alternative A. Closures directly affect rangeland vegetation by reducing disturbance and weed seed introduction. Although increasingly more OHVs are in use throughout the cumulative impact area, the trend towards concentrating them into designated areas would enhance range management efforts in most habitat types by reducing the extent of disturbance and fragmentation. Several proposed actions in the Cottonwood RMP would address FRCC classes and work to move Class 3 areas into Classes 2 or 1. Since many rangelands are infested with weeds, this cumulative effect could be substantial throughout the cumulative impact area. Alternative D would offer the greatest amount of treatments, with Alternative C offering the least.

Cumulative effects would be similar among the alternatives. Alternative A would contribute to more regional cumulative effects resulting from land tenure adjustments, open OHV use, and wildland fire suppression. In general, Alternatives B, C, and D would provide more management measures than Alternative A that would directly or indirectly reduce the potential for cumulative impacts. The emphasis in Alternative C on actions that value resource conservation, protection, and minimal human intervention would have the least impact or risk of impacts on rangeland management and would contribute the least to cumulative impacts.

4.2.8 Vegetation—Riparian and Wetlands

Goal: Maintain or improve riparian and wetland areas to achieve proper functioning condition. Manage for riparian plant community types appropriate for the site.

Summary

Measures would be implemented to protect riparian areas under all alternatives. Under Alternative A, riparian and wetlands management for the CFO includes Riparian Management Guidelines (BLM 1985e), PACFISH (BLM and Forest Service 1995), and MFP Supplement for Fisheries and Water Quality Objectives (BLM 1985d). Under Alternatives B, C, and D, an Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) was developed, and is somewhat similar to Alternative A for providing conservation and restoration measures for fisheries and water resources. The Aquatic and Riparian Management Strategy (**Appendix F**) provides more flexibility for adaptive

management, which is also specific to the incorporation of the aquatic and riparian habitat component of ICBEMP into BLM land use plans.

The default buffer zones sizes for streams and water bodies would vary for these four alternatives; however, Alternative C would provide the most protection, followed by Alternative A, B, and D (least protective). Alternative A identifies prescription watersheds, and Alternatives B, C, and D designate conservation and restoration watersheds to focus management efforts for the maintenance or improvement of riparian areas and aquatic habitats. **Table 4-12** identifies the indicators that were used to analyze effects on riparian and wetlands resources under each alternative.

Table 4-12
Comparison of Vegetation—Riparian and Wetlands Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Number of miles of streams in PFC flowing across BLM lands	537 miles	537 miles	537 miles	537 miles
Riparian and wetland general management direction.	Management emphasis on riparian guidelines and BMPs	Inventory and prioritize streams, riparian areas, and wetlands for maintenance of PFC or strive to achieve PFC	Inventory and prioritize streams, riparian areas, and wetlands for maintenance of PFC or strive to achieve PFC	Inventory and prioritize streams, riparian areas, and wetlands for maintenance of PFC or strive to achieve PFC
Number of acres of riparian buffer areas in RHCAs (Alternative A) and RCAs (Alternatives B, C, D)	24,290 acres	22,847 acres	27,624 acres	20,710 acres
Total miles of stream flowing across BLM lands within prescription watersheds (Alternative A) and within conservation and restoration watersheds (Alternatives B, C, D)	69 miles	80 miles	81 miles	65 miles

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For riparian and wetlands, the indicators used for impact analysis are identified in **Table 4-12**, Comparison of Vegetation—Riparian and Wetlands Indicators by Alternative.

Methods and Assumptions

Impacts were identified using best professional judgment and were assessed according to the following methods and assumptions:

- The RCA stream buffers under the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume III]), extend to all riparian zones in the CFO and restrict most activities to those that would benefit or restore the quality of habitat within these areas;

- Different program actions are assessed for their effects on vegetation resources;
- Activities generally affect vegetation by changing plant composition, seral condition, structure, production, ground/canopy cover, and soil resources;
- Restoring riparian and wetland vegetation is assumed to include a correction in the species composition and structure, including stand density and age, where appropriate;
- Livestock type and stocking rates would remain the same over the planning period;
- Current trends in plant succession/vegetation would continue;
- Vegetation communities would be maintained with a mix of species composition, cover, and age classes;
- Noxious and invasive weeds would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the CFO planning area, recreational activities, wildlife and livestock grazing and their movements, and surface-disturbing activities;
- Noxious and invasive weeds would further expand into native plant communities, and disturbances to these communities would expand opportunities for the spread of nonnative invasive plant species;
- The BLM would continue to treat noxious and invasive weeds and pests on public land and grazing allotments, and livestock permit holders, right-of-way holders, mineral lease claim, and permit holders would continue to treat noxious and invasive weeds and pests on public land, as stipulated within their permits and authorizations;
- Weed and pest control would be carried out in coordination with the appropriate county weed and pest control district and with owners of adjacent property; and
- Because snowmobiles do not disturb soils to a significant degree, effects to riparian vegetation from snowmobile use would be minimal and confined to occasional damage to shrubs that emerge from the snow in the path of snowmobiles.

Effects Common to All Alternatives

Effects from Soils Management

Designing projects to avoid or minimize the potential for adverse effects in sensitive land types would help to maintain vegetation quality in riparian zones by reducing erosion.

Effects from Water Resources Management

Since riparian zones are an integral part of floodplains, restricting actions that would cause definable adverse effects to the natural and beneficial functions of floodplains would, by necessity, require that riparian zones are not adversely affected.

Effects from Vegetation—Forests Management

Riparian vegetation would be protected from direct effects from timber harvest and other forest practices by implementing RHCAs according to the Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) or as RCA stream buffers under the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) (see **Table 4-12**, Comparison of Vegetation—Riparian and Wetlands Indicators by Alternative). Although some timber harvest may still be allowed in buffer zones, it would be subject to guidelines that would ensure that soils and vegetation were preserved or enhanced. These plans allow short-term adverse effects for long-term beneficial effects or no net change actions.

Potential for effects can be seen as directly related to PSQ, since higher PSQ means that either a larger area would be subjected to logging or the same amount of area would be logged more intensively. Therefore, alternatives with higher PSQ are more likely to indirectly or directly affect riparian resources.

Effects from Vegetation—Weeds Management

Weed management strategies would reduce competition between riparian vegetation and invasive species, leading to healthier riparian zones. Some strategies may actively restore riparian areas that have been impaired by weed infestation, increasing riparian health. Strategies may require cessation of, or restrictions on, activities occurring in riparian zones that could increase weed potential, including grazing, OHV use, or logging. Potential for such effects is the same across all alternatives.

Working with partners at other land management agencies would increase the scope of weed control efforts and reduce the potential for weed seed introduction from outside the CFO. Partnering would give the BLM greater resources to draw from in terms of local weed knowledge and it could give the BLM a greater labor pool to draw from, creating a regional approach to weed control.

~~*Effects from Vegetation—Riparian and Wetlands*~~

~~Implementing RHCAs as described in the Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) or RCA stream buffers according to the Aquatic and Riparian Management Strategy (Appendix F [see Volume III]) would improve or maintain riparian habitat by limiting actions within riparian zones to those that would preserve or improve such habitat. Activities most likely to be restricted in such areas are those associated with mining, timber management, grazing, and transportation. Soil erosion, loss of vegetation, and diminished bank stability would decrease as a result of establishing buffers as described.~~

Effects from Special Status Plants Management

Management measures that would protect sensitive riparian plant species would indirectly protect aquatic habitats by maintaining healthy riparian areas where sensitive plant species occur.

Effects from Wildland Fire Management

Suppressing wildfires within one operational period, using Appropriate Management Response, would protect riparian areas from destructive wildfire and would allow for flexibility for using wildfire to achieve resource management goals. Although riparian areas generally do not burn as frequently as grasslands or dry forests, some effects, including maintenance of plant diversity and canopy structure, may be better achieved by use of occasional fires.

Riparian resources could be affected if fire equipment needed to enter these zones for suppression tactics. These effects could include soil disturbance, which could facilitate weed growth and loss of vegetation.

Implementing measures to stabilize burned areas would affect riparian areas by ensuring that proper conditions for vegetative regeneration would be present.

Effects from Forest Products Management

Indirect effects could occur if forest management practices in adjacent areas resulted in clearcuts, significant soil disturbance, or changes in vegetation type or structure. Potential effects such as greater weed potential, changes in water retention, or changes in riparian vegetation resulting from

changes in the amount of sunlight reaching lower levels of riparian vegetation are unlikely to occur since RCA buffer widths are generally much wider than the riparian zone that they protect. Additional effects occur when timber harvest changes the forest canopy cover to result in changes to Equivalent Clearcut Acres, which may affect the flow regimes (high and low) and base flow conditions. Such hydrologic effects may affect stream channels/streambanks, floodplains, and riparian areas.

Effects from Visual Resources Management

VRM Classes I and II contain restrictions that may limit the amount of timber harvest or mineral resource extraction that may occur within riparian buffer areas. Although these restrictions are not intended specifically to protect riparian biological resources, they would protect such resources if proposed activities would affect the visual landscape. VRM Classes III and IV contain few restrictions limiting land uses. The increased restrictions associated with Classes I and II could indirectly protect aquatic and riparian habitats from impacts associated with other land uses.

Effects from Livestock Grazing Management

Although riparian zones may cover only a small amount of a given planning area, grazing cattle are most likely to be found in such areas during the summer. This is due to the fact that riparian vegetation is most likely to be green and lush even during the dry summer months, and also because riparian zones are cooler than associated uplands. The BLM would monitor livestock use of such areas and adjust livestock use as necessary to comply with Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). This would ensure that no adverse effects occur to riparian areas from grazing livestock.

Effects from Minerals Management

Minerals management actions would result in the localized removal of vegetation during both exploration and development work. Mineral development actions would also fracture continuous vegetation communities, change plant community structure and diversity, and alter vegetation landscapes. Long-term impacts would mostly be associated with the location and design of roads. Increased erosion and decreased vegetation cover would occur from soils compaction and the channelization of surface runoff in ruts and road ditches. Areas below mid-slope roads become drier, which reduces plant productivity and can potentially change species composition.

Designation of 131,044 acres as open to leasing subject to terms and conditions of the standard lease form, without assigning significant stipulations in those areas, could result in an increased impact on riparian vegetation in these areas. The standard lease stipulations include complying with established acts, laws, and regulations governing BLM land management, including the Riparian Management Guidelines (BLM 1985e) and the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]). Because of these guidelines, very little mineral activity would be allowed in riparian areas, and most effects would be indirect.

Effects from Recreation Management

Increased recreation use and demand require an increased management response to minimize potential effects, leading to SRMA designation. Potential impacts to riparian areas from increased recreational use may include direct loss of vegetation, fragmentation of habitat from construction of social trails, and increased weed potential. Increased visitor use without increased management and SRMA designation would be expected to result in greater impacts.

Lands in ROS classes Primitive or Semiprimitive Nonmotorized would be subject to the least potential disturbance from recreational activities. Greater amounts of motorized or high-impact recreational activities could occur under the other ROS classes, increasing the potential for direct vegetation disturbance, soil disturbance, or weed seed introduction in riparian areas.

Effects from Transportation and Travel Management

OHV use and road construction would result in effects such as loss of vegetation cover and density, fragmentation of habitat, and composition changes. OHV users would introduce and spread noxious and invasive weed seeds from their vehicles, shoes, clothing, and recreational equipment and would cause soil disturbances that result in increased weed potential and erosion. Potential effects are greatest in areas designated as Open to OHV use and are least in areas designated as Closed to OHV use. The amount of allowable OHV use varies by alternative. In most cases, snowmobiles have minimal impact on riparian vegetation or soils.

Effects from Renewable Energy Management

Potential effects from geothermal, wind, and solar energy development are predominantly associated with the construction, use, and maintenance of roads and facilities. Road-related activities could result in increased fragmentation of riparian habitat and increased weed potential from soil disturbances and increased vehicle traffic. Renewable energy development actions could also change plant community structure and diversity, and alter vegetation landscapes. Long-term impacts would mostly be associated with the location and design of roads. Increased erosion and decreased vegetation cover would occur from soils compaction and the channelization of surface runoff in ruts and road ditches. Areas below mid-slope roads become drier, which reduces plant productivity and can potentially change species composition. Right-of-way avoidance and exclusion areas would protect against these potential impacts.

Renewable energy projects would be unlikely to occur in riparian areas. Those that may occur include biomass projects as part of a salvage operation. Effects on riparian zones could include soil compaction, loss of vegetative cover, and loss of habitat diversity in riparian zones as woody debris was removed. This effect would be minimized by implementing RHCAs under Alternative A or RCA stream buffers under Alternatives B, C, and D, in which guidelines would allow only those activities that resulted in enhanced or maintained riparian conditions.

Effects from ACEC/RNA Management

Protection of the riparian habitat at the Clearwater River Islands Goose Nesting Area would indirectly protect aquatic habitats and fisheries in this section of the Clearwater River. Similar protection would occur at the Lower and Middle Creek Cottonwoods Islands, Captain John Creek, Lower Salmon River, and Lucile Caves ACEC/RNAs.

Timber harvest restrictions and prohibition of livestock grazing would protect riparian and aquatic habitats in the Craig Mountain WMA from impacts associated with these land uses.

Protection of resource values including the riparian habitat along Lower Lolo Creek would result in direct effects on riparian resources, resulting in improved riparian vegetation and maintained soil and bank integrity.

Effects from Wild and Scenic Rivers Management

The majority of areas found suitable for inclusion in the NWSRS are already managed as riparian buffer zones under the Riparian Management Guidelines (BLM 1985e), Fisheries and Water Quality Objectives and Sediment Budgets (BLM 1985d), and PACFISH (BLM and Forest Service 1995). The remaining areas would be managed as such under the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]), but would receive another layer of protection by being managed to protect the outstandingly remarkable values of each suitable segment.

Effects from Wilderness and Wilderness Study Areas Management

Managing 750 acres of the Frank Church/River of No Return Wilderness per the Wilderness Act would remove potential for effects from mining, forestry practices, or motorized transportation. Similar effects would occur by managing 5,571 acres at Marshall Mountain WSA and 6,463 acres at Snowhole Rapids WSA under the BLM's Interim Management Policy for Lands under Wilderness Review. These types of management would protect vegetation and soils in riparian areas from effects related to these types of activities.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Restoring AMLs would increase health of riparian areas to the degree that cleanups occurred in this habitat type, since part of the cleanup of such areas includes revegetation and grading to conditions similar to those of surrounding areas.

Under all alternatives, AML remediation would include restoration of vegetation. This would benefit riparian vegetation to the extent that such remediation occurred in riparian areas.

Alternative A

Effects from Soils Management

Maintaining buffers of riparian vegetation between streams and roads as described in the Road Guidelines (**Appendix B**, Best Management Practices [see Volume II~~I~~]), the Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995) would minimize effects on riparian vegetation from vehicle use or roadway erosion. Federal listing of salmon, steelhead, and bull trout, provides for increased riparian protection in watersheds with listed fish. All sixth-code HUCs within the planning area provide habitat for one or more listed fish.

Implementing riparian management guidelines would create buffer zones in which actions must protect or improve riparian-dependent resources, ensuring that there would be no adverse effects on vegetation or other riparian resources.

Designing projects to avoid potential for mass wasting could protect riparian vegetation by reducing potential for disturbance from landslides. Such disturbance could increase the weed potential or allow for localized vegetation changes. The PACFISH (BLM and Forest Service 1995) provides measures to restrict land uses on landslide-prone areas.

Effects from Water Resources Management

Implementing road guidelines and riparian management guidelines would have similar effects, as described under Effects from Soils Management.

Wetland and riparian vegetation plays an integral part in ensuring that watersheds capture, retain, and release water appropriately. Therefore, developing plans to alleviate watershed problems would by necessity require maintaining or restoring such vegetation.

Maintaining thermal water quality would require maintaining sufficient riparian vegetation to provide thermal regulation of fish-bearing streams. This would require maintaining normal canopy height, composition, density, and structure in riparian areas. Federal listing of salmon, steelhead, and bull trout provides for increased riparian protection in watersheds with listed fish. All sixth-code HUCs within the planning area provide habitat for one or more listed fish. Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) provide for various land use restrictions within default buffer areas.

Effects from Vegetation—Forests Management

Riparian vegetation would be protected from direct effects from timber harvest and other forest practices by implementing buffers according to the riparian management guidelines. Although some timber harvest may still be allowed in buffer zones, it would be subject to guidelines that would ensure that soils and vegetation were preserved or enhanced. Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) provide for timber harvest restrictions within default buffer areas. Under Alternative A, these buffers amount to 24,290 acres.

Effects from Vegetation—Weeds Management

Possible restrictions on use of herbicides in riparian and aquatic areas may reduce the efficiency of BLM weed control efforts.

Inventorying and mapping weed populations would allow the BLM to prioritize treatment areas and minimize infestation of riparian and wetland areas. Instituting weed control measures for particular actions would help to fund and expand the BLM's weed control program.

Incorporating weed-control measures into contracts would diminish the possibility of new infestations in riparian and wetland areas, provided that the measures included such requirements as vehicle pre- and post-washing and restoration actions for disturbed soils/vegetation.

Effects from Vegetation—Riparian and Wetlands Management

A total of 24,290 acres of riparian habitat would be protected as RHCAs under this alternative. Effects are described under Effects Common to All Alternatives, above.

Improving 7.25 miles of streams from poor to fair or better condition would require restoration of riparian zones in these particular areas to the extent that degraded riparian areas could be restored by changed BLM management actions or other site specific restoration actions.

Effects from Wildlife and Special Status Wildlife Management

Measures to protect sensitive animal species, including the yellow-billed cuckoo and willow flycatcher, that depend on riparian areas for all or part of their lifecycle would require preservation or enhancement of riparian conditions. However, few special status animal species in the CFO are riparian-dependent, so wildlife management actions under this alternative would have little effect on riparian areas.

Improving conditions on 8,803 acres of ~~range~~ rangeland for wildlife benefit would involve improvements to riparian habitat to the extent that riparian habitat occurs in this rangeland. Improvements may occur from reduced grazing, prescribed burning, vehicle restrictions, and manipulation of cover/forage ratios.

Development of new or continuation of existing wildlife HMPs would often have direct and indirect beneficial effects for riparian habitats.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Developing aquatic HMPs to maintain fisheries habitat and riparian areas would result in increased management of vegetation in riparian zones along these waterways. Few actions beyond current management are proposed that would affect riparian areas.

Effects from Special Status Plants Management

Measures to protect sensitive plant species, including Case's corydalis *(Corydalis caseana ssp hastata)*, chatterbox orchid *(Epipactis ~~gigantcum~~gigantea),* Douglas' clover *(Trifolium douglasii)*, western ladies tresses *(Spiranthes porrifolia)*, spacious monkey flower *(Mimulus ampliatus)*, and Idaho barren strawberry *(Waldsteinia idahoensis)*, that depend on riparian areas for all or part of their lifecycle would require preservation or enhancement of riparian conditions. Actions required to accomplish this may require restrictions on soil and vegetation treatments in riparian areas. Such affected land uses may include road construction, timber harvest, and grazing management, leading to direct effects on riparian vegetation and reducing the potential for weed infestation, soil compaction, and erosion.

Effects from Wildland Fire Management

Most effects on riparian vegetation from wildfire management are described under Effects Common to All Alternatives. In general, management measures under this alternative are less proactive than under the action alternatives.

Effects from Visual Resources Management

Under Alternative A, 12,704 acres would be designated as VRM Class I, and 41,195 acres would be designated as Class II. Effects are described under Effects Common to All Alternatives, above.

Effects from Forest Products Management

Under this alternative, logging would only be allowed in riparian areas for salvage operations or to attain PFC goals, assuming that such practices did not affect attainment of riparian management objectives. Some treatments would be allowed but only those that would result in maintenance or enhancement of riparian resources. Therefore, riparian areas would be minimally affected by logging practices. Potential indirect effects are listed under Effects Common to All Alternatives. Such effects are most likely to occur where riparian areas are very wide and are adjacent to the 24,257 acres classified for intensive forest practices and are least likely to occur in areas adjacent to the 37,549 acres classified for custodial forest management.

Effects from Livestock Grazing Management

Despite measures to minimize impacts, grazing has the potential to cause extensive effects on riparian resources as described under Effects Common to All Alternatives. This alternative offers 2,128 acres of riparian areas to grazing livestock (out of 122,732 acres). The riparian/wetlands acres would be 1.94 percent of the total acres. The BLM has consulted with the National Marine Fisheries Service and USFWS in relation to listed species and has implemented riparian use criteria and

monitoring in order to assure grazing use in critical habitat is compatible with listed species, minimizing the potential for adverse effects in critical habitat areas. Other areas not considered critical habitat for listed species must meet the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]), which contain criteria for riparian habitat quality. Meeting such criteria would help to minimize effects on riparian habitat from livestock grazing.

Effects from Minerals Management

Managing ACECs as NSO would keep 23,219 acres off limits to surface occupancy associated with leasable mineral activities, and in most cases, mineral material activities. Although this would protect riparian zones within those lands from effects associated with these activities, the protected amount is the least of any alternative; therefore, the potential for effects is greatest under this alternative.

Effects from Recreation Management

Under this alternative, 33,197 acres would be designated as ROS classes Primitive or Semiprimitive Nonmotorized. These areas could be subject to disturbance under the other ROS classes.

Developing SRMA activity plans for Salmon River Scenic, Salmon River Recreational, and Clearwater River SRMAs would take into account potential effects on riparian ecosystems, potentially lowering the possibility of effects to such areas.

Under this alternative, 26,682 acres would be designated as SRMAs. Projected increases in recreation would occur but would be matched by commensurate increases in management on less land. Cross-country motorized vehicle travel can impact riparian vegetation and soils and accelerate spread of weeds.

Effects from Renewable Energy Management

Potential effects from renewable energy projects are similar to those that could occur from minerals management, forest vegetation management, and forest products management (see those sections under Effects Common to All Alternatives).

Effects from Transportation and Travel Management

Potential for the types of effects listed under Effects Common to All Alternatives is greatest under Alternative A. This is because 85,308 acres are Open to OHV use. Also, because there are fewer restrictions and possibly less area covered under riparian management units than under RCA stream buffers, potential effects on riparian areas from OHV use and road construction is generally greater.

Effects from Lands and Realty Management

Initiating road easement acquisition only after development of activity plans would require assessment of potential effects on riparian resources. Such effects would be considered on a project-level basis.

Continued withdrawal of public lands located within 0.25-mile of the Salmon River would provide protection of riparian areas along the Salmon River from potential impacts associated with mining. Although this would affect 18,532 acres, this area is already heavily impacted by weeds, minimizing one of the main benefits of withdrawal.

Effects from ACEC/RNA Management

Prohibiting livestock grazing and logging in the Captain John Creek area would reduce defoliation and promote soil and bank integrity on 1,321 acres, some of which are in riparian areas. Permitting no new rights-of-way or roads within 300 feet of Lolo Creek would protect riparian resources within that buffer strip from direct loss of vegetation or loss of soil and bank integrity. Maintenance and protection of resource values identified for designation of ACEC/RNAs would have direct and indirect benefits to riparian habitats found in Craig Mountain, Lower Salmon, and Lucile Cave ACECs, including bank and soil stabilization and increased protection of vegetation.

Alternative B

Effects from Geology Management

Increasing public awareness of unique geological features would create opportunities for increasing awareness of the value of other unique features, including riparian areas and wetlands.

Increased public access to unique geological sites could affect riparian areas and wetlands if such access brought more people to or through these areas. Potential effects would include creation of social trails, loss of vegetation, fragmentation of habitat, and increased chances of weed introduction; these potential effects would be minimized by proper trail maintenance, placing educational signs, and routing access ways away from sensitive features.

Effects from Soils Management

Implementing BMPs for soil-disturbing activities would minimize soil erosion and protect riparian habitats to a greater degree than the MFP Road Guidelines (BLM 1981a) or the Riparian Management Guidelines (BLM 1985e). This would require the BLM to maintain or increase PFC of riparian habitats.

Measures to protect landslide-prone areas and minimize potential for mass wasting would protect riparian habitat to the extent that it occurs in landslide-prone areas. Measures implemented under all alternatives are similar in regards to actions allowed within riparian habitats and landslide-prone areas, which may impact soils and vegetation.

Effects from Water Resources Management

Promoting activities to achieve DFCs in restoration watersheds would help increase the amount of PFC riparian habitat and indirectly benefit aquatic resources. ~~Thirty-two~~Twenty-eight watersheds would be managed as restoration watersheds and ~~1~~ three would be managed as~~ a~~ conservation watersheds, totaling 64,481 acres, which is 2 percent less than the prescription watersheds in Alternative A (66,077 acres).

Effects from Vegetation—Forests Management

Riparian vegetation would be protected from direct effects from timber harvest and other forest practices by placing 22,847 acres into RCA stream buffers according to the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]), 1,443 acres less than Alternative A. Although some timber extraction may still be allowed in buffer zones, it would be done only to enhance or preserve riparian conditions.

Effects from Vegetation—Weeds Management

Although there are no weed management actions specifically for riparian areas, actions to prevent the introduction of weeds or prevent the spread of existing ones would benefit habitat in riparian areas, similar to Alternative A. Measures to increase public awareness are increased under this alternative, as are measures to restore weed-affected areas and remove weed infestations. Weed potential in riparian areas would decrease under this alternative due to these increased measures.

Effects from Vegetation—Riparian and Wetlands Management

This alternative would place 22,847 acres into RCA stream buffers, which is 6 percent less than Alternative A. Most effects are described under Effects Common to All Alternatives. Overall efforts to restore degraded riparian resources or to decrease potential effects, including land use restrictions and active recontouring and reseeding, would be increased under this alternative and would lead to improved riparian health over current conditions. These efforts would be part of the BLM's strategy of moving sites toward PFC.

Effects from Wildlife and Special Status Wildlife Management

Actions to restore, protect, or maintain habitat for listed species would require maintaining adequate roost trees for bald eagles and cover for the yellow-billed cuckoo. Protecting both of these species would require maintaining adequate canopy structure and understory complexity, both of which are measures of PFC. Restoring unnecessary roads and trails would decrease habitat fragmentation and reduce disturbances that could increase weed potential.

Designing projects to preserve wildlife travel corridors would require preservation of adequate vegetation along riparian corridors, as these areas are frequently used for migration and travel by wildlife due to the density of vegetation found there.

Implementing grazing season of use would protect riparian habitat during sensitive periods in the lifecycle of aquatic species, indirectly leading to short-term effects on riparian vegetation. Development of new or continuation of existing wildlife HMPs would often have direct and indirect beneficial effects for riparian habitats and dependent wildlife.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Implementing specific standards and guidelines according to the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) would allow only those activities that would minimize effects to riparian resources.

~~Thirty-two~~Twenty-eight watersheds would be managed as restoration watersheds and ~~1~~ three would be managed as~~ a~~ conservation watersheds (totaling 64,481 acres), which is 2 percent less than the prescription watersheds in Alternative A (66,077 acres). Development of new or continuation of existing aquatic HMPs would often have direct and indirect beneficial effects for riparian habitats and native fish species.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative A.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative A, although under this alternative effects may occur to riparian resources in the Craig Mountain ~~FMU~~FMA and portions of the Salmon ~~FMU~~FMA through evaluating and using wildfire for resource benefits.

Chemical, mechanical, or biological treatments on FRCC 2 or 3 lands may improve forest and rangeland health and would improve riparian health to the extent that such habitat is found in treated areas. Fuels treatments that emphasize biomass utilization would not affect riparian resources within RCA, since only actions that maintain or enhance such habitat would be allowed. Suspending livestock grazing in burned areas would decrease potential for damage to soils or vegetation made sensitive by being burned.

Effects from Visual Management

Effects under Alternative B would be the same as those described under Alternative A.

Effects from Forest Products Management

Potential impacts from forest products management are described under the Forest Products Management section of Effects Common to all Alternatives. As mentioned previously, a PSQ of 3,129 MBF on 40,598 acres is less than Alternative A (6,600 MBF on 35,757 acres), meaning that there is less potential for effects from logging activities under this alternative.

Protection of riparian areas during road construction would be provided by the buffer zones associated with the Road Construction Guidelines and the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]). The potential impacts based on buffer zone size are described under the Effects from Vegetation—Riparian and Wetlands Management section.

Effects from Livestock Grazing Management

Livestock grazing would be permitted on 1,880 aces of riparian areas (out of 105,619 acres) under Alternative B. The riparian/wetland acres would be 1.78 percent of the total acres and would be 11.65 percent less than offered for grazing under Alternative A. Therefore, potential effects are lower under this alternative than under Alternative A. Potential effects are listed under Effects Common to All Alternatives.

Effects from Minerals Management

The NSO stipulations would protect riparian habitats from surface-disturbing activities such as vegetation removal on 43,590 acres. Riparian habitats in river segments identified as suitable for inclusion in the NWSRS would be protected from minerals activities within 0.25-mile of the river.

Effects from Recreation Management

Under this alternative, similar to Alternatives C and D, 42,695 acres would be classified as Primitive or Semiprimitive Nonmotorized, decreasing the potential for disturbance of riparian zones in these areas relative to current management by approximately 20 percent.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative ~~B~~A.

Effects from Transportation and Travel Management

Potential for effects described under Effects Common to All Alternatives would decrease relative to current management since areas Open to cross-country OHV travel would be Closed or placed under restrictions. Limited travel areas would be increased to 125,729 acres and would be limited to designated routes, as opposed to existing routes in Alternative A. Potential for effects under this alternative would be lower than Alternative A.

Effects from Lands and Realty Management

Retention of public lands along the Salmon River would provide continued protection of riparian areas along the Salmon River from private land uses such as development or timber harvest.

Withdrawing public lands located on the Lower Salmon River would increase protection of riparian areas along the Salmon River from potential impacts associated with mining.

Consolidating right-of-way corridors would reduce potential loss of vegetation that is common to right-of-way construction and would reduce weed potential by minimizing right-of-way construction areas. This would reduce potential effects on riparian vegetation to the degree that rights-of-way cross riparian zones.

Effects from ACEC/RNA Management

In general, measures to improve conditions in ACEC/RNAs may improve conditions in riparian areas to the degree that riparian areas occur in ACEC/RNAs. Such measures include controlling nonnative vegetation, prohibiting soil or vegetation disturbance, and restricting grazing in some areas or at particular times, as described under Alternative A. Overall, effects on riparian vegetation are similar to those under the other alternatives. Developing and implementing a management strategy to support restoration of Cottonwood Flats would potentially result in better riparian cottonwood habitat than under current management. Listing the East Fork American River as an ACEC and allowing vegetation treatments to occur in ways that would afford maximum protection to the site would result in greater protection of riparian areas in this 570-acre parcel. In addition, by protective the Upper Lolo Creek as an ACEC and ensuring that new road construction is temporary, and making weed control a high priority would decrease the potential for effects. Assuming that classification as ACECs would protect resources in a given area to a greater degree than in other areas, this alternative would increase protection by ~~8,928~~10,553 acres (~~35~~ 41 percent) relative to Alternative A.

Alternative C

Effects from Geology Management

Effects would be the same as those described under Alternative B.

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except that a greater amount of protection and restoration would occur by managing 6 percent more watershed acres as conservation and restoration watersheds. This is 3 percent more watershed acres than prescription

watersheds in Alternative A and represents the greatest amount of watershed management of any of the alternatives. It also offers the most potential for restoration and protection of any alternative.

Effects from Vegetation—Forests Management

Effects would be similar to Alternative A, except that RCA stream buffers would be increased by 3,334 acres, decreasing the potential for effects.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, except that 1,957 acres of riparian areas would be incorporated into allotments, the least of any alternative. This would lead to the lowest potential effect from livestock grazing.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that 27,624 acres would be considered RCA stream buffers (21 percent more than Alternative B and 14 percent more than Alternative A). This is the most of any alternative; therefore, the potential for effects is lowest under this alternative.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that 6 percent more watershed acres managed as conservation and restoration watersheds under Alternative C. This would be 3 percent more watershed acres than prescription watersheds in Alternative A and would be the most of any alternative, resulting in the greatest protection and restoration potential of any alternative.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative ~~B~~A.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that every fire would be evaluated for its potential to assist in achieving resource goals, possibly increasing beneficial uses of this resource similar to Alternative A and to a greater extent than the other alternatives. Treated FRCC 2 and 3 (moderate to high risk) WUI areas would decrease by up to 20 percent under this alternative relative to Alternative B, potentially decreasing benefits to riparian vegetation from this resource use.

Effects from Visual Management

Effects would be similar to those described under Alternative B, except that the amount of land in VRM Classes I and II would increase to 73,699 acres, the most of any alternative, thereby reducing potential for disturbance in riparian areas more than any other alternative.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, except that PSQ would be reduced from 3,129 MBF to 3,101 MBF, and the commercial land base would be lowest of any alternative. Estimated PSQ would be 53 percent lower than under Alternative A. This alternative offers the lowest potential for effects from forest products management of any alternative.

Effects from Livestock Grazing Management

Livestock grazing would be permitted on 1,765 aces of riparian areas (out of 101,350 acres) under Alternative C. The riparian/wetland acres would be 1.74 percent of the total acres and would be 17.06 percent less than offered for grazing under Alternative A, as well as being less than under any other alternative. Therefore, potential grazing-related effects would be least under this alternative. Potential effects are listed under Effects Common to All Alternatives.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that NSO restrictions on leasable minerals activities would increase to 68,854 acres, the most of any alternative. Therefore, potential mining ~~mineral~~ related effects would be least under this alternative.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B, except that additional measures would be taken to reduce motor vehicle use in certain areas, potentially resulting in reduced effects on riparian resources.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative A, except that ACECs would increase by 35,601 acres (135 percent), potentially increasing the amount of riparian areas protected under this designation. In addition, classifying the Craig Mountain ACEC for custodial timber management, increasing the area by 19,386 acres, excluding livestock grazing, ensuring that new road construction is temporary, and making weed control a high priority would decrease the potential for effects. ~~Similar effects would occur by protecting Upper Lolo Creek as an ACEC.~~

Alternative D

Effects from Geology Management

Effects would be the same as those described under Alternative B.

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except that the BLM would manage 52,118 acres as conservation and restoration watersheds, 19 percent fewer watershed acres than Alternative B and 21 percent fewer than prescription watersheds in Alternative A. This is the least amount of watershed management of any alternative and offers the least potential for restoration and protection.

Effects from Vegetation—Forests Management

Effects would be similar to Alternative A, except that RCA stream buffers would be decreased by 3,580 acres, increasing the potential for effects.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that 20,710 acres would be considered RCA stream buffers, which is 9 percent less than Alternative B and 15 percent less than Alternative A. This is the least of any action alternative; therefore, potential for effects is highest under this alternative.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that managing 52,118 acres as conservation and restoration watersheds would be the least of any alternative, resulting in the least riparian protection and restoration potential.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except that only fires occurring in areas managed for custodial forest management or areas not authorized for livestock grazing would be evaluated for their potential to assist in achieving resource goals, which would greatly reduce the number of wildfires that could be used for riparian resource benefits.

Alternative D offers the highest annual treatment goal of any alternative, potentially increasing riparian areas treated by prescription fire, chemical or biological methods by up to 20 percent over Alternative B and 40 percent over Alternative C.

Effects from Visual Management

Effects would be similar to those described under Alternative B, except that the amount of area in VRM Classes I and II would decrease to 30,313 acres, the lowest of any alternative. Therefore, this alternative would increase potential for disturbance in riparian areas more than any other alternative.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, except that PSQ would be increased to 4,823 MBF (decreased from an estimated annual ASQ of 6,600 MBF, or 27 percent,

from Alternative A), and the commercial land base of 45,190 acres would be the highest of any alternative. Therefore, this alternative offers the highest potential for effects to riparian areas from forest products management. As with all alternatives, riparian buffers would shield riparian areas from effects of most forest products activities, as these are most likely to occur in upland areas.

Effects from Livestock Grazing Management

Livestock grazing would be permitted on 2,324 aces of riparian areas (out of 135,850 acres) under Alternative D. The riparian/wetland acres would be 1.71 percent of the total acres and would be 9.21 percent more than offered for grazing under Alternative A, and would be more than any other alternative. Therefore, potential for grazing-related effects is highest under this alternative. Potential effects are listed under Effects Common to All Alternatives.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that NSO restrictions would decrease to 35,045 acres, the least restrictive of any action alternative (Alternatives B, C, and D), but more restrictive than Alternative A. Therefore, potential effects to riparian resources from mineral management would be the second highest under this alternative.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Under this alternative, 23,189 acres would be Open to cross-country travel, which is the most except under Alternative A, and OHV use would be limited on 102,542 acres, which is the least of any action alternative. Cross-country motorized vehicle travel could impact soils and vegetation in riparian habitats and increase weed infestations. Establishing these designations would create the highest potential for effects of any action alternative) However, potential for effects is lower than under Alternative A.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B. ACECs would increase slightly from current management, potentially increasing the amount of riparian areas protected under this designation. In addition, the potential for short-term disturbance of riparian vegetation or soils would increase relative to other alternatives by using livestock grazing to support achievement of goals and objectives identified for ACEC/RNAs, but would be offset by long-term benefits of achieving resource goals by use of this method.

~~*Effects from Public Safety—Abandoned Mines and Hazardous Materials Management*~~

~~Effects would be the same as those described under Alternative B.~~

Cumulative Effects

Past actions that are relevant to riparian resources in the cumulative impact area include land tenure changes, wildland fire and wildland fire use and suppression, fuel and vegetation treatments, salable minerals, population growth, urban development, recreational use, OHV use, stream and watershed restoration activities, regional planning efforts, weed management efforts, and grazing. The types of impacts that have occurred and would continue to occur include direct destruction of riparian resources, loss of plant diversity, changes to canopy structure, loss of soil integrity, reduced riparian function, enhanced weed control efforts, greater focus on restoration of affected areas, and greater focus on use of wildland fire for resource benefits.

Watershed restoration efforts throughout the planning area would result in improvements to riparian areas. Alternative C would include the greatest number and acres of restoration and conservation watersheds and would contribute most to this trend. Because long-term wildfire suppression has led to circumstances where stand-replacing wildfire can occur and severely affect riparian resources, regional fire planning on the part of various land-management agencies, along with implementation of individual fire plans, would directly influence riparian health in the cumulative impact area, with those plans that promote a return to a natural fire regime leading to highest riparian health. Increased population, particularly in WUI areas, makes the use of wildfire for resource benefits more difficult than in other, less-populated areas. Increased fuels treatments, although generally carried out in non-riparian areas, would indirectly affect riparian resources by reducing potentially stand-replacing wildfires. Alternative D would treat the most area, with Alternative C treating the least. Under all alternatives, grazing management would comply with the same standards in practice in other parts of the planning area. The differences in treatment areas and grazed areas between the alternatives amounts to at most several thousand acres, which is a small portion of the overall planning area, therefore effects to the overall planning area are minimal under any alternative.

Cumulative effects would be similar among the alternatives. Alternative A would contribute to more regional cumulative effects resulting from land tenure adjustments, open OHV use, and wildland fire suppression. In general, Alternatives B, C, and D would provide more management measures than Alternative A that would directly or indirectly reduce the potential for cumulative impacts. However, each of these alternatives also would accelerate fuel-reduction treatments using all available methods within five years and would have fewer restrictions on wildland fire use for resource benefit. These measures could contribute to cumulative impacts on riparian resources. The emphasis in Alternative C on actions that value resource conservation, protection, and minimal human intervention would have the least impact or risk of impacts to riparian resources and would contribute the least to cumulative impacts. Overall, the actions proposed under any of the alternatives would not contribute to effects on a planning-area wide scale.

4.2.9 Wildlife and Special Status Wildlife

Goal: Manage habitat to contribute to the conservation of special status species habitats and to maintain biological diversity of wildlife.

Summary

Actions that increase habitat disturbance potential and alter vegetation structure, composition, and distribution generally have the greatest impact on wildlife. These actions result from timber harvest,

road building, increased recreation use, livestock grazing, fire, mineral extraction, and construction of any type of infrastructure. Proposed management practices can mitigate many of the effects from these actions. Alternative C would best manage habitat to maintain biological diversity of wildlife, followed by Alternatives B, A, and then D.

Alternative A would not address all species that have been listed as threatened, endangered, species of concern, or sensitive species with USFWS, Idaho Department of Fish and Game, and Idaho BLM. Alternatives B, C, and D would provide updated list and status for special status species and management emphasis and added focus for protection, conservation, or restoration of special status species habitat.

The BLM has established procedures and policies that assess the effects of existing and proposed projects on BLM-managed lands. The BLM would be responsible for analyzing potential impacts to ensure that activities would not cause significant adverse effects on the habitats that support native fish and desirable nonnative fish species. The BLM would be responsible for analyzing potential impacts and for taking appropriate actions to ensure that special status/BLM Sensitive designation is no longer warranted.~~The BLM would be responsible for analyzing potential impacts to ensure that no significant adverse effects would occur to BLM sensitive species or habitats.~~ In addition, the BLM may consult with USFWS in accordance with ESA Section 7 on activities that may affect federally listed species. **Table 4-13** identifies the indicators that were used to analyze effects under each alternative.

Table 4-13
Comparison of Wildlife and Special Status Wildlife Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
What: Measures of composition, structure, diversity, and relative abundance of habitat components	Snag (dead standing trees) management on 60% of each timber harvest area	Snag management on 100% of each timber harvest area and buffers	Snag management on 100% of each timber harvest area and buffers	Snag management on 100% of each timber harvest area and buffers
	No DFC management	10% old forest DFC=24,789 acres	20% old forest DFC=28,087 acres	No DFC management
	Similar weed management across alternatives	Similar weed management across alternatives	Similar weed management across alternatives	Similar weed management across alternatives
Where: Measures of distribution, patterns, and habitat component connectivity	Least potential number and area of ACECs, rivers suitable for the NWSRS, wilderness areas	Moderate potential number and area of ACECs, rivers suitable for the NWSRS, wilderness areas	Greatest potential number and area of ACECs, rivers suitable for the NWSRS, wilderness areas	Less potential than Alternative B
Causal factors: Measures of processes and disturbances, geo-climatic capability, historical range of variability	Estimated 358 acres of forest harvest/treatment per year	Estimated 242 acres of forest harvest/treatment per year	Estimated 191 acres of forest harvest/treatment per year	Estimated 361 acres of forest harvest/treatment per year
	35,757 acres of commercial forest	40,598 acres of commercial forest	34,611 acres of commercial forest	45,190 acres of commercial forest

Table 4-13
Comparison of Wildlife and Special Status Wildlife Indicators by Alternative *(continued)*

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
	1,530 to 4,800 acres of forest treated by prescribed fire or mechanical fuel reduction per year	1,182 to 3,545 acres of forest treated by prescribed fire or mechanical fuel reduction per year; Vegetation treatments would support achievement of natural ecosystem functions, which may include natural fire regimes, stand structure, and fuel reduction in the WUI	1,448 to 5,377 acres of forest treated by prescribed fire or mechanical fuel reduction per year; Vegetation treatments would support achievement of natural ecosystem functions, which may include natural fire regimes, stand structure, and fuel reduction in the WUI	2,870 to 7,597 acres of forest treated by prescribed fire or mechanical fuel reduction per year; Vegetation treatments would support achievement of natural ecosystem functions, which may include natural fire regimes, stand structure, and fuel reduction in the WUI
	12,704 acres VRM I	12,704 acres VRM I	26,945 acres VRM I	7,205 acres VRM I
	7,~~204~~ 200 AUMs	~~6,254~~6,263 AUMs	6,020 AUMs	8,54~~0~~9 AUMs
	14,381 acres Primitive ROS	6,200 acres Primitive ROS	6,200 acres Primitive ROS	6,200 acres Primitive ROS
	0 acres NSO (case-by-case basis)	43,590 acres NSO	68,854 acres NSO	35,045 acres NSO
	No DFC management	24,789 acres DFC management (timbered blocks over 1,000 acres)	28,087 acres DFC management (timbered blocks over 500 acres)	No DFC management
Identify acreages for "no net increase in open roads/trails for motorized use"	0	101,526 acres	75,772 acres; 38,733 acres for "strive for decrease"	0
Habitat quality and trends	122,735 acres available for grazing	105,619 acres available for grazing	101,414 acres available for grazing	135,850 acres available for grazing
Acres of RHCAs in prescription watersheds or RCAs in conservation and restoration watersheds (on BLM lands)	24,290 (RHCAs in prescription watersheds)	22,847 (RCAs in conservation and restoration watersheds)	27,624 (RCAs in conservation and restoration watersheds)	20,710 (RCAs in conservation and restoration watersheds)
Acres of Open travel areas	85,308	0	0	23,189
Acres Limited travel areas	40,437 (limited to existing routes)	125,729 (limited to designated routes)	125,729 (limited to designated routes)	102,542 (limited to designated routes)

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators used to assess impacts are outlined in **Table 4-13**, Comparison of Wildlife and Special Status Wildlife Indicators by Alternative.

Methods and Assumptions

Wildlife health within the CFO is directly related to the overall ecosystem health, habitat abundance, habitat fragmentation, and wildlife security provided, and thus most resource management actions have at least an indirect effect on wildlife. Impact analysis on wildlife resources included an assessment of whether each action would result in the possible destruction, degradation, or modification of habitat, as well as impacts that could improve wildlife habitat. A large proportion of actions under all alternatives are mitigation measures for other actions and protective measures, so that many of the individual actions could improve wildlife habitats or the health of populations, depending on the success of the action when completed. The degree of impact attributed to any one management action or series of actions is influenced by the watershed, time and degree of action, existing vegetation, and precipitation. The indicators listed above were used to guide, frame, and measure impacts.

Impacts were identified with the use of best professional judgment and were assessed according to the following assumptions:

- Success of mitigation is dependent on specific protective measures, past results, and the assumption that proper implementation of such would take place;
- Implementation-level actions will be further assessed at an appropriate spatial and temporal scale and level of detail;
- Additional field inventories could be needed to support implementation-level decisions, which may be subject to further analysis under NEPA; and
- Implementation-level decisions that may affect species listed under ESA would be subject to appropriate ESA Section 7 consultation with USFWS.

Effects Common to All Alternatives

Effects from Soils Management

Under all alternatives wildlife habitat would be indirectly conserved via conservation measures to prevent erosion and other degradations to soil, which in turn diminishes impacts on vegetation and thus wildlife habitats. Preventing sedimentation in water courses also can improve the health of fish populations, which benefits fish-eating wildlife, such as bald eagle.

Effects from Water Resources Management

Effective watershed management, which minimizes erosion, maintains hydrologic flow, and maintains vegetative community health, would result in healthy and diverse plant communities, which in turn provide wildlife habitat, especially in riparian areas. Healthy watersheds improve fish habitat, which in turn provides foraging opportunities for fish-eating wildlife.

Effects from Vegetation—Forests Management

Vegetation treatments that alter tree species composition or stand structure for specific resource objectives or for commercial value would alter wildlife habitats immediately. This would improve

habitat for some species, especially those that select more early-seral or open forest habitats, and would degrade habitats for others, especially those that prefer denser and structurally diverse habitats. These treatments may return forests to a condition closer to historic composition or a desired condition in the long-term. Impacts would be highly dependent on (1) species, (2) habitat conditions before and after treatments, (3) type of treatment, (4) details of how each treatment is carried out, (5) adjacent habitat types, and (6) long-term management of each area after treatments.

Effects from Vegetation—Weeds Management

Spread of noxious and invasive weeds results in decreases in habitat quality, habitat diversity and forage for wildlife. Treatment actions would not be sufficient to control the spread of weeds into all wildlife habitats but would reduce these impacts in treated areas. Actions to prevent and control invasive and noxious weeds using integrated weed management techniques could reduce or at least slow down the rate of increase in the CFO and severity of damage to wildlife habitats across all alternatives. Reducing the quantity of invasive species, thereby decreasing plant competition, would allow native species vital to wildlife to increase (or at least slow down the rate of decrease). Although weed treatments would generally improve wildlife habitats in the long term, short-term disturbances to wildlife would occur. Weed treatment actions could remove forage and cover in areas dominated by weeds, resulting in short-term impacts on wildlife that are using weed infested areas. Short-term impacts would vary by type of application. All treatments, especially mechanical treatments, would cause some species to temporarily avoid treated areas. Some injury and mortality could occur from machinery, especially for small less mobile species. Herbicides would be applied with all applicable guidelines to prevent harm to wildlife, but some residual risk would still exist.

Effects from Vegetation—Riparian and Wetlands Management

Actions that would improve riparian and wetland PFC would in turn improve habitats for riparian- and wetland-dependent wildlife species, especially via increases in quantity and quality of riparian vegetation. Affected species could include bald eagle, yellow-billed cuckoo, harlequin duck, willow flycatcher, Coeur d'Alene salamander, Idaho giant salamander, western toad, several snail species, and other riparian-dependent wildlife.

Effects from Wildlife and Special Status Wildlife Management

Wildlife and special status wildlife management actions would generally improve wildlife habitats, with the exception of certain measures designed to improve habitat for one type of wildlife that could decrease habitat quality for another. Wildlife management emphasis would generally include multispecies benefits, and management emphasis would strive to achieve historic and natural habitat conditions. Actions related to general compliance with the ESA would be the same across alternatives. These include reviewing activities for impacts on listed species, consultation with USFWS as appropriate where listed species may be affected, coordination with USFWS on recovery efforts, and management under delisting (if applicable) and other requirements. Continuing bald eagle midwinter inventories for long-term trend information would continue to enhance appropriate opportunities for conservation and would contribute toward delisting the species by monitoring population size and distribution.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Generally any actions that increase fish populations can provide additional foraging opportunities for fish-eating wildlife, such as wading birds and bald eagles. Actions that result in improved health of aquatic systems can also result in improved aquatic invertebrate populations that are sources of

food for several species of waterfowl and American dipper (a song-bird that feeds on aquatic insects in streams). Any fish-related stream improvement actions that improve the quantity, quality, and structure of riparian vegetation indirectly increase the extent and improve the quality of riparian habitats for wildlife, such as yellow warbler, and BLM sensitive species, such as willow flycatcher.

Effects from Special Status Plants Management

Actions to conserve special status plant species generally would improve habitat and would protect wildlife species that occupy similar habitat types or that are affected by similar disturbances. Special status plant management objectives and management actions would strive to achieve good-quality habitats that support native plant populations, which support good-quality wildlife habitats. These actions include inventories, mapping, discretionary activity impact review, and consultation as appropriate with USFWS.

Effects from Wildland Fire Management

Fuel treatments would have similar impacts as forested vegetation treatments and may return sites to historic fuel loading and structure. Effects on wildlife would vary by the habitat needs of species. Fuel treatments would result in more open forested conditions improving habitat for species that select those types of habitats. Acreage of forest with dense multi-story cover would be reduced, decreasing available habitat for species that select those types of habitats. Effects would change over time. Short-term effects from any kind of vegetation treatment could temporarily displace wildlife. Habitats would be considerably changed immediately after treatments and then gradually evolve over time. Details of effects would vary considerably dependent on details of current conditions and treatments at a site-specific level. Wildland fire use in areas that have had fuel reductions would generally result in increased growth and vigor of forage plants and maintenance of open habitats.

Effects from Visual Resources Management

Impacts from visual resources on wildlife are indirect and come from actions under other areas of resource management that are authorized within each VRM class. Vegetation treatments, road construction, recreational facilities construction, and mining are actions that would change visual appearance and also would affect wildlife habitat and their associated species. Generally, VRM Classes III and IV would contain more alterations of wildlife habitat over time than VRM Classes I and II.

Effects from Forest Products Management

General types of impacts are similar to those under Effects from Vegetation—Forests Management. Discouraging livestock grazing in reforested areas until seedlings are at least three feet tall or five years old would reduce potential competition between ungulates and livestock for forage.

Effects from Livestock Grazing Management

Management of BLM lands to meet Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would minimize impacts from livestock grazing across alternatives. Potential impacts from livestock grazing include the following:

- Competition for forage, water, and space;
- Habitat alteration;
- Competition for grass and forbs for big game, such as elk, which is especially critical in winter;~~;~~

- Adverse impacts to bighorn sheep from domestic sheep and goat grazing because of potential for disease transmission;
- Degradations to stream banks from compression, sloughing, and removal of vegetation, resulting in erosion;
- Changes in plant species composition from overuse;
- Potential loss of shrubs in riparian areas, leading to a decrease in nesting riparian songbirds and bank stability;
- Appropriate levels of grazing, stimulating growth of some plant species and increasing succulents;
- Overgrazing, which decreases range condition;
- Weed control to reduce weed spread and resultant impact to native plant communities;
- Fences that create travel barriers, cause stress and energy loss, result in injury and death from entanglement, alter big game distribution, and create perches for predators;
- Fences for control of livestock to reduce impacts on vegetation, streams, and thus wildlife; ~~and~~
- Water developments that expand the spatial and temporal range of where both big game and livestock can exist, creating more pressure on vegetation and competition with each other~~.~~; and
- New water developments would allow increased use of an area by wildlife. New developments would provide previously unavailable watering sites for different wildlife species when livestock are not in the vicinity or conflicting with wildlife use of the area.

Effects from Minerals Management

Minerals management activities have the potential to impact wildlife everywhere except the Frank Church Wilderness, because mineral activities could occur everywhere but in the Wilderness. Minerals management impacts on wildlife generally occur from surface disturbance and thus loss and fragmentation of habitat, as well as disturbances from noise and movement from the exploration, construction, and operation of facilities and roads. Actions spell out where, how much, and what type of mineral exploration and extraction can occur. Generally, the tighter the restriction, the fewer impacts on wildlife.

Effects from Recreation Management

Impacts from recreation management actions can include loss or modification of habitat from construction of recreational facilities, including roads, which are addressed under Effects from Transportation and Travel Management. Other impacts are similar to the indirect impacts from transportation and travel management, such as increased human-wildlife interaction, which can cause animals to alter behaviors, home ranges, and habitat use and sometimes become physiologically stressed, especially in winter. Some bird species would abandon active nests if sufficiently disturbed.

Most BLM-managed lands (about 100,800 acres) would be open to snowmobiles, which can cause physiological stress in mammals from expending energy needed to stay warm with limited food supply. Limiting this type of travel to designated trails in the Craig Mountain WMA would reduce impacts on big game from snowmobiles in an area important to big game populations.

Effects from Renewable Energy Management

Potential impacts from renewable energy management are generally similar to those described under Effects from Minerals Management and Effects from Vegetation—Forests Management.

Effects from Transportation and Travel Management

Roads and trails can fragment habitats, reduce wildlife security areas, increase road kill, and alter home range and migration corridors of wildlife. On a broad general scale, roads decrease habitat quality and impair populations. The magnitude of impacts varies by species, habitat types, size and traffic volume of roads, and seasonal use. Species that require forest interior habitats, have large home ranges, follow distinct migration patterns, or are wary of humans are affected the most by roads. Roads, trails, and snowmobile access increase human-wildlife interactions. Vehicles can degrade wildlife habitats from surface disturbance and can displace and stress animals, which is especially important in winter. Motorized vehicle use and associated human uses that impact critical habitat niches for wildlife, such as den sites, nest sites, critical foraging areas, travel corridors, and security areas, are particularly vulnerable to wildlife disturbances and displacement.

Effects from Lands and Realty Management

Habitat fragmentation could be reduced via land acquisition and adjustment that reduces the checkerboard pattern of public lands ownership and increases the size of publicly owned blocks of land. Larger blocks of contiguous lands allow for consistent management of wildlife habitats without unregulated private land activities interspersed. Unfragmented lands are especially important to shy forest interior species. Degraded habitat on acquired lands could be improved. Public lands with low habitat value could also be exchanged for lands with better wildlife habitat or that are adjacent to unfragmented blocks.

Effects from ACEC/RNA Management

Generally special management areas such as ACECs and RNAs result in protection of wildlife from human activities and long-term improvement or at least maintenance of habitat quality because of numerous restrictions, such as OHV use, mineral exploration, and timber harvest. Several actions that protect resources within ACECs and RNAs would be the same across all alternatives, including the following:

- No new rights-of-way or road construction in Wapshilla Ridge ACEC/RNA;
- No livestock grazing in Captain John Creek ACEC/RNA;
- Management of the Long Gulch ACEC/RNA, in accordance with the updated MacFarlane's Four-o'clock Recovery Plan;
- Allowing no ground-disturbing activities and withdrawal from mineral entry in the Long Gulch ACEC/RNA;
- Filing for nonconsumptive water rights, permitting no new rights-of-way or road construction, and withdrawing from mineral entry at Lucile Caves ACEC/RNA;
- Management of the Skookumchuck ACEC/RNA, in accordance with the updated MacFarlane's Four-o'clock Recovery Plan, no grazing, and withdrawal from mineral entry; and
- In the Lower Lolo Creek ACEC, timber harvest activities on slopes over 50 percent would use yarding methods (such as aerial or high-lead systems) that minimize ground disturbance.

These management actions would have direct and indirect conservation impacts on wildlife, including several special status species that use these areas. The restrictions above, some of which are for sensitive and listed plants, would also reduce potential habitat degradations of wildlife habitats, including several BLM sensitive species, nongame species, upland game, bighorn sheep, elk, mule deer, mountain lion, and black bear at Captain John Creek, BLM sensitive snails at Lucile Caves, and several sensitive wildlife species at Lower Lolo Creek.

Effects from National Trails Management

Actions to protect resources along the National Trails could directly or indirectly affect wildlife and special status wildlife if these measures prevented disturbances of habitat or animals, such as restoring damaged areas around trails or a seasonal closure for a special status species.

Effects from Wild and Scenic Rivers Management

Under all alternatives, 29 miles of river segments found suitable, as well as 112 miles of the Salmon River that has been a study river since 1968, would be managed to preserve their outstandingly remarkable values. Wild and scenic river management can restrict activities that would alter the tentative classification, which could indirectly conserve wildlife habitat, especially for riparian species, in areas where actions would have been authorized without the classification. These impacts would vary according to the criteria for which each segment was found suitable. Special status species that are riparian-dependent and could be the most affected include harlequin duck, willow flycatcher, Coeur d'Alene salamander, Idaho giant salamander, and Columbia River tiger beetle.

Effects from Wilderness and Wilderness Study Areas Management

Continued management of BLM land would generally maintain existing conditions for wildlife in the following:

- 750-acre portion of the Frank Church/River of No Return Wilderness, in compliance with the Wilderness Act;
- The 5,571-acre Marshall Mountain WSA; and
- The 6,463-acre Snowhole Rapids WSA under Interim Management Policy for lands under wilderness review.

Bald eagles occur in the Snowhole Rapids WSA, and wolves could occur in the Frank Church/River of No Return Wilderness. Management under wilderness and WSA regulations would continue to provide indirect protection in addition to the ESA for these listed species.

Effects from Watchable Wildlife Viewing Sites Management

Actions to maintain or improve wildlife habitat could improve habitat for a variety of wildlife, including deer, elk, bighorn sheep, waterfowl, raptors, and river otter. This would be in conjunction with providing wildlife viewing opportunities in Lower Salmon River Canyon (87 miles), Middle Salmon River Canyon (80 miles), Snake River in Hells Canyon (68 miles), and Craig Mountain WMA (24,000 acres). Specific impacts would depend on the nature of individual habitat improvement measures made in these areas. Increased wildlife viewing can affect behavior in some wildlife species that may flush in response to human presence or avoid using areas frequented by humans. However, providing wildlife viewing opportunities helps build appreciation and knowledge of wildlife with the general public, which can result in increased indirect long-term support and funding wildlife programs.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, animals, fish, and important habitats could improve habitat conditions for those species and habitats if these consultations result in changes in management that would improve habitats. ~~However, Tribes collecting or hunting special status species, as allowed under their treaty rights, could impact those species.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Generally, actions to remediate contaminated sites to safeguard human health would also affect wildlife habitats and populations, especially those that depend on riparian and wetland habitats. Reducing contaminants in the environment reduces the potential for animals to ingest them. It also reduces biomagnification because contaminants are concentrated as they pass up through the food chain. Removing contaminants from the environment through such actions as mitigating newly discovered hazards within 120 days and pursuing the reduction of hazards at abandoned mine sites would generally affect fish-eating species, such as osprey and belted kingfisher, as well as bats, which mostly forage on insects near water. Closing abandoned mines could affect bats. However, if the mines are closed in a manner to allow access to bats, then these bat populations would be preserved. Remediation and stabilization actions along creeks would promote the growth of riparian vegetation and reduce sediment loads and thus would gradually improve habitat for riparian-dependent wildlife species. Additional actions to more effectively manage hazardous sites and cleanups could indirectly improve habitat and the health of wildlife more under Alternatives B, C, and D than under Alternative A.

Alternative A

Effects from Soils Management

In addition to impacts noted under Effects Common to All Alternatives, under Alternative A the MFP Road Guidelines (BLM 1981a) and the Riparian Management Guidelines (BLM 1985e) would avoid and mitigate many surface disturbances and erosion, which could reduce impacts on quantity and quality of vegetation and thus habitats from other resource uses, especially those associated with roads and those located in riparian areas. Prioritizing existing roads for restoration, including obliteration, could increase quantity of wildlife habitat, reduce human disturbance on wildlife, and reduce habitat fragmentation, where roads are obliterated.

Effects from Water Resources Management

In addition to impacts noted under Effects Common to All Alternatives, under Alternative A wildlife habitat, especially riparian and wetland habitats would be conserved from water management actions, such as implementation of the MFP Road Guidelines (BLM 1981a), Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995). These actions directly and indirectly conserve riparian vegetation, which is especially critical wildlife habitat.

Effects from Vegetation—Forests Management

Under Alternative A treating dry ponderosa pine and dry conifer cover types and whitebark pine would reduce stand densities, which would result in impacts on wildlife described under Effects Common to All Alternatives. Improving old-growth forest structure may help prolong the life of old-growth stands and thus, in the long term, maintain or improve habitat for old-growth-dependent species, such as fisher.

Effects from Vegetation—Weeds Management

Actions to prevent and control invasive and noxious weeds using integrated weed management techniques consistent with the BLM's *Partners Against Weeds: An Action Plan for the Bureau of Land Management* (BLM 1996) could reduce or at least slow the rate of increase of the area and severity of damage to wildlife habitats, as described under Effects Common to All Alternatives, under Alternative A.

Effects from Vegetation—Rangelands Management

Alternative A identifies improvements in rangeland condition and riparian habitats, which would benefit wildlife. Alternative A identifies areas for development of HMPs, which could improve rangeland condition.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative A riparian management actions would continue to reduce the potential for degradations of riparian wildlife habitat. Implementing BMPs for riparian management units and the Riparian Management Guidelines (BLM 1985e) and PACFISH (BLM and Forest Service 1995) would avoid and mitigate many surface disturbances and erosion. This also would protect and enhance riparian vegetation, which could reduce impacts on riparian-dependent wildlife habitats from other resource uses, especially those associated with roads and those located in riparian areas.

Effects from Wildlife and Special Status Wildlife Management

In addition to impacts noted under Effects Common to All Alternatives, under Alternative A, following elk habitat coordinating guidelines would continue to maintain elk habitat conditions by guiding silvicultural practices that could affect elk habitat components.

Improving half the 3,840 acres of poor condition range to fair condition and half the 13,766 acres of fair condition range to good condition within 20 years could improve 8,803 acres of habitat for range and grassland wildlife species. These species include BLM sensitive species such, as ferruginous hawk, prairie falcon, and Brewer's sparrow. Managing lands identified for intensive wildlife management would continue to improve or maintain habitat for wildlife in these areas via HMPs and use restrictions.

Practicing snag management over 60 percent of any timber harvest area, with at least two large diameter and breast height snags per acre, plus additional snag recruitment actions, would help maintain cover, denning, nesting, and foraging microhabitat features for snag- and cavity-dependent forest wildlife species, such as woodpeckers.

Protection of active raptor nests with a 100-yard nondisturbance buffer would provide limited protection of these nests. This buffer size could be insufficient based on the species, topography, vegetation, site distance, and type of activity.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Under Alternative A, actions to improve aquatic, riparian, and fisheries habitats with implementation of management plans and use restrictions for sensitive areas would have indirect impacts on wildlife consistent with the impacts described under Effects Common to All Alternatives.

Effects from Special Status Plants Management

In addition to impacts noted under Effects Common to All Alternatives, under Alternative A the Long Gulch and Skookumchuck populations of MacFarlane's four-o'clock would be protected as ACEC/RNAs (completed). This is further described under Effects from ACEC/RNA Management.

Effects from Wildland Fire Management

Analysis of how wildland fire management actions would affect forested lands is described in Effects from Wildland Fire Management in Sections 4.2.5, Vegetation—Forests and 4.2.12, Wildland Fire Management. Predictions for forest conditions post-fire and treatments described in these sections form the basis of forest wildlife habitat. Impacts on species are variable and are described under Effects Common to All Alternatives.

Effects from Visual Resources Management

Alternative A, like Alternative B, would be intermediate between Alternatives C and D (**Table 4-13**, Comparison of Wildlife and Special Status Wildlife Indicators by Alternative) in terms of indirect impacts, as described under Effects Common to All Alternatives.

Effects from Forest Products Management

Alternative A designates 35,757 (35 percent) of the forested acres as commercial forest, 24,000 acres (less than 25 percent of the CFO) of which would be intensively managed with a focus on maximizing timber production on a sustained yield basis. Within this area, wildlife would not be a primary concern, and thus habitat quality would be lower than in other BLM-administered forested lands in the CFO. This is because less vegetative structural diversity and more human disturbances would exist, and fewer specific protections would apply. These losses of habitats and disturbances would generally affect late seral dependant wildlife more than early seral wildlife. Habitat conditions could improve for a few select species that thrive in early seral and disturbed habitats.

Effects from Livestock Grazing Management

Alternative A would generally be intermediate between Alternatives B and D in quantity of AUMs, allotments, and leased area (**Table 4-14**, Grazing ~~Statistics~~ Factors that Could Affect Wildlife). Improvements that have been completed under Alternative A, including 25.5 miles of fence, 30 spring developments, 7 catchments, 10 cattle guards, 2.7 miles of fence for stream protection, and 1,900 acres of noxious weed control, would have indirect impacts on wildlife, as described under Effects Common to All Alternatives. Allocation of 1,004 AUMs of competitive big game forage would reduce conflicts for forage with livestock from big game species, such as deer and elk. Also see **Table 4-50** in Section 4.3.2, Livestock Grazing.

Table 4-14
Grazing ~~Statistics~~ Factors that Could Affect Wildlife

Grazing Statistic	Alternative A	Alternative B	Alternative C	Alternative D
Permitted AUMs	7,~~204~~200	~~6,254~~6,263	6,020	8,54~~0~~9
Number of allotments	168	166	145	170
Area available for grazing (acres)	122,732	105,619	101,350	135,850
Big game competitive AUMs[1]	1,004	864	829	1,111

Source: BLM 2004a

[1]Only identifies competitive livestock/big game AUMs not allocated to livestock. Total available AUMs/forage for big game is significantly larger than indicated competitive amount.

Currently, the BLM CFO has four allotments that are leased for sheep grazing (**Table 4-15**). Domestic sheep or goat grazing is a concern because of associated risks for disease transmission from domestic sheep and goats to bighorn sheep. Using a risk rating process adapted from the Payette National Forest, a level of disease transmission risk was made, and ranged from low to high for the four BLM sheep allotments.

Table 4-15
BLM Sheep Allotments and Risk Analysis for Disease Transmission to Bighorn Sheep

Allotment Name Allotment No.	Total Acres	Class of Livestock AUMs[1]	Season of Use	Subbasin(s)	Level of Disease Transmission Risk from Domestic Sheep to Bighorn Sheep[2]	Bighorn Sheep Habitat
Partridge Cr. Allot. No. 36240	9,166 acres	Sheep 287 AUMs	4/11–7/15	Lower Salmon R.	High	Suitable Habitat
		Sheep 142 AUMs	10/15 – 11/30			
		Cattle 30 AUMs	5/1 – 10/15			
Marshall Mtn. Allot. No. 36284	4,719 acres	Sheep 166 AUMs	7/5 – 8/4	Middle Salmon R. S.Fk. Salmon R.	High	Suitable Habitat
Hard Cr. Allot. No. 36242	5,186 acres	Sheep 218 AUMs	6/15 – 7/15	Little Salmon R.	Low	Secondary Suitable Habitat
Big Cr. Allot. No. 36358	480 acres	Sheep 81 AUMs	6/1 – 10/31	Little Salmon R.	Low	Secondary or Incidental Use Habitat

[1]Conversion factor for AUM: 1 AUM = 1 cow and calf or 5 sheep and lambs (less than six months).
[2]Adapted from *Risk Analysis of Disease Transmission Between Domestic Sheep and Bighorn Sheep on the Payette National Forest* (Forest Service 2006). "Risk rating" was determined by rating given to nearest Payette National Forest Sheep Allotment and proximity of bighorn sheep habitat (Forest Service 2006). It is noted that these allotment specific ratings have not had an expert panel risk assessment, which was conducted for Payette National Forest sheep allotments.

Effects from Minerals Management

General effects are described under Effects Common to All Alternatives, above. Under Alternative A, 131,044 acres would continue to be open to leasable minerals activities subject to the standard lease terms and site-specific mitigation measures/stipulations, with 12,786 acres subject to nondiscretionary closures (same nondiscretionary closure acres for all alternatives). Approximately 131,044 acres would also be open to mineral (salable) materials disposal subject to the standard permit terms and site-specific mitigation measures/stipulations, with 12,034 acres subject to discretionary WSA closures and 750 acres subject to nondiscretionary closures. Approximately 121,961 acres would be open to locatable minerals with site-specific mitigation measures/stipulations developed during the BLM's review of a plan of operation. This would apply to all alternatives..

Effects from Recreation Management

In addition to the impacts noted under Effects Common to All Alternatives under Alternative A, the BLM would continue to manage public lands for a variety of recreational activities within all ROS settings, as shown in **Table 4-~~15~~16**.

Table 4-16
Recreation Opportunity Spectrum

ROS Class	Alternative A		Alternative B		Alternative C		Alternative D	
	Acres	%	Acres	%	Acres	%	Acres	%
Primitive	14,381	10.00	6,200	4.32	6,200	4.32	6,200	4.32
Semiprimitive	18,816	13.08	36,495	25.40	36,495	25.40	36,495	25.40
Semiprimitive motorized	26,206	18.22	23,593	16.42	23,593	16.42	23,593	16.42
Roaded, natural	55,988	38.93	54,867	38.19	54,867	38.19	54,867	38.19
Rural	0	0.00	22,478	15.65	22,478	15.65	22,478	15.65
Semiurban	27,349	19.02	0	0	0	0	0	0
Urban	40	0.03	40	0.03	40	0.03	40	0.03
Undesignated	1,046	0.73	0	0	0	0	0	0

Source: BLM 2004a

These percentages are indicative of the management emphasis for recreation activities on BLM-administered lands. A much smaller portion of the planning area is reserved for primitive experiences, when compared to opportunities for activities that include motorized uses. Generally wildlife and their habitats within the primitive class would be affected the least from recreation.

Impacts, as described under Effects Common to All Alternatives, would increase with each class up the ROS. More acres would remain in primitive ROS class under Alternative A than under the other alternatives, so that Alternative A could have the fewest impacts on wildlife from recreation (**Table 4-~~15~~16**, Recreation Opportunity Spectrum).

The BLM would continue to allow 44 commercial water-based outfitter permits issued with the Idaho Outfitters Guides Licensing Board on the Salmon and Clearwater Rivers. No permits would be issued for Lolo Creek, and permits for Craig Mountain would require concurrence of the Idaho Department of Fish and Game.

Effects from Transportation and Travel Management

In addition to the impacts noted under Effects Common to All Alternatives under Alternative A, Alternative A would provide areas Open to cross-country OHV use. Areas Open to motorized cross-country travel have the greatest potential to alter wildlife behaviors and do damage to habitats, as described under Effects Common to All Alternatives. Closing roads yearlong to all motorized vehicles on 108 miles of routes would reduce disturbances to wildlife near those routes. Locating designated areas and trails to minimize harassment of wildlife and especially listed species would further reduce potential conflicts with wildlife use.

Effects from Lands and Realty Management

In addition to the general impacts from lands and realty management described in Effects Common to All Alternatives under Alternative A, identifying hazards on public lands, if corrected, could locally reduce impacts on wildlife that could be harmed by these hazards, such as toxic materials that could be ingested. Keeping the public lands within 0.25-mile of the Salmon River withdrawn from mineral entry would prevent surface disturbances of wildlife habitat within 18,532 acres.

Effects from ACEC/RNA Management

Under Alternative A, impacts would be consistent with the general types of impacts on wildlife described under Effects Common to All Alternatives, where wildlife habitat would be protected by certain actions. These include actions that directly prohibit specific impacts on wildlife and their habitats and indirectly from conserving other natural resources, such as listed and BLM sensitive plants. Although these management actions would conserve wildlife resources, Alternative A would generally be less effective than Alternative B, C, or D where additional actions would be added to refine management of ACECs and RNAs, as well as adding new ACECs.

Alternative B

Effects from Soils Management

Implementation of BMPs (**Appendix B**, Best Management Practices [see Volume II~~I~~]) for soil-disturbing activities and application of reclamation measures to mitigate adverse impacts on soils and water add additional actions that could benefit wildlife and their habitats, including special status species, over Alternative A. The BMPs could prevent additional soil-disturbing activities that could encourage healthy vegetation communities, which are the foundation of wildlife habitats. Reclamation measures further restore wildlife habitats that have already been impacted. Alternative B, which includes a more thorough and protective list of BMPs and reclamation measures, would provide for more protection of wildlife and their habitats than Alternative A.

Effects from Water Resources Management

Implementation of BMPs (**Appendix B**, Best Management Practices [see Volume II~~I~~]), monitoring, and adaptive management add additional actions that could benefit wildlife and their habitats, including special status species, over Alternative A. The BMPs could prevent additional erosion that could lead to healthier vegetation communities, which are the foundation of wildlife habitats. Associated monitoring and adaptive management could increase the effectiveness of the BMPs. Alternative B, which includes a more thorough and protective list of BMPs and reclamation measures, would provide for more protection of wildlife and their habitats than Alternative A.

Effects from Vegetation—Forests Management

Blocks over 1,000 acres, which would be managed to improve forest health and vigor, account for 24,789 acres (24 percent of forest land) (17 percent of the CFO). These areas would be managed to meet DFC listed in **Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat (see Volume II~~I~~). Impacts on wildlife of managing for DFC would have some short-term impacts on wildlife from harvesting activities, including removal of potential cover, dens, nesting sites, and foraging opportunities from tree removal, and behavioral disturbances, including displacement associated with noise, movement, and vibrations. These activities, if successful, could transform forest stands into conditions closer to historical range of variability in native wildlife habitats, and they would represent an improvement in habitat quality for many species. As described under Effects Common to All Alternatives, forest treatment impacts on wildlife vary widely by species.

Managing species composition and canopy closure of large trees, giving preference to ponderosa pine and western larch, would, over more than 50 years, increase the amount of old-growth forest wildlife habitat. Identifying and recording old-growth stands and determining if they meet pre-fire suppression criteria could help prevent old-growth stands and their associated limited wildlife habitat from being lost in a severe fire. Performing site-specific analysis on forest vegetation proposals would allow for tailoring projects to maximize, within other constraints, the quality of wildlife habitat post-harvest/treatment by identifying and retaining specific microhabitat features, including nest sites, snags, dens, food sources, and migratory routes, as well as designing the composition and structure of the stand.

Harvesting timber in stands where there is high risk of extensive mortality, in order to maximize the economic return, would degrade wildlife habitats in the short-term due to loss of forested habitat and disturbance from harvest activities. Cavity-dependent and insectivorous species would be the most affected by the loss of potential snags and insects that may be present in dead and diseased trees. In the long term, live trees would be replaced more quickly, providing habitat for species requiring mature forest sooner.

Effects from Vegetation—Weeds Management

Types of impacts from weed management actions on wildlife are similar to those described under Effects Common to All Alternatives. Numerous additional specific actions under Alternative B would make weed management more effective than under Alternative A and thus would be more successful at slowing down the encroachment of weeds in native wildlife habitats.

Effects from Vegetation—Rangelands Management

Under Alternative B actions designed to promote the health of native vegetation communities and rehabilitate areas in nonnative vegetation would generally reduce degradations of wildlife habitat quality and improve it where rehabilitated by increasing quantity and quality of native plant communities that form habitats. Species that use canyon grassland habitat would be the most affected and include short-eared owl, vesper sparrow, mourning dove, and mule deer. The BLM sensitive species that use these habitat types include Brewer's sparrow, Woodhouse toad, and prairie falcon. Management actions and treatments that improve rangeland conditions would be emphasized in the Rattlesnake Ridge and Craig Mountain canyon grassland areas.

Effects from Vegetation—Riparian and Wetlands Management

Alternative B could be slightly less effective at conserving and restoring riparian wildlife habitats than Alternative A because Alternative B RCA stream buffers would total 22,847 acres, 6 percent less than the 24,290 acres of RHCAs under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Actions designed to conserve bald eagle could increase bald eagle use in the CFO and contribute toward species recovery, if successful, by increasing foraging opportunities, area of suitable nesting and roosting habitat, numbers of suitable nest trees, and protection of any active nests from disturbances.

Implementing applicable conservation and restoration measures identified in Canada Lynx Conservation Assessment and Strategy and the Recovery Plan for Canada lynx could increase the area of denning and foraging habitat on BLM-managed lands in the CFO and could contribute toward recovery.

Implementing applicable measures from the gray wolf recovery plan could increase populations of ungulates and alternate prey, suitable denning and rendezvous sites, and sufficient space with minimal human exposure. This could in turn increase the number of packs and individuals in central Idaho and contribute toward recovery. Maintaining and enhancing large stands of cottonwood would at least maintain the potential for yellow-billed cuckoo to occur in the CFO.

Actions to manage sensitive species and their habitats via inventories, database maintenance, guild-based habitat management, land tenure adjustments, conservation easements, restoration projects, and cooperative planning could improve, maintain, or reduce degradations to these species' habitats. Types of impacts would be specific to each species and the project-level implementation of these general guidelines. These actions, if successful, would reduce the possibility of CFO management contributing to a species being listed under the ESA in the future.

Striving to improve the ecological condition of native grassland plant communities, with an emphasis on bighorn sheep, elk, and deer winter range areas, could improve habitat conditions for species that use grasslands for part or all of their life. Improvement in big game winter range areas could increase the size of these herds by reducing winter mortality, and thus increasing success rates for these species.

Alternative B would be more successful at maintaining and improving snag-dependent wildlife habitat than Alternative A.

Actions to protect riparian areas from degradations and to achieve PFC would indirectly conserve and enhance riparian wildlife habitats as well. Increased riparian health would result in increased cover, nesting habitat, and food by increasing density, extent, and structural complexity of riparian vegetation. Improved bank stability and other conditions that reduce sedimentation, increase shading and instream structure, and improve water quality could lead to increases in fish density, which provides more foraging opportunities for fish-eating birds.

Protecting active raptor nests with a 100-yard nondisturbance buffer would provide limited protection of these nests. The possibility of a larger buffer being required to suit the specific situation would make raptor nest protection more effective under Alternative B than under Alternative A.

Actions to improve bighorn sheep habitat could result in an increase in population size in the long-term as well as an increase in hunting opportunities. Improvements to bighorn habitats would also improve habitat conditions for other canyon grassland species

General wildlife management actions to provide for overall species diversity, including providing water sources and developing management plans, reintroductions, and transplants, would generally contribute toward maintaining or improving biodiversity and quality of habitats in the CFO. Population health parameters could improve for some species due to management actions. At a minimum these management actions reduce impacts from other activities that could impair habitats and populations. Few management actions can have the same effect on all wildlife species. Actions that improve habitat for one group of wildlife may lessen the quality of habitat for another on any particular piece of land. Managing habitats for diversity at a landscape level balances out these issues.

Not authorizing any net increase in motorized vehicle use in priority management areas on 101,526 acres would prevent the increase of wildlife disturbance from vehicles.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Types of impacts on wildlife are similar to those described under Alternative A, but additional actions to conserve, enhance, and restore aquatic habitats could provide additional riparian wildlife habitat improvement and result in greater aquatic food sources for wildlife. Emphasis for restoration in 32 watersheds (64,481 acres) would have direct and indirect effects on wildlife habitats.

Effects from Special Status Plants Management

Actions designed to ensure that special status plant populations are stable or continue to improve could indirectly have similar impacts on wildlife that use the habitat types occupied by special status plants and conversely could decrease habitat quality for species that do not use each habitat type affected.

Effects from Wildland Fire Management

Types of impacts of wildland fire management on wildlife would be similar to those under Alternative A. Unplanned fire for wildland fire use would not be evaluated in the Craig Mountain ~~FMU~~FMA and a portion of the Salmon ~~FMU~~FMA (**Figure H-2**, Areas Available for Wildland Fire Use—Alternative B [see **Appendix H** in Volume II~~I~~]).

Treatment of up to 40 percent (approximately 33,760 acres) of CFO lands to reduce FRCC (moderate to high risk) WUI areas would represent less change in wildlife habitat than Alternative D (60 percent [approximately 50,650 acres]) and more than Alternative C (20 percent [approximately 16,883 acres]). Treatments in DFC areas outside of the WUI would strive to achieve historic fire regimes and vegetation-fuel-structure characteristics. Old growth/old forest stands would be managed to meet structural component targets in these areas, as described in DFC tables (**Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]).

Effects from Visual Resources Management

Indirect effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Under Alternative B, 40,598 acres (40 percent of the forested acres) would be managed as commercial forest, and an estimated 242 acres would be treated annually (estimated 3,630 acres over the life of the RMP, which is almost 4 percent of the forested vegetation) (**Table 4-~~16~~17**, Commercial Forest Use Projections). Types of impacts are similar to those described under Alternative A.

Cavity-dependent wildlife species, such as woodpeckers, depend on snags for cover and reproduction. Population sizes of these species are limited by the availability of snags. Snag management would be followed for all timber sales based on forest type (**Table 4-~~17~~18**, Desired Range of Snags per Acre for Potential Vegetation Groups [PVG]) and would maintain or improve snag availability for the long term.

Table 4-17
Commercial Forest Use Projections

Commercial Forest Use Projections	Alternative A	Alternative B	Alternative C	Alternative D
Commercial forest land (acres)	35,757	40,598	34,611	45,190
Proportion of forested area (%)	35	40	34	44
Acres of forest management per year	358	242	191	361
Acres of forest management in a 15-year period[1]	Estimated 5,370	3,630	2,865	5,415
Predicted annual PSQ in MBF	6,600 (ASQ)	3,129	3,101	4,823

Source: BLM 2004a
[1] Based on the annual acres of forest management multiplied by 15 years.

Table 4-18
Desired Range of Snags per Acre for Potential Vegetation Groups

Diameter Group	PVG-1	PVG-2	PVG-3	PVG-4	PVG-5	PVG-6	PVG-7	PVG-8	PVG-9	PVG-11
10 to 20 inches	0.4-0.5	1.8-2.7	1.8-4.1	1.8-2.7	1.8-5.5	1.8-5.5	1.8-5.5	1.8-7.5	1.8-7.5	1.4-2.2
Greater than 20 inches	0.4-2.3	0.4-3.0	0.2-2.8	0.2-2.1	0.4-3.5	0.2-3.5	0.2-3.5	0.2-3.0	0.2-3.0	1.4-2.2
Total	0.8-2.8	2.2-5.7	2.0-6.9	2.0-4.8	2.2-9.0	2.0-9.0	2.0-9.0	2.0-10.5	2.0-10.5	2.8-4.4
Minimum Height	15 feet	30 feet	30 feet	30 feet	30 feet	30 feet	30 feet	30 feet	30 feet	15 feet

Source: BLM 2004a

Effects from Livestock Grazing Management

The impacts from livestock grazing management on wildlife are similar to those described under Alternative A. The Number of allotments and area of grazing would be intermediate between Alternatives A and C (**Table 4-14**, Grazing ~~Statistics~~ Factors that Could Affect Wildlife). Also see **Table 4-50** in Section 4.3.2, Livestock Grazing. Retiring three allotments could improve wildlife habitats within those allotments because any potential competition for forage would be alleviated and cover for wildlife may increase. Habitat for other species may not be improved. It needs to be noted that current conditions and trends for wildlife habitat would probably continue, because these allotments are not currently grazed by livestock. Construction of exclosures and ESA Section 7 consultation would reduce the potential for accidental take of listed plants from grazing. Modifying grazing authorizations to strive toward meeting unmet Idaho Standards for Rangeland Health (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would reduce degradations on rangeland wildlife habitats. It is difficult to control season of use and authorized AUMs on small tracts of fragmented BLM lands, which comprise a large majority of the allotments. Consequently, with exception of acres available for grazing, overall effects are expected to be similar for all alternatives. To promote the achievement of bighorn sheep management objectives, new domestic sheep or goat grazing would not be authorized where such grazing would result in risk of disease transmission to bighorn sheep. On existing sheep grazing allotments, coordination with grazing lessee's and appropriate state/federal agencies, and tribes would be taken to reduce or eliminate risks for domestic sheep

transmission of disease to bighorn sheep. Primary focus would occur on allotments with high risks for disease transmission to bighorn sheep (**Table 4-15**, BLM Sheep Allotments and Risk Analysis for Disease Transmission to Bighorn Sheep).

Effects from Minerals Management

General effects are described under Effects Common to All Alternatives, above. Under Alternative B, effects would be similar to those described under Alternative A, but would be further limited by additional areas with surface use restrictions (leasables and mineral materials), which include 43,590 acres subject to NSO stipulations to protect resources, including wildlife and special status wildlife, and 42,403 acres of public lands would be subject to CSU stipulations to protect visual quality and rivers suitable for the NWSRS. These stipulations mostly eliminate potential impacts on wildlife from mineral management within the NSO areas and would reduce them within the CSU stipulation areas.

Effects from Recreation Management

In addition to the impacts noted under Effects Common to All Alternatives, under this alternative the BLM would continue to manage the Elk City, Little Salmon River, John Day Creek, and Marshall Mountain areas as Extensive Recreation Management Areas. Lolo Creek and Craig Mountain would be designated as SRMAs, identifying recreation as the principal use of these lands. The Lolo Creek SRMA would emphasize backcountry, dispersed, and nonmotorized recreation opportunities, with an emphasis on whitewater boating and fishing. The Craig Mountain SRMA would provide opportunities in a natural setting for big game hunting, hiking, and biking, while promoting backcountry recreation experiences. Managing lands as SRMAs rather Extensive Recreation Management Areas could encourage additional use of these lands and thus increase the level of disturbances to wildlife, as described under Effects Common to All Alternatives. However, because these two SRMAs emphasize nonmotorized activities, the impacts would be less.

Similar to Alternative A, the BLM would continue to manage public lands for a variety of recreational activities within all ROS settings (**Table 4-~~15~~16**, Recreation Opportunity Spectrum). Under Alternative B, less than half of the acres affected under Alternative A would be managed as primitive, potentially opening over 8,000 acres to additional human disturbances that could affect wildlife, as described under Effects Common to All Alternatives.

Effects from Renewable Energy Management

Authorized renewable energy development could have some impacts on wildlife via alteration of habitats from removing vegetation from construction activities. Human disturbances from construction and operation of facilities, such as noise, movement, and vibrations, would alter wildlife behavioral use patterns in the vicinity of the project. Impacts would vary by species, type of development, topography, and habitat type. Removing vegetative treatment byproducts to use in generating plants would reduce the quantity of woody debris on the forest floor similar to removal for a forest or fuels management project. In turn, this would remove cover for wildlife species that use that type of habitat feature.

Effects from Transportation and Travel Management

In addition to impacts noted under Effects Common to All Alternatives, under Alternative B no acres would be Open to cross-country motorized vehicular traffic, thereby reducing impacts on wildlife more than Alternative A. Closing roads to all motorized vehicles yearlong on 100 miles of

routes would reduce disturbances to wildlife near those routes. Implementing the travel plan would ensure additional protections for wildlife, special status wildlife, and their habitats over Alternative A through patrols, enforcement, education, visitor contacts, monitoring, and use restriction signage.

Obliterating or decommissioning roads and trails could reduce habitat fragmentation in the long term.

Effects from Lands and Realty Management

Types of impacts from land tenure adjustments are described under Effects Common to All Alternatives. Improvements to wildlife habitat via land acquisition would be more likely under Alternative B because 113,728 acres in 12 management blocks have been identified with ranked resource values. Wildlife ranks as "high value" for 70,657 acres in 6 blocks. In addition, conservation easements would be used to protect resources, including wildlife.

Encouraging linear rights-of-way to be collocated would reduce the area of surface disturbance that could degrade wildlife habitat by vegetation removal and conversion and spread of noxious weeds. Wildlife and habitats would receive varying levels of protection and conservation from withdrawals and special designations that restrict potential land use conflicts.

Effects from ACEC/RNA Management

Under Alternative B ~~three~~ four new ACECs would be created: 5,759 acres on the Salmon River from White Bird Creek to French Creek, 570 acres on the East Fork American River, 1,625 acres on Upper Lolo Creek, and 6,356 acres on the American River. Adding another ACEC to the East Fork of the American River would further protect species along the river corridor, especially riparian-dependent wildlife, such as yellow warbler, bald eagle, and other riparian-dependent species.

Possible updates to the Clearwater River Islands Goose Nesting HMP could further enhance waterfowl habitat and nesting success rates in the Lower and Middle Cottonwood Islands ACEC/RNA. Possible updates of the Lucile Caves HMP could improve conservation efforts for BLM sensitive land snails.

Effects from National Trails Management

Effects would be the same as those described under Alternative A.

Effects from Wilderness and Wilderness Study Areas Management

Management of the wilderness area and WSAs under interim policy would have the same effect as under Alternative A. If Congress were to release the WSAs from wilderness consideration, management of these areas could offer slightly less protection for threatened and endangered species from other actions and human disturbance. These species would still receive required protection from the ESA.

Effects from Watchable Wildlife Viewing Sites Management

Impacts on wildlife and special status wildlife described under Alternative A would be continued and expanded under Alternative B with additional habitat improvements, viewing opportunities, and partnerships, which could improve more wildlife habitat and populations than under Alternative A.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, animals, fish, and habitats, and then incorporating that information into monitoring protocols, could improve habitat conditions for those species and habitats, as well as for species with similar habitat requirements if management actions were adjusted to address the results of monitoring data.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Types of impacts from forest vegetation management would be similar to Alternative B. However, under Alternative C, the threshold of contiguous forest blocks would be reduced from 1,000 to 500 acres for management support of attaining DFC. Blocks would total 28,087 acres under Alternative C, a 3-percent increase from Alternative B. This could lead to attainment of more acres of wildlife habitats in DFC than under Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, with the addition of promoting native plant communities in one additional area, Salmon River canyon grasslands. Thus, Alternative C has the greatest potential to improve rangeland wildlife habitats.

Effects from Vegetation—Riparian and Wetlands Management

Alternative C would be slightly more effective at conserving and restoring riparian wildlife habitats than Alternative A because of greater sizes of the RCA stream buffers. Alternative C would have RCAs totaling 27,624 acres, 14 percent greater than RHCAs under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

The impacts from wildlife and special status wildlife management are similar to Alternative B with the following exceptions:

- Under Alternative C, the addition of the Lower Salmon River in emphasis management areas for native grassland communities could increase the area of grassland wildlife habitat that is improved;
- Under Alternative C, the reduction of the threshold of contiguous forest size from 1,000 to 500 acres for management support of attaining DFC could lead to attaining more acres of wildlife habitats in DFC than under Alternative B;
- Riparian and wetland management actions would be more effective at improving riparian wildlife habitat because of larger RCA stream buffers (buffer widths are the largest for Alternative C compared to all other alternatives) and more watersheds and acreage identified for conservation or restoration (3 percent more than prescription watersheds under

Alternative A). Specifying use criteria for grazing allotments along fish-bearing streams could further conserve riparian areas; and

- More acres/areas identified for no net increase and/or emphasis for decrease in open routes for motorized use.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

The impacts from aquatic resources management actions would be similar to those under Alternative B, with additional improvement to riparian wildlife habitats because of additional conservation and restoration watersheds (6 percent more than Alternative B and 3 percent more than prescription watersheds under Alternative A). Conservation and restoration measures identified for listed and BLM sensitive fish would have direct and indirect effects for riparian-dependent wildlife species.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be the similar to those described under Alternative B, except all unplanned fires would be evaluated for wildland fire use (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). Treatment of up to 20 percent of CFO lands (approximately 16,883 acres) to reduce FRCC (moderate to high risk) in WUI areas represents less change in wildlife habitat than Alternative B (40 percent [approximately 33,766 acres]) and Alternative D (60 percent [approximately 50,650 acres]). Habitat could improve for some species and not for others. With less fire management, there would be less opportunity for habitat improvements needing harvest per winter range HMPs.

Effects from Visual Resources Management

Indirect impacts on wildlife and special status wildlife from visual resources are the least among the four alternatives, as described under Alternative A (**Table 4-13**, Comparison of Wildlife and Special Status Wildlife Indicators by Alternative), because there would be the greatest number of acres in VRM Class I and II and the fewest in Class III.

Effects from Forest Products Management

Under Alternative C, types of impacts from forest products management are similar to those under Alternative B, except for fewer acres of forest harvest and treatment and larger RCA stream buffers for riparian areas within forested lands, as described under Vegetation—Riparian and Wetland. Habitat could improve for some species and not for others. With less fire management, they would be less opportunity for habitat improvements needing harvest per winter range HMPs.

Effects from Livestock Grazing Management

The types of impacts on wildlife from livestock grazing management are similar to those under Alternative B. However, there would be fewer AUMs, allotments, and grazed acres (**Table 4-14**, Grazing ~~Statistics~~ Factors that Could Affect Wildlife). Habitat could improve for some species and not for others. Also see **Table 4-50** in Section 4.3.2, Livestock Grazing. Reduced risks from transmission of disease from domestic sheep and goats to bighorn sheep may occur. Effects to bighorn sheep are similar to those described in Alternative B.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except 68,854 acres of the public lands open to leasing would be subject to NSO stipulation to protect resources, including wildlife and special status wildlife. Also, 59,122 acres of the public lands open to leasing would be subject to CSU stipulations to protect visual quality and rivers suitable for the NWSRS. These stipulations mostly eliminate potential impacts on wildlife from mineral management within the NSO areas and reduce them within the CSU stipulation areas. The increase in surface use stipulations would decrease potential impacts compared to Alternatives A and B. Alternative C specifies the largest acreages for lease stipulations and could, therefore, result in the least amount of impacts.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B, except that managing for a decrease in motorized vehicle use on BLM-managed lands in 5 priority areas on 38,733 acres could decrease vehicle disturbances, habitat damage from OHVs, access to remote habitats, and fragmentation of habitats.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Under Alternative C the Craig Mountain ACEC would be increased to 23,342 acres from the current 3,956 acres, an almost 5-fold increase. This would increase the number of protective measures in place for an area already managed for wildlife. Habitats would be further conserved by additional restrictions on roads and grazing, as well as a monitoring program. Forest habitats would be further conserved and/or restored by designating DFC for forest habitats, which would conserve and protect old forest characteristics. Upper Lolo Creek would be designated an ACEC. This 1,625-acre parcel would directly and indirectly conserve wildlife, especially riparian-dependent wildlife, by restricting timber harvest, withdrawal from minerals, road decommission, exotic plant management, riparian restoration, and forest management for DFC. Designation of the 576-acre Partridge/Elkhorn ACEC and the 590-acre Little Salmon River ACEC would protect wildlife, including BLM sensitive wildlife that use old-growth ponderosa pine, such as goshawk, by emphasizing management for large trees.

Effects from National Trails Management

Effects would be the same as those described under Alternative A.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be the same as those described under Alternative B.

Effects from Native American Tribal Uses Management
Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management
Effects would be the same as those described under Alternative B.

Effects from Water Resources Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management
Effects would be similar to those described under Alternative B, except that, under Alternative D forest vegetation management could be less effective at conserving wildlife habitat than the other alternatives because there is no objective to manage for forest DFC and old forest characteristics.

Effects from Vegetation—Weeds Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management
Rangeland management actions would be less protective of wildlife and special status wildlife habitats and would provide less potential to improve than under Alternatives A, B, and C because there would be no specific management emphasis actions to convert nonnative communities to native.

Effects from Vegetation—Riparian and Wetlands Management
Alternative D would be slightly less effective at conserving and restoring riparian wildlife habitats than Alternatives A, B, and C because of smaller sizes of the RCA stream buffers. Alternative D would have RCAs totaling 20,710 acres, 15 percent less than RHCAs under Alternative A, 9 percent less than RCAs under Alternative B, and 25 percent less than RCAs under Alternative C.

Effects from Wildlife and Special Status Wildlife Management
Effects would be similar to those described under Alternative B, with the following exceptions:

- Incorporating important sensitive species habitat components into activity and project design could conserve and in some cases improve sensitive species habitats. These improvements could contribute to preventing a future need for ESA listing;
- Riparian and wetland management actions could be less effective at improving riparian wildlife habitat because of smaller RCA stream buffers (15 percent, 9 percent, and 25 percent less acres than Alternatives A, B, and C, respectively), as described under Effects from Vegetation—Riparian and Wetland Management above;
- 21 percent, 19 percent, and 24 percent fewer priority (prescription, conservation, or restoration) watersheds than Alternatives A, B, and C, respectively; and
- No designated management areas with restrictions to not allow no net increase in open routes for motorizes vehicles, which is identified in Alternatives B and C.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, with less potential improvement to riparian wildlife habitats because of fewer conservation and restoration watersheds, 19 percent less than Alternative B and 21 percent less than prescription watersheds under Alternative A.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative B, except evaluation of unplanned fire for wildland fire use would not be done in commercial forest lands or grazing allotments (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). Only fires that have been determined to not affect these resources would be allowed to burn. This could preclude potential wildlife habitat improvements .

Treatment of up to 60 percent of CFO lands (approximately 50,650 acres) to reduce FRCC (moderate to high risk) in WUI areas would represent more change in wildlife habitat than under Alternative B (40 percent [approximately 33,766 acres]) and Alternative C (20 percent [approximately 16,883 acres]). Habitat could improve for some species and not for others.

Effects from Visual Resources Management

Indirect impacts on wildlife and special status wildlife from visual resources are the greatest among the four alternatives, as described under Alternative A (**Table 4-13**, Comparison of Wildlife and Special Status Wildlife Indicators by Alternative), because there would be the fewest number of acres in VRM Class I and II and the greatest in Class III.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, except there would be more acres of forest harvest and treatment and smaller RCA stream buffers for riparian areas within forested lands, as described under Vegetation—Riparian and Wetlands.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, but considerably more grazing would be permitted (**Table 4-14**, Grazing ~~Statistics~~ Factors that Could Affect Wildlife). Also see **Table 4-50** in Section 4.3.2, Livestock Grazing. Allotments that would be retired under Alternatives B and C would be increased under Alternative D, thus resulting in more potential for conflicts with wildlife management and potential degradations to wildlife habitat and populations as described under Effects Common to All Alternatives. Reduced risks from transmission of disease from domestic sheep and goats to bighorn sheep may occur. Effects to bighorn sheep are similar to those described in Alternative B.

Effects from Minerals Management

Under Alternative D, effects would be similar to those described under Alternative B, but would be less limited because of fewer areas with surface use restrictions (leasables and mineral materials), which include 35,045 acres subject to NSO stipulations to protect resources, including wildlife and special status wildlife, and 32,013 acres would be subject to CSU stipulations to protect visual quality and rivers suitable for the NWSRS. These stipulations mostly eliminate potential impacts on wildlife from mineral management within the NSO areas and reduce them within the CSU stipulation areas.

The increase in surface use stipulations could decrease potential impacts compared to current levels. Types of impacts would be the same as those described under Alternative A.

Effects from Recreation Management

Effects would be similar to those described under Alternative B throughout most BLM-managed lands. However, in the Craig Mountain WMA SRMA, access would be improved to promote rural, developed recreation instead of backcountry experience. This could result in more disturbances to wildlife and their habitats from the impacts of increased human presence and vehicles, as described under Effects Common to All Alternatives.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B, except that there would be a 23,189-acre Open area that would allow for more potential wildlife disturbance than under Alternatives B or C.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B. The only proposed difference is to allow livestock grazing to support achievement of goals on Wapshilla Ridge ACEC/RNA. Quantity and composition of vegetation may be altered by grazing, but if grazing is being used as a tool to achieve goals, the health of wildlife habitats likely would not be impaired.

Effects from National Trails Management

Effects would be the same as those described under Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

Effects from Watchable Wildlife Viewing Sites Management

Effects would be the same as those described under Alternative B.

Effects from Native American Tribal Uses Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

Most of the cumulative projects listed in Section 4.1.3, Cumulative Impacts, have or will affect wildlife. Population increases, timber activities, fire suppression, road construction, weeds, and mineral development have had the greatest effects. These actions and their interactions have resulted in the loss of and changes in habitat across northern Idaho, resulting in degraded quality of these habitats and the populations they support. The above actions directly and indirectly result in changes in vegetation species composition and structure. On public lands, these changes in vegetation have the greatest effect on wildlife as opposed to private lands where development results in the complete loss of habitats under the footprint of infrastructure. These changes include the following: old

single-story ponderosa pine forests have decreased; early seral forests have decreased; mid-age/mature stands of lodgepole and grand fir have increased; white pine blister rust has almost eliminated western white pine and whitebark pine; native canyon grasslands, primarily bluebunch wheatgrass and Idaho fescue, have declined due to weed invasion; agriculture has eliminated the majority of native Palouse grasslands; and vegetation and wildlife habitats are less diverse than historic conditions from past timber harvest practices, fire exclusion, roads, grazing, agriculture, weeds, and recreation. Improvements have included high populations of whitetail deer, wolves surpassing recovery goals, the first successful nesting pairs of bald eagles documented in the area, delisting of the peregrine falcon, high upland bird numbers, Idaho Department of Fish and Game habitat improvement projects, and conservation easements being implemented by Potlatch.

In the foreseeable future, implementing the RMP in combination with National Forest Plans and revisions would put numerous new mitigation, restoration, and conservation measures in place that would reduce the potential extent and severity of effects from other actions. Implementing several programs, such as RCA stream buffers, when combined with similar programs on Forest Service lands, would rehabilitate damaged lands such as riparian areas. Actions on BLM lands would have a noticeable effect at the local level, but because BLM lands are a small total area of scattered parcels, the Cottonwood RMP's contribution to cumulative effects on wildlife across northern Idaho is relatively small. The actions of the Forest Service, as well as state, private, and tribal lands, shape the conditions of much of northern Idaho.

Forested vegetation treatments and harvest, including prescribed fire in conjunction with similar actions on Forest Service, and some private, state and tribal lands, would, if successful, bring forested lands into DFC, a condition more similar to the historic range of variability for species composition and structure. However, logging would have short-term effects on wildlife from roads, noise, and presence of humans on all types of land ownership. Long-term effects would occur for species requiring the denser, more-complex structure of mature forests where converted to more open or early seral-stage stands. These species could decline to a historical level more in balance with the historical amount of mature forests. Species that select more open, single-canopy forest structures would experience an increase in available habitat from this type of forested vegetation treatments.

The same types of cumulative effects would occur under all alternatives. Generally, Alternative C would contribute the greatest potential for improvement in wildlife habitat in northern Idaho because of numerous management actions, mitigation measures, and restrictions designed to improve wildlife habitats. There would be less conversion of forested habitats to historical structures, so that habitat conditions for some species dependent on early seral stages and single story ponderosa pine, would be less improved than under Alternatives B and D. The least amount of change resulting from forest vegetation treatments would occur. Alternatives A and D would contribute less to any improvements in wildlife habitat conditions across northern Idaho because of more focus on commodities, especially under Alternative D. More acres of forest vegetation would be treated than under Alternative C, resulting in more effects on wildlife. Alternative B is intermediate between Alternatives C and D in most regards.

Most of the cumulative impact projects in Section 4.1.3, Cumulative Impacts, have had or will have effects on special status wildlife. Cumulative effects described above also apply to those wildlife species listed under the ESA or designated sensitive by the BLM. Actions and mitigation measures

to comply with the ESA and work towards recovery would make a small contribution to recovery of listed species in northern Idaho, because of the small quantity of BLM-managed lands. The Forest Service has by far the greatest control over the health of listed and sensitive species in northern Idaho because of the large amount of land in its ownership. Development on private lands in northern Idaho also would put additional pressure on special status species. Comparisons of effectiveness among the Cottonwood RMP alternatives would be the same as for non-special status wildlife.

4.2.10 Aquatic Resources, Fish, and Special Status Fish

Goal: Manage habitat to contribute to the conservation of special status and native fish species.

Summary

Healthy riparian areas are critical to aquatic systems that include invertebrate populations and fish, including special status fish species. Under Alternative A, aquatic resources management for the CFO includes designating streams for development of aquatic HMPs, Riparian Management Guidelines (BLM 1985e), PACFISH (BLM and Forest Service 1995), and Fisheries and Water Quality Objectives (BLM 1985d). Prioritized areas for achievement of fisheries and water quality objectives are identified as prescription watersheds for achievement of objectives. Under Alternatives B, C, and D, the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) is somewhat similar to Alternative A for providing conservation and restoration measures for fisheries and water resources. The Aquatic and Riparian Management Strategy (**Appendix F**) provides more flexibility for adaptive management, which is also specific to the incorporation of the aquatic and riparian habitat component of ICBEMP into BLM land use plans.

Alternative A does not address all species that have been listed as threatened, endangered, species of concern, or sensitive species with USFWS, National Marine Fisheries Service, Idaho Department of Fish and Game, and Idaho BLM. Alternatives B, C, and D provide updated status for special status species and management emphasis and added focus for protection, conservation, or restoration of special status species habitat.

Because of the intermingled and fragmented land patterns and small BLM ownership within many watersheds, Chapter 2 identifies focus areas where achievement of fisheries objectives (e.g., DFCs) may be more achievable. This strategy focuses on public land ownership within a watershed and where similar management emphasis would also probably occur (e.g., BLM, Forest Service, Idaho Department of Fish and Game). Alternative A identifies prescription watersheds, and Alternatives B, C, and D identifies conservation/restoration watersheds, where focused fisheries management would occur.

Degradation of aquatic habitats and fisheries, including special status fish populations, could occur as a result of land management activities. Resource management such as forestry, minerals, travel, recreation development, and use and grazing can affect aquatic habitats. The potential for impact is dependent upon the success and adequacy of protective measures such as riparian buffer zones, mineral withdrawals, and adherence to the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). Alternative C would best manage habitat to contribute to the conservation of special status and native fish species,

followed by Alternatives B, A, and then D. **Table 4-~~18~~ 19** identifies the indicators that were used to analyze effects on aquatic resources, fish and special status fish under each alternative.

Table 4-19
Comparison of Aquatic Resources, Fish, and Special Status Fish Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Changes to fish habitat condition in priority prescription, conservation, and restoration watersheds	Improved for 66,077 acres in 39 prescription watersheds (many are the same as restoration and conservation watersheds in Alternatives B, C, and D)	Improved for 64,481 acres in ~~32~~ 28 restoration watersheds and ~~1~~ 3 conservation watersheds	Improved for 68,359 acres in ~~40~~ 37 restoration watersheds and 3 conservation watersheds	Improved for 52,118 acres in ~~27~~ 24 restoration watersheds and ~~1~~ 3 conservation watersheds
Miles of streams in PFC flowing across BLM lands as an indicator of good fish habitat	537	537	537	537
Miles of fish-bearing streams within prescription, conservation, and restoration watersheds flowing across BLM lands	69	80	81	65
Miles of fish-bearing streams flowing across BLM lands	162	162	162	162

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For aquatic resources, fish, and special status fish, the indicators used for impact analysis are identified in **Table 4-~~18~~19**, Comparison of Aquatic Resources, Fish, and Special Status Fish Indicators by Alternative.

Methods and Assumptions

Potential impacts on aquatic resources, fish, and special status fish from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- Healthy riparian areas are critical for properly functioning aquatic ecosystems. Improvements or protection of riparian habitats would indirectly improve or protect aquatic habitats and fisheries. Degradations to riparian habitats would indirectly degrade aquatic habitats and fisheries;
- Impacts described for fish populations and aquatic habitats would have similar effects on special status fish species where they occur;
- Emphasis and management opportunities for maintenance or improvement of fish habitat

conditions would occur in designated prescription, conservation, and restoration watersheds; and

- All BLM management actions would incorporate appropriate project design, BMPs, and mitigation to not result in any adverse long-term trends for water quality and aquatic habitats at a sixth-code HUC.

Effects Common to All Alternatives

Effects from Water Resources Management

Properly functioning floodplains are important for functioning aquatic ecosystems. Protecting floodplains would indirectly protect aquatic habitats and fisheries. The BLM would not impair long-term achievement of state or tribal water quality standards. It is the responsibility of the BLM through implementation of the Clean Water Act to protect and restore the quality of public water under its jurisdiction to the extent feasible. The development and implementation of water quality restoration plans (or, in some specific instances, sufficiently stringent management measures) would provide the specific action by which the BLM would meet TMDL requirements on lands under their jurisdiction.

Effects from Vegetation—Forests Management

Forest management includes activities such as commercial timber harvest, vegetation treatments, and road construction. These activities can affect aquatic resources. Potential impacts associated with forest management include:

- *Increased sedimentation.* For various forestry practices, the relative contribution of sediment appears to be moderate from clear-cutting (i.e., higher than from selective cutting or patch-cutting), moderately high from skid trails, and moderate from site preparation. By far, excess sediment generation is greatest from logging roads, particularly if built near streams (Waters 1995). Increased sedimentation in streams can affect fish populations in a variety of manners, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from forest vegetation treatments could occur even if the treatments occur outside the buffer zones.
- *Altered stream flow regimes.* Water yield increase resulting from excessive vegetation removal could result in scouring of stream channel bottoms and decreasing fish habitat and food sources (BLM 1981a). Scouring is dependent on the percent of total overstory forest canopy removed at a watershed level and does not occur at a result of localized vegetation removal. Consequently, the potential for scouring to occur would be relatively low.
- *Changes in water temperature.* Increases in water temperature can occur in areas where streamside vegetation is removed or altered flow regimes exist, increasing the amount of sunlight reaching the water or reducing summer base flow conditions. The default buffer zones on fish-bearing water bodies identified would vary between Alternative A and Alternatives B, C and D. The buffer zones would prevent vegetation treatments from occurring in these areas unless treatment would benefit the riparian plant community structure and riparian goals. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates decreases.

- *Logging debris accumulation.* Logging debris and jams in moderate amounts may provide increased and improved aquatic habitats. Large quantities of debris may form check dams that fill with silt, causing loss of food-producing rubble and gravel. Large quantities may also form migration barriers (BLM 1981a). The default buffer zones would generally prevent streams from changes in the amount of large woody debris recruitment for streams.

Effects from Vegetation—Weeds Management

Herbicide treatments of noxious weeds could degrade water quality in water bodies through the introduction of minimal amounts of herbicides, which are considered of low to moderate risk to aquatic organisms. Careful management and monitoring of applications would minimize the potential for these impacts. Potential for these impacts would be the same for all four alternatives.

Depending on existing riparian ecological condition and potential for weed infestations, large noxious weed infestations could provide inferior riparian habitat than populations of native riparian species, which could affect aquatic habitats. Noxious weed control measures would help prevent these conditions. Invasive plants can create or exacerbate conditions that reduce water quality. Directly or indirectly, invasive plants can affect stream bank stability, sediment, turbidity, shade and stream temperature, dissolved oxygen, and pH (Forest Service 2005a). Reduction of total acres impacted by invasive plants would positively affect water quality and therefore aquatic resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Alternative A would provide similar protection for aquatic and riparian areas as the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) measures to be implemented under Alternatives B, C, and D. Alternative differences would exist for watersheds designated as prescription watersheds (Alternative A) or as conservation or restoration watersheds (Alternatives B, C, and D). The PACFISH (BLM and Forest Service 1995), Riparian Management Guidelines (BLM 1985e), and Fisheries and Water Quality Objectives (BLM 1985d) could be more restrictive for some actions than the Aquatic and Riparian Management Strategy identified for Alternative B, C, and D (**Appendix F**). Alternative A has larger default buffers for lakes and large rivers than the other alternatives. Default buffers on all other types of fish-bearing water bodies within RHCAs and RCA stream buffers would be the same across all alternatives. These buffer zones would serve to protect aquatic habitats from impacts associated with other resource uses such as forest products and minerals, as described in the Effects Common to All Alternatives section. Alternatives B, C, and D are more specific for implementation of conservation and restoration actions for special status fish.

Effects from Special Status Plants Management

Management measures that protect sensitive riparian plant species would indirectly protect aquatic habitats by maintaining healthy riparian areas where sensitive plant species occur.

Effects from Wildland Fire Management

The use of non-fire fuel management strategies such as timber harvest could impact aquatic habitats and fish. Potential impacts are described under Effects from Vegetation—Forests Management. The use of protective riparian buffer zones would lessen the severity of impacts on aquatic habitats in riparian areas from fuels management compared to fire. The potential degradation of aquatic habitats resulting from a high-severity fire could include burning of riparian habitats, increased landslide potential, increased sedimentation, and scouring. Fuel management strategies could reduce these impacts in areas where high-severity fires could occur. Factors in wildland fire management

that could affect aquatic resources, fish, and special status fish are related to the size of area where vegetation is removed and its proximity to fish-bearing waterbodies.

Effects from Visual Resources Management

VRM Classes I and II contain restrictions that limit the amount of timber harvest or mineral resource extraction that may occur within these areas. VRM Classes III and IV contain few restrictions limiting land uses. The increased restrictions associated with VRM Classes I and II could indirectly protect fish populations and aquatic and riparian habitats from impacts associated with other land uses.

Effects from Forest Products Management

General potential impacts, described under Effects from Vegetation—Forests Management, are more likely to be realized under Alternatives B and D than under Alternative A.

Effects from Livestock Grazing Management

The quality of riparian areas influences the productivity of stream fisheries. Livestock grazing can affect the riparian environment by changing, reducing, or eliminating vegetation, and by actually eliminating riparian areas through channel widening, channel aggrading, or lowering of the water table (Platts 1991). In the CFO, assessments per the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) have shown that current grazing levels are compatible with aquatic resources as assessed in Standard 1 (watersheds), Standard 2 (riparian areas and wetlands), and Standard 3 (stream channel and floodplains). In all alternatives, the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management would be implemented, and allotments where grazing occurs in occupied habitat and adjacent to occupied habitat would be monitored and management changes implemented to assure grazing use is compatible with the maintenance of listed fish species habitat. Federal listing of salmon, steelhead, and bull trout, and subsequent ESA Section 7 consultation with USFWS, would reduce potential for BLM impacts to listed fish and aquatic habitats under all alternatives.

Effects from Minerals Management

In instances where conservation measures are not successful, or the identified buffers are inadequate, the actions associated with mining could impact fish populations and aquatic habitats. The potential impacts on fish and aquatic habitats from mining activities include but are not limited to:

- *Increased sedimentation on fish-bearing streams.* Excess sediment generation can be the direct result of surface disturbances for mineral extraction, drilling, and facilities construction and also for road construction, maintenance, and use. Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from mining could occur even if the mining activities are outside the buffer zones.
- *Introducing hazardous materials to fish-bearing rivers, streams, and lakes.* Hazardous materials from mining activities and from equipment use and maintenance could be released into fish-bearing water bodies. Associated with locatable minerals extraction are mine tailings, which can introduce heavy metals. Similarly, the extraction of fluid materials can result in oil or

other fluid releases, which could degrade water quality. Examples of this are the releases associated with well-flow testing for geothermal power development. Spills can also occur from equipment that uses hazardous fluids such as gasoline and oil. The impact on fish populations depends upon the type of hazardous material released and the quantity of the release. If severe enough, mortalities can occur and habitat can become unsuitable for aquatic life.

- *Altered stream flow regimes.* Water yield increase resulting from vegetation removal and alteration of natural drainage could result in scouring of stream channel bottoms and decreasing fish habitat and food sources.
- *Changes in water temperatures.* Increases in water temperature can occur in areas where streamside vegetation is removed, increasing the amount of sunlight reaching the water. The default buffers and management constraints would minimize the amount of mining that would occur in these sensitive areas. If mining were to occur in riparian areas, increased water temperatures could reduce suitable habitat for cold-water fish species. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates decreases.

Designation of 131,044 acres as open to leasing subject to terms and conditions of the standard lease form would limit the BLM's ability to assign major or moderate stipulations (such as NSO) in those areas. Consequently, there could be an increased impact on aquatic habitats in these areas. The standard lease stipulations include compliance with established acts, laws, and regulations governing BLM land management, which would provide protection to special status fish species. Areas designated as open to leasing with NSO stipulations would provide some protection to aquatic habitats by limiting the amount of surface disturbance. Protection would be realized where NSO stipulations are applied to riparian areas and areas upslope of fish-bearing streams. Potential impacts on fish and aquatic habitats from locatable minerals activities could occur as a result of activities on the 121,961 acres designated as open to location.

Effects from Recreation Management

Increased recreation use and demand require an increased management response to mitigate the impacts from this increase, leading to SRMA designation. Potential impacts to fish species and aquatic habitats would result from impacts to riparian habitats and streambanks and increased erosion. Increased visitor use without increased management and SRMA designation would be expected to result in greater impacts. Continued acquisition of lands and conservation easements within the Salmon River and Lolo Creek SRMAs could provide additional protection of aquatic habitats from private land uses, such as timber harvest, road construction, and rural development.

Effects from Renewable Energy Management

Potential impacts from geothermal, wind, and solar energy development are predominantly associated with the construction, use, and maintenance of roads and facilities. Road-related activities could result in increased sedimentation in fish-bearing streams, rivers, and lakes. The potential effects of increased sedimentation would be similar to those described above for mining activities (under Effects from Minerals Management). Right-of-way avoidance and exclusion areas would protect against these potential impacts.

Potential impacts from biomass energy development would be similar to those described for timber harvest activities under the Vegetation—Forests Management section.

Effects from Transportation and Travel Management

Roads and trails could result in increased sedimentation to fish-bearing streams, rivers, and lakes. Increased sedimentation in streams could affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, reduction in summer and winter rearing habitat, suffocation and mortality of eggs, and displacement of individual fish.

Effects from ACEC/RNA Management

Designation of ACECs and RNAs in areas containing fish-bearing water bodies would indirectly protect aquatic habitats and fisheries. Under all alternatives there would be six areas managed as ACEC/RNAs, although the size of the Lucile Caves ACEC/RNA is larger under Alternative A than the other alternatives. The number and specific area designated and managed as ACECs varies by alternative.

Effects from Wild and Scenic Rivers Management

Aquatic habitats and fish populations located in the ~~five~~ six segments determined suitable for inclusion in the NWSRS, Salmon River (two segments), Lolo Creek, Hazard Creek, Hard Creek, and Lake Creek, would be protected from land uses that could result in degradation. The majority of these areas are already managed using similar protective measures as a result of BLM sensitive species management and ESA requirements. The wild and scenic suitability determination would add another, potentially legislative, layer of protection.

Impacts from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, animals, fish, and important habitats could improve habitat conditions for those species and habitats if these consultations result in changes in management that would improve habitats. ~~Tribes collecting or hunting special status species, as allowed under their treaty rights, could impact those species.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Hazardous and contaminated site cleanups could improve fish habitat where contamination has occurred near fish-bearing streams. Activities such as site restrictions and rock dump stabilizations would limit the potential for hazardous materials to reach fish-bearing water bodies. Cleanup efforts could result in water quality improvements, stream stabilizations, and watershed restoration. Potential impacts to fisheries would be the same for all alternatives.

Effects from Wild and Scenic Rivers Management

Land acquisition and conservation easement acquisition along the Lower Salmon River would increase the BLM's management capabilities for the protection of fisheries and aquatic habitats in the Lower Salmon River.

Alternative A

Effects from Soils Management

Implementing the MFP Road Guidelines (BLM 1981a), Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995) for soil-disturbing activities would minimize soil erosion and protect riparian habitats. This would indirectly protect aquatic habitats and fish by maintaining or increasing PFC of riparian habitats. The 1985 Riparian Management Guidelines and Fisheries and Water Quality Objectives (BLM 1985d) include some watershed-specific restrictions regarding sediment budgets and water quality that would directly protect aquatic habitats and fish.

Management to maintain fish habitat by pursuing water quality and watershed health objectives would maintain good-quality habitat for fish species, focusing on chinook salmon, steelhead, and resident salmonid species. Federal listing of salmon, steelhead, and bull trout, and subsequent ESA Section 7 consultation with USFWS, would reduce potential for BLM impacts to listed fish, aquatic habitats, and soil resources.

Sedimentation from landslides and mass wasting events in streams could degrade aquatic habitats. PACFISH (1995) has specific measures to protect landslide-prone areas and to minimize potential for mass wasting would indirectly protect riparian and aquatic habitats.

Effects from Water Resources Management

Implementing the MFP Road Guidelines (BLM 1981a) and Riparian Management Guidelines (BLM 1985e) for soil-disturbing activities would minimize nonpoint source pollution. Other potential impacts are described under Effects from Soils Management. The Riparian Management Guidelines (BLM 1985e) and Fisheries and Water Quality Objectives (BLM 1985d) include some watershed-specific restriction regarding sediment budgets and water quality that also would directly protect aquatic habitats and fish. This would indirectly protect aquatic habitats and fish.

Effects from Vegetation—Forests Management

The current estimated annual ASQ for timber harvesting, which is 6,600 MBF on 358 acres, would continue. Timber harvest and other forest practices such as road construction could impact aquatic habitats and fish populations, including special status fish species. Potential impacts on aquatic resources from forest management are described under the Effects Common to All Alternatives section, above. As described under the Vegetation—Riparian and Wetlands section and the Aquatic Resources, Fish, and Special Status Fish section, several protective measures would be implemented to reduce or prevent impacts from forest management practices on aquatic resources. However, the potential for impacts from forest practices still exists, and increases or decreases in impacts depend upon the amount of land disturbed, treatment activities, and watershed-specific aquatic resources. Under Alternative A, potential impacts would be most likely in streams within watersheds or adjacent to the 24,257 acres classified for intensive forest practices and to a lesser extent on the 11,500 acres classified for extensive management. Impacts to aquatic resources could also occur in streams adjacent to the 35,757 acres, but because these would not be managed for timber production, the potential for impacts would be much less.

Effects from Vegetation—Riparian and Wetlands Management

Management measures proposed under Alternative A would protect riparian habitat to maintain wildlife and fish habitat, water quality, and aquatic resources. In general, the level of protection provided would be similar to that provided under the other three alternatives, although the classification system and buffers from the Riparian Management Guidelines (BLM 1985e) and Fisheries and Water Quality Objectives (BLM 1985d) differ from those presented in Alternatives B, C, and D. The default buffer zones implemented under Alternative A would be larger for lakes and large rivers than under the other alternatives, providing additional protection. Many of the 39 prescription watersheds (totaling 66,077 acres) identified in Alternative A would be reclassified as restoration or conservation watersheds under the other alternatives.

Effects from Wildlife and Special Status Wildlife Management

The majority of management measures implemented would not affect aquatic resources. Some land treatments (e.g., prescribed burning, plantings) and other construction projects (e.g., water development, road closures) would have varying levels of impacts. Impacts depend upon the amount of area disturbed, treatment activities, and watershed-specific aquatic resources. However, wildlife management measures that would protect riparian habitats such as limiting use of forage in riparian areas to 50 percent of available forage would indirectly protect aquatic resources, fish, and special status fish species. Special status wildlife management activities for riparian habitat-dependent species such as the yellow-billed cuckoo would similarly protect aquatic habitats.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Management under Alternative A would include developing plans and identifying actions for the protection and enhancement of aquatic resources. Default buffers would be larger for lakes and large rivers under Alternative A than for the other alternatives. Buffers for other fish-bearing watersheds within RHCAs would be the same as for RCA stream buffers under Alternatives B, C, and D. Effects are discussed under Effects Common to All Alternatives.

Effects from Wildland Fire Management

General potential effects from wildland fire use as related to vegetation removal are described under Effects Common to Alternatives, Effects from Vegetation—Forests Management. Under Alternative A these potential effects could occur in the entire CFO as all unplanned ignitions can be evaluated for wildland fire use upon completion of the appropriate wildfire implementation plan (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). Similarly, the potential effects from high-intensity fires and the subsequent degradation of aquatic resources, such as increased sedimentation and scouring, would be reduced upon implementation of wildland fire use. RCAs would be used to protect aquatic resources where vegetation is removed.

Effects from Visual Resources Management

General impacts from visual resources management are described under Effects Common to All Alternatives. Indirect protection of aquatic habitats under Alternative A would occur on the 12,704 acres and 41,195 acres designated as VRM Classes I and II, respectively.

Effects from Forest Products Management

Potential impacts from forest products management are described under the Vegetation—Forests Management sections under Effects Common to all Alternatives and Alternative A. Riparian areas are critical for the proper functioning of aquatic systems, including aquatic habitat and fish population health. Effects are discussed under Effects Common to All Alternatives. RHCA established under PACFISH would provide protection to fish-bearing stream habitats and associated riparian areas. Potential impacts are described under Effects from Vegetation—Forests Management. Timber harvest activities would not occur where they could destroy or degrade wetland-riparian areas.

Effects from Livestock Grazing Management

Potential impacts from grazing described under Effects Common to All Alternatives could occur where grazing is permitted near fish-bearing streams, rivers, lakes, and riparian areas. There would be 122,732 acres available for grazing in 168 allotments under Alternative A. Alternative A, current

management, has generally proven compatible with aquatic resources and fisheries according to monitoring and the results of Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) assessments conducted to date. Therefore, impacts to aquatic resources could occur on these acres.

Proper season of use grazing would be implemented on the remaining 68,177 acres. This strategy is moderately compatible with fisheries because proper season of use, along with proper grazing levels, would support maintenance or improvement of riparian areas and streambanks. Riparian areas would still receive grazing use, which could result in varying levels of impacts to riparian and aquatic habitats.

Improved grazing practices and reduced impacts to aquatic resources have occurred with the listing of salmon, steelhead, and bull trout and completion of ESA Section 7 consultation with USFWS for all allotments. Because of the large number of allotments that consist of fragmented, intermingled BLM ownership, emphasis for grazing management and monitoring is primarily focused on allotments adjacent to fish-bearing streams that are most sensitive to grazing, such as low-gradient streams that occur in meadows.

Effects from Minerals Management

Some protection of aquatic habitats and fish populations in the Salmon River would be provided by withdrawing public lands within 0.25-mile of the rivers from mineral entry.

Effects from Transportation and Travel Management

The greatest potential for increased sedimentation occurs in Open travel areas where new roads and trails are being constructed and where cross-country riding can result in erosion and potential impacts to riparian and aquatic habitats. Limited travel areas would be less likely to cause increased sedimentation compared to Open areas because no cross-country travel would be authorized in Limited areas. Similar impacts from use of existing roads and trails would occur in Open and Limited areas. Road and trail restrictions for motorized vehicle use would reduce potential for increased erosion and sediment. Closed travel areas would protect fish-bearing streams from the effects of road and trail use.

Effects from Lands and Realty Management

Continued withdrawal of public lands within 0.25-mile of the Salmon River would provide protection of aquatic habitats and fisheries in the Salmon River from potential impacts associated with mining.

Effects from ACEC/RNA Management

Under Alternative A, four areas totaling 23,366 acres would be managed as ACECs. Aquatic habitats and fisheries would be indirectly protected through the designation and management in these areas. The predominant fisheries affected by ACEC designation include those in the Craig Mountain, Lower Lolo Creek, and the lower Salmon River ACECs.

Alternative B

Effects from Soils Management

Under Alternative B, BMPs (**Appendix B** [see Volume II~~I~~]) would update and improve upon the MFP Road Guidelines (BLM 1981a) and Riparian Management Guidelines (BLM 1985e).

Implementing BMPs for soil-disturbing activities would minimize soil erosion/sediment. This would indirectly protect aquatic habitats and fish by maintaining or increasing PFC of riparian habitats. However, the BMPs to be implemented under this alternative do not contain the specific restrictions pertaining to sediment budgets and water quality that are included in the Fisheries and Water Quality Objectives (BLM 1985d) and designated prescription watersheds (Alternative A). This would increase the flexibility of BLM when permitting activities that could affect aquatic habitats and fisheries, potentially increasing impacts within specific prescription watersheds. However, programmatic direction provided for conservation and restoration watersheds would be that land uses would not result in adverse increases in sediment, which would impact aquatic resources.

Reclamation and mitigation to soil and water resources would indirectly protect or enhance aquatic habitats.

Measures to protect landslide-prone areas and to minimize potential for mass wasting would indirectly protect riparian and aquatic habitats. Measures implemented under Alternative B would be similar to Alternative A in regards to management activities on and avoidance of landslide-prone areas.

Effects from Water Resources Management

Under Alternative B, BMPs (**Appendix B** [see Volume III~~I~~]) would update and improve upon the MFP Road Guidelines (BLM 1981a) and Riparian Management Guidelines (BLM 1985e). Implementing BMPs for soil-disturbing activities would limit nonpoint source pollution and protect water quality. This would indirectly protect aquatic habitats and fish. Alternative B does not contain specific sediment budget requirements compared to Alternative A; therefore, the means of protecting water quality are less defined and potentially less protective. However, programmatic direction provided for conservation and restoration watersheds would be that land uses would not result in adverse increases in sediment, which would impact aquatic resources.

Promoting activities to achieve DFCs in restoration watersheds would help increase the amount of PFC riparian habitat and indirectly benefit aquatic resources. The number of restoration watersheds varies by alternative, as presented in **Table 4-~~18~~ 19** (Comparison of Aquatic Resources, Fish, and Special Status Fish Indicators by Alternative).

Effects from Vegetation—Forests Management

Timber harvest and other forest practices such as road construction could impact aquatic habitats and fish populations, including special status fish species. As described under the Vegetation—Riparian and Wetlands section and the Aquatic Resources, Fish, and Special Status Fish section, several protective measures would be implemented to reduce or prevent impacts from forest management practices on aquatic resources. However, the potential for impacts from forest practices still exists, and increases or decreases in impacts depend upon the amount of land disturbed, treatment activities, and watershed-specific aquatic resources. Under Alternative B, potential impacts would be most likely to occur in the same watersheds identified as the commercial forest land base (40,598 acres). Alternative B would decrease the current estimated annual PSQ for timber harvesting by 53 percent (to 3,129 MBF) with an estimated usage area of 242 acres (an estimated 32-percent decrease from current management).

Implementing timber harvest activities to maximize the economic return of forest stands with existing or high risk for extensive mortality could increase timber harvest activities in fish-bearing

watersheds. This could increase the potential for timber harvest-related impacts on aquatic resources. The potential impacts to aquatic habitats would be increased compared to the natural mortality of stands due to the construction of roads and additional ground-disturbing activities barring the occurrence of fire. If fire occurred in forest stands with extensive mortality, fire intensity would be significantly increased due to fuel loading, and sediment impacts to streams could be significantly increased over mitigated impacts due to harvest.

Effects from Vegetation—Rangelands Management

Monitoring programs to assess rangeland health and adaptive management could prevent losses in soil stability, which would indirectly protect aquatic habitats. Management emphasis for maintenance and improvement of rangeland vegetation would occur for Craig Mountain WMA and Rattlesnake Ridge area. Improvement of upland and riparian habitat conditions in the long term would improve soil stability and reduce erosion and sediment.

Effects from Vegetation—Riparian and Wetlands Management

Management measures would indirectly protect fish habitat and water quality. The monitoring emphasis on streams that provide habitat for listed or sensitive fish would improve management for these species. The primary difference in riparian vegetation management between Alternatives A and B is in relation to the size of the buffer zone for large rivers and lakes. Alternative A would have default buffers of 500 feet, whereas Alternatives B would have default buffers of 300 feet for fish-bearing streams and 150 feet for lakes, ponds, and reservoirs. Alternative B would identify ~~32~~ 28 restoration and ~~1~~ three conservation watersheds totaling 64,481 acres, 2 percent less than the prescription watersheds in Alternative A. Management emphasis for maintenance of or improvements to aquatic and riparian habitats would occur in the drainages presented in **Table 4-~~18~~19**, Comparison of Aquatic Resources, Fish, and Special Status Fish Indicators by Alternative.

Effects from Wildlife and Special Status Wildlife Management

Wildlife management measures designed to protect or enhance riparian habitat would indirectly protect or enhance adjacent aquatic habitats. Specific measures that would improve fish resources include maintaining or improving habitat for bald eagle forage species and measures promoting conservation of yellow-billed cuckoo. Vegetation treatments (e.g., prescribed burning, forest stand treatments for DFC, plantings) and other construction projects (e.g., water development, road closures) would have varying levels of impacts. Such impact depends upon the amount of area disturbed, treatment activities, and watershed-specific aquatic resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Alternative B would promote conservation and restoration for special status fish species. Activities resulting in conservation easements and land tenure adjustments would increase the amount of habitat being managed for specials status fish.

Alternative B would manage 64,481 acres as conservation and restoration watersheds, 2 percent less watershed acres than the prescription watersheds under Alternative A. Good-quality aquatic habitats would be maintained and/or degraded aquatic habitats improved with management emphasis for aquatic and riparian restoration and protective measures occurring in conservation and restoration watersheds.

~~If realized through BLM support, f~~Fish passage improvements would help fish species, in particular anadromous species, by providing access to additional habitats for spawning and rearing and by

facilitating downstream distribution. Similarly, actions such as instream habitat improvements and road decommissioning would improve aquatic habitat conditions.

Effects from Wildland Fire Management

General potential effects from wildland fire management as related to vegetation removal are described under Effects Common to Alternatives, Effects from Vegetation—Forests Management. Effects would be similar to those described under Alternative A, except wildland fire use methods would be implemented in the southern portion of the Salmon ~~FMU~~FMA and the Craig Mountain ~~FMU~~FMA (**Figure H-2**, Areas Available for Wildland Fire Use—Alternative B [see **Appendix H** in Volume II~~I~~]). This would increase the amount of area treated compared to Alternative D.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Designing harvest and reforestation projects to achieve full stocking on 90 percent of the area within 5 years would help protect aquatic habitats from long-term impacts. Full stocking within five years would reduce the amount of time that potential increased sedimentation and altered stream flows would occur.

Protection of riparian areas during road construction would be provided by the buffer zones associated with the Road Construction Guidelines and Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]). The potential impacts based on buffer zone size are described under the Effects from Vegetation—Riparian and Wetlands Management section.

Effects from Livestock Grazing Management

Potential impacts from grazing as described under Effects Common to All Alternatives could occur where grazing is permitted near fish-bearing streams, rivers, lakes, and riparian areas. Livestock grazing would be permitted on 105,619 acres and 166 allotments under Alternative B. Potential impacts to aquatics from grazing would be less than Alternative A. Permanently retiring allotments at Craig Mountain, Wapshilla Ridge, and Corral Creek would reduce the potential for grazing-related impacts to fish in these areas, although these allotments have been vacant for over 10 years. The Idaho Department of Fish and Game acquired adjacent lands, and the area has a high-priority emphasis for wildlife management.

Effects from Minerals Management

Indirect protection of aquatic habitats from leasable minerals and mineral materials operations would occur on the 43,590 acres of public lands subject to NSO stipulations where these lands occur in riparian areas and areas upslope of fish-bearing streams. NSO stipulations would protect riparian habitats and indirectly protect aquatic habitats from surface-disturbing activities such as vegetation removal. This protection would be greater than under Alternative A.

Fish species and aquatic habitats in river segments identified as suitable for inclusion in the NWSRS would be protected from leasable and salable minerals activities within 0.25-mile of the river. This would include bull trout, westslope cutthroat trout, steelhead, and chinook salmon in Lake Creek, summer steelhead, spring Chinook, and coho salmon in Lolo Creek, and various fish species in Hazard and Hard Creeks.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative A; however, eliminating Open areas would reduce the potential for impacts to aquatic habitats from cross-country motorized use in these areas. Restoring unnecessary roads and trails would reduce the amount of sediment reaching fish-bearing streams.

Effects from Lands and Realty Management

Retaining public lands along the Salmon River would provide continued protection of the aquatic habitats, fisheries, and special status fisheries in the Salmon River from private land uses such as development or timber harvest. Withdrawal of public lands on the Lower Salmon River would increase protection of aquatic habitats and fisheries in the Salmon River from potential impacts associated with mining.

Effects from ACEC/RNA Management

Under Alternative B, ~~five~~ six areas totaling ~~32,562~~34,187 acres would be managed as ACECs, ~~39~~ 46 percent more than ACEC areas under Alternative A. Aquatic habitats and fisheries would be indirectly protected through the designation and management in these areas. The predominant fisheries affected by ACEC designation include those in Lower Lolo Creek, Upper Lolo Creek, Lower Salmon River, Salmon River, East Fork American River, and American River ACECs.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B, except that, under Alternative C, the commercial forest land base would be 34,611 acres. Alternative C would decrease the acreage available for timber harvesting by 3 percent from that available under Alternative A. Alternative C would decrease the current estimated annual PSQ for timber harvesting by 53 percent (to 3,101 MBF) from Alternative A, with an estimated usage area of 191 acres (an estimated 47-percent decrease from current management).

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, with the exception that addition management emphasis would be given to Salmon River canyon grasslands for maintenance and/or improvement of habitats. Improvement of upland and riparian habitat conditions in the long term would improve soil stability and reduce erosion and sediment.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except Alternative C would identify ~~30~~ 37 restoration and 3 conservation watersheds totaling 68,359 acres, 3 percent more than the prescription watersheds in Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described under Alternative B, except Alternative C would provide additional protections against potential aquatic habitat degradations from OHV use and grazing activities. Alternative C identifies increased emphasis for achievement of DFC, particularly old forest characteristics. Vegetation treatments (e.g., prescribed burning, forest stand treatments for DFC, plantings) and other construction projects (e.g., water development, road closures) would have varying levels of impacts. Such impact depends upon the amount of area disturbed, treatment activities, and watershed-specific aquatic resources. The predominant impact from these activities would be related to increased sedimentation in fish-bearing streams.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except Alternative C would manage 68,359 acres as conservation and restoration watersheds. This would be 6 percent more than under Alternative B and 3 percent more than the prescription watersheds under Alternative A. As a result, aquatic habitats in more watersheds would be improved under Alternative C than under any other alternative. Good-quality aquatic habitats would be maintained and/or degraded aquatic habitats improved with management emphasis for aquatic and riparian restoration and protective measures occurring in conservation and restoration watersheds.

Effects from Wildland Fire Management

General potential effects from wildland fire management as related to vegetation removal are described under Effects Common to Alternatives, Effects from Vegetation—Forests Management. Effects would be similar to those described under Alternative A. This would increase the area where wildland fire is used compared to Alternatives B and D.

Effects from Visual Resources Management

Indirect protection of aquatic habitats under Alternative C would occur on the 26,945 acres and 46,753 acres designated as VRM Classes I and II, respectively. This is 112 percent and 13 percent more than VRM Classes I and II, respectively, under Alternative A.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, except Alternative C would include less acres of forest harvest and treatment and larger RCA stream buffers for riparian areas within forested areas. This would also represent less acres of forest harvest and treatment and larger buffers than under Alternative A.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B, except Alternative C would permit livestock grazing on 101,350 acres and 145 allotments. The potential for impacts to aquatics from grazing would be the least in Alternative C.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except Alternative C would indirectly protect aquatic habitats on 68,854 acres of public lands subject to NSO stipulations where these lands occur in riparian areas and areas upslope of fish-bearing streams.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Under Alternative C, nine areas totaling 58,695 acres would be managed as ACECs, 150 percent more area than under Alternative A. Aquatic habitats and fisheries would be indirectly protected through the designation and management in these areas. The predominant fisheries affected by ACEC designation include those in Lower Lolo Creek, Upper Lolo Creek, Little Salmon River, Lower Salmon River, Salmon River, East Fork American River, and American River ACECs.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be similar to those described under Alternative B. Under Alternative D, the commercial forest land base would be 45,190 acres (26 percent more than Alternative A). Alternative D would increase the acreage available for timber harvesting (361 acres, a 1-percent increase from current management), while the estimated annual PSQ for timber harvesting would decrease by 27 percent from current management (to 4,823 MBF).

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, except Alternative D would not include emphasis areas for improvement of rangeland vegetation.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B. Alternative D would identify ~~27~~ 24 restoration and ~~1~~ three conservation watersheds totaling 52,118 acres, 21 percent less than the prescription watersheds in Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Overall effects would be similar to those described under Alternative B. Compared to Alternatives B and C, Alternative D identifies less emphasis for achievement of DFC, particularly old forest characteristics. Vegetation treatments (e.g., prescribed burning, forest stand treatments for DFC, plantings) and other construction projects (e.g., water development, road closures) would have varying levels of impacts. Such impact depends upon the amount of area disturbed, treatment activities, and watershed-specific aquatic resources.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B. Alternative D would manage 52,118 acres as conservation and restoration watersheds. This would be 19 percent less than under Alternative B and 21 percent less than the prescription watersheds under Alternative A. As a result, aquatic habitats in fewer watersheds would be improved under Alternative D than under Alternatives A, B, or C. Good-quality aquatic habitats would be maintained and/or degraded aquatic

habitats improved with management emphasis for aquatic and riparian restoration and protective measures occurring in conservation and restoration watersheds.

Effects from Wildland Fire Management

General potential effects from wildland fire management as related to vegetation removal are described under Effects Common to Alternatives, Effects from Vegetation—Forests Management. Effects would be similar to those under Alternative C, except more lands would be treated under Alternative D.

Effects from Visual Resources Management

Indirect protection of aquatic habitats under Alternative D would occur on 7,205 acres and 36,180 acres designated as VRM Classes I and II, respectively. This is 43 percent and 12 percent less than VRM Classes I and II, respectively, under Alternative A, and the least of any alternative.

Effects from Forest Products Management

Effects would be similar to those described under Alternative B, except that Alternative D would include more acres of forest harvest and treatment and smaller RCA stream buffers for riparian areas within forested areas within forested areas.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative B. Alternative D would permit livestock grazing on 135,850 acres and 170 allotments. The potential for impacts to aquatics from grazing would be the greatest in Alternative D, as additional areas would be made available for grazing. In addition, potential indirect impacts on aquatic habitats would increase as a result of increasing the amount of grazing lands available at Craig Mountain, Wapshilla Ridge, and Corral Creek (The Nature Conservancy lands excluded). Impacts could include streambank and riparian degradation, as described under the Effects Common to all Alternatives section. Increasing the area available for grazing along the American River and Lolo Creek would increase the potential for degradation of riparian habitats and streambank stability in these areas.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except Alternative D would indirectly protect aquatic habitats on 35,045 acres of public lands subject to NSO stipulations where these lands occur in riparian areas and areas upslope of fish-bearing streams.

Effects from Recreation Management

Issuance of commercial permits for Lolo Creek could increase the use of this area. Increasing the number of people who visit this relatively remote stretch of river would increase the potential increased recreation use and associated impacts to riparian and aquatic habitats. Expected river-based recreation use would primary occur during high-flow periods in spring or early summer. Increased recreation use is expected to have some potential impacts to spawning fish or redds.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative A; however, decreasing Open travel areas by 73 percent would reduce the potential for impacts to aquatic habitats from cross-country motorized use in these areas.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Under Alternative D, two areas totaling 21,958 acres would be managed as ACECs, six percent less area than under current management. Aquatic habitats and fisheries would be indirectly protected through the designation and management in these areas. The predominant fisheries affected by ACEC designation include those in the Lower Salmon River and Salmon River ACECs.

Cumulative Effects

Approximately 214 miles of streams and rivers and 6 lakes (28 acres) on BLM lands provide fish habitat. With the exception of Marshall Lake, none of the lakes support native salmonids, and fish presence is a result of fish transplants/stocking (e.g., rainbow trout, cutthroat trout, and brook trout). Water quality, riparian habitats, and fish habitat have experienced slight upward trends during the past decade within drainages that are mostly owned by the federal government or Idaho Department of Fish and Game. Connectivity between fish populations within the planning area remains intact, with exceptions such as road crossings (e.g., culverts/roads), where partial or complete barriers may prevent upstream migration. Effects of past actions include increased sedimentation from roads and landslides. These effects have been decreasing in frequency and severity on federal and state lands through improved management.

Fish populations are not restricted by land ownership. Many resident populations migrate upstream and downstream depending on their life cycle, using aquatic habitats independent of land ownership. Anadromous fish in particular migrate to the ocean as smolts (juveniles) and return as adults. Aquatic habitat management outside BLM-administered lands is often critical for the health of fish populations within BLM-managed lands. Additionally, water quality on BLM-administered land is often affected by up-drainage land uses and other natural or human-caused events (e.g., fires, floods, debris torrents, etc.), which do not occur on BLM lands. The BLM manages less than 2 percent of the lands within the planning area; consequently, the scale of potential effects from BLM management on aquatic habitats is relatively small compared to other land owners/managers. Land-management activities both outside of and within BLM-managed lands are important for fish populations, including special status fish. Cumulative effects on fish and special status fish would be those effects where activities outside of BLM-managed lands combined with actions on BLM-managed lands to affect fisheries.

Management measures to improve water quality, such as the TMDL program established by the IDEQ, tribes, and US EPA, is coordinated with other state, federal, and private restoration programs to improve watershed and aquatic conditions in mixed-ownership drainage. This cooperative effort facilitates BLM management within watersheds when public lands are intermixed with other ownerships.

Potential degradation of water quality, riparian habitats, and aquatic habitats could occur from timber, mining, road construction, OHV use, and grazing activities outside BLM-administered lands. These potential effects, combined with the potential effects from these activities on BLM-administered lands, could result in increased effects on fish populations. Although there are several conservation measures to be implemented along with these resource uses, effects similar to those described above could occur. The largest degradations to aquatic habitats would most likely occur

from activities on private lands that are not subject to the same environmental reviews as activities on federally and state-managed lands.

Unlike Alternative A, Alternative B has no areas designated as open, cross-country motorized travel areas, which would reduce the potential for associated effects compared to Alternative A. The Cottonwood RMP proposed riparian and watershed management actions (i.e., designation of restoration and conservation watersheds), combined with the National Forest Plan Revisions (i.e., emphasis on restoring or maintaining vegetation and watershed conditions), could result in a net increase in riparian habitat quality. An increase in riparian habitat quality would indirectly increase aquatic habitat quality and fish populations. These cumulative effects would potentially occur in areas where Forest Service land is located within the same watershed as BLM land. Overall, the potential cumulative degradation of aquatic habitats and fisheries resources would be less under Alternative C, followed by Alternatives A, B, and D. Watersheds where the BLM would have the highest opportunities for cooperative management and improvement of aquatic conditions are watersheds identified as prescription, conservation, or restoration watersheds.

Cumulative effects under Alternative C would be similar to under Alternative B, except more restoration and conservation watersheds have been identified by the BLM, and more riparian habitats would be improved under Alternative C. Cumulative effects under Alternative D would be similar to under Alternative B, except fewer restoration and conservation watersheds have been identified by the BLM and fewer riparian habitats would be improved. In addition, more timber would be harvested under Alternative D, increasing the potential to degrade water quality and aquatic habitats.

4.2.11 Special Status Plants

Goal: Maintain or restore special status species and their habitat to contribute to species recovery.

Summary

Management actions under most resource categories and under all alternatives could affect special status plants either directly or indirectly. Many proposed limitations would exclude management actions within known special status plant occurrence areas, so that many of the potential impacts would affect only undocumented special status plant occurrences or would reduce the potential for species colonization. Alternative C would best maintain or restore special status plants and their habitats followed by Alternatives B, D, and then A.

The threat to special status plants from weeds would not be eradicated, but under all alternatives the problem would be slowed across the CFO, with local areas being restored to native vegetation.

Actions would be in compliance with the ESA and BLM policy to recover and conserve special status plants and the ecosystems upon which they depend. All the actions considered together would at least maintain the current condition of special status plant habitats and population parameters under all alternatives. **Table 4-~~19~~ 20** identifies the indicators that were used to analyze effects on special status plants under each alternative.

Table 4-20
Comparison of Special Status Plants Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Occurrences of special status plant populations	Least potential for increases in numbers of occurrences	Intermediate between Alternatives A and C; more than Alternative D	Greatest potential for increases in numbers of occurrences	Intermediate between Alternatives A and C; less than Alternative B
Special status plant populations' conditions and trends (e.g., plant numbers/size of populations [rarity], plant composition, ecological condition, seral condition)	Least potential for improvement in conditions and population health trends	Intermediate between Alternatives A and C; more than Alternative D	Greatest potential for increases in conditions and population health trends	Intermediate between Alternatives A and C; less than Alternative B
Noxious weeds and other aggressive nonnative plant species encroachment	Potential for occurrences would increase	Potential for occurrences would stay at current levels or would decrease	Greater potential than Alternative B for occurrences to decrease	Greater potential than Alternative A for occurrences to increase
Identified conservation and restoration measures to reduce threats to special status plants	With the exception of a few designated HMPs and ACEC/RNAs, no specific conservation and restoration measures; would use site-specific ESA consultation primarily to reduce threats from ongoing and new actions where applicable	Identifies specific conservation and restoration measures that could support recovery for listed plants and not cause potential listing for BLM sensitive plants; more specific in supporting recovery plans for listed plants	Similar to Alternative B; designated ACEC/RNAs would offer more protection for populations	Similar to Alternative B

Source: BLM 2004a
Notes: These indicators can be measured, but predictions of future conditions can only be expressed qualitatively.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For special status plants, the indicators used for impact analysis are identified in **Table 4-~~19~~20**, Comparison of Special Status Plants Indicators by Alternative.

Methods and Assumptions

Special status plant species health within the CFO is directly related to the overall ecosystem health, and the presence of nonnative vegetation is the single most critical indicator of ecosystem health relative to special status plants. Analysis of impacts on special status plants included assessing whether a project or action would affect a special status plant occurrence size, health, and vigor. Project and activity threats and opportunities for improvement to occupied and other suitable habitats (for expansion) were assessed. The degree of impact attributed to any one project or ongoing activity is influenced by area characteristics, which include topography/soils, plant communities, ecological condition, and climate. As ecosystems respond ~~in response~~ to soil, vegetation, or hydrologic impacts, varying levels of impacts would occur to special status plants, dependent on site characteristics and the duration and magnitude of disturbance.

Impacts would occur if management actions resulted in substantial or irreplaceable loss of vital and high-value habitats. Subsequent loss of habitat function or disruption of life history requirements would preclude maintenance or improvement of special status plant populations.

This analysis is based on the following methods and assumptions:

- Implementation of project design and mitigation measures would take place as identified. Mitigation measures' ability to avoid impacts is generally determined by past evaluations of such actions that have been implemented under similar conditions;
- Implementation-level actions would be further assessed at an appropriate spatial and temporal scale and level of detail;
- Additional field inventories may be needed to support implementation-level decisions;
- Implementation-level decisions will be subject to further analysis under NEPA; and
- Implementation-level decisions that may affect species listed under ESA may be subject to ESA Section 7 consultation with USFWS.

Effects Common to All Alternatives

Effects from Soils Management

Under all alternatives, special status plants could be indirectly conserved via conservation measures to protect from erosion and other degradations to soil, which in turn diminishes impacts on vegetation. Any action that decreases disturbances to soil would also decrease the potential for weed encroachment because weeds have a competitive advantage in disturbed soils.

Effects from Water Resources Management

Effective watershed management, which minimizes erosion, would result in healthy and diverse plant communities, especially in riparian areas. BLM sensitive species that occur in riparian areas include Case's corydalis, chatterbox orchid, Douglas' clover, Idaho barren strawberry, western ladies'-tresses, and spacious monkey flower.

Effects from Vegetation—Forests Management

Vegetation treatments that alter tree species composition or stand structure for specific resource objectives or for commercial value would alter habitats immediately after treatments and for decades. Effects would be highly dependent on 1) species, 2) habitat conditions before and after treatments, 3) type of treatment, 4) details of how each treatment is carried out, 5) adjacent habitat

types, and 6) long-term management of each area after treatments. BLM sensitive species that occur in forested habitats are Case's corydalis within riparian areas in cedar, Engelmann spruce, and grand fir habitats; western ladies-tresses in seeps in Douglas-fir stands near grasslands; and Idaho barren strawberry in meadows and moist woods along streams, and in moist and cool sites associated with grand fir, western red cedar, and alpine fir zones. Other species that may be associated with forest vegetation include Jessica's aster (Douglas fir/ninebark) and broad-fruit mariposa lily (open ponderosa pine and/or Douglas fir communities in forested uplands).

Forest treatments and harvest would be designed to avoid or minimize impacts to habitats and sensitive plant populations. Overall, the potential for degradation to BLM sensitive plant habitats and occurrences from forest management practices are low.

Effects from Vegetation—Weeds Management

Spread of noxious and invasive weeds results in decreases in habitat quality and diversity. Nonnative plant species pose a serious threat to native plants, including many special status species, because they compete for space, light, water, pollinators, and nutrients, are spreading rapidly, and are difficult to control. Treatment actions would not be sufficient to control the spread of weeds on all BLM-managed lands in the CFO, but they would reduce these impacts in treated areas. Actions to prevent and control invasive and noxious weeds using integrated weed management techniques could reduce or at least slow down the rate of increase in the CFO and the severity of damage to native plants.

Effects from Vegetation—Riparian and Wetlands Management

Actions that would improve riparian PFC could in turn conserve or improve habitats for riparian-dependent special status plant species, including Case's corydalis, chatterbox orchid, Douglas' clover, Idaho barren strawberry, western ladies'-tresses, and spacious monkey flower. Improving riparian habitats could increase the chances of these special status species colonizing new riparian areas in the future.

Effects from Wildlife and Special Status Wildlife Management

General wildlife management actions that protect habitat features, such as riparian vegetation or ecological condition of grasslands, would generally offer limited protection for special status plants that use the same habitats as well.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Any fish-related stream improvement actions that improve the quantity and quality of riparian areas could indirectly improve habitat conditions or expand appropriate habitat for future colonization for riparian-dependent special status plant species, such as Case's corydalis, chatterbox orchid, Douglas' clover, Idaho barren strawberry, western ladies'-tresses, and spacious monkey flower.

Effects from Special Status Plants Management

Actions to comply with the ESA and conserve threatened and endangered species could eliminate take and could contribute to recovery of listed species. Actions to reduce impacts on sensitive species, such as inventorying suitable habitats, reviewing discretionary activities for impacts, and project-specific inventories, could improve or at least slow down losses of habitat extent and quality. These actions could also contribute to reducing the potential for future ESA listings of BLM sensitive species.

Effects from Wildland Fire Management

Weed treatments in grasslands for fuel reduction could benefit special status plants by reducing fire severity and competition. The level of impact from fires occurring in special status plant habitats would depend on whether that species is fire-dependent, severity of fire, type of habitat, composition, structure and fire regime of the area relative to the historical range of variability, and fire suppression. Special status plant populations could be damaged or destroyed in a severe fire, and fire could cause the additional proliferation of cheatgrass, a fire-promoted species in the canyon grasslands that serves as habitat for the two listed plant species in the CFO. Fires occurring in poor-fair ecological condition grasslands could contribute to increased infestations of weeds and nonnative vegetation, which could encroach on occupied or suitable habitats for special status plants. Forested fuel treatments would have effects similar to forested vegetation treatments. Forest fires and forested fuels treatment would have limited effects on special status plants, as most of the species in the CFO are grassland- and/or riparian-dependent although the broad-fruit mariposa lily occurs in forest openings. Other species that may be associated with forest vegetation include Jessica's aster (Douglas fir/ninebark) and Idaho barren strawberry (associated with grand fir, western red cedar, and subalpine fir). Because fuel treatments are generally focused on dense portions of forest, these species would not be affected by treatments. Effects of fire management actions on special status plants would be similar among alternatives.

Effects from Visual Resources Management

Impacts from visual resources management on special status plants are indirect and come from actions under other areas of resource management that are authorized within each VRM class. Vegetation treatments, road construction, recreational facilities construction, and mining are actions that would change visual appearance and that could also affect special status plant habitat and their associated species. Numerous safeguards, such as the ESA, would be in place to minimize the chances of affecting special status plant habitat, but the potential for indirect, unforeseen, and accidental impacts always exists. Generally, VRM Class IV, for example, would contain more alterations of habitats over time than VRM Class I.

Effects from Forest Products Management

Forest products management effects on special status plants would be similar to those under Effects from Vegetation—Forests Management.

Effects from Livestock Grazing Management

Management of BLM lands to meet Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]), ESA, ACECs and RNAs, and inventories prior to issuing grazing permits would minimize impacts from livestock grazing across alternatives. The majority of ongoing grazing allotments have not had intensive inventories completed for special status plants. However, increased inventory efforts during the past decade have occurred within grazing allotments. Potential damage from livestock grazing on special status plants would primarily be incidental on unknown occurrences or from nonauthorized livestock. Fencing or other mitigation measures would be implemented if livestock grazing were found to be impacting any special status plant population.

Effects from Minerals Management

Minerals management impacts on special status plants potentially occur from surface disturbance and thus loss of habitat and potential destruction of individuals. Actions spell out where, how much,

and what type of mineral exploration and extraction can occur. Generally, the tighter the restriction, the fewer potential impacts on special status plants. The ESA, ACECs and RNAs, NSO, and inventories prior to issuing permits would prevent most impacts. Potential impacts could result if occurrences are not documented. Mineral actions that disturb soil could lead to an increase in weeds in the CFO that compete with special status plants.

Effects from Recreation Management

Impacts from recreation management actions are similar to those under Effects from Transportation and Travel Management.

Effects from Renewable Energy Management

Potential effects from renewable energy management are generally similar to those described under Effects from Minerals Management and Effects from Vegetation—Forests Management.

Effects from Transportation and Travel Management

Impacts from travel management on special status plants are generally limited to accidental destruction of individual plants or occurrences from vehicles and pedestrian and equestrian use. Travel management restrictions, special designations, and the ESA generally minimize but do not eliminate the potential for these impacts.

Effects from Lands and Realty Management

Private lands containing special status plant occurrences could be acquired or conservation easements obtained to protect and conserve habitats for specials status plants. Realty actions that result in disturbance of soils and vegetation, such as new road construction for a right-of-way, could have direct and indirect impacts to special status plants, depending on if occupied or suitable habitats for plants could be affected.

Effects from ACEC/RNA Management

Generally, special management areas such as ACECs and RNAs result in protection of special status plants from human activities and long-term improvement or at least maintenance of habitat quality because of numerous restrictions, such as OHV use, mineral exploration, and timber harvest. Special status plant species occur in most of the existing ACEC/RNAs or ACECs and new areas proposed under various alternatives. These designations provide additional protection for areas providing occupied and suitable habitats for special status plant species.

Effects from Wild and Scenic Rivers Management

Wild and scenic river management can restrict activities that would alter the tentative classification, which could indirectly conserve habitats, especially riparian areas and canyon grasslands, in areas where actions would have been authorized without the classification. These effects would vary according to the criteria for which each segment was found suitable. Several special status plant species occur in canyon grasslands and/or riparian areas and could receive additional protections under management to protect outstandingly remarkable values. Under all alternatives, 29 miles of river segments found suitable, as well as 112 miles of the Salmon River that has been a study river since 1968, would be managed to preserve their outstandingly remarkable values. This would indirectly affect special status plants, as described above.

Effects from Wilderness and Wilderness Study Areas Management

Continued management of wilderness and WSAs would generally preserve the possibility that special status plant occurrences could exist in these areas or could colonize them at some point in the future. These areas include BLM's 750-acre portion of the Frank Church/River of No Return Wilderness in compliance with the Wilderness Act, and the 5,571-acre Marshall Mountain WSA and the 6,463-acre Snowhole Rapids WSA, which are under Interim Management Policy for lands under wilderness review. If the WSAs should be released from wilderness consideration by Congress, management of these areas could offer slightly less protection for special status plants from other actions and human disturbance. These species would still receive required protections for special status plants afforded on other BLM-managed lands.

Effects from Watchable Wildlife Viewing Sites Management

~~Special status plants that occur in areas identified for watchable wildlife sites.~~ Any management actions that maintain or improve ecological conditions for watchable wildlife sites~~these areas~~ would directly and/or indirectly affect special status plants that could occur there.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, animals, fish, and important habitats could improve habitat conditions for those species and habitats if these consultations result in changes in management that would improve habitats. ~~However, allowing tribal members to collect special status species, as allowed under their treaty rights, could impact those species.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Generally, actions to remediate contaminated sites to safeguard human health could also affect special status plant habitats and populations, especially if restoration activities occur in occupied or suitable habitats for special status plants. Reducing contaminants in the environment could result in healthier vegetation communities. Additional actions under Alternatives B, C, and D to more effectively manage hazardous sites and cleanups could indirectly improve habitat and the health of special status plant populations more than under Alternative A.

Alternative A

Effects from Soils Management

The MFP Road Guidelines (BLM 1981a), Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995) would avoid and mitigate many surface disturbances and erosion. This could reduce impacts on quantity and quality of vegetation and thus reduce impacts to potential special status plant habitats from other resource uses, especially those associated with roads and areas providing occupied or suitable habitats for special status plants. Alternative A could provide for slightly less indirect protection of special status plants and their habitats than the other alternatives that include a more thorough and protective list of BMPs, reclamation measures, and conservation/restoration actions, as described under Alternative B.

Effects from Water Resources Management

Special status plant habitat, especially riparian and wetland habitats, could be indirectly conserved from water management actions such as implementation of the MFP Road Guidelines (BLM 1981a), Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995). These actions directly and indirectly conserve riparian vegetation and other affected occupied or suitable habitats associated with water resources management.

Effects from Vegetation—Forests Management

Specific forest vegetation management under Alternative A would have direct and indirect effects on occupied and suitable habitats for special status plants within a project or treatment area. Project design and mitigation measures would avoid or minimize impacts. However, actions that conserve old growth habitats could also conserve species of plants warranting sensitive designations in the future if additional old growth habitats were lost.

Effects from Vegetation—Weeds Management

Under Alternative A, actions to prevent and control invasive and noxious weeds using integrated weed management techniques, consistent with BLM's *Partners Against Weeds: An Action Plan for the Bureau of Land Management* (BLM 1996), could reduce the rate of increase of the area and severity of damage to habitats as described under Effects Common to All Alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative A, riparian management actions would continue to reduce the potential for degradations of riparian habitat, as described under Effects Common to All Alternatives. Implementing BMPs for riparian management units, Riparian Management Guidelines (BLM 1985e), and PACFISH (BLM and Forest Service 1995) would avoid and mitigate many surface disturbances and erosion and would protect and enhance riparian vegetation. This could reduce potential impacts on riparian-dependent special status plant habitats from other resource uses, especially those associated with roads and those located in riparian areas. Alternative A includes RHCAs totaling 24,290 acres.

Effects from Wildlife and Special Status Wildlife Management

Alternative A has the goals of improving one-half of the 3,840 acres of poor condition range to fair condition and improving one-half of the 13,766 acres of fair condition range to good condition within 20 years. Meeting these goals could improve 8,803 acres of habitat that could more likely be colonized by special status grassland plants in the future than without improvements. Limiting the use of forage in riparian area to 50 percent of available forage would prevent extreme damage to riparian habitats. Development and implementation of HMPs that maintain or enhance ecological condition would be beneficial to special status plants if the project area included occupied and suitable habitats for special status plants. Vegetation treatments would have design features to avoid or minimize impact to special status plants.

Effects from Special Status Plants Management

Under Alternative A, the Long Gulch and Skookumchuck populations of MacFarlane's four-o'clock would be protected as ACEC/RNAs, as further described under Effects from ACEC/RNA Management.

Effects from Wildland Fire Management

Use of nonfire fuel-management strategies to help maintain or improve range conditions would necessitate weed removal, using herbicides, biocontrols, or other methods. Under Alternative A, 1,700 to 10,680 acres could be treated annually to reduce weeds and reduce hazardous fuel conditions. These weed treatments would be focused in the canyon grasslands where special status plants exist.

Effects from Livestock Grazing Management

Alternative A would permit livestock grazing on 122,732 acres and 168 allotments. Potential effects on special status plants are incidental to livestock grazing, particularly if unknown plant populations are degraded by such grazing.

Effects from Minerals Management

Impacts to special status plants from minerals management could occur anywhere they exist except within the 750 acres of wilderness currently withdrawn from operation of the mining laws (locatable minerals) and the mineral laws (leasable and salable minerals). This withdrawal would continue under Alternatives B, C, and D. Impacts in WSAs would be less because of the nondiscretionary closure to leasable minerals activity and the discretionary closure to salable minerals activity. The Salmon River withdrawal currently protects special status plants from locatable minerals activities (subject to prior existing rights) on BLM land within 0.25-mile of the river bank. Conditions of approval for plans of operations involving minerals activities (i.e., mitigation measures and/or stipulations) would protect special status plants on a case-by-case basis.

Effects from Recreation Management

The BLM would continue to manage public lands for a variety of recreational activities within all ROS settings (**Table 4-~~15~~16**, Recreation Opportunity Spectrum). These percentages are indicative of the management emphasis for recreation activities on BLM-administered lands. A much smaller portion of the planning area is reserved for primitive experiences, when compared to opportunities for activities that include motorized uses. Generally, special status plants within the Primitive class would have less potential to be impacted. Impacts, as described under Effects Common to All Alternatives, would increase as ROS class moves from Primitive to Urban. Specifically, more acres would remain in Primitive ROS class under Alternative A than under the other alternatives, so Alternative A could have the fewest potential impacts on special status plants from recreation (**Table 4-~~15~~16**, Recreation Opportunity Spectrum).

Effects from Transportation and Travel Management

There would be a much greater number of acres that are designated Open to OHV use than under the other alternatives (compared to zero acres under Alternatives B and C). Areas open to motorized cross-country travel have the greatest potential to harm special status plants and damage habitats, as described under Effects Common to All Alternatives. Cross-country travel has the potential to disturb soils and vegetation and accelerate spread for nonnative species, which could infest occupied or suitable habitats for special status plants.

Effects from Lands and Realty Management

Lands withdrawn from mineral entry could reduce the chances of damage to special status plant populations.

Effects from ACEC/RNA Management

Under Alternative A, effects would generally be consistent with those described under Effects Common to All Alternatives. Populations would be protected directly by actions that prohibit specific impacts to special status plants and their habitats and indirectly from conserving other natural resources. Although these management actions would conserve special status plants, Alternative A would generally be less effective than Alternatives B, C, or D, where additional actions

would be added to refine management of ACECs and RNAs and where new ACECs would be added.

Alternative B

Effects from Soils Management

Implementing BMPs (**Appendix B**, Best Management Practices [see Volume II~~I~~]) for soil-disturbing activities and applying reclamation measures to mitigate adverse impacts on soils and water could indirectly benefit special status plant species compared to Alternative A. By preventing soil-disturbing activities, the BMPs could potentially encourage healthy vegetation communities that increase the chances of colonization of an area by a special status species. Reclamation measures could further restore potential habitats that have previously been impacted.

Effects from Water Resources Management

Alternative B would offer more protection and opportunities for improvement than Alternative A because Alternative B includes a more-thorough and protective list of BMPs, reclamation measures, and conservation/restoration actions. Implementing BMPs (**Appendix B**, Best Management Practices [see Volume II~~I~~]), monitoring, and adaptive management add additional actions that could benefit special status plants and their habitats compared with Alternative A. The BMPs could prevent additional erosion and could lead to healthier vegetation communities. Associated monitoring and adaptive management could increase the effectiveness of the BMPs.

Effects from Vegetation—Forests Management

Under Alternative B, effects of forest vegetation management on special status plants are limited by protections preventing vegetation treatments within occurrences and the limited number of species that are forest dependent. Effects would be the same as those described under Alternative A.

Effects from Vegetation—Weeds Management

Types of effects from weed management actions on special status plants would be similar to those described under Effects Common to All Alternatives. Numerous additional specific actions under Alternative B would make weed management more effective than under Alternative A and thus would be more successful at slowing down the encroachment of weeds in native habitats. These additional actions include inventories, education, control methods, rehabilitation, and monitoring.

Effects from Vegetation—Rangelands Management

Under Alternative B, actions designed to promote the health of native vegetation communities, including Craig Mountain and Rattlesnake Ridge, and to rehabilitate areas in nonnative vegetation would generally: 1) reduce potential degradations of habitat quality; and 2) improve it where rehabilitated by increasing quantity and quality of native plant communities. Where there are no occurrences, improving overall health of native grasslands could increase the chances of special status plants colonizing areas that provide occupied or suitable habitats.

Effects from Vegetation—Riparian and Wetlands Management

Alternative B would have slightly smaller RCA stream buffers compared to Alternative A RHCAs. There would be 22,847 acres of RCAs, including riparian vegetation. Alternative B would prioritize management of conservation and restoration watersheds totaling 64,481 acres, 2 percent less than the prescription watersheds in Alternative A. Types of effects are described under Effects Common to All Alternatives.

Effects from Wildlife and Special Status Wildlife Management

Additional actions to conserve wildlife habitats, especially in canyon grasslands, include vehicle restrictions and rangeland and riparian improvements; these additional actions could indirectly protect existing occurrences of special status plants by increasing the land health surrounding the populations and by reducing weed encroachment. Land treatments that maintain or improve ecological conditions for wildlife could increase the chances of future colonization of special status plants if such habitats are suitable for special status plants.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative A, but additional actions to conserve, enhance, and restore aquatic habitats could provide additional riparian habitat improvement.

Effects from Special Status Plants Management

Actions designed to ensure that special status plant populations are stable or continue to improve under Alternative B would be more effective than under Alternative A. Monitoring populations of the two listed species, MacFarlane's four-o'clock and Spalding's silene, at least every three years would provide more accurate and precise information on the health and extent of these populations. More timely information would allow for faster adaptation of management actions to preserve these species. Implementing conservation and restoration measures identified within the recovery plans could improve the health and size of these populations and contribute towards recovery of the species and potential delisting. Developing new management plans for the listed species would assist in implementing the recovery actions on BLM-managed lands in the CFO. Implementing control measures for invasive plants that adversely impact listed plant populations would, if effective, prevent or reduce competition that could weaken these populations. Establishing and maintaining new populations of listed species that would support recovery efforts, if carried out, could increase the chances and rate of recovery for the species and could provide insurance for threats to existing populations. Land tenure adjustments could enhance the federal government's ability to conserve listed and BLM sensitive plant species with regulations and conservation efforts that do not apply on private lands. Inventorying suitable habitats for new populations of BLM sensitive species could further protect these species by identifying locations and thus facilitating protection of them from accidental degradations to unknown populations and identifying locations for restoration and enhancement opportunities.

Effects from Wildland Fire Management

Chemical and/or biological treatments would be used on up to 36 percent of CFO lands with the annual treatment range of 844 to 6,078 acres. This is 44 percent less than Alternative A and, as such, would result in fewer impacts to special status plants in the canyon grasslands.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative A. Alternative B would permit livestock grazing on 105,619 acres and 166 allotments, 14 percent fewer acres than Alternative A.

Effects from Minerals Management

Impacts to special status plants would be the same as Alternative A with possible added protection provided by the Mineral Leasing Stipulation in **Appendix J** (Mineral Leasing Surface Use

Stipulations–Alternatives A, B, C, and D [see Volume II~~I~~]). These stipulations include NSO-4, which restricts surface occupancy and/or disturbance activities related to leasable and salable minerals that could have negative impacts on listed and sensitive plant species.

Effects from Recreation Management

The BLM would continue to manage the Elk City, Little Salmon River, John Day Creek, and Marshall Mountain areas as Extensive Recreation Management Areas. Lolo Creek and Craig Mountain would be designated as SRMAs, identifying recreation as the principal use of these lands. The Lolo Creek SRMA would emphasize backcountry, dispersed, and nonmotorized recreation opportunities, with an emphasis on white–water boating and fishing. The Craig Mountain SRMA would provide opportunities in a natural setting for big game hunting, hiking, and biking while promoting backcountry recreation experiences. Managing lands as SRMAs rather Extensive Recreation Management Areas could encourage additional use of these lands and thus increase the amount of potential disturbances of special status plants as described under Effects Common to All Alternatives. However, because these two SRMAs emphasize nonmotorized activities, impacts would be less.

Similar to Alternative A, the BLM would continue to manage public lands for a variety of recreational activities within all ROS settings (**Table 4-~~15~~16**, Recreation Opportunity Spectrum). Under Alternative B less than half of the acres under Alternative A would be managed as Primitive, potentially opening over 8,000 acres of land to additional human disturbances that could affect special status plants; this is described under Effects Common to All Alternatives.

Effects from Transportation and Travel Management

Under Alternative B no areas would be Open to cross-country motorized vehicular traffic, reducing potential impacts on special status plants compared to Alternative A. Implementation actions to improve public education and compliance includes patrols, enforcement, education, visitor contacts, monitoring, and use restriction signage.

Effects from Lands and Realty Management

Improvements to special status plant habitats and populations via land acquisition could be more likely under Alternative B than current management because 113,728 acres in 12 management blocks have been identified with ranked resource values. Special status plants rank as "high value" for 48,166 acres in three blocks. Conservation easements would be used as another tool to protect resources, including special status plants.

Encouraging co-location of linear rights-of-way would reduce the area of surface disturbance that could threaten special status plants by direct damage to plants and spread of noxious weeds. Special status plant populations within withdrawals would generally be more protected than lands not withdrawn or protected by a special designation because there would be a reduced level of surface disturbances.

Effects from ACEC/RNA Management

Under Alternative B, two new ACECs would be created that contain sensitive plant species. This would include 5,759 acres on the Salmon River from White Bird Creek to French Creek and 570 acres on the East Fork American River. The Lower Salmon River ACEC, which contains sensitive plants, would be increased to 16,199 acres. These actions would increase from current management

the amount of protection for these species by bringing more acreage under the protections of ACEC designation.

Alternative C

Effects from Soils Management

Effects would be similar to those described under Alternative B, except that RCA stream buffers would be larger and additional emphasis for riparian/aquatic management would occur with additional conservation and restoration watersheds. These actions would have additional direct or indirect benefits for special status plants if occupied or suitable habitats occur in these areas.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except for the differences described under Alternative C, Effects from Soils Management, above.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be similar to those described under Alternative B, with the addition of promoting native plant communities in Salmon River canyon grasslands. Less acreage would be identified as being available for livestock grazing. Thus, Alternative C has the greatest potential to improve grassland habitats for special status plants.

Effects from Vegetation—Riparian and Wetlands Management

Alternative C would be slightly more effective at conserving and restoring riparian habitats for special status plants than Alternatives A and B because stream buffers would be larger. There would be 27,624 acres of RCAs, 14 percent more than Alternative A and 21 percent more than Alternative B. Alternative C would designate 6 percent more area of conservation and restoration watersheds (64,481 acres) than Alternative B and 3 percent more than the prescription watersheds in Alternative A. Types of effects would be as described under Effects Common to All Alternatives.

Effects from Wildlife and Special Status Wildlife Management

Effects from wildlife and special status wildlife management would be similar to Alternative B, with the following exceptions:

- Under Alternative C, adding the Lower Salmon River to the emphasis management areas for native grassland communities could increase the area of canyon grassland habitat that is improved;
- Riparian and wetland management actions would be more effective at improving riparian habitat that could support special status plant populations because RCA stream buffers would be larger (this is described under Riparian and Wetland Management, above) and because of additional conservation and restoration watersheds. Specifying use criteria for grazing allotments along fish-bearing streams could further conserve riparian areas; and

- In addition to no net increase in roads in 12 specified areas, 5 areas would be managed for a net decrease in roads. This could decrease motorized vehicle use in these areas and could reduce associated public recreation use, which could affect occupied or suitable habitats for special status plants. A reduction of motorized use of roads and trails would also reduce threats from spread of nonnative species, which could impact occupied or suitable habitats for special status plants.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects from aquatic resources management actions would be similar to those described under Alternative B, with larger RCA stream buffers and additional improvement to riparian habitats because of additional conservation and restoration watersheds. These effects also would be greater than under Alternative A.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Treated FRCC 2 and 3 areas, including those treated for weeds by biological or chemical methods, would decrease by 16 percent relative to Alternative B, reducing the chances of special status plants impacts.

Effects from Visual Resources Management

Indirect impacts on special status plants from visual resources management would be less than Alternatives A and B. Alternative C would have the greatest number of acres in VRM Class I and II and the fewest in Class III.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative A. Alternative C would permit livestock grazing on 101,350 acres and 145 allotments, 17 percent fewer acres than Alternative A.

Effects from Minerals Management

Effects would be the same as those described under Alternative B.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Under Alternative C the Craig Mountain ACEC would be expanded from 3,956 acres to 23,342 acres, an almost 5-fold increase from current management. Habitats would be further conserved by additional restrictions on roads and grazing, and a monitoring program would be implemented. Upper Lolo Creek would be designated an ACEC. This 1,625-acre parcel would directly and indirectly conserve sensitive plants, especially riparian-dependent plants, by restricting timber

harvest, withdrawing land from mineral exploration and development, decommissioning roads, managing exotic plants, and restoring riparian areas.

Alternative D

Effects from Soils Management

Effects would be similar to those described under Alternative B, except that RCA stream buffers would be smaller and less emphasis for riparian/aquatic management would occur with fewer watersheds designated as conservation and restoration watersheds.

Effects from Water Resources Management

Effects would be similar to those described under Alternative B, except for the differences described under Alternative D, Effects from Soils Management, above.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Rangeland management actions would be similar to current management and less protective of special status plants and would provide less potential for improvement than under Alternatives B or C because there would be no emphasis management areas for improvement of ecological conditions of canyon grasslands.

Effects from Vegetation—Riparian and Wetlands Management

Alternative D would be slightly less effective at conserving and restoring riparian special status plants habitats than all other alternatives because RCA stream buffers would be smaller. There would be approximately 20,710 acres of RCAs, 15 percent less than Alternative A. Alternative D would designate the fewest conservation and restoration watersheds (52,118 acres) of any alternatives.

Effects from Wildlife and Special Status Wildlife Management

Under Alternative D, effects from wildlife and special status wildlife management would be similar to those described under Alternative B. Riparian and wetland management actions would be less effective at improving riparian habitat than all the other alternatives because stream buffers would be smaller; this is described under Effects from Vegetation—Riparian and Wetland Management, above.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects from aquatic resources management actions would be similar to those described under Alternative B; there would be less potential improvement to riparian special status plants habitats than all other alternatives because stream buffers would be smaller and there would be fewer conservation and restoration watersheds.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

The types of effects of wildland fire management on special status plants would be similar to those described under Effects Common to All Alternatives, except unplanned fire for wildland fire use would not be evaluated in commercial forest lands or on grazing allotments (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]) unless it is determined to not adversely impact commercial timber lands or active grazing allotments. This could preclude potential special status plants habitat improvements in commercial timber lands. This alternative would allow for chemical or biological weed treatments on 80 percent more land area than under Alternative C and the same area as Alternative B, increasing potential impacts to special status plants from this type of action the most of any alternative.

Effects from Visual Resources Management

Alternative D would have the fewest number of acres in VRM Class I and II and the greatest in Class III. As such, indirect impacts on special status plants from visual resources management would be the greatest among the four alternatives.

Effects from Livestock Grazing Management

Effects would be similar to those described under Alternative A. However, Alternative D would permit livestock grazing on 135,850 acres and 170 allotments, 11 percent more acres than Alternative A.

Effects from Minerals Management

Effects would be the same as those described under Alternative B.

Effects from Recreation Management

Under Alternative D, impacts on special status plants from recreation management would be similar to those described under Alternative B throughout most BLM-managed lands. However, in the Craig Mountain WMA SRMA, access would be improved to promote rural, developed recreation instead of backcountry experience. This could result in more potential disturbances of special status plants and their habitats from the effects of increased human presence and vehicles (as described under Effects Common to All Alternatives).

Effects from Transportation and Travel Management

Effects from transportation and travel management on special status plants would be similar to those under Alternative B, except there would be a 23,189-acre Open area designation that would allow for more potential damage than under Alternatives B or C.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Fewer areas (totaling 23,924 acres) would be proposed for designation, almost 7 percent less than Alternative A. This would result in somewhat less protection for occupied and suitable habitats for special status plants in these areas. Effects of ACEC/RNA management actions on special status plants would be similar to those described under Alternative B. The only proposed difference is to allow livestock grazing to support achievement of goals on Wapshilla Ridge ACEC/RNA. Quantity and composition of vegetation may be altered by grazing, but if grazing is being used as a tool to achieve goals, there would not be impairment of special status plant populations.

Cumulative Effects

Most of the cumulative projects listed in Section 4.1.3, Cumulative Impacts, have had or could have at least indirect effects on special status plants. Effects of past actions and natural events including fire suppression, livestock grazing, timber harvest, mineral development, road construction, and recreation, often leading to infestations from nonnative species, have affected special status plants in the CFO planning area.

In the foreseeable future, invasion of native habitats by noxious weeds and other exotic species poses one of the greatest threats to native plant species and communities and is an increasing concern within the CFO. Controlling the spread of invasive plants is essential for the conservation of special status plant species. Cooperative efforts are underway to control nonnative species that may encroach on occupied and suitable habitats for special status plants. Conservation and restoration efforts to protect occupied and suitable habitats for special status plants would support recovery for listed plants and reduce potential for federal listing of BLM sensitive plants.

The same types of cumulative effects would occur under all alternatives. Generally, Alternative C would contribute the greatest potential for improvement in special status plant populations, habitat, and potential habitat in northern Idaho because of numerous management actions, mitigation measures, and restrictions. Alternatives A and D would contribute less to any improvements in special status plant habitat conditions across northern Idaho because of more focus on commodities, especially under Alternative D. Alternative B is intermediate between Alternatives C and D in most regards.

4.2.12 Wildland Fire Management

Goal: Manage fuels and wildland fires to protect life and property and to protect or enhance resource values.

Summary

Alternative A would best manage fuels and wildland fire to protect life and property and to protect and enhance resource values, followed by Alternatives D, B, and then C. Proposed practices to protect aquatic resources, and visual quality could reduce the acres where effective treatment could occur. Under Alternative A, specific percentages of CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/fuels-reduction treatments. Alternative A does specify acres available for treatment, and treatments are prioritized in a manner that would lead to reduced FRCC and reduced risk in the WUI. A range of recent past acre treatments was also used to determine the effect of fire management actions. **Table 4-~~20~~ 21** identifies the indicators that were used to analyze effects on wildland fire management under each alternative.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For wildland fire management, the indicators used for impact analysis are identified in **Table 4-~~20~~21**, Comparison of Wildland Fire Management Indicators by Alternative.

Table 4-21
Comparison of Wildland Fire Management Indicators by Alternative

Indicator	Alternative A[1]	Alternative B	Alternative C	Alternative D
Effects on WUI	Prioritizing areas for fuel treatment according to WUI and FRCC status would reduce risk in the WUI and potentially reduce FRCC where treatments occur. This prioritization would result in treating the most affected vegetation types and promote restoration in these areas.	Prioritizing areas for treatment according to hazard in WUI would result in reduced risk in priority areas. This alternative would likely result in substantially less WUI fuels reduction than Alternative A (see below).	Prioritizing areas for treatment according to hazard in WUI would result in reduced risk in priority areas. This alternative would likely result in substantially less WUI fuels reduction than Alternative A (see below).	Prioritizing areas for treatment according to hazard in WUI would result in reduced risk in priority areas. This alternative would likely result in slightly more WUI fuels reduction than Alternative A (see below).
Percent of CFO by FRCC	The potential WUI 5-year treatment of FRCC 2/3 lands is 54,763 acres and could result in the following changes to FRCC: Current Percent of CFO Lands: FRCC 1: 10% FRCC 2: 33% FRCC 3: 57% Plan Life FRCC Potential Change: FRCC 1: ~~11~~20% - ~~14~~40% FRCC 2: ~~32~~12% - ~~40~~33% FRCC 3: ~~51~~29% - ~~55~~50%	The potential WUI 5-year treatment of FRCC 2/3 lands would be 37,395 acres, 32% less than Alternative A, and could result in the following changes to: Plan Life FRCC Potential Change: FRCC 1: 17% - 38% FRCC 2: 12% - 33% FRCC 3: 29% - 50% ~~FRCC 1: 22%~~ ~~FRCC 2: 37%~~ ~~FRCC 3: 41%~~	The potential WUI 5-year treatment of FRCC 2/3 lands would be 18,697 acres, 66% less than Alternative A, and could result in the following changes to FRCC: Plan Life FRCC Potential Change: FRCC 1: 15% FRCC 2: 35% FRCC 3: 50%	The potential WUI 5-year treatment of FRCC 2/3 lands would be 56,092 acres, 2% more than Alternative A, and could result in the following changes to FRCC: Plan Life FRCC Potential Change: FRCC 1: 28% FRCC 2: 39% FRCC 3: 33%

Source: BLM 2004a

Methods and Assumptions

This analysis is based on the following methods and assumptions:

- Acres in FRCC 1 will remain in FRCC 1 during the 20-year analysis period;
- Acres treated to "move toward FRCC 2 or FRCC 1" were considered effectively moved into that FRCC for analysis purposes;

- FRCC 2 and 3 were used to represent moderate and high hazard/risk, respectively for analysis purposes;
- For calculating percent of areas treated, wildland fire management goals can be achieved while still meeting other management action requirements, and budget and staffing level would be sufficient to achieve treatment goals; and
- For qualitative discussions on impacts from management direction for everything except wildland fire management, actions and objectives for other resources will override fire management goals unless otherwise specified.

Effects Common to All Alternatives

Effects from Air Quality Management

All of the air quality actions could hinder or delay implementation of burning-related wildland fire management actions. This could mean that treatments such as prescribed burns would be delayed until later, even to the next year, which could delay treatments that would reduce FRCC or reduce wildfire risk in the WUI, but it would not completely eliminate them. It is expected that all treatments would eventually ~~get done~~be completed.

Effects from Wildland Fire Management

Allowing no more than 30 percent of the CFO acres to burn in a 5-year period could reduce prescribed burning to reduce FRCC or hazard. Based on past history (see Chapter 3, Section 3.2.12, Wildland Fire Ecology and Management), it is unlikely that 30 percent would burn in a 5-year period and therefore prohibit prescribed burning. Fuel reduction and reduced FRCC and hazard would improve firefighter safety, reduce fire behavior and over the long term, allow fires to burn more like their historic conditions.

Effects from Livestock Grazing Management

Grazing could lead to some conifer encroachment and invasion of nonnative species in the dry conifer and perennial grass types, and could increase tree density by limiting grass competition in the dry conifer type. All of these conditions contribute to increased FRCC. Grazing also could reduce fine fuels that could affect the rate of spread and intensity of fire.

Effects from Transportation and Travel Management

Areas open to motorized use or open to motorized travel off designated routes could improve suppression access, increase potential for human-caused fires from recreationists, and lead to the spread of invasive species that could increase FRCC in most of the vegetation types found in the CFO.

Roads closed to motorized travel year-round eventually could become overgrown with vegetation or could otherwise become impassible because of cut or fill failures, culvert removal, or fallen timber, If so, these roads may not be available for use during wildland fire suppression, thereby increasing suppression response times, making it more likely that fires would become larger and burn more acres.

Effects from Wild and Scenic Rivers Management

Management of the outstandingly remarkable values of river segments found suitable for inclusion in the NWSRS could increase visual quality protection via more protective VRM classifications, which could inhibit the BLM's ability to manage fuels to improve FRCC and reduce the hazard in

the WUI. These effects are discussed under Effects from Visual Resources Management for each alternative.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations could place higher priority of protection in areas not previously identified or could limit actions in planned treatment areas. Prescription burning could satisfy tribes interested in prescription burning's potential to promote plant gathering potential.

Alternative A

Effects from Soils Management

Avoiding adverse impacts on sensitive land types could result in reduced acres of treatment in areas with higher (worse) FRCC or in WUI, which should have negligible effects. Decommissioning, obliterating, or partially recontouring roads on sensitive land types would remove them from service for fire suppression or for easy access to accomplish treatments to reduce FRCC or the risk or hazard in the WUI.

Effects from Water Resources Management

Meeting fish and water quality objectives could affect where and to what extent treatments to reduce FRCC could occur (24,290 acres included in the RHCA); the same would be true of treatments to reduce risk to the WUI.

Effects from Vegetation—Forests Management

There would be 24,257 acres designated for intensive management and 11,500 acres designated for extensive management (treatments) that would allow reduced FRCC and risk through timber management.

Where custodial acres occur in the WUI, -timber management could also be employed to reduce risk to the WUI.-.

Establishing priorities for treatment by FRCC and WUI would ensure that the acres most needing treatment would be treated first, and that appropriate fuel conditions would be maintained. This would reduce FRCC and risk to the WUI where treatments occur. Because the priority treatment areas are in the WUI, wildland fires could be easier to suppress if there were less intense fire behavior because of reduced fuel loads and reduced ladder fuels (small trees growing in the understory) (Graham et al. 2004).

Effects from Wildlife and Special Status Wildlife Management

Reviewing ongoing or new actions and modifying them for listed species conservation may or may not reduce or increase FRCC, or increase or decrease risk to WUI, depending on what the modification entails and where the modification occurs.

Improving range conditions for wildlife would improve FRCC. In the WUI, it could result in more fine fuels, which can increase rate of spread and flame length but reduce severity and resistance to control and potentially lowering risk to WUI.

Maintaining a 100-yard nondisturbance buffer around active raptor nests could delay some treatments, which could affect FRCC.

Effects from Special Status Plants Management

Some special status plants are located in the WUI or may be found in the WUI during future plant inventories. Protecting listed plants could prohibit treatments that could reduce FRCC or influence the design of treatments that would reduce the risk to WUI. This protection could also affect wildland fire suppression.

Effects from Wildland Fire Management

Using wildland fire could result in a reduced FRCC over the long term..

Treating FRCC 2 and 3 areas first would result in treating the most affected vegetation types and promoting a reduced FRCC in these areas. **Table 4-~~21~~ 22** summarizes the range of acres that could be treated in a five-year period and the effects that would have on FRCC. On areas which remain untreated, shrub and forested vegetation types that are currently FRCC 2 would move to a higher (worse) FRCC in 20 years because of a lack of disturbance. The perennial grass type is currently in FRCC 3. Consequently, for the calculations below, it was assumed that acres that were not treated would not move into a higher (worse) FRCC, although in reality, perennial grass that is treated and moves to a lower FRCC could move back into a higher FRCC over the 20-year analysis period. In the WUI, treatments would result in more fine fuels which would need to be removed through maintenance, and would also remove the heavier fuels (noxious weeds) reducing severity, intensity, and resistance to control.

Table 4-22
Results of Implementing FRCC Reduction and Maintenance Actions under Alternative A

Fire Regime Condition Class	Current Acres[1]	Current Percent of CFO Lands	Acres Treated in Five Years, Low to High Range[2]	Acres After Treatment, Low to High Range (acres)	% of CFO After Treatment, Low to High Range
FRCC 1	14,383	10%	0	24,383 – 57,258~~15,821 – 20,136~~	~~11~~20% – ~~14~~40%
FRCC 2	47,464	33%	10,000 – 42,875	46,026 – 57,532	32% – 40%
FRCC 3	81,983	57%	10,000 – 42,875	73,353 – 79,107	51% – 55%
Total	143,830		20,000 – 85,750		

[1] Acres are evaluated individually here. In Chapter 3, FRCC is reflected for vegetation types as a whole.
[2] Acres in five years based on **Appendix H**, Wildland Fire Management (see Volume II~~I~~).

The low range of the calculations performed for Alternative A is based on the BLM's 2004 budget and staffing level, which is likely a reasonably good indicator of the future budget and staffing level. The high range of the calculations is based on maximum treatment acres recommended to achieve the goals in the MFP (BLM 1981a).

In the WUI, the treatment priorities described in Chapter 2 would result in improvements in FRCC and maintenance of appropriate FRCC where it exists. When treatments are achieved to reduce or maintain FRCC 1, wildland fires would eventually burn at a severity and intensity that is historically appropriate for the vegetation type; however, in stand-replacing fire regimes (historic fire regimes III, IV, and V), FRCC I may still pose a risk to life and property. In stands with historic fire regimes I and II, this would include low-intensity fires that are much easier to control, when necessary. In

the long term, this would result in a reduced fuel load, less-dense understory vegetation, and healthier trees.

The goal of Community Wildland Fire Protection Plans is to identify WUI resources and risk and develop a strategy to reduce the risk of loss to life and property in the WUI and the infrastructure that allows the community to function. For BLM wildland fire management, this would require the reduction of fuels in WUI covered in the plans. Overall, implementing fuels reduction would reduce intensity and resistance to control of wildland fire, reducing risk to the WUI. In some instances, this could also result in a reduction in FRCC in the WUI.

Reducing the potential for stand-replacing fire would entail reducing crown closure, overall stand density, and ladder fuels. This action would reduce the risk of high-intensity fire behavior. Stand-replacing fire is a natural component of all fire regimes, but it is uncommon in historic fire regime I (frequent, low-severity fire). In the wet/cold conifer type (34,506 acres) and the cottonwood/riparian conifer type (2,474 acres) this action would require human-caused disturbance because stand-replacing fire is the historic fire regime, which is not acceptable within the WUI. In the dry conifer type, shrub, and grass types, this would improve FRCC; in the wet/cold conifer, aspen/conifer mix, and riparian types, this action would not affect FRCC.

Reducing hazardous fuels outside the WUI using fire and non-fire treatments would improve FRCC in vegetation types where hazardous fuels have increased due to wildland fire suppression, insects, disease, or noxious weeds or invasive species.

Effects from Visual Resources Management

In some cases, VRM Class I and II areas would restrict activities in forested areas that could improve FRCC or reduce the risk to WUI, particularly in the dry conifer type (**Table 4-~~22~~23**, Forested WUI Acres by VRM under Alternative A). Where WUI overlaps VRM I and II, fuel-reduction activities in forested types designed to change species composition and reduce stand densities would be inconsistent with the VRM designations.

Table 4-23
Forested WUI Acres by VRM under Alternatives A and B

WUI Areas in VRM Classes I and II	Urban WUI Acres	Rural WUI Acres
WUI in VRM Class I	0	5,803
WUI in VRM Class II	7,349	11,390
Total WUI Category in VRM Classes I and II	7,349	17,193
Total WUI Category Acres	33,584	94,093
Percentage of WUI Category in VRM Classes I and II	22%	18%

Source: BLM 2004a

Under Alternative A, some dry conifer (FRCC 3) and moist conifer (FRCC 2) outside of the WUI in VRM Class I or II areas could not be treated effectively to reduce FRCC, to reduce the risk of stand-replacing fire, or to reduce the level of hazardous fuels as required under wildland fire management.

Effects from Forest Products Management

Effective treatments to reduce insect and disease mortality would improve FRCC, although to a limited degree. In the WUI, this would reduce hazardous fuels, which would reduce risk to the WUI.

Timber management in intensive areas may or may not improve FRCC, depending on the treatment and its location. Intensive forest practices can improve species composition and stand density, which are largely the reasons for FRCC 3 in forested areas. Until activity fuels are treated, however, fuel loadings pose a hazard. Activity fuels are nearly always reduced within two years of the activity. After activity fuels are treated, hazardous fuels are significantly reduced and, in most cases, this would reduce FRCC. These treatments reduce hazardous fuels and generally reduce the risk of stand-replacing fire. Extensive management can have the same effects but often to a much lesser degree because few acres are treated.

Effects from ACEC/RNA Management

ACECs that would prohibit or restrict vegetation treatments or timber harvesting (Wapshilla Ridge, Lower and Middle Cottonwood Islands, Captain John Creek, Long Gulch, Lucile Caves, and Skookumchuck) would increase or maintain high FRCC in those areas (2,233 acres).

Alternative B

Effects from Soils Management

Effects would include those described in Alternative A. In addition, interdisciplinary review of all activities on slopes over 55 percent or with indicators of slope instability could result in fewer treatments to improve FRCC or reduce risk to the WUI. One-hundred-foot slope distance buffers around landslides and landslide-prone areas could also reduce treatment areas to improve FRCC or reduce risk to WUI.

Effects from Water Resources Management

Effects would be similar to those described under Alternative A, except 22,847 acres would be included in RCAs, compared to 24,290 included in RHCAs under Alternative A.

Effects from Vegetation—Forests Management

The DFC management areas (**Figure 6**, Desired Future Condition Blocks – Alternative B [see Volume IV of the Cottonwood Draft RMP/EIS]) were established and structural composition goals developed (**Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat – Alternatives B and C [see Volume II~~I~~]). Managing for these structural goals is consistent with managing for FRCC I. However, managing for these structural goals could prevent achievement of fuel reduction goals in the WUI. In these cases, the WUI fuel reduction goals would have priority over the structural goals to insure that risk-reduction actions were implemented.

In areas outside the DFC management areas, priorities for treatment by FRCC and WUI would ensure that the acres needing treatment the most would be treated first. This would serve to reduce the FRCC and the risk to the WUI where treatments occur. Fuel treatments can make wildland fires easier to suppress if there were less-intense fire behavior because of reduced fuel loads and reduced ladder fuels (small trees growing in the understory) (Graham et al. 2004).

Effects from Vegetation—Weeds Management

Controlling weeds and invasive species would reduce FRCC in the perennial grass type by reducing fire severity and returning the fire frequency and timing to HRV, which is the reason for the increased FRCC.

Effects from Vegetation—Rangelands Management

Maintaining existing native plants and converting nonnative plant communities to desired plant communities would reduce FRCC in the perennial grass type; reducing fire severity and returning the fire frequency and timing to HRV.

Effects from Vegetation—Riparian and Wetlands Management

Maintenance and enhancements of riparian management objectives could improve FRCC where the riparian management objectives are consistent with vegetation conditions, fuel loadings, and fire return intervals for each type. Where riparian management objectives are not consistent, treatments to reduce FRCC would not occur and FRCC would continue to increase. Riparian management objectives override all other considerations in riparian areas, except for safety considerations.

In some areas within WUI, treatments needed to reduce the risk to the WUI may not be the desired condition for RCA, or meet riparian management objectives. **Appendix F**, Aquatic and Riparian Management Strategy (see Volume II~~I~~), requires that all treatments maintain or enhance riparian management objectives even if they occur outside of RCA, and makes no allowance for treatments in the WUI that may not fit the desired condition as indicated by riparian management objectives. This restriction could prevent attainment of some fuel reduction goals within the WUI.

Effects from Wildlife and Special Status Wildlife Management

Reviewing ongoing and future activities would have the same effects as those described under Alternative A.

Managing forests and rangeland to contribute to healthy populations of rangeland- and forest-dependent species would reduce FRCC when treatments to meet wildlife needs result in restoration of species composition, structure, and fire return interval. In some instances, however, FRCC reduction and wildlife needs could conflict, resulting in increasing FRCC. Wildlife needs could also conflict with WUI treatments, resulting in continued increased risk to the WUI if wildlife needs take priority over reducing hazardous fuels.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

For wildland fire management, effects would be the same as those described under the Effects from Vegetation—Riparian and Wetlands Management section, above.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative A.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative A, except wildland fire use would be restricted to Craig Mountain ~~FMU~~FMA and that portion of the Salmon ~~FMU~~FMA south and east of Riggins (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). In these areas, wildland fire use could result in a reduced FRCC over the long term.

Table 4-~~23~~ 24 summarizes the potential effects on FRCC of management actions to reduce FRCC in Alternative B. Acres with reduced FRCC due to wildland fire use are not reflected in this table. Lower FRCC improves firefighter and public safety.

Table 4-24
Results of Implementing FRCC Reduction and Maintenance Actions under Alternative B

Fire Regime Condition Class	Current Acres[1]	Current Percentage of CFO	Acres Treated in Five years[2]	Acres After Treatment	Percentage of CFO after Treatment
FRCC 1	14,383	10%	~~17,250~~0	31,643	~~22~~17%-38%
FRCC 2 (30% treated)	47,464	33%	17,250	53,217	12%-33~~37~~%
FRCC 3 (40% treated)	81,983	57%	23,000	58,970	29%-50~~41~~%
Total	143,830		57,500	143,820~~143,830~~	

[1] Acres are evaluated individually here. In Chapter 3, FRCC is reflected for vegetation types as a whole.
[2] Acres in 5 years based on 40 percent of the CFO.

Under recent budget and staffing level levels available for fire management, the BLM has been able to treat an average of 4,000 acres per year, indicating that it is unlikely that the BLM could effectively treat over 57,500 acres in 5 years to maintain or reduce FRCC. Limitations and planning for the management of other resources would impose additional constraints on wildland fire management and could increase FRCC in some areas.

Acres by VRM class would be the same as those under Alternative A, but allowances would be made for fuel treatments to occur in WUI and for public and firefighter safety and infrastructure protection

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Forest products would come from forest vegetation management action, as described under the Effects from Vegetation—Forests Management section. Requirements to meet aquatic and riparian management are described under the Effects from Riparian and Wetland section, above.

Effects from Transportation and Travel Management

Decommissioning or obliterating roads could increase response time for fire suppression in restoration and conservation watersheds, possibly resulting in additional acres burned by unplanned wildland fire. This could increase the risk to WUI, and result in making it harder for BLM to achieve the stated goal of controlling wildland fires within one operating period.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative A, except that the Lucile Caves ACEC/RNA would be reduced from 404 acres to 136 acres. ACECs that would prohibit or restrict vegetation treatments or timber harvesting (1,965 acres) would increase or maintain high FRCC in those areas.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would similar to those described under Alternative A, except under Alternative C, RCA stream buffers would be slightly wider on perennial non-fish-bearing streams, affecting 27,624 acres compared to 24,290 acres in Alternative A. In addition, there would be more watersheds designated for restoration and conservation.

Effects from Vegetation—Forests Management

Effects would similar to those described under Alternative B, except 28,087 acres would be designated for treatments to meet DFC. FRCC would continue to increase across the CFO.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that, under Alternative C, more acres would be considered RCA unless a site-specific watershed analysis is completed.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

For wildland fire management, effects would be similar to those described under the Effects from Vegetation—Riparian and Wetlands Management, above, except that more watersheds would be considered conservation or restoration watersheds, which would result in fewer treatments to improve FRCC and to reduce risk to WUI. See also Effects from Vegetation—Riparian and Wetlands Management.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative A, except wildland fire use in all ~~FMU~~FMAs could allow wildland fire use to help reduce FRCC (**Table 4-~~24~~25**) (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). Lower FRCC improves firefighter and public safety.

Under recent budget and staffing level levels available for fire management, BLM has been able to treat an average of 4,000 acres per year, indicating that it is likely that the BLM could effectively treat the 25,974 acres in 5 years to maintain or reduce FRCC under Alternative C.

Table 4-25
Results of Implementing FRCC Reduction and Maintenance Actions under Alternative C

Fire Regime Condition Class	Current Acres[1]	Current Percentage of CFO	Acres Treated in Five Years[2]	Acres after Treatment	Percentage of CFO after Treatment
FRCC 1	14,383	10%	~~7,792~~0	21,575	15%
FRCC 2 (30% treated)	47,464	33%	7,792	50,340	35%
FRCC 3 (40% treated)	81,983	57%	10,390	71,915	50%
Total	143,830		25,974	144,430 ~~143,830~~	

[1] Acres are evaluated individually here. In Chapter 3, FRCC is reflected for vegetation types as a whole.
[2] Acres in 5 years based on 20 percent of the CFO.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative A, except that 20 percent of the acres in the rural WUI would need VRM considered for management (**Table 4-~~25~~26**, Forested WUI Acres by VRM under Alternative C).

Table 4-26
Forested WUI Acres by VRM under Alternative C

WUI Areas in VRM Classes I and II	Urban WUI Acres	Rural WUI Acres
VRM Class I	2,259	7,294
VRM Class II	5,090	11,481
Total WUI in VRM Classes I and II	7,349	18,775
Total WUI Acres	33,584	94,093
Percentage of WUI in VRM Classes I and II	22%	20%

Source: BLM 2004a

Outside the WUI, VRM Class I and VRM Class II would make some treatments to reduce FRCC in dry conifer and moist conifer difficult to accomplish. VRM Classes I and II on these acres and would result in no reduction in FRCC in these areas.

Effects from Forest Products Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be similar to those described under Alternative A, except 20,710 acres would be included in RCAs, compared to 24,290 included in RHCAs under Alternative A.

Effects from Vegetation—Forests Management

Effects from forest management would be similar to those described under Alternative B, although there would be no DFCs or large tree goals. Treatments would still be designed to reduce FRCC and to reduce fuels in the WUI to meet goals established elsewhere under Alternative D.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B except under Alternative D, RCA stream buffers on intermittent streams would be slightly narrow, affecting slightly fewer acres.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B except under Alternative D, RCA stream buffers on intermittent streams would be slightly narrow, affecting slightly fewer acres.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative A.

Effects from Wildland Fire Management

Effects would be similar to those described under Alternative A, except wildland fire use would be severely restricted compared to Alternative A, and very few opportunities for FRCC improvement would be realized (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). In Alternative D, 60 percent of the CFO treated in 5 years would exceed the Projected Range of Annual Fuels Treatment" in **Appendix H**, Wildland Fire Management (**Table 4-~~26~~27**).

Table 4-27
Results of Implementing FRCC Reduction and Maintenance Actions under Alternative D

Fire Regime Condition Class	Current Acres[1]	Current Percentage of CFO	Acres Treated in Five Years[2]	Acres after Treatment	Percentage of CFO after Treatment
FRCC 1	14,383	10%	~~25,875~~0	40,272	28%
FRCC 2 (30% treated)	47,464	33%	25,875	56,094	39%
FRCC 3 (40% treated)	81,983	57%	34,500	47,464	33%
Total	143,830		86,251	143,816~~14 3,830~~	

[1] Acres are evaluated individually here. In Chapter 3, FRCC is reflected for vegetation types as a whole.
[2] Acres in 5 years based on 60 percent of the CFO.

Under recent budget and staffing level levels available for fire management, BLM has been able to treat an average of 4,000 acres per year, indicating that it is unlikely that the BLM would be able to effectively treat over 86,000 acres in 5 years to maintain or reduce FRCC because of these limitations and due to planning and other resource management constraints.

Effects from Visual Resources Management

Allowances would be made for fuel treatments to occur in the WUI and for public and firefighter safety and infrastructure protection in VRM management areas. However, 814 acres of VRM Class I, where most fuel-reduction treatments would be severely limited, would be located within the rural WUI (**Table 4-~~27~~28**, Forested WUI Acres by VRM under Alternative D).

Outside the WUI, VRM Class I and VRM Class II would make treatments to reduce FRCC in dry conifer and moist conifer would be difficult to accomplish. VRM Class I and II areas and would result in no reduction in FRCC in these areas.

Table 4-28
Forested WUI acres by VRM in Alternative D

WUI Areas in VRM Classes I and II	Urban WUI Acres	Rural WUI Acres
VRM Class I	0	814
VRM Class II	4,105	10,056
Total in VRM Classes I and II	4,105	10,870
Total WUI Acres	33,584	94,093
Percentage of WUI in VRM Classes I and II	12%	12%

Source: BLM 2004a

Effects from Forest Products Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be the same as those described under Alternative B.

~~**Table 4-27**~~
~~**Forested WUI acres by VRM in Alternative D**~~

~~WUI Areas in VRM Classes I and II~~	~~Urban WUI Acres~~	~~Rural WUI Acres~~
~~VRM Class I~~	~~0~~	~~814~~
~~VRM Class II~~	~~4,105~~	~~10,056~~
~~Total in VRM Classes I and II~~	~~4,105~~	~~10,870~~
~~Total WUI Acres~~	~~33,584~~	~~94,093~~
~~Percentage of WUI in VRM Classes I and II~~	~~12%~~	~~12%~~

~~Source: BLM 2004a~~

Cumulative Effects

Effects of past actions, natural events, and region-wide assessments (e.g., fire, fire suppression, logging, insect and disease, road construction, ICBEMP) that have affected fire management are documented in Chapter 3, Section 3.2.12, Wildland Fire Ecology and Management. To summarize, the fire regime and vegetation conditions have been altered from their historic fire regime and condition, and most of the CFO is in FRCC 2 or FRCC 3. Logging, fire suppression, and invasive plants (particularly in grasslands) have had the greatest effects, although insect and disease outbreaks have contributed significantly.

Effects on wildland fire management due to any of the Cottonwood RMP alternatives are overshadowed by reasonably foreseeable stand-replacing fire, continued fire suppression made necessary by WUI and intermingled landownership, and large-scale insect and disease outbreaks that would continue over the life of the RMP. Effects on wildland fire management, including FRCC and firefighter and public safety because of management accomplished by other landowners, could affect wildland fire management on public lands. When activity fuels on adjacent lands are not treated adequately, fuel hazard can increase and affect fire intensity and severity on BLM-administered lands. When adjacent owners treat fuels or implement wildfire mitigation plans in the WUI, fires are easier to suppress and firefighter safety is enhanced. All counties within CFO have adopted Community Wildland Fire Protection Plans and are beginning to implement home site evaluations and WUI treatments. Idaho Department of Lands, some private land owners and the Nez Perce Tribe are actively reducing fuels in WUI. Implementation of fire management direction in the Revised Payette National Forest Plan would result in additional acres treated inside and outside the WUI to reduce FRCC and wildland fire risk. Revising the Clearwater and Nez Perce National Forest Plan could result in more or less treatment of adjacent areas; because no decision has yet been made, the effects are unknown. Implementing the current plans results in additional treatments to reduce FRCC and risk of wildland fire in WUI. Wildland fire management on Forest Service lands will be determined in the Forest Plan decision, particularly areas where wildland fire use may occur. The BLM will need to coordinate with the Forest Service on all wildland fire use projects, as wildland fire use on Forest Service lands could affect FRCC on BLM-administered lands. Since Forest Service lands make up 63 percent of the land base in the cumulative effects analysis area, their activities have the most influence on FRCC overall. BLM lands make up less than 2 percent.

A decision to increase the level of wildland fire use or prescribed fire, along with agricultural field burning, on non-BLM lands could impact the BLM's ability to use wildland fire and prescribed fire because of air quality concerns and meeting the air quality requirements. This could postpone or eliminate fuel reductions or treatments to improve FRCC.

Wildland fuels could continue to increase as insects have and will continue to cause mortality in all conifers. Insect infestations can be exacerbated by inappropriate management, which could affect public lands. A lack of appropriate treatment could allow insect mortality to spread to BLM-administered lands from adjoining state, tribal, Forest Service, or private lands.

Population increases are likely to expand the WUI, which in turn could alter forest management, taking the emphasis off restoring historic composition and structure and focusing more on fuel reduction. There are no building codes which require fire resistant materials or defensible space, which could lead to a continual increase in the at-risk WUI as development of forested rural subdivisions continue.

Ground access is a critical component of wildland fire suppression. A trend toward reducing access to public lands due to adjacent land ownership could hamper wildland fire suppression efforts and pose a risk to public and firefighter safety.

Listings under the ESA could affect fuel-reduction treatments, and in some cases, wildland fire suppression actions. ESA listing would not override protection of life and property during wildland fire suppression, so firefighter and public safety should not be affected.

4.2.13 Cultural Resources

Goals: 1) Preserve and protect significant cultural resources and ensure that they are available for appropriate uses; and 2) Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resources uses, by ensuring that all authorizations for land use and resource use will comply with National Historic Preservation Act, Section 106.

Summary

Proposed management actions that could impact or increase the risk of impacts on known and unknown cultural resources include those that require ground disturbance, affect natural processes such as erosion, expose cultural resources to intense fire, open or close land to potentially incompatible uses, affect the visual setting of cultural resources, affect access to cultural resources, and remove or add land subject to federal protections for cultural resources. Most of the CFO has not been inventoried, and undiscovered cultural resources are believed to be present. The Section 106 process and tribal consultation would be completed to address anticipated impacts resulting from authorized and planned activities, but unauthorized activities, wildland fire, dispersed recreation, and natural processes could lead to impacts that may be more difficult to monitor and mitigate. Management actions include stipulations designed to avoid or reduce impacts.

The types of impacts resulting from many of the proposed resource management actions are the same or similar for each alternative. Because planned actions would be subject to review under the Section 106 process, there would be further site-specific consideration of cultural resource impacts. Overall, the emphasis in Alternative C on actions that emphasize resource conservation and protection and restrict incompatible actions would best protect significant cultural resources followed by Alternatives B, D, and then A. **Table 4-~~28~~ 29** identifies the indicators that were used to analyze effects on cultural resources under each alternative.

Table 4-29
Comparison of Cultural Resources Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres and relative depth of ground-disturbing activities or removal of structural features permitted and their potential for affecting known or unknown intact cultural resources or areas of importance to Native American or other traditional communities.	No change	Decrease	Decrease	Decrease
Increased access to or activity in areas where resources are present or anticipated.	No change	Decrease	Decrease	Decrease
Extent that an action changes the potential for erosion or other natural process that could affect cultural resources.	No change	Decrease	Decrease	Decrease
Extent that the action alters the setting of cultural resources.	No change	Decrease	Decrease	Decrease

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For cultural resources, the indicators used for impact analysis are identified in **Table 4-~~28~~29**, Comparison of Cultural Resources Indicators by Alternative. The primary indicator for assessing the condition and trend of cultural resources is the effect on National Register of Historic Places-eligible cultural resources or areas of importance to Native American or other traditional communities.

Methods and Assumptions

Impacts on cultural resources are assessed by applying the criteria of adverse effect as defined in 36 CFR 800.5a: "An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places in a manner that would diminish the integrity of the property's location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative." The criteria of adverse effect provide a general framework for identifying and determining the context and intensity of potential impacts on other categories of cultural resources as well, if these are present. Assessment of effects involving Native American or other traditional community, cultural, or religious practices or resources also requires focused consultation with the affected group.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- Most of the CFO has not been inventoried for cultural resources. There is potential for cultural resource occurrence in uninventoried areas, but the presence and significance of resources and impacts cannot be quantified;

- Traditional cultural properties are places associated with the cultural practices or beliefs of a living community. These cultural resource sites are rooted in the community's history and are important in maintaining cultural identity. Contemporary Native American groups such as the Nez Perce maintain social and cultural ties to the land and resources of the CFO. These cultural resources are generally not known or discussed outside of the affected community but may be present in the CFO. Maintaining access to these places is a responsibility of the BLM. Impacts on broader tribal interests in the natural resources of the CFO and the exercise of tribal treaty rights are discussed in Section 4.5.1, Native American Tribal Uses;
- Prior to authorizing a site-specific project, the federal and BLM requirements of consultation, site-specific inventory, and evaluation would be completed, and mitigation measures would be identified to minimize effects through the Section 106 process. Overall impacts could be minimized with mitigation measures, including avoidance;
- There is qualitative information that indicates areas where there is a higher probability that cultural resources would be present, relative to the whole CFO. For example, highly disturbed or recently developed areas would be less likely to include intact cultural resources;
- In the absence of inventory information, the number of acres affected and the intensity of the proposed activity is assumed to correlate to the potential number of cultural resource sites that may be affected and the potential severity of the impacts;
- With the completion of inventories for Section 106 purposes, more acres of public lands would be inventoried for cultural resources. Completion of these inventories would result in the identification and evaluation of additional cultural resource sites in the planning area requiring management actions such as protection and monitoring. Knowledge of these resources would: (1) aid in their protection from inadvertent impacts; (2) add to BLM's understanding of cultural resources both in surveyed and unsurveyed areas; and (3) potentially add to the BLM's workload in site protection, monitoring, and data recovery;
- Measures that withdraw land or restrict surface development for the purpose of resource protection can provide direct and indirect protection of cultural resources from disturbance, incompatible activities, and unauthorized activities;
- Natural processes, such as erosion or weathering, will degrade the integrity of many types of cultural resources over time. Human visitation, recreation, vehicle use, grazing, fire and nonfire vegetation treatments, and other activities can increase the rate of deterioration through natural processes. While the effect of a few incidents may be negligible, the effect of repeated uses or visits over time could increase the intensity of impacts due to natural processes;
- Vandalism or unauthorized collecting can destroy a cultural resource in a single incident. Exposure of cultural resources or access to areas where cultural resources are present can increase the risk of vandalism or unauthorized collection of materials; and
- Site monitoring, non-project-related inventories, site stabilization, and other proactive management activities would continue.

Effects Common to All Alternatives

Effects from Soils Management

Measures under all of the alternatives to limit soil erosion, manage ground-disturbing activities, and protect landslide-prone areas would enhance the preservation of cultural resources, particularly archaeological sites, in the long term.

Effects from Water Resources Management

Actions to restore watersheds and improve water quality, riparian habitat, and aquatic species could include risks of direct disturbance of cultural resources through ground-disturbing activities, such as vegetation treatments and erosion-control features, increased access, visibility and activity in the vicinity of cultural resources, or temporary loss of access if any traditional cultural properties are present. Impacts would be addressed in site-specific project review. Watershed improvements that reduce erosion and sedimentation could indirectly enhance ~~site~~ archaeological site preservation in the long term.

Effects from Vegetation—Forests Management

Forest vegetation treatment and management can impact cultural resources from ground disturbance, erosion, changes in setting, increased access, visibility and activity in the vicinity of cultural resources, and temporary loss of access to any traditional cultural properties present. There is a greater potential for impacts on cultural resources from intensive forest practices that use the full complement of commercial harvest systems and treatment methods. The potential for impacts is reduced for extensive and custodial forest practices. Effects on cultural resources from these actions would be considered in the Section 106 process. Although standard inventory and mitigation procedures would protect cultural resources, some unanticipated impacts could occur.

Effects from Vegetation—Weeds Management

There could be impacts on cultural resources from ground disturbance associated with treatments, effects of chemicals and fire, increased access, visibility and activity in the vicinity of cultural resources, and introduction of seeds and pollens, which could affect the accuracy of paleobotanical data on archaeological sites. Impacts would be addressed in site-specific project review. These actions in the long term could reduce erosion of archaeological sites and reduce the risk to cultural resources from wildland fire. There could be short-term impacts from changes in setting and loss of access during treatment to any traditional cultural properties present.

Effects from Vegetation—Rangelands Management

No specific actions are identified that could affect cultural resources, although unspecified management changes or projects to achieve objectives could include actions that reduce ground-disturbing activities and erosion and affect the cultural resources preservation.

Effects from Vegetation—Riparian and Wetlands Management

Cultural resources are often associated with riparian and wetland areas. Riparian restoration actions such as plantings, seeding, recontouring, topsoil placement, and vegetation treatments can disturb cultural resources and cause temporary loss of access to traditional cultural properties during treatments. Impacts could occur from ground disturbance associated with treatments, the effects of chemicals and fire, and introduction of seeds and pollens, which could affect the accuracy of paleobotanical data on archaeological sites. There could also be increased visibility of resources and activity in the vicinity of cultural resources. These actions could also have the indirect effect of

reducing erosion, which could enhance the archaeological site preservation. Restrictive buffers around streams and water bodies and closures to prevent actions that would degrade riparian conditions would indirectly protect cultural resources within these areas.

Effects from Wildlife and Special Status Wildlife Management

Actions to protect wildlife and wildlife habitat include restrictions or buffers that could restrict grazing, vehicle use, access, or other activities that are incompatible with maintaining wildlife and special status species. These actions could indirectly reduce the potential for direct disturbance of cultural resources and access leading to vandalism and unauthorized collecting. There could also be loss of access to traditional cultural properties. Some impacts from direct disturbance could be associated with vegetation treatments, including fire use to enhance habitat. Specific implementation actions would require further Section 106 review.

Effects from Special Status Plants Management

No specific actions are identified that could affect cultural resources, although unspecified management changes or projects to achieve objectives could include actions that impact cultural resources by reducing ground-disturbing activities and erosion. These actions would be subject to further review.

Effects from Wildland Fire Management

Fire can result in direct disturbance to cultural resources through the destruction or modification of structures, features, and artifacts. Organic materials and the information that can be obtained from their study are especially vulnerable to heat damage. Fire management and suppression activities can involve ground-disturbing activities that can also directly impact cultural resources, especially by altering the spatial relationships of archaeological sites. Fire can also result in impacts through erosion and the increased visibility of cultural resources. Fire can remove vegetation and expose previously undiscovered resources, allowing their study and protection; however, sites exposed by fire or flagged for fire avoidance in prescribed burns can be susceptible to unauthorized collection and vandalism. There could also be impacts on cultural resources from ground disturbance associated with fuel treatments and rehabilitation, the effects of chemicals and fire, and the introduction of seeds and pollens, which could affect the accuracy of paleobotanical data on archaeological sites.

The alternatives vary in the percentage of land that is targeted for particular fuel-reduction treatments and where wildland fire use would be considered. The risk of impacts on cultural resources is greatest from unplanned wildland fire, since the locations of cultural resources are less likely to be known and avoided during the fire and fire suppression. For planned fuel-reduction activities, where cultural resources would be considered prior to conducting the action, the risk of impacts would be greatest for mechanical methods and prescribed fire and less for chemical and biological treatments.

Effects from Cultural Resources Management

Management measures would preserve and protect cultural resources and help ensure that they are available for appropriate uses. Ongoing and planned management measures include proactive inventories in priority areas, consulting with federally recognized tribes, protecting and monitoring identified cultural resource areas, restricting OHV use to protect certain sites, standardizing cultural resource records, nominating resources to the National Register of Historic Places, preparing

planning and overview documents, continued implementation of the Lower Salmon River Cultural Resource Management Plan, and implementing other proactive management measures. Allocating cultural resources to use categories (scientific, conservation, traditional, interpretation, experimental, and discharged) and developing management actions in support of these designated uses would continue.

Impacts from proposed land use authorizations would be minimized or avoided by complying with laws and executive orders designed to preserve and protect cultural resources. Complying with management measures for authorized actions requires consulting with federally recognized tribes and other interested parties, identifying and evaluating cultural resources, and adhering to procedures for resolving any adverse effects and mitigating impacts. There is a greater risk of impacts resulting from unauthorized activities, natural processes, dispersed activities, and incremental or inadvertent human actions, especially where inventories are incomplete.

Effects from Visual Resources Management

VRM Class I and II designations provide indirect protection of cultural resources where visual setting is a contributor to the significance of the property or the traditional use. Requirements that new structures blend into the landscape could reduce the impact of visual intrusions. Visual intrusion on the setting of cultural resources must be considered in the Section 106 process and tribal consultation, regardless of VRM designation. Risk of impacts on cultural resources located in VRM Class I areas would also be indirectly reduced by limitations on surface-disturbing activities in these areas.

Effects from Forest Products Management

Forest product management can impact cultural resources from ground disturbance, erosion, changes in setting, and loss of access to any traditional cultural properties present. There is a greater potential for impacts on cultural resources from intensive forest practices that use the full complement of commercial harvest systems and treatment methods. The potential for impacts is reduced for extensive and custodial forest practices. Effects on cultural resources from these actions would be considered in the Section 106 process. Although standard inventory and mitigation procedures would protect cultural resources, some unanticipated impacts on resources would occur and would be proportional to the intensity of the action and affected acreage.

Effects from Livestock Grazing Management

Livestock grazing, watering locations, corrals, water haul roads, pipelines, and fences can affect cultural resources through direct disturbance and erosion. Actions that improve rangeland health could reduce the potential for impacts on cultural resources due to direct disturbance and erosion.

Effects from Minerals Management

Mineral exploration and development is associated with potential effects on cultural resources. Minerals management includes standard stipulations to reduce impacts on cultural resources. Impacts of specific actions would be considered in the Section 106 process in consultation with tribal governments. Potential impacts include direct ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. Based on reasonably foreseeable development scenarios, very little activity is expected through the life of the RMP for fluid and solid leasable minerals. Locatable mineral development, primarily gold, and salable mineral

materials would continue, but based on minerals activities over the last 20 years, the affected acreage would likely be less than 500 footprint acres.

All of the alternatives include 12,786 acres that would be closed to fluid minerals and solid leasable mineral development. All alternatives also would continue the withdrawals on the Lower Salmon River. In total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable minerals. Mineral material disposal would not be allowed on 750 acres (nondiscretionary), and 12,034 additional acres of discretionary closures are proposed. Closures of land to mineral exploration and development would have a long-term effect on cultural resources by restricting surface and other disturbances and potentially restricting incompatible uses. Withdrawals from mineral entry in the vicinity of the Salmon River would continue to protect significant cultural resources from an incompatible use.

Effects from Recreation Management

Current and proposed SRMAs would emphasize recreational use and access in these areas. Activity plans and consideration of the environmental impacts of this designation are required prior to formal designation. Significant cultural resources are present or are expected in many of these areas. Recreational use and access can impact cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. The potential for impacts on cultural resources would increase as population and recreational use increases or is concentrated. All of the alternatives include provisions for recreational permitting, which can reduce the potential for impacts from overuse and dispersed recreation. The acquisition of access areas, recreational lands, and conservation easements in SRMAs could include cultural resources that would become subject to federal cultural resource protections or that could allow more options for avoiding impacts on cultural resources in river corridors while maintaining recreational opportunities. Additional effects specific to OHV use are addressed under Effects from Transportation and Travel Management.

Effects from Renewable Energy Management

Very little geothermal energy inventory and exploration is anticipated. The effects would be the same as those described under Effects from Minerals Management and include direct ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism.

Effects from Lands and Realty Management

Exchange or disposal of lands to nonfederal entities would permanently remove federal protections for any significant cultural resources present. The removal of federal protections is an adverse effect under the NHPA that would be addressed and resolved in the Section 106 process prior to disposal. The acquisition of new land would provide long-term federal protection to any cultural resources included in the transaction and could enhance currently managed resources by consolidating holdings. The criteria and priorities for acquisition include consideration of lands with unique and important resources. Land tenure adjustments that allow for better access to public lands could facilitate cultural use of traditional cultural properties but could also ~~could~~ lead to vandalism or unauthorized collection of cultural resources. Existing withdrawals of land such as the land adjacent to the Salmon River would continue to provide additional protection to cultural resources by restricting incompatible uses. Most BLM-administered land would remain open to rights-of-way and realty authorizations; however, some actions may be denied if they would result in unacceptable impacts to cultural resource values. They would be evaluated case by case.

Effects from ACEC/RNA Management

ACEC/RNA management could directly or indirectly provide long-term protection of cultural resources by restricting incompatible uses. Special management measures designed to protect resource values in ACECs would also decrease the risk of impacts on identified or unidentified cultural resources present. Under all alternatives, the risk of impacts on cultural resources from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would be reduced by restricting new rights-of-way and road construction in the Wapshilla Ridge and Lucile Caves ACEC/RNAs, prohibiting vegetation manipulation in the Lower and Middle Cottonwoods Islands ACEC/RNA, and restricting grazing in the Captain John Creek or the Skookumchuck ACEC/RNAs.

Effects from National Trails Management

The Nez Perce and Lewis and Clark National Trails are historic properties protected under the NHPA. Efforts to protect and enhance the values that qualify these cultural resources as National Trails are compatible and complementary with cultural resource protection.

Effects from Wild and Scenic Rivers Management

Management of the Salmon River and other suitable segments to protect identified outstandingly remarkable values would include direct and indirect protection of cultural resources in the river corridor.

Effects from Wilderness and Wilderness Study Areas Management

Surface-disturbing activities would be excluded from the Frank Church/River of No Return Wilderness, which would reduce the risk of impacts on cultural resources from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. Restrictions on surface-disturbing activities for lands under wilderness review would continue at the Marshall Mountain and Snowhole Rapids WSAs.

Effects from Native American Tribal Uses Management

All alternatives include provisions to consult with tribal groups, improve natural and cultural resource conditions, and identify, enhance, and facilitate cultural uses of significant plants, animals, fish, and important habitats. Recognition and inclusion of tribal knowledge and concerns with cultural resources and traditional uses would enhance the management of resources in the long term. Some use locations may be traditional cultural properties and need to be considered in the Section 106 process if affected by management actions.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Safety considerations and hazard reduction could require removal of historic structures and features and could involve ground and other disturbances. The impacts of hazard reduction and removal actions would be addressed in the Section 106 process, and adverse effects would be resolved. AML inventory and collection of history information would contribute to understanding the cultural resources present.

Alternative A

Effects from Soils Management

Fewer actions that could enhance the preservation of archaeological sites by limiting soil erosion, managing ground-disturbing activities, and protecting landslide-prone areas would be undertaken under Alternative A than under the other alternatives.

Effects from Water Resources Management

Fewer actions to restore watersheds would be undertaken under Alternative A than under the other alternatives, which would reduce the risks of impacts from direct disturbance or temporary loss of access to traditional cultural properties. Fewer watershed improvements would be planned that could indirectly enhance archaeological site preservation by reducing erosion.

Effects from Vegetation—Forests Management

Under Alternative A, forest management emphasizes various management strategies (such as intensive, extensive, and custodial management) to meet management objectives, such as maximum timber production, sustained yield timber production, or no timber production (although harvesting could occur for ecological reasons). The potential for impacts on cultural resources would vary by treatment type and would be addressed in site-specific Section 106 review.

Effects from Vegetation—Weeds Management

Under Alternative A, there would be fewer specified actions to prevent or treat for weeds than the other alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative A, RHCAs would total 24,290 acres. There would generally be fewer specified actions to maintain or improve wetlands and riparian areas than under the other alternatives. Cultural resources are often associated with riparian and wetland areas. Riparian restoration actions could disturb cultural resources and cause temporary loss of access to traditional cultural properties during treatments. In the long term these actions would also indirectly reduce erosion, which could enhance the preservation of archaeological sites. Restrictive buffers and closures to prevent actions that would degrade riparian conditions would indirectly protect cultural resources within these areas.

Effects from Wildlife and Special Status Wildlife Management

Under Alternative A, there would be fewer specific measures than under the other alternatives to protect wildlife and habitat through closures and restrictions on vehicle use, grazing, or access that could indirectly protect cultural resources in the areas where restrictions are designated.

Effects from Wildland Fire Management

Under Alternative A, wildland fire use would be considered for each unplanned fire, which would be the same as Alternative C (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). The risk of impacts on cultural resources is greatest from unplanned wildland fire, because the locations of cultural resources would be less likely to be known and avoided during the fire and fire suppression.. Under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas would not be identified for fire risk/fuels-reduction treatments. An estimated 13 to 58 percent of CFO lands could receive fuel-reduction treatments in the next 5 years. Without fuel-reduction treatments there would be more risk in the long term to cultural resources from wildland fire.

Effects from Visual Resources Management

Proposed VRM Class I acres (12,704) and Class II acres (41,195) would be the same as Alternative B, greater than Alternative D, and less than Alternative C. VRM Class I and II designations provide indirect protection for cultural resources where visual setting is a contributor to the significance of the property or the traditional use. Class I designations could indirectly reduce risk to cultural resources from surface-disturbing activities in these areas.

Effects from Forest Products Management

Under Alternative A, the level of permitted forest practices are designated by acreage for the CFO. The estimated annual treatment acres through removal of forest products are 358 acres. It is anticipated that the treatment through the removal of forest products would be more than the other alternatives over the next 15 years, with the exception of Alternative D (361 acres). The estimated annual timber harvest of 6,600 MBF on 35,757 acres would continue.

Effects from Livestock Grazing Management

Effects would be the same as those identified for all alternatives. Under Alternative A, AUMs, allotments, and lands currently leased for livestock grazing would continue to be leased.

Effects from Minerals Management

Under Alternative A, only standard stipulations would apply to lands open to fluid and solid mineral leasing and mineral material permits, and there are no specific actions proposed regarding surface occupancy.

Effects from Recreation Management

Under Alternative A, there would be 33,197 acres of nonmotorized ROS designations, which is less than all of the other alternatives. Motorized recreation could impact cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism.

Cultural resource impacts would be formally considered in the development and implementation of SRMA activity plans. In the absence of activity plans, cultural resources would be protected in a manner similar to the way they are protected throughout the CFO. As recreational use increases and is concentrated in these recreational areas, the risk of impacts on cultural resources in these areas would increase. Alternative A would not specify a schedule for development of activity plans for Craig Mountain or Lolo Creek SRMAs.

Effects from Renewable Energy Management

Inventory and exploration of geothermal resources could include direct ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. Very little geothermal energy inventory and exploration is anticipated. Impacts on cultural resources resulting from renewable energy development would be considered in the Section 106 process.

Effects from Transportation and Travel Management

Open motorized vehicle use can impact cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, and intrusions to setting. Transportation access could facilitate access to any traditional cultural properties present for cultural uses, but it could also increase the risk of impacts on resources from unauthorized collection or vandalism.

Restricting vehicle use to existing routes would reduce the risk of disturbing cultural resources located off of travel routes. Enforcing travel routes is difficult, and unauthorized, user-created trails would continue to occur, potentially impacting cultural resources.

Under this alternative, 85,308 acres would be Open, 40,437 acres would be Limited to existing routes, and 18,054 acres would be Closed. Alternative A would result in more risk of impacts on

cultural resources than the other alternatives because of the amount of open, cross-country motorized vehicle use permitted, coupled with the expected increase in recreational use.

Effects from Lands and Realty Management

Under Alternative A, the BLM would retain all land within management blocks and would consider exchanging public lands in other areas to acquire private lands within management areas. Some unanticipated impacts could occur on CFO lands not excluded from rights-of-way, although actions may be denied if they would result in unacceptable impacts to cultural resource values.

Effects from ACEC/RNA Management

In addition to the effects common to all alternatives, under Alternative A the risk of cultural resource impacts from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would be reduced by restricting timber harvest or vegetation treatments in the Wapshilla Ridge ACEC/RNA, restricting timber harvest in the Captain John Creek ACEC/RNA, except for disease and insect control, restricting ground-disturbing activities in the Long Gulch ACEC/RNA, restricting vegetative treatments in the Lucile Caves or the Skookumchuck ACEC/RNAs, restricting road and right-of-way development and including measures to reduce erosion for timber harvest in the Lolo Creek ACEC, and designating Craig Mountain as an ACEC, with some restrictions on timber harvest and new rights-of-way or road construction.

Designating the Elk City Dump and American Hill Lake ACECs to protect the public from hazards could reduce impacts from some ground-disturbing activities, but remediation activities could affect the integrity of cultural resources.

Effects from Wilderness and Wilderness Study Areas Management

If released from consideration as wilderness areas, no management measures are specified for the Marshall Mountain WSA and the Snowhole Rapids WSA, which could result in surface-disturbing actions that increase the risk of impacts on cultural resources.

Alternative B

Effects from Soils Management

Additional BMPs for soil-disturbing activities and reclamation and erosion-control measures could reduce the risk to cultural resources, especially archaeological sites, from erosion and ground disturbance impacts.

Effects from Water Resources Management

Effects would be similar to those common to all the alternatives, with additional measures to improve water quality and stream characteristics that could involve some risk of cultural resource impacts from ground disturbance and removal of structures that may be historic. Additional actions to reduce erosion could also indirectly enhance archaeological site preservation.

Effects from Vegetation—Forests Management

Under Alternative B, all harvest systems and treatment methods and techniques could be used unless specifically prohibited or limited by site-specific prescription direction. The potential for impacts on cultural resources would vary by treatment type and would be addressed in site-specific Section 106 review.

Effects from Vegetation—Weeds Management

Under Alternative B there would be additional specified actions to prevent and treat lands for weeds, including physical, mechanical, biological, and chemical controls, which could impact cultural resources.

Effects from Vegetation—Riparian and Wetlands Management

Alternative B RCA stream buffers would total about 6 percent fewer acres than the RHCAs under Alternative A. This would result in decreased management emphasis on riparian restoration actions, which could result in fewer cultural resources impacts through direct disturbance, loss of access to traditional cultural properties, and reducing erosion of archaeological sites. Alternative B would provide more indirect protection to cultural resources than Alternative A through restrictions related to roads, grazing, recreation, minerals, and fire use.

Effects from Wildlife and Special Status Wildlife Management

Further restrictions under Alternative B on activities that are incompatible with wildlife management, such as grazing restrictions and closures, could indirectly enhance protection of cultural resources to a greater degree than under Alternative A. ~~Thirty-two~~Twenty-eight restoration watersheds and ~~one~~ three conservation watersheds would be designated and could lead to cultural resource impacts, as described in Effects from Vegetation—Riparian and Wetlands Management.

Under Alternative B, there would be no net increase in vehicle use of roads or trails in specific areas, and unneeded roads would be decommissioned. Cultural resources in the vicinity of these roads and trails would be afforded additional protection from direct disturbance and access leading to vandalism and unauthorized collecting, while there could be some loss of access to traditional cultural properties.

Effects from Wildland Fire Management

Under Alternative B, wildland fire use would be more restrictive than under Alternatives A and C but more restrictive than under Alternative D (**Figure H-2**, Areas Available for Wildland Fire Use—Alternative B [see **Appendix H** in Volume II~~I~~]). The risk of cultural resource impacts would be greatest from unplanned wildland fire, because the locations of cultural resources would be less likely to be known and avoided during the fire and fire suppression.

Treatment of up to 40 percent of the CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas would be targeted over any 5-year period, which is 50 percent more than under Alternative C and 50 percent less than under Alternative D. A direct comparison to Alternative A cannot be made because, under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas are not identified. Prescribed fire would be used on up to 15 percent, mechanical treatments on up to 6 percent, and chemical and biological controls on up to 36 percent. Planned fuel-reduction treatments could impact cultural resources, with the greatest risk of impacts resulting from prescribed fire and mechanical treatments. Since treatments reduce the potential for unplanned fire spread, some indirect risk to cultural resources would be reduced.

Effects from Cultural Resources Management

Additional actions under Alternative B would enhance the current management of cultural resources by attempting to improve the consultation process, identifying priority areas for cultural resource inventories, scheduling and setting goals for resource monitoring, updating records, allocating sites to use categories, and preparing cultural resource management plans for the Elk City and Marshall

Mountains areas. These actions would have a long-term effect by increasing understanding of the cultural resources of the CFO, monitoring impacts, improving resource protection, and reducing incompatible uses.

Effects from Visual Resources Management

Effects would be the same as those identified for Alternative A.

Effects from Forest Products Management

Under Alternative B, all harvest systems and treatment methods and techniques could be used unless specifically prohibited or limited by site-specific prescription direction. The potential for impacts on cultural resources would vary by treatment type and would be addressed in site-specific Section 106 review. Estimated annual treatment acreage through removal of forest products would total 242 acres for the next 15 years, an estimated reduction of 32 percent in comparison to Alternative A.

Effects from Livestock Grazing Management

Effects would be similar to those identified for Alternative A, except that, under Alternative B, AUMs would be reduced to ~~6,254~~6,263 from 7,204, allotments would be reduced to 166 from 168, and grazed acres would be reduced to 105,619 from 122,732. Reducing grazing and implementing additional rangeland health standards under Alternatives B, C, and D would reduce the risk of impacts on cultural resources.

Effects from Minerals Management

Alternative B would include additional surface use stipulations on leasable and possibly salable minerals, which could reduce the risk on cultural resources present if mineral development occurs. The NSO-6 stipulation for cultural resources would prohibit surface occupancy within areas of cultural or spiritual value to Native American Tribes. These areas would be determined at the project level for site-specific areas. Additionally, 43,590 acres would be open to leasing of fluid minerals and solid leasable minerals, subject to NSO constraints, and 42,403 acres would be subject to CSU constraints, expanding protection of cultural resources. This alternative includes more acres with restrictions than Alternatives A and D and fewer acres with restrictions than Alternative C. As a result, there would be less risk of cultural resource impacts from fluid minerals and solid leasable minerals under this alternative than under Alternatives A and D.

Effects from Recreation Management

Under Alternative B, there would be 42,695 acres of nonmotorized ROS designations, which would be more than Alternative A. Motorized recreation could impact cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. The risk of impacts on cultural resources from increased recreational use and concentration of use in particular areas would continue. Alternatives B and C would specify that activity plans be prepared for the Lolo Creek and Craig Mountain SRMAs by 2012. Activity plans would include consideration of impacts on cultural resources.

Effects from Renewable Energy Management

Very little geothermal energy inventory and exploration is anticipated. Under Alternative B, the use of biomass from vegetation treatment projects for electrical development would be considered. In addition to the risk of impacts described for vegetation treatments themselves, there would be additional acreage subject to ground-disturbing activities associated with the transport of the

material and construction of generating facilities and distribution systems. Impacts on cultural resources resulting from renewable energy development would be considered in the Section 106 process.

Effects from Transportation and Travel Management

Effects would be similar to those described for Alternative A. In addition, Alternative B would eliminate areas open to cross-country motorized vehicle use. OHV use would be Limited to designated routes on 125,729 acres. Areas Closed to motorized vehicle use would increase slightly to 18,069 acres. These alternatives would also include more outreach, enforcement, physical barriers, and monitoring measures in conjunction with route designations.

Potential impacts on cultural resources located off of travel routes would be reduced by restricting vehicle use to designated routes. Any potential effects from direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to vandalism and unauthorized collecting would be concentrated along the designated routes. The enforcement of travel routes is difficult, and unauthorized, user-created trails would continue to occur and potentially impact cultural resources.

Effects from Lands and Realty Management

Alternative B would retain approximately 113,728 acres of designated management blocks that contain high-value resources. New withdrawals and conservation easements that provide additional protection for cultural resources could be proposed.

Effects from ACEC/RNA Management

In addition to the effects common to all alternatives, under Alternative B, the risk of impacts on cultural resources from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would be reduced by restricting livestock grazing in the Wapshilla Ridge ACEC/RNA; restricting vegetation disturbance in the Lower and Middle Cottonwoods Islands ACEC/RNA; restricting ground-disturbing activities in the Long Gulch ACEC/RNA; restricting the construction of hydroelectric facilities, mineral entries, and new road and right-of-way development and including measures to reduce erosion for timber harvesting in the Upper and Lower Lolo Creek ACECs; expanding the Lower Salmon River ACEC from 15,702 acres to 16,199 acres; creating a Salmon River ACEC (from White Bird Creek to French Creek) to protect scenic and cultural values; creating an ACEC in the East Fork American River; protecting cultural resources through the designation of the American River Historic Sites District ACEC; and requiring that timber harvest roads be decommissioned within three years.

Alternative B would allow vegetation treatments and/or timber harvest in the Lower Salmon River ACEC and in the Wapshilla Ridge, Captain John Creek, Lucile Caves, and Skookumchuck ACEC/RNAs, which could increase the risk of impacts on cultural resources. The size of the Lucile Caves and Skookumchuck ACECs would be reduced. An ACEC would not be created at the Elk City Dump and American Hill Lake.

Overall, fewer risks of cultural resource impacts would be expected under Alternative B than under Alternatives A and D.

Effects from National Trails Management

Under Alternative B, there are additional provisions to identify and record trail segments and to develop informational and interpretive material. Additional efforts to inventory the location, condition, and setting of trails would provide better baseline information for planning and assessing impacts to these cultural resources. Public appreciation for the historic values and protection of these cultural resources could be enhanced by providing information and interpretive materials. Interpretation is an appropriate use for certain cultural resources.

Effects from Wilderness and Wilderness Study Areas Management

Under Alternative B, if Marshall Mountain WSA and Snowhole Rapids WSA were released from consideration as wilderness areas by Congress, management measures would continue to include restrictions on surface-disturbing actions that risk impacts to cultural resources.

Alternative C

Effects from Soils Management

Effects would be the same as those identified for Alternative B.

Effects from Water Resources Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Forests Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those identified for Alternative B, except that Alternative C would increase the RCA buffers by 21 percent over Alternative B (and 14 percent over Alternative A). This is greater than all of the alternatives and could indirectly protect cultural resources.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those identified for Alternative B. There would be ~~40~~ 37 restoration and three conservation watersheds, which is more than the other alternatives (3 percent more than prescription watersheds under Alternative A); there also would be more restrictions on use of riparian areas. Restoration actions are associated with potential impacts on cultural resources as described in Effects from Vegetation—Riparian and Wetlands Management, while reduction of other activities in riparian zones could protect cultural resources from direct disturbance and the effects of erosion.

Effects from Wildland Fire Management

Under Alternative C, wildland fire use would be considered for each unplanned fire, which would be the same as Alternative A (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]). The risk of impacts on cultural resources is greatest from unplanned wildland fire, because the locations of cultural resources would be less likely to be known and avoided during the fire and fire suppression.

Treatment of up to 20 percent of the CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas would be targeted over any 5-year period, which is 50 percent less than under Alternative B, and 300 percent less than under Alternative D. A direct comparison to Alternative A cannot be made because, under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas are not identified. Prescribed fire would be used on up to 20 percent, mechanical treatments on up to 6 percent, and chemical and biological controls on up to 20 percent. Planned fuel-reduction treatments could impact cultural resources, with the greatest risk of impacts resulting from prescribed fire and mechanical treatments. Since treatments reduce the potential for unplanned fire spread, some indirect risk to cultural resources would be reduced.

Effects from Cultural Resources Management

Effects would be the same as those identified for Alternative B.

Effects from Visual Resources Management

Proposed VRM Class I acres (26,945) and Class II acres (46,753) are greater than the other alternatives and would provide the least risk of cultural resources impacts. Under this alternative, VRM Class I would increase 14,241 acres and VRM Class II would increase 5,558 acres in comparison to Alternative A. VRM Class I and II designations provide indirect protection for cultural resources where visual setting is a contributor to the significance of the property or the traditional use. Class I designations could indirectly reduce risk to cultural resources from surface-disturbing activities in these areas.

Effects from Forest Products Management

Effects would be similar to those identified for Alternative B, except that, under Alternative C, estimated annual treatment acreage through removal of forest products would total 191 acres, which would be the least of all the alternatives. This is 21 percent less than Alternative B and 47 percent less than Alternatives A and D.

Effects from Livestock Grazing Management

Effects would be similar to those identified for Alternative B, except that, under Alternative C, AUMs would be reduced to 6,020, allotments would be reduced to 145, and grazed acres would be reduced to 101,350, the least of all the alternatives. Reducing grazing and implementing additional rangeland health standards under Alternatives B, C, and D would reduce the risk of impacts on cultural resources.

Effects from Minerals Management

Effects would be similar to those identified for Alternative B, except that, under Alternative C, 68,854 acres would be open to leasing of fluid minerals and solid leasable minerals, subject to NSO constraints, and 59,122 acres would be subject to CSU constraints. This alternative includes more acres with restrictions than all of the other alternatives. There would be less risk of impacts on cultural resources anticipated from fluid minerals and solid leasable minerals under this alternative.

Effects from Recreation Management

Effects would be the same as those identified for Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those identified for Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those identified for Alternative B. Alternative C would also include decreasing vehicle use on roads and trails in some areas, which would provide additional protection to cultural resources from direct disturbance and access leading to vandalism and unauthorized collecting.

Effects from Lands and Realty Management

Effects would be the same as those identified for Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those identified for Alternative B. In addition, under Alternative C, the risk of cultural resources impacts from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would be reduced by creating an ACEC at Craig Mountain with no grazing, no new rights-of-way or road construction, and limited timber removal; ~~restricting the construction of hydroelectric facilities and new road and right-of-way development, and including measures to reduce erosion for timber harvest in the Upper Lolo Creek ACEC;~~ and creating the Partridge/Elkhorn and Little Salmon ACECs, with provisions for minimal new road construction.

Overall, fewer risks of cultural resources impacts would be expected under Alternative C than under the other alternatives. More land would be placed in ACECs and RNAs than the other alternatives, and there would be more restrictions on ground-disturbing and other activities that could impact cultural resources.

Effects from National Trails Management

Effects would be the same as those identified for Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those identified for Alternative B.

Alternative D

Effects from Soils Management

Effects would be the same as those identified for Alternative B.

Effects from Water Resources Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Forests Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those identified for Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those identified for Alternative B. Alternative D would decrease RCA buffers to total about 9 percent less area than Alternative B, 15 percent less than Alternative A, and 25 percent less than Alternative C. Smaller buffers could result in less indirect protection of cultural resources.

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those identified for Alternative B, except that Alternative D would designate fewer restoration (27) and conservation (1) watersheds (19 percent less watershed acres than under Alternative B and 21 percent less than prescription watersheds under Alternative A) and would include fewer treatments to enhance habitat. There would be fewer watersheds and treatment actions, and the potential for impacts on cultural resources would be less than under Alternatives B and C.

Effects from Wildland Fire Management

Under Alternative D, wildland fire use would be considered in all areas except where it would impact commercial forest land management areas or livestock grazing (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]). This is the most restrictive alternative. The risk of impacts on cultural resources would be greatest from unplanned wildland fire, since the locations of cultural resources would be less likely to be known and avoided during the fire and fire suppression.

Treatment of up to 60 percent of the CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas would be targeted over any 5-year period. This would be the most fuel treatment targeted among all of the alternatives. Treatment under this alternative is 50 percent more than under Alternative B, and three times those under Alternative C. A direct comparison to Alternative A cannot be made because, under Alternative A, specific percentages of the CFO FRCC 2 and 3 (moderate to high risk) WUI areas are not identified. Prescribed fire could be used on up to 15 percent, mechanical treatments on up to 15 percent, and chemical and biological controls on up to 36 percent. Planned fuel-reduction treatments could impact cultural resources, with the greatest risk of impacts resulting from prescribed fire and mechanical treatments. Since treatments reduce the potential for unplanned fire spread, some indirect risk to cultural resources would be reduced.

Effects from Cultural Resources Management

Effects would be the same as those identified for Alternative B.

Effects from Visual Resources Management

Proposed VRM Class I acres (7,205) and Class II acres (36,180) would be less than all the alternatives and would have the highest risk of impact to the visual setting of cultural resources. VRM Class I and II designations provide indirect protection for cultural resources where visual setting is a contributor to the significance of the property or the traditional use. Class I designations could indirectly reduce cultural resources risk from surface-disturbing activities in these areas.

Effects from Forest Products Management

Effects would be similar to those identified for Alternative B, except that, under Alternative D, estimated annual treatment acreage through removal of forest products would total 361 acres, which would be the most specified among the alternatives. It is anticipated that the treatment through the removal of forest products over the next 15 years would be less than 1 percent more than Alternative A, 33 percent more than Alternative B, and 47 percent more than Alternative C.

Effects from Livestock Grazing Management

Like Alternatives B and C, Alternative D would include the implementation of additional rangeland health standards that would reduce the potential for erosion and would thereby reduce some direct impacts on cultural resources. However, under Alternative D AUMs would be increased to 8,54~~0~~9,

allotments would be increased to 170, and grazed acres would be increased to 135,850. This is the most of all of the alternatives and would increase the risk of impacts on cultural resources from grazing activities.

Effects from Minerals Management

Effects would be similar to those identified for Alternative B, except that, under Alternative D, 35,045 acres would be open to leasing of fluid minerals and solid leasable minerals, subject to NSO constraints, and 32,013 acres would be subject to CSU constraints. This alternative includes more acres with restrictions than Alternative A but fewer than Alternatives B and C.

Effects from Recreation Management

Effects would be the same as those identified for Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those identified for Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described for Alternative A. Under this alternative, 23,189 acres would be Open to cross-country motorized use, 102,542 acres would be Limited to designated routes, and 18,069 acres would be Closed. The risk of impacts from open OHV use would be reduced from Alternative A but would be much greater than Alternatives B and C, where this activity would not occur. Alternative D would result in more risk of impacts on cultural resources than the other alternatives except Alternative A because of the Open motorized vehicle use and the expected increase in recreational use.

Effects from Lands and Realty Management

Effects would be the same as those identified for Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those identified for Alternative B, except that Alternative D would create fewer ACECs to protect resources and would allow more activities in ACECs, which would impact cultural resources through ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism.

ACECs would not be created at Upper Lolo Creek, Lower Lolo Creek, East Fork American River, or the American River Historic Sites District. Cultural resources in these areas would not be subject to the ACEC management and restrictions on incompatible activities.

Unlike Alternative B, livestock grazing would be permitted in the Wapshilla Ridge ACEC/RNA. Under Alternative D, construction of hydroelectric facilities, road construction, mineral entries, or other activities would be allowed in the Lower Lolo Creek ACEC.

Overall, Alternative D would protect the fewest RNAs and ACECs and would involve the most potential ground-disturbing activities, such as roads and vegetative treatments, in areas that would be restricted under the other alternatives. The risk of impacts on cultural resources would be greatest under this alternative.

Effects from National Trails Management

Effects would be the same as those identified for Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those identified for Alternative B.

Cumulative Effects

The types of effects on cultural resources that have occurred in the past include destruction of cultural resources, loss of integrity due to physical or other disturbances, loss of setting, the effects of natural processes such as erosion and weathering, incremental disturbance from use or access, loss of access to traditional cultural properties, and effects from vandalism and unauthorized collection.

Cultural resource values have and would continue to be considered and inventoried in the acquisition and disposal of lands. In cases where resources are identified, mitigations to resolve adverse effects can preclude other desirable management options. Easier access through consolidation could facilitate better management and access to traditional cultural properties, but it also could lead to more impacts on cultural resources. Increased frequency of wildland fire in the cumulative effects area, wildland fire use, and suppression are associated with surface and other disturbances to cultural resources. Fuel and vegetation treatments including prescriptive fire treatment, timber harvest, and watershed restoration actions planned regionally are associated with impacts to cultural resources due to ground disturbance, the effects of chemicals and fire, introduction of seeds and pollens that can affect archaeological data, and potential loss of access to traditional cultural properties.

Population growth, construction associated with urban development, access changes, and growth in recreation would continue to impact cultural resources through loss or disturbance of resources that are not protected, changes in setting, pressure from incremental use, loss of access to traditional cultural properties, and access leading to vandalism of cultural resources. Historic properties and trails adjacent to areas of growth and development would be most susceptible to future impacts. Areas where open, cross-country OHV use is allowed would continue to expose cultural resources to impacts. Designating routes can protect cultural resources located off the routes, but restrictions are difficult to enforce, especially as population and recreational use grows and other areas are closed. Actions related to grazing, timber harvest, and mineral development have had past effects on cultural resources. Utilization of natural resources within the CFO planning area is expected to remain at current or slightly increased levels

For actions that could affect cultural resources on federal land or actions that are funded, licensed, or permitted by the federal government, compliance is required with the NHPA and other laws, statutes, and regulations. Consideration of the effects of undertakings on protected cultural resources would be required, and any adverse effects would be resolved. For many types of cultural resources, information on the regional cultural resource base is not available and needs to be developed to properly assess the significance of the resource base. State agency actions using federal funds or needing a federal permit require cultural resource review. Impacts on cultural resources would be avoided or mitigated in many of the regional actions. Some effects would be unavoidable. Measures are in place to identify threats to resources and to prioritize management actions, but some effects on known or unknown cultural resources resulting from activities such as natural processes, wildland fire, grazing, dispersed recreation, OHV use, and vandalism can go unnoticed and may not be mitigated. Mitigation could preclude other desirable management options and future uses. Development or actions on lands that are not protected by federal or other cultural resource statutes

and regulatory protections could lead to loss of these resources and the regional heritage and knowledge that they contain.

Cumulative effects would be similar among the alternatives. Alternative A would contribute to more regional cumulative effects resulting from land tenure adjustments, open OHV use, and wildland fire suppression. In general, Alternatives B, C, and D provide more management measures than Alternative A that would directly or indirectly reduce the potential for cumulative effects. However, each of these alternatives would also greatly accelerate fuel-reduction treatments using all available methods within five years and would have fewer restrictions on wildland fire use. Alternative B would treat up to 40 percent of the CFO lands classified as FRCC 2 or 3, Alternative C would treat 20 percent, and Alternative D would treat 60 percent. While these measures may contribute to cumulative effects on cultural resources, planned fuel reduction could reduce the potential for unplanned fires, reducing effects on cultural resources. Overall, the emphasis in Alternative C on actions that value resource conservation, protection, and minimal human intervention would have the least impact or risk of impacts to cultural resources and would contribute the least to cumulative effects, but unplanned fire risk would be the greatest.

There are ongoing actions by Native American groups to assert tribal rights and traditional uses throughout the region. The RMP recognizes that tribal knowledge contributes to the management of cultural resources and that traditional use areas or sacred sites can be traditional cultural properties that need to be treated as protected cultural resources.

4.2.14 Paleontological Resources

Goal: Preserve and protect significant paleontological resources and ensure that they are available for appropriate uses.

Summary

Impacts to paleontological resources are not anticipated. There are no known vertebrate or invertebrate fossils on public land in the CFO, but there is some potential for these resources to be present. Under all alternatives, further project planning would be conducted to review paleontological sensitivity and to address any impacts that could result from authorized activities. If resources are present, impacts would most likely result from vandalism, land tenure adjustments that remove resources from federal protection, salable mineral development, fire suppression, or other actions that require large-scale disturbance of bedrock, weathered bedrock, or unconsolidated alluvial deposits. There are additional measures specified in Alternatives B, C, and D to identify priority geographic areas for field inventory, protect any resources found, and consider scientific, educational, and recreational uses for any paleontological discoveries. **Table 4-~~29~~ 30** identifies the indicators that were used to analyze effects on paleontological resources under each alternative.

Methods of Analysis

Indicators

If scientifically important paleontological resources were located or anticipated, then the indicators identified in **Table 4-~~29~~30**, Comparison of Paleontological Resources Indicators by Alternative, are used to identify the level of impact.

Table 4-30
Comparison of Paleontological Resources Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres and relative depth of ground-disturbing activities permitted	No Change	Overall decrease in ground-disturbing activities. Some increases in disturbance possible due to wildland fire and minerals	Overall decrease in ground-disturbing activities. Some increases in disturbance possible due to wildland fire and minerals	Overall increase in ground-disturbing activities. Some increases in disturbance possible due to wildland fire and minerals
Changes in access to or activities permitted in these areas	No Change	Net decrease in access	Net decrease in access	Net decrease in access
The extent that the management action changes the potential for erosion or other natural processes	No Change	Actions to reduce erosion are proposed	Actions to reduce erosion are proposed	Actions to reduce erosion are proposed

Source: BLM 2004a

Methods and Assumptions

There is no separate review process for effects on paleontological resources, but impacts are addressed under FLPMA, NEPA, other federal regulations, and BLM orders. Pursuant to FLPMA, the BLM has issued regulations that provide additional protection. Section 8365.1-5 of Title 43 CFR prohibits removing any scientific resource or natural object without authorization. There are exceptions to this prohibition for small quantities of common invertebrate fossils and petrified wood. Specific guidance is found in BLM Manual Section 8270, Paleontological Resource Management. The BLM manages paleontological resources for their scientific, educational, and recreational values and to ensure that any impacts are mitigated.

When areas containing fossils are identified during review of projects involving surface disturbance, land use authorizations, or title transfer, a formal analysis of existing data must be conducted to assess potential impacts on paleontological resources, and the need for a paleontological field inventory would be based on findings resulting from the above analysis. Consideration of impacts on paleontological resources includes an assessment of whether the project or action would result in the destruction or risk of destruction or unauthorized collection of fossils. Mitigations may be warranted where risks to vertebrate fossils, or noteworthy occurrences of invertebrate or plant fossils, are expected. Mitigation may be accomplished, for example, by 1) collecting data and fossil material, 2) by obtaining representative samples of the fossils, 3) by avoiding areas where fossils are found, or 4) in some cases by no action. In some cases, surface disturbance may expose fossils that could be excavated or interpreted for scientific study or public education.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- There has not been a formal paleontological resource inventory in the CFO. Major geologic units present in the CFO generally have little fossil potential, but fossils could occur in

Martin Bridge Limestone and the Latah Formation. There are no known vertebrate or invertebrate fossils on public land in the CFO, but there are known localities on private and National Park Service lands. Mammoth remains have been found in Tolo Lake. As such, there is some potential for paleontological resources in parts of the CFO;

- The greatest potential for impacts would result from actions that include direct large-scale disturbance of bedrock, weathered bedrock, or unconsolidated alluvial deposits that may include fossils of more recent geologic age;
- Exposed fossils or scientifically important paleontological resources can be damaged by wind and water erosion, animal and human intrusion, natural deterioration, and development and maintenance activities. Vandalism and unauthorized collecting can destroy a feature or remove it from its context and availability for scientific study; and
- Excavation can reveal previously undiscovered resources and potentially allow research and interpretive uses.

Effects Common to All Alternatives

Effects from Geology Management

No paleontological resources or impacts are anticipated. If paleontological locations were found, actions to identify and allow appropriate uses of significant geological features could protect these resources from inappropriate uses. Alternatives B, C, and D also include further measures for developing scientific, educational, and recreational uses. These are appropriate uses for paleontological resources, but there could be a greater risk of impacts from vandalism and unauthorized collecting as access is improved and locations become known.

Effects from Wildland Fire Management

No paleontological resources or impacts are anticipated. Wildland fire use and suppression can involve ground-disturbing activities at depths that can directly affect paleontological resources, if present. These actions include constructing fire lines, bulldozing access roads, and using heavy equipment. High-intensity fire can also cause damage to surface fossils, including cracking, spalling, and oxidizing. Fire can result in impacts through erosion and the increased visibility of paleontological resources. Fire can also remove vegetation and expose previously undiscovered resources, allowing their study and protection; however, locations exposed by fire can be susceptible to vandalism and unauthorized collecting. More flexibility in considering the use of wildland fire is proposed under Alternatives B, C, and D.

Effects from Paleontological Resources Management

No paleontological resources or impacts are anticipated. Measures under all of the alternatives call for an inventory of areas that may contain paleontological resources prior to land use authorizations. Alternatives B, C, and D also include additional protective management measures to identify priority geographic areas for field inventory and to protect any identified resources on a case-by-case basis.

Effects from Minerals Management

Impacts to paleontological resources are not anticipated. If present, paleontological resources could be impacted by the extent and depths of ground disturbance associated with salable and locatable mineral development. However, the potential for paleontological resources would be assessed prior to authorizing these activities.

Effects from Lands and Realty Management

Impacts to paleontological resources are not anticipated. The acquisition of new land would provide long-term federal protection to any paleontological resources contained therein. Exchange or disposal of lands to non-federal entities would permanently remove federal protections for paleontological resources present. The potential for paleontological resources would be assessed prior to authorizing these activities.

Cumulative Effects

Paleontological resources are not anticipated in the CFO. Cottonwood RMP actions are not anticipated to impact paleontological resources or contribute to cumulative effects.

4.2.15 Visual Resources

Goal: Manage activities to maintain scenic quality.

Summary

Alternative C would best manage activities to maintain scenic quality followed by Alternatives A and B, with Alternative D providing the least focus on ~~promoting~~ protecting scenic quality. Fuel-reduction projects emphasized in Alternatives B and D may have short term impacts on visual quality with potential long term benefits of reducing fire risk and the associated viewshed impacts from fire. **Table 4-~~30~~ 31** identifies the indicators that were used to analyze effects on visual resources and how each alternative would affect them.

Table 4-31
Comparison of Visual Resources Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Summary of Effects	Manages scenic quality somewhat less than Alternative C.	Manages scenic quality slightly less or similarly to Alternative A.	Scenic quality is most intensely managed.	Least-intensive management of scenic quality.
Changes to scenic quality from air quality management	No net change	No net change	No net change	No net change
Changes to scenic quality from water resources management	No net change	No net change	No net change	No net change
Changes to scenic quality from wildland fire management	No net change	Net decrease	Net increase	Net decrease
Acres by VRM class	Class I: 12,704 Class II: 41,195 Class III: 62,289 Class IV: 27,639	Class I: 12,704 Class II: 41,195 Class III: 62,289 Class IV: 27,639	Class I: 26,945 Class II: 46,753 Class III: 42,489 Class IV: 27,636	Class I: 7,205 Class II: 36,180 Class III: 72,803 Class IV: 27,635
Changes to scenic quality from PSQ	6,600 MBF (ASQ) Greatest potential change	3,129 MBF Less than A and D, more than C	3,101 MBF Least potential change	4,823 MBF Less than A, more than B and C
Changes to scenic quality from minerals management	No net change	Net increase in quality	Net increase in quality	Net increase in quality
Changes to scenic quality from transportation and travel management	No net change	Net increase in quality	Net increase in quality	Net increase in quality

Table 4-~~30~~31
Comparison of Visual Resources Indicators by Alternative *(continued)*

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Changes to scenic quality from ACEC/RNA management	No net change	Net increase in quality	Net increase in quality	Net decrease in quality
Changes to scenic quality from wild and scenic rivers management	Net increase	Net increase	Net increase	Net increase
Changes to scenic quality from wilderness and WSA management	No net change	No net change	No net change	No net change

Source: BLM 2004a

Methods of Analysis

Indicators

For visual resources, indicators used to assess impacts are outlined in **Table 4-~~30~~31**, Comparison of Visual Resources Indicators by Alternative.

Methods and Assumptions

Potential impacts on visual resources from each alternative are based on interdisciplinary team knowledge of the resources and the CFO planning area, and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- Scenic resources would remain in demand within the CFO over the life of the RMP; and
- Conflicts regarding fuel treatments and retention of scenic beauty will increase as rural subdivision development increases; and
- The demand for recreational use would continue to increase over the life of the RMP, increasing the value of open spaces and undeveloped landscapes.

Effects Common to All Alternatives

Effects from Air Quality Management

The BLM would minimize degradation of the airshed by managing wildland fire, including prescribed fire, while meeting federal and IDEQ air quality and opacity standards. This would continue to promote visually clear skies over BLM-managed lands.

Effects from Water Resources Management

The BLM would continue to protect and maintain watersheds so that they appropriately capture, retain, and release water of quality that meets or exceeds state and federal standards. This would promote clean water in, for example, streams, resulting in visually clear aquatic landscapes.

Effects from Wildland Fire Management

The BLM would allow no more than 30 percent of CFO acres to burn in combination of wildland fire and/or prescribed fire (including wildland fire use) in any 5-year period. This would continue to

allow the landscape to be visually altered by fire over time. The BLM would design, develop, and implement hazardous fuels-reduction projects.

The BLM would base suppression methods on resource values (e.g., streams, cultural sites, WSAs, ACECs, VRM Class I and II areas, slopes and soils, and access) consistent with the Values at Risk identified in **Appendix H**, Wildland Fire Management (see Volume II~~I~~). Suppression methods would be designed to meet VRM class objectives as much as possible but could be superseded by priorities such as firefighter and public safety.

Effects from Wild and Scenic Rivers Management

Management of the outstandingly remarkable values of river segments found suitable for inclusion in the NWSRS would protect scenic values along the segments. Wild river segments are afforded a VRM Class I designation, directly increasing visual resource protection along the suitable segment.

Alternative A

Effects from Wildland Fire Management

The BLM would design, develop, and implement hazardous fuels-reduction projects. These projects should be developed and implemented consistent with the fuels treatment priorities and protocols displayed in **Appendix H**, Wildland Fire Management (see Volume II~~I~~). Fuels treatment protocols common to all ~~FMU~~FMAs (**Appendix H**, Wildland Fire Management) states treatments occurring in areas classified or inventoried as VRM Class I and II areas would consider visual qualities. Under current management, the BLM would implement fuel treatment projects only if the project fully meets existing VRM class designations. Changes to visual landscapes could occur, but the level of modification would be consistent with established VRM class objectives.

Effects from Visual Resources Management

The BLM would manage the following acreage of BLM land according to existing VRM class designations in **Table 4-~~31~~32**. VRM Class III contains the largest amount (43 percent) of acreage in the CFO planning area, allowing moderate changes to the visual landscape. Class I areas, covering smallest portion of the planning area (9 percent), strive to preserve the existing character of the landscape.

Table 4-32
VRM Classes on BLM-administered Lands

VRM Class	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
Class I	12,704	12,704	26,945	7,205
Class II	41,195	41,195	46,753	36,180
Class III	62,289	62,289	42,489	72,803
Class IV	27,639	27,639	27,636	27,635

Source: BLM 2004a

Effects from Forest Products Management

Under Alternative A, the level of permitted forest practices are designated by acreage for the CFO. Forest treatments located in Class I and II VRM areas would need to be designed to meet those areas objectives. Class III and IV areas would be subject to greater effects. Under Alternative A, the

estimated annual treatment acres through removal of forest products are 358 acres. It is anticipated that the treatment through the removal of forest products would be more than the other alternatives over the next 15 years, with the exception of Alternative D (361 acres). The estimated annual timber harvest of 6,600 MBF on 35,757 acres, would continue. Since the most timber would be extracted under this alternative, potential effects on visual resources from forest practices would be greatest under Alternative A.

Effects from Livestock Grazing Management

The BLM would manage the following number of grazing allotment acres on BLM-administered land with VRM designations in **Table 4-~~32~~33**. Most grazing (35 percent) would continue to occur in VRM Class III areas, and the least amount of grazing (5 percent) would occur in VRM Class I. Existing livestock facilities would continue to affect the visual resources over the long-term but lands in the CFO are agricultural and intermixed with private lands where livestock and livestock handling facilities are common components of the viewshed. New range improvements would be developed so to blend with the viewshed.

Table 4-33
VRM Class on Livestock Grazing Allotments

VRM Class	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
Class I	6,572	6,572	15,691	6,044
Class II	35,133	32,533	22,145	28,552
Class III	50,715	40,463	39,009	69,938
Class IV	25,961	23,517	21,890	26,937

Source: BLM 2004a

Effects from Minerals Management

The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~33~~34**.

Table 4-34
Minerals Designations by VRM Class for Alternatives A and B

Minerals Designations	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Leasables Open	0	39,734	62,276	27,608	129,619
Leasables Closed	12,704	1,450	0	0	14,154
Locatables Open	5,826	24,946	62,165	27,594	120,530
Locatables Closed	6,878	16,238	112	15	23,242
Salables Open	0	41,033	62,273	27,608	130,914
Salables Closed (discretionary and nondiscretionary)	12,704	151	3	0	12,858

Source: BLM 2004a

Leasable, locatable, and salable minerals activities would be allowed on 90 percent, 84 percent, and 91 percent, respectively, of BLM-administered land. The BLM would not designate NSO and CSU areas and there would be no mineral leasing stipulations; rather, stipulations would be established on

a case-by-case basis. Not requiring stipulations could result in surface disturbances (such as road construction and site development) associated with minerals activities that could damage visual resources.

Effects from Transportation and Travel Management

The BLM would manage areas designated as open, limited, and closed to motorized vehicles according to **Table 4-~~34~~35**.

There would be no change in the designation of Open, Limited, and Closed areas for motorized vehicles under this alternative. The majority of OHV areas designated as Open are within VRM Class II and III areas. Most areas designated as Closed to motorized use are within VRM Class I areas. These designations provide protection to sensitive visual landscapes while allowing cross-country OHV use to continue in areas with lower VRM objectives.

Table 4-35
Motorized Vehicle Use Area by VRM Class for Alternative A

Motorized Vehicle Use Area	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Open	3	25,207	37,205	22,896	85,311
Limited	0	12,914	22,816	4,707	40,437
Closed	12,701	3,074	2,268	11	18,054

Source: BLM 2004a

Effects from Lands and Realty Management

The BLM would manage land designated for retention and disposal according to **Table 4-~~35~~36**.

Table 4-36
Retention and Disposal Areas by VRM Class for Alternative A

Land Tenure Adjustment	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Retention	12,624	37,038	36,034	10,773	96,468
Disposal	80	4,157	26,256	16,866	47,358

Source: BLM 2004a

There would be no change to land tenure adjustment and most of the land being retained would be VRM Class II and III.

Effects from ACEC/RNA Management

The BLM would manage areas designated as ACECs and ACEC/RNAs according to VRM designations in **Table 4-~~36~~37**. There would be no change in the designation of ACECs and ACEC/RNAs, so there would be no new effects.

Effects from Wilderness and Wilderness Study Areas Management

There would be no new WSAs or Wilderness, and WSAs and Wilderness would continue to be managed under VRM Class I management objectives, resulting in no new impacts. Should the WSAs be released by Congress from wilderness consideration, there are no actions under Alternative A related to how the WSAs would be managed, resulting in undetermined effects on visual resources.

Table 4-37
VRM Classes in ACECs and ACEC/RNAs

VRM Class	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
Class I	6,172	6,172	20,192	6,172
Class II	13,634	20,545	30,130	15,473
Class III	5,215	7,438	6,185	2,077
Class IV	439	220	3,740	84

Source: BLM 2004a

Alternative B

Effects from Wildland Fire Management

Effects would be similar to those described for Alternative A, except under Alternative B, the BLM would strive to meet VRM objectives as much as possible while implementing fuel treatment projects. Changes to visual landscapes could occur and the level of modification could be inconsistent with established VRM class objectives. Fuel treatments allowed in the WUI could affect VRM Class I and II areas, however, treatments would be severely limited and designed to meet VRM class objectives as much as possible.

Effects from Visual Resources Management

The effects would be similar to Alternative A. Additionally, Alternative B places more emphasis than Alternative A on managing activities that affect visual resources instead of just managing visual resources. This would provide more comprehensive protection to visual resources in general.

Effects from Forest Products Management

Effects would be similar to those described for Alternative A, except under Alternative B, the estimated annual treatment acres through removal of forest products would be 242 acres. It is anticipated that the treatment through the removal of forest products over the next 15 years would be 21 percent more than Alternative C, but 32 percent less than Alternatives A and D.

Effects from Livestock Grazing Management

The BLM would manage grazing allotments with VRM designations in **Table 4-~~32~~33**, VRM Classes on Livestock Grazing Allotments. There would be no change in the number of acres for livestock grazing in VRM Class I areas in comparison to Alternative A. Under this alternative, 79 percent of the VRM Class II land would be used for grazing, thereby providing greater protection (a 6-percent decrease from Alternative A) to visual resources in VRM Class II areas from livestock grazing impacts, such as trampled vegetation. This would provide greater protection to areas with high scenic qualities (i.e., VRM Class I and II areas).

Effects from Minerals Management

The areas open for leasables, locatables, and salables would be the same as those described under Alternative A (**Table 4-~~33~~34**, Minerals Designations by VRM Class for Alternatives A and B). Under this alternative, leasable mineral activities would be constrained by NSO and CSU stipulations (**Table 4-~~37~~38**).

Table 4-38
Mineral Leasing Stipulations by VRM Class for Alternative B

Minerals Designations	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Leasables NSO	<1	25,141	14,002	4,395	43,538
Leasables CSU	<1	41,110	1,115	174	42,400

Source: BLM 2004a

NSO and CSU stipulations (43,538 acres and 42,400 acres, respectively) would afford visual resources protection from surface disturbances (such as road construction and site development) associated with minerals activities. It is important to note, however, that the acres for NSO and the acres for CSU overlap.

Effects from Transportation and Travel Management

The BLM would manage areas designated as open, limited, and closed to motorized vehicles according to **Table 4-~~38~~39**.

Table 4-39
Motorized Vehicle Use Area by VRM Class for Alternative B

Motorized Vehicle Use Area	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Open	0	0	0	0	0
Limited	3	38,121	60,018	27,603	125,744
Closed	12,701	3,074	2,268	11	18,054

Source: BLM 2004a

Alternative B would provide more protection to visual resources than Alternative A because there would be no Open areas for cross-country motorized vehicles. Closed areas would remain unchanged. Most motorized vehicle use would occur in areas designated as both Limited and VRM Class II, III, or IV, with the greatest use occurring in areas designated as both Limited and VRM Class III. In Limited areas, motorized vehicle use would be allowed on designated routes. Although existing cross-country motorized vehicle use is low within Open areas (which comprise 59 percent of the planning area), eliminating all Open OHV areas would generally improve scenic quality by reducing the amount of terrain scarring and vegetation damage from motorized vehicles.

Effects from Lands and Realty Management

The BLM would manage land designated for retention and disposal according to **Table 4-~~39~~40**.

Table 4-40
Retention and Disposal Areas by VRM Class for Alternative B

Land Tenure Adjustment	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Retention	12,703	39,317	47,750	13,961	113,730
Disposal	1	1,878	14,540	13,678	30,096

Source: BLM 2004a

Compared to Alternative A, the BLM would retain more land in each individual VRM class, with the most additional land being retained having a VRM Class III designation. This would result in continued protection of visual resources.

Effects from ACEC/RNA Management

The BLM would manage areas designated as ACEC/RNAs according to VRM designations in **Table 4-~~36~~37**, VRM Classes in ACECs and ACEC/RNAs. Compared to Alternative A, the number of acres of ACEC/RNAs designated as VRM Class I would remain the same, and the number of acres of ACEC/RNAs designated as VRM Class II and III would both increase by approximately 50 percent. This could provide more protection to visual resources because management actions within ACEC/RNA designations typically limit certain activities to provide more protection to sensitive or valuable resources. For example, if the reason for designation is to protect vegetation or habitat, then the visual landscape associated with those resources would also be protected from disturbance and degradation.

Effects from Wilderness and Wilderness Study Areas Management

Should WSAs be released from wilderness consideration by Congress, the Snowhole Rapids WSA would be managed as VRM Class I, and the Marshall Mountain WSA would be managed as VRM Class II. Compared to Alternative A, this could result in less protection of the special visual resources in the Marshall Mountain WSA that were, in part, originally responsible for making the area suitable for designation as a WSA.

Alternative C

Effects from Wildland Fire Management

The effects would be the same as those described under Alternative B.

Effects from Visual Resources Management

Alternative C would provide more protection to visual resources than Alternative A. Most notably, Alternative C would more than double the amount of land designated as Class I. It would also increase by 5,558 acres the amount of land designated as Class II. Additionally, Alternative C places more emphasis than Alternative A on managing activities that affect visual resources instead of only managing visual resources. This would provide more comprehensive protection to visual resources in general.

Effects from Forest Products Management

Effects would be similar to those described for Alternative A, except under Alternative C, the estimated annual treatment acres through removal of forest products would be 191 acres, the least of all alternatives. It is anticipated that the treatment through the removal of forest products over the next 15 years would be 21 percent less than Alternative B and 47 percent less than Alternatives A and D.

Effects from Livestock Grazing Management

The BLM would manage grazing allotments with VRM designations in **Table 4-~~32~~33**, VRM Classes on Livestock Grazing Allotments. Under Alternative C, 58 percent of the VRM Class I land would be used for grazing, a 6-percent increase from Alternative A, which would diminish the unaltered quality of VRM Class I lands. Approximately 47 percent of VRM Class II land would be used for grazing, a decrease of 38 percent in comparison to Alternative A. Although more VRM Class I

lands would be grazed, overall this alternative would provide greater protection to visual resources in comparison to Alternative A because less land would be used for grazing.

Effects from Minerals Management

The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~40~~41**.

Table 4-41
Minerals Designations by VRM Class for Alternative C

Minerals Designations	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Leasables Open	14,241	45,293	42,477	27,605	129,615
Leasables Closed	12,704	1,450	0	0	14,154
Locatables Open	26,197	31,283	10,743	7,049	75,272
Leasables NSO	14,241	33,655	12,432	8,471	68,800
Leasables CSU	11,368	46,699	907	174	59,119
Locatables Closed	14,423	8,774	31	15	23,242
Salables Open	14,241	46,592	42,473	27,605	130,911
Salables Closed (discretionary and nondiscretionary)	12,704	150	3	0	12,857

Source: BLM 2004a

The percent of areas open for leasables, locatables, and salables would be the same as under Alternative A. Leasable mineral activities, however, would be constrained by the NSO and CSU stipulations (68,800 and 59,119 acres, respectively), which would afford visual resources protection from surface disturbances (such as road construction and site development) associated with minerals activities. It is important to note, however, that the acres for NSO and the acres for CSU overlap. In addition, Alternative C opens more VRM Class I and II land to locatables and salables compared to Alternative A, thereby provide less protection to visual resources areas of high value.

Effects from Transportation and Travel Management

The BLM would manage areas designated as open, limited, and closed to motorized vehicles according to **Table 4-~~41~~42**.

Table 4-42
Motorized Vehicle Use Area by VRM Class for Alternative C

Motorized Vehicle Use Area	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Open	0	0	0	0	0
Limited	11,687	44,606	41,852	27,600	125,745
Closed	15,258	2,148	637	11	18,054

Source: BLM 2004a

Similar to Alternative B, this alternative would provide more protection to visual resources than Alternative A, because there would be no areas designated as Open for OHV use. Although the

total area closed to motorized vehicles would remain unchanged, more emphasis would be placed on protecting visual resources in areas designated as both closed and VRM Class I. Alternative C provides the most opportunities for motorized vehicle use in VRM Class I areas (which would be in areas designated as limited). Most motorized vehicle use would occur in areas designated as both Limited and VRM Class II, III, or IV, with the greatest use occurring in areas designated as both limited and VRM Class II. In areas designated as limited, motorized vehicle use would be allowed on certain routes to protect visual resources by reducing the amount of terrain scarring from motorized vehicles and disturbances to vegetation.

Effects from Lands and Realty Management

The BLM would manage land designated for retention and disposal according to **Table 4-~~42~~43**.

Table 4-43
Retention and Disposal Areas by VRM Class for Alternative C

Land Tenure Adjustment	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Retention	26,698	44,776	28,296	13,959	113,728
Disposal	247	1,977	14,194	13,677	30,095

Source: BLM 2004a

Compared to Alternative A, the BLM would retain more land in VRM Class I and II areas, with the most additional land being retained having a VRM Class I designation. This would result in continued protection of visual resources characterized as having high value.

Effects from ACEC/RNA Management

The BLM would manage areas designated as ACEC/RNAs according to VRM designations in **Table 4-~~36~~37**, VRM Classes in ACECs and ACEC/RNAs. Compared to Alternative A, the number of acres of ACEC/RNAs designated as VRM Class I would more than triple, and the number of acres of ACEC/RNAs designated as VRM Class II would double. The number of acres of ACEC/RNAs designated as VRM Class IV would increase eightfold. This alternative would provide more protection to visual resources because management actions within ACEC/RNA designations typically limit certain activities to provide more protection to sensitive or valuable resources. For example, if the reason for designation is to protect vegetation or habitat, then the visual landscape associated with those resources would also be protected from disturbance and degradation.

Effects from Wilderness and Wilderness Study Areas Management

The effects would be the same as those described under Alternative B.

Alternative D

Effects from Wildland Fire Management

The effects would be the same as those described under Alternative B.

Effects from Visual Resources Management

Alternative D would provide less protection to areas with high scenic qualities (i.e., VRM Class I and II areas) than Alternative A. Most notably, Alternative D would reduce the amount of land designated as Class I by approximately 43 percent. It would also decrease by approximately 12 percent the amount of land designated as Class II.

Similar to Alternatives B and C, Alternative D places more emphasis than Alternative A on managing activities that affect visual resources instead of just managing visual resources. This would provide more comprehensive protection to visual resources in general.

Effects from Forest Products Management

Effects would be similar to those described for Alternative A, except under Alternative D, the estimated annual treatment acres through removal of forest products would be 361 acres, the most of all alternatives. It is anticipated that the treatment through the removal of forest products over the next 15 years would be less than 1 percent more than Alternative A, 33 percent more than Alternative B, and 47 percent more than Alternative C.

Effects from Livestock Grazing Management

The BLM would manage grazing allotments with VRM designations in **Table 4-~~32~~33**, VRM Classes on Livestock Grazing Allotments. Under Alternative D, 84 percent of the VRM Class I land would be used for grazing, a 32-percent increase from Alternative A, which would diminish the unaltered quality of VRM Class I lands. Approximately 79 percent of the VRM Class II land would be used for grazing, a decrease of 6 percent in comparison to Alternative A. Overall, this alternative provides the least visual resource protection through grazing management in comparison to all alternatives.

Effects from Minerals Management

The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~43~~44**.

Table 4-44
Minerals Designations by VRM Class for Alternative D

Minerals Designations	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Leasables Open	0	30,595	71,415	27,605	129,615
Leasables Closed	7,205	5,574	1,375	0	14,154
Locatables Open	6,456	28,284	14,175	5,315	54,980
Leasables NSO	<1	21,143	9,977	3,870	34,991
Leasables CSU	<1	30,607	1,232	174	32,013
Locatables Closed	6,879	14,862	1,487	14	23,242
Salables Open	0	30,595	72,711	27,605	130,911
Salables Closed (discretionary and nondiscretionary)	7,205	5,574	80	0	12,859

Source: BLM 2004a

The percentage of areas open for leasables, locatables, and salables would be the same as Alternative A. Leasable mineral activities, however, would be constrained by the NSO and CSU stipulations in **Table 4-~~43~~44**, Mineral Leasing Stipulations by VRM Class for Alternative D. NSO and CSU stipulations (34,991 acres and 32,013 acres, respectively) would afford visual resources protection from surface disturbances (such as road construction and site development) associated with minerals activities. It is important to note, however, that the acres for NSO and the acres for CSU overlap. In addition, Alternative D would opens more VRM Class III land to locatables and salables compared

to Alternative A, thereby providing more protection to visual resource areas of high value (VRM Class I and II).

Effects from Transportation and Travel Management

The BLM would manage areas designated as open, limited, and closed to motorized vehicles according to **Table 4-~~44~~45**.

Table 4-45
Motorized Vehicle Use Area by VRM Class for Alternative D

Motorized Vehicle Use Area	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Open	2	724	11,774	10,688	23,188
Limited	0	26,885	58,762	16,911	102,558
Closed	7,205	8,571	2,268	10	18,054

Source: BLM 2004a

In general, Alternative D would provide more protection to visual resources than Alternative A, because there would be fewer areas designated as Open for OHV use. Although the total area closed to motorized vehicles would remain unchanged, less emphasis would be placed on protecting visual resources in areas designated as both closed and VRM Class I, and more emphasis would be placed on protecting visual resources in areas designated as both closed and VRM Class II. Most motorized vehicle use would occur in areas designated as both Limited and VRM Class II, III, or IV, with the greatest use occurring in areas designated as both limited and VRM Class III. In areas designated as Limited, motorized vehicle use would be allowed on designated routes to protect visual resources by reducing the amount of terrain scarring from motorized vehicles and disturbances to vegetation.

Effects from Lands and Realty Management

The BLM would manage land designated for retention and disposal according to **Table 4-~~45~~46**.

Table 4-46
Retention and Disposal Areas by VRM Class for Alternative D

Land Tenure Adjustment	VRM Class I (acres)	VRM Class II (acres)	VRM Class III (acres)	VRM Class IV (acres)	Total (acres)
Retention	7,204	35,035	57,530	13,959	113,728
Disposal	1	1,144	15,273	13,677	30,095

Source: BLM 2004a

Compared to Alternative A, the BLM would retain more land in VRM Class III and IV areas and less in VRM Class I and II areas. This would result in continued protection of visual resources characterized as having moderate to low value and the loss of protection of visual resources characterized as having high value.

Effects from ACEC/RNA Management

The BLM would manage areas designated as ACEC/RNAs according to VRM designations in **Table 4-~~36~~37**, VRM Classes in ACECs and ACEC/RNAs. Compared to Alternative A, the number of acres of ACEC/RNAs designated as VRM Class I would remain the same, and the number of acres of ACEC/RNAs designated as VRM Class II would increase by 1,839 acres. However, the number of acres of ACEC/RNAs designated as VRM Class III and IV would decrease by 3,493 acres. As a result, 1,675 acres would no longer be designated as ACEC/RNAs. Management activities associated with these acres would still be required to comply with VRM class management objectives; however, the visual resources associated with these lands would no longer be afforded the added protection associated with ACEC/RNA designation, which limits the types of allowable activities.

Effects from Wilderness and Wilderness Study Areas Management

The effects would be the same as those described under Alternative B.

Cumulative Effects

Effects of past actions and natural events including wildland fires, wildland fire suppression, mining, vegetation treatments, sale of forest products, motorized vehicle use, noxious weed invasion, subdivision of rural lands, and road construction have affected visual resources in the CFO planning area.

Foreseeable future actions affecting visual resources within the CFO planning area mirror many of the actions that have occurred in the past. The BLM cannot prevent certain events, such as landscape level projects conducted by other agencies like the Forest Service, nor can the BLM entirely prevent events such as wildland fires. The BLM does have greater control over activities, such as mining, the sale of forest products, and motorized vehicle use. The public living closer to public lands creates challenges to managing visual resources on public lands immediately adjacent to urban areas. It is assumed that the BLM would update its VRM class designations, if necessary.

All alternatives would continue to contribute to the protection of visual resources. Alternative A could contribute to scenic quality effects through timber management activities. Alternatives B and D, and to a lesser extent Alternative C, could contribute to adverse scenic quality effects through fuel-reduction projects because VRM guidelines could generally not be met. Overall, Alternatives B, C, and D would improve VRM class retention, increase actions to protect scenic quality from mineral activities and travel and transportation management, and increase viewsheds along wild and scenic rivers, in comparison to Alternative A.

4.3 RESOURCE USES

4.3.1 Forest Products

Goal: Provide forest products to help meet local and national demands.

Summary

Alternative A best meets the goal of providing forest products to help meet local and national demands, followed by Alternative D, B, and then C. In all alternatives, RCA stream buffers and protection measures for wildlife, special status species, and visual quality would limit where, how,

and when treatments could occur. **Table 4-~~46~~ 47** identifies the indicators that were used to analyze effects on forest products under each alternative.

Table 4-47
Comparison of Forest Products Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Predicted annual PSQ in MBF	6,600 (ASQ)	3,129	3,101	4,823
Acres of forest management per year	358	242	191	361
Acres of forest management in a 15-year period[1]	Estimated 5,370	3,630	2,865	5,415
Annual PSQ foregone for custodial forest	unknown	2,488	2,731	2,235
Commercial Forest Base Acres	35,757	40,598	34,611	45,190

Source: BLM 2004a

[1] Based on the annual acres of forest management multiplied by 15 years.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For forest products management, the indicators used for impact analysis are identified in **Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative.

Methods and Assumptions

This analysis is based on the following methods and assumptions:

- Alternative A depicts ASQ (the average timber volume allowed), while the PSQ (the timber volume estimated to be reasonable considering environmental, economic, and budgetary condition) is predicted in Alternatives B, C, and D. ASQ and PSQ can not be directly compared;
- Social and economic opportunities will be accomplished following vegetation management objectives, and actions and effects are included in the vegetation management discussion;
- Forest product goals can be achieved while still meeting other resource management requirements;
- Burned timber may be salvaged in all areas unless it is specifically prohibited, including timber burned as a result of prescribed fire or wildland fire use; and
- Management actions related to protection of water quality, riparian areas, soils, fisheries, wildlife, special status plants, and ACECs, among others, affect the acres and output of forest products and are considered in the estimated PSQ.

Effects Common to All Alternatives

Effects from Soils Management

Protecting landslide-prone and sensitive areas could restrict timber harvesting in these areas. Decommissioning, obliterating, or partially recontouring roads would make them unavailable for use for producing forest products. This could result in constructing additional roads elsewhere or using other potentially more-expensive logging systems.

Effects from Water Resources Management

Road management actions specified in **Appendix F**, Aquatic and Riparian Management Strategy (see Volume III), could result in areas where timber harvesting is limited because it could require using other potentially more-expensive helicopter or skyline systems.

Water quality protection measures would affect transportation and logging systems. This could reduce timber volume availability in some watersheds.

Effects from Vegetation—Riparian and Wetlands Management

Riparian and wetlands actions would have the same effect on forest products as those described under the Effects from Vegetation—Riparian and Wetlands Management in the Vegetation—Forests section (Section 4.2.5) for each alternative.

Effects from Wildlife and Special Status Wildlife Management

Providing suitable habitat for and reducing impacts on federally listed species could result in areas where forest product removal would be prohibited or restricted. The effects depend on the listed species and the requirements for each species of concern.

Effects from Special Status Plants Management

Modifying projects to avoid or minimize adverse impacts on listed plants would result in areas where forest product removal would not be allowed or would be restricted.

Effects from Wildland Fire Management

Wildland fire use could reduce merchantable forest products in some areas if they are completely consumed by fire or could create merchantable forest products if the burned timber is salvaged.

Suppressing fires would prevent forest products from being burned.

Treating areas to reduce FRCC or hazardous fuels would produce some forest products.

Effects from Visual Resources Management

Effects would be the same as those described under the Effects from Visual Resources Management in the Vegetation—Forests section (Section 4.2.5).

Effects from Wild and Scenic Rivers Management

Effects would be the same as those described under the Effects from Wild and Scenic Rivers Management in the Vegetation—Forests section (Section 4.2.5).

Effects from Cultural Resources Management

Minimizing effects by redesigning or canceling projects could reduce the availability of forest products.

Effects from ACEC/RNA Management

Effects would be the same as those described under the Effects from ACEC/RNA Management in the Vegetation—Forests section (Section 4.2.5) for each alternative.

Effects from Livestock Grazing Management

Effects would be the same as those described under the Effects from Livestock Grazing Management in the Vegetation—Forests section (Section 4.2.5).

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations could limit production of forest products in areas not previously identified or could limit actions in planned treatment areas.

Alternative A

Effects from Vegetation—Forests Management

See Effects from Forest Products Management, below.

Effects from Forest Products Management

Based on timber harvest output since 1992, which averaged 2,000 to 11,000 MBF annually, the annual ASQ is estimated at about 6,600 MBF on approximately 358 acres. This estimate serves as a baseline for comparing alternatives. Under Alternative A, 24,257 acres would be intensive management, 11,500 acres would be extensive management, resulting in 35,757 acres of forest land would be included in the commercial timber base. The remaining 37,549 acres of forest land would be considered custodial and would not be managed for timber, although harvesting could occur for other ecological reasons.

Requirements to maintain snags and hiding cover in cutting units could affect both the efficiency of timber harvesting (making it more expensive or difficult) and reduces the amount harvested in each unit.

Reforestation requirements would ensure that adequate restocking occurs for future timber production.

Alternative B

Effects from Vegetation—Forests Management

Under Alternative B, 40,598 acres of forest land would be included in the commercial timber base. The remaining forest land would be considered custodial and would not be included in the commercial base for PSQ calculations, although harvesting could occur for ecological reasons.

Approximately 21,403 acres of commercial forest (62 percent of the commercial forest; **Table 4-~~47~~48**) would be in the 1,000-acre or larger blocks subject to DFC (24,789 acres) (**Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]). Maintaining more of the large tree components in the dry conifer types would reduce the timber volume removed per acre in those types. Dry conifer is the most common type in the CFO and where most forest products production occurs; therefore, by reducing the volume per acre removed, more acres would need to be harvested for each MBF. Additionally, longer rotations (years between initiation and cutting) would be needed to reach and maintain the large tree component, resulting in few acres available for longer periods of time, as compared to Alternative A, which does not have this DFC.

Designating custodial forest would result in the loss of 2,483 MBF of sale quantity timber per year on 224 acres (**Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative).

Table 4-48
Commercial Forest in Desired Future Condition Blocks under Alternative B

Total Commercial Forest Land	Total in DFC blocks	Commercial Forest Land in DFC Blocks	Percent of DFC Blocks that are Commercial Forest Land	Percent of Commercial Forest Land in DFC Blocks
40,598 acres	24,789 acres	21,403 acres	86%	53%

Source: BLM 2004a

Effects from Wildlife and Special Status Wildlife Management

Volume would be reduced due to large tree retention, so forest vegetation management would become more expensive, resulting in situations where the BLM must pay to have trees removed, instead of the timber purchaser paying the BLM for the timber.

Effects from Forest Products Management

The PSQ is calculated based on acres that can be managed. Acres that are reserved for other purposes such as ACECs, special designations, or custodial forest reduce the potential PSQ. In Alternative B, approximately 242 acres (**Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative) could be harvested annually for an output of 3,129 MBF. The potential output (based on vegetation type, current tree size, and stocking level) is 5,375 MBF on 458 acres annually, indicating that custodial acres would cause the PSQ to be reduced by 42 percent of its potential output. Reforestation requirements would ensure that adequate restocking occurs for future timber production.

Effects from Transportation and Travel Management

Decommissioning or obliterating roads would make them unavailable for most forest vegetation management actions, requiring more-expensive helicopter or skyline systems.

Alternative C

Effects from Vegetation—Forests Management

Under Alternative C, 34,611 acres of forest land would be included in the commercial timber base. The remaining forest land would be considered custodial and would not be managed for timber, although harvesting could occur for other ecological reasons.

Approximately 21,607 acres (62 percent of the commercial forest; **Table 4-~~48~~49**) would be in the 500-acre or larger blocks subject to DFC (28,087 acres) (**Appendix D**, Desired Future Conditions for Forest Vegetation/Wildlife Habitat [see Volume II~~I~~]). Effects would be similar to those described under Alternative B.

Effects of designating custodial forest would be the 2,759 MBF of sale quantity per year on 273 acres (**Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative).

Table 4-49
Commercial Forest in Desired Future Condition Blocks under Alternative C

Total Commercial Forest Land	Total in DFC blocks	Commercial Forest Land in DFC Blocks	Percent of DFC Blocks that are Commercial Forest Land	Percent of Commercial Forest Land in DFC Blocks
34,611 acres	28,087 acres	21,607 acres	77%	62%

Source: BLM 2004a

Effects from Wildlife and Special Status Wildlife Management

Effects would be similar to those described for Alternative B, except changes in timber sale value would decline even more with the requirements to retain more large trees.

Effects from Forest Products Management

In Alternative C, approximately 191 acres could be harvested annually for an output of 3,101 MBF. The potential output is 5,861 MBF on 464 acres annually, indicating that custodial acres would cause the PSQ to be reduced by 47 percent of its potential output (**Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative). Reforestation requirements would ensure that adequate restocking occurs for future timber production.

Effects from Transportation and Travel Management

Effects would be the same as those described for Alternative B.

Alternative D

Effects from Vegetation—Forests Management

Under Alternative D, 45,190 acres of forest land would be included in the commercial timber base. The remaining forest land would be considered custodial and would not be managed for timber, although harvesting could occur for other ecological reasons.

Effects of designating custodial forest would be the loss of 2,210 MBF of sale quantity per year on 187 acres.

Effects from Forest Products Management

In Alternative D, approximately 361 acres could be harvested annually for an output of 4,823 MBF. The potential output is 7,033 MBF on 548 acres annually, indicating that custodial acres would cause the PSQ to be reduced by 32 percent of its potential output (**Table 4-~~46~~47**, Comparison of Forest Products Indicators by Alternative). Reforestation requirements would ensure that adequate restocking occurs for future timber production.

Cumulative Effects

Effects of past actions, natural events, and region-wide assessments (e.g., fire, logging, insect and disease, road construction, ICBEMP) that have affected forest products are documented in Chapter 3 (Section 3.3.1, Forest Products). In summary, PSQ has declined over the last 20 years, and the small log market has developed.

Timber harvesting levels have declined on all federal lands in northern Idaho, have held relatively constant on state lands, and have increased on private lands. Using 2003 figures for the 10 northern counties, the BLM produced 0.4-percent of the timber sold in northern Idaho between 1994 and 2003.

Wildland fires and insect and disease would continue to cause tree mortality. Currently, some dead trees are salvage logged, although logging response to fire or insect and disease has also declined across all federal lands and has held relatively constant on state and private lands. It is uncertain whether future mortality would result in an increase in output (from salvage logging) or a decrease in output (due to loss of trees without salvage logging).

Implementing the National Fire Plan and fuel-reduction treatments on adjacent lands could produce more commercial forest products. The effect on the overall market would be minimal because of the percentage contributed to the market by BLM-administered lands. These types of treatments frequently produce very small-sized products or biomass. The market trend for these products is expected to increase as more mills become able to handle them, and as more uses for the product are developed.

4.3.2 Livestock Grazing

Goal: Provide opportunities for grazing, while meeting rangeland health standards.

Summary

Alternative D would best provide opportunities for grazing while meeting Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]), followed by Alternative A then Alternative B, with Alternative C providing the least opportunities for grazing. Actions under most resource categories have the potential to affect livestock grazing. Grazing would be impacted when part of an allotment is restricted during vegetation treatments, prescribed burning, reforestation, or watershed or riparian restoration. Grazing exclusion areas designed to protect wildlife, sensitive species, or cultural or paleontological resources would impact livestock grazing. Mineral and energy development also would minimally impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of these facilities. **Table 4-~~49~~ 50** identifies the indicators that were used to analyze effects on livestock grazing under each alternative.

Table 4-50
Comparison of Livestock Grazing Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Change in Acres under Lease for Grazing				
Lands available for livestock grazing	No net change: 122,732 acres	Net decrease: 105,619 acres	Net decrease: 101,350 acres	Net increase: 135,850 acres
Grazing lands available for disposal	41,880 acres	30,098 acres	30,098	30,098
Change in AUMs Permitted on Allotments				
Available AUMs (Note: Other resource activities that change grazing acres would have same impact on AUMs)	No net change: 7,~~204~~ 200 AUMs	Net decrease: ~~6,254~~6,263 AUMs	Net decrease: 6,020 AUMs	Net increase: 8,54~~0~~9 AUMs

Table 4-50
Comparison of Livestock Grazing Indicators by Alternative *(continued)*

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Types of Livestock Authorized on Allotments[1]				
Number of allotments that have cattle grazing	157	155	135	159
Number of cattle AUMs	6,211	5,270	5,030	7,556
Number of allotments that have sheep grazing	4	4	4	4
Number of sheep AUMs	894	894	894	894
Number of allotments that have horse grazing	13	13	12	13
Number of horse AUMs	99	99	96	99

Source: BLM 2004a

[1] This table does not reflect the total number of allotments by alternative because some allotments are authorized for both cattle and horses, and cattle and sheep.

Methods of Analysis

Indicators

Management actions could result in impacts on livestock grazing management if they directly or indirectly changed the quantity and availability of the forage base. Changes in the forage base could result from vegetation treatments and management of fish and wildlife and special status species habitat, wildland fire, forestry, minerals, lands and realty, recreation, and special designations. Indicators that are used to quantitatively and qualitatively assess management changes that could affect livestock grazing are summarized in **Table 4-~~49~~50**, Comparison of Livestock Grazing Indicators by Alternative.

Methods and Assumptions

Impacts on livestock grazing are generally the result of activities that affect management of forage levels for individual grazing allotments and/ or reduction of allotment acreage. Impact analysis is based on interdisciplinary team knowledge of resources and the planning area, review of existing literature, and information provided by BLM specialists. Certain assumptions are made, including:

- Data regarding grazing allotments are compiled from BLM sources;
- BLM will continue to complete Rangeland health assessments in accordance with the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (1997)~~Rangeland health assessments are and would continue to be conducted on all allotments and under all alternatives on a yearly basis, based on a 10-year cycle~~;
- Monitoring of allotments is occurring yearly based on allotment priority and potential for impacts due to grazing use; and
- Scattered parcels surrounded by private land are difficult to control season of use and number of AUMs utilized.

Effects Common to All Alternatives

Effects from Air Quality Management

Actions associated with air quality management would have long-term effects on the livestock grazing program. Air quality issues that affect vegetation include particulate matter and fugitive dust from wildland fire use and prescribed fire. Dust could reduce the quality and regenerative capacity of shrubs, forbs, and grasses and would decrease the availability and palatability of forage for livestock. Implementing prescribed fire under the guidelines put forth by the Montana/Idaho Airshed Group and adhering to IDEQ BMPs to reduce air emissions would indirectly affect livestock forage in the long term.

Effects from Soils Management

Soils management considerations would generally result in enhanced vegetative conditions through actions designed to reduce erosion, which would indirectly increase forage levels for livestock. Where the potential for accelerated erosion exists or where soil cover (vegetation and litter) could be improved, changes in the livestock season and duration of use would be required to improve vegetative cover and to reduce impacts on soils. Long-term effects on livestock operations would result from implementing grazing adjustments designed to protect vegetation and soil resources. Measures identified to limit soil erosion and ground-disturbing activities would affect livestock grazing activities by permanently or temporarily closing affected areas within allotments to grazing.

Effects from Water Resources Management

Any project designed to enhance watershed health would also enhance vegetation resources by reducing erosion, which would have the indirect effect of increasing forage levels for livestock. However, livestock grazing would be affected by the need to adjust or modify current livestock management to achieve the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). In addition, grazing restrictions on season and duration of use would result from actions designed to protect and enhance water resources. Protecting water quality and watershed health would in some cases require changes in livestock management, such as deferred or shortened grazing periods, riparian pastures, increased cattle herding, and upland water development.

Management actions that result in increased water availability and forage base would indirectly affect livestock through improved livestock distribution and increased weight gain and conception rates. Protecting water quality standards would also affect livestock grazing by successfully managing habitat and water supplies for livestock grazing.

Effects from Vegetation—Weeds Management

Livestock do not always graze on weeds and invasive species. Encroachment of weeds into grazing areas reduces the preferred forage for livestock until treated. Actions to prevent and control invasive and noxious weeds using integrated weed management techniques could affect livestock grazing in the short term if livestock are excluded in the treatment areas until revegetation has taken place. Livestock grazing would improve over the long term by increasing forage, as the ecological condition of vegetation in grazing allotments improves following restoration.

Effects from Vegetation—Rangelands Management

Vegetation treatments designed to enhance vegetative conditions would directly affect livestock grazing activities by enhancing and increasing the forage base and vegetation age and structural

diversity, thereby improving livestock distribution and forage utilization. Vegetation treatment areas would receive short-term deferment to allow vegetation to recover. However, enhanced forage availability and forage base would be realized over the long term with herbaceous vegetation replacing woody shrub species.

Effects from Vegetation—Riparian and Wetlands Management

Livestock adjustments in riparian areas could also be needed to meet a PFC rating and the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). Vegetation/fuel treatment could improve vegetation composition in riparian areas. Managing vegetation to meet DFCs would affect livestock grazing by providing shade in riparian areas within woody communities; however, there would be a reduction in forage availability and forage base.

Effects from Wildlife and Special Status Wildlife Management

Grazing conflicts could arise where there is direct competition with wildlife for forage. Big game species, such as elk and deer, compete for similar forage as cattle, sheep, and horses. During certain times of the year, the competition can be more pronounced. In the fall, sheep and cattle prefer the same browse species as deer and elk. Indirect impacts also could occur. For example, if elk calving occurred within grazing allotments, the calving areas could be closed to livestock during the calving season (spring).

Livestock management adjustments would be considered when wildlife and livestock conflicts arise as a result of competition for water, forage, or cover. In wildlife crucial habitat areas, livestock management adjustments would be implemented to reduce short- and long-term livestock impacts on wildlife. In addition, uneven distribution of big game causes some grazing allotments to receive a disproportionate amount of the total wildlife grazing within the planning area, which could necessitate adjustments in livestock management. Water developments designed to provide new water sources for wildlife in some situations would result in increased water availability for livestock, which would promote long-term improved distribution of both livestock and wildlife.

Actions to protect federally listed and BLM sensitive species and their habitats could affect livestock grazing by limiting grazing areas and seasons of use. For example, if a species were discovered within an allotment, the habitat could be protected by an exclosure during season of use. Sensitive wildlife habitats (e.g., crucial winter range) would also influence the location, timing of construction, and cost of range improvements.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Protection of springs, seeps, and adjacent riparian areas from grazing animals would provide cleaner and more dependable water sources for livestock. Fisheries actions, such as stream restoration and fish reintroduction, could reduce available forage through the construction of exclosures and riparian pastures. In addition, adjustments in livestock management, such as timing and duration of grazing, could be needed to ensure adequate fish habitat.

Effects from Special Status Plants Management

Actions to protect federally listed and BLM sensitive plant species could affect livestock grazing by limiting grazing areas and seasons of use. For example, if a listed plant species were discovered within an allotment and the species were being adversely affected by livestock grazing, it could require construction of an exclosure to protect it.

Effects from Wildland Fire Management

Grazing could be affected by wildfires and planned vegetative treatments, such as prescribed fire, chemical treatment, seeding, and brush and tree removal. BLM policy recommends that areas burned by wildland fire and prescribed burns for fuels-reduction project sites receive a minimum of two growing seasons of rest from livestock grazing or until vegetation objectives are met. Livestock closures for less than two growing seasons may be justified on a case-by-case basis, based on sound resource data and experience.~~BLM policy requires that areas burned by wildland fires and prescribed burns for fuel-reduction project sites receive a minimum of two growing seasons of rest from livestock grazing to ensure species regrowth and that existing vegetation or seeded vegetation become established.~~ In addition, vegetation resource objectives must be reached before grazing is reauthorized. Wildland fire could be used in all cover types and would have the same effect as prescribed burning.

Prescribed fires would have some impacts that would initially displace livestock and temporarily reduce forage and AUMs. Over the long term, prescribed fire normally improves forage base and availability in all vegetation cover types, which could improve livestock distribution. Chemical and mechanical treatments would also be used in all cover types to provide long-term benefits for vegetation and livestock. Only treatments approved for use on BLM-administered lands would be used. Generally, these treatment types would have a short-term impact on livestock grazing. Chemical treatments would focus largely on spot treatments to control noxious weeds and invasive species. Mechanical treatments would be used to remove conifers encroaching on aspen.

Deferring livestock use for two or more years after a wildland fire or some vegetation treatment allows new vegetation to establish and would have a short-term effect on livestock by temporarily reducing available AUMs and modifying grazing systems. Livestock would use unburned areas during the recovery period, or there would be temporary reductions in grazing use if other comparable forage or unused allotments were not available. Actions could also require that livestock be completely removed from allotments. Allotment restrictions would be managed on a site-specific, case-by-case basis for each vegetation treatment. Lessees could be required to lease additional private land, purchase additional forage, or reduce livestock numbers during interim periods when grazing is temporarily suspended. Wildland fires would have direct short-term impacts where wildland fire use damages livestock improvements such as fences and corrals, resulting in increased maintenance needs for the livestock operator and the need to herd livestock. Wildland fires could also reduce the pastures available for use.

Effects from Cultural Resources Management

In general, management actions associated with cultural resources affect relatively small localized areas and would have negligible effects on livestock forage. Even under the most intensive management, such as excavation, the acreage disturbed would be small. Fencing some cultural sites could exclude grazing and cause a loss of available forage. Restrictions on surface-disturbing and other disruptive activities near cultural sites could require that some range improvements be modified or relocated, and in rare cases improvements could be precluded. This too would have short-term negative effects on grazing.

Effects from Paleontological Resources Management

Effects would be the same as those described under Effects from Cultural Resources Management, above.

Effects from Visual Resources Management

Livestock and livestock handling facilities are a common and expected component within private and public lands in the Planning Area. Restrictions in VRM Class I and II areas could change the type, design, and location of new range improvements, but the restrictions would not necessarily preclude development that would result in long-term effects.

Effects from Livestock Grazing Management

~~The objectives and actions identified in Chapter 2, alternatives, affects the livestock grazing program by changing allotment boundaries, zeroing out vacant allotments, and implementing the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (Appendix A [see Volume III]).~~

~~Changing allotment boundaries and zeroing out allotments could impact grazing by reducing or increasing the amount of forage available to livestock. Implementing the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (Appendix A [see Volume III]) ensure healthy functional rangelands and productive livestock grazing practices~~The objectives and actions identified in Chapter 2, Alternatives, affects the livestock grazing program by determining allotment boundaries, class of livestock, season-of-use, and AUMs.

Effects from Minerals Management

Approximately 92 to 94 percent of grazing allotments would be open to mineral leasing, 81 to 84 percent would be open to locatable mineral development, and 93 to 95 percent would be open to salable mineral production under all alternatives. Impacts would be generally the same under all alternatives. Mineral development would impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities.

Effects from Recreation Management

Recreation would result in both direct and indirect short- and long-term effects on livestock grazing. Recreation activities would impact livestock grazing on public lands that allow for multiple uses by reducing forage through disturbance, and providing opportunity for harassment of grazing animals. Actions to protect recreation values could also impact livestock grazing by closing some areas to livestock grazing that overlap with specific recreation sites. Recreation would have some effect on livestock grazing through direct human disturbance, which displaces animals and injures or kills animals in vehicle-animal collisions on roads or highways. Grazing closures in recreational areas would result in a small loss of forage. Effects on livestock grazing would result from the temporary removal of vegetation by campers in concentrated areas. Vandalized range projects and gates left open would also affect grazing operations. These impacts would increase over the life of the RMP because the popularity of outdoor recreation is increasing. Educating members of the public who use these areas and emphasizing the benefits of multiple-use management would reduce some of these conflicts and could create advocates for traditional uses of BLM lands.

Effects from Renewable Energy Management

Developing solar, biomass, or wind energy could impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities in multiple-use areas.

Effects from ACEC/RNA Management

Managing ACEC/RNAs would result in direct and indirect effects on livestock grazing. In general, the protections afforded to these areas, such as restrictions on surface-disturbing and other disruptive activities, would help maintain and improve vegetation conditions, thereby maintaining or improving the forage base for livestock. However, some ACEC/RNA proposals could restrict grazing within specially designated areas, change seasons of use or implement additional management requirements.

Effects from Wilderness and Wilderness Study Areas Management

Managing WSAs would result in direct and indirect effects on livestock grazing. In general, the protections afforded to these areas, such as restrictions on surface-disturbing and other disruptive activities, would help maintain and improve vegetation conditions, thereby maintaining or improving the forage base for livestock.

Effects from Native American Tribal Uses Management

No specific effects have been identified from management actions regarding Native American tribal uses. The BLM would continue to consult with tribes regarding treaty rights, cultural access, and use of plants, animals, fish and habitats. Consultation could result in identifying areas where current or proposed livestock grazing could need to be modified to accommodate tribal uses or to avoid resources important to tribes. However, it is unlikely that accommodating tribal uses would be inconsistent with providing opportunities for grazing within the CFO in the long-term.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Actions to clean up newly discovered waste sites could temporarily impact livestock grazing practices by fencing off part of an allotment during cleanup and restoration of that site. Actions to correct and cleanup hazards and to protect closed sites would also help protect livestock from possible injury or contamination and well as improve the vegetative conditions around the sites.

Alternative A

Effects from Geology Management

Identifying and allowing for appropriate uses of significant geologic features would not impact livestock grazing practices.

Effects from Vegetation—Forests Management

The estimated treatment acreage of 760 acres of forested vegetation could impact livestock grazing in any two-year period. The short-term livestock grazing effects from reforestation would include the exclusion of livestock from reforested areas for two years. This would result in a short-term reduction in available grazing acreage and associated AUMs where reforestation coincides with grazing allotments. The long-term effects of excluding livestock from reforested areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing.

Effects from Vegetation—Riparian and Wetlands Management

Approximately 2,128 acres of riparian habitat (2 percent) of the 122,732 acres available for livestock grazing could impact livestock grazing practices under Alternative A. The objective to improve degraded riparian and wetland habitat across the CFO would affect livestock grazing if current grazing practices were the reason riparian habitat objectives were not being met. Monitoring of

current use does not indicate improving degraded riparian habitat is contrary to livestock grazing in Alternative A. Localized impacts to grazing may occur where monitoring indicates current use is not compatible with riparian objectives. These impacts may include implementing restoration measures that require the exclusion of grazing use, permanently or temporarily closing affected areas, and additional management requirements such as herding or vegetation use criteria.

Effects from Wildland Fire Management

Wildland fire use could occur on all CFO acres. The short-term livestock grazing effects from implementing prescribed burning would include the exclusion of livestock from prescribed burn areas for potentially a minimum of two years. This would result in a short-term reduction in available grazing acreage and associated AUMs where prescribed burn areas coincide with grazing allotments. The long-term effect of excluding livestock from prescribed burn areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing following the successful stabilization of soils and vegetation. Rehabilitation activities, particularly seeding would occur as soon as possible but not more than three years following a wildfire or prescribed burn event. Projects that would not be implemented immediately following fire could extend the time livestock would be restricted from areas, resulting in an additional temporary, short-term loss of the forage base.

Effects from Visual Resources Management

VRM I and II areas where livestock grazing occurs under Alternative A, (mainly along the Lower Salmon River) are in a pastoral area and adjacent to upslope private lands, where livestock and livestock handling facilities are a common and expected component. Livestock are visible in the viewshed on both private and public lands. Class I and II management areas could impact livestock grazing in allotments when new range improvements (e.g., fencing) are needed. The design and placement of new range improvements in those areas would have to be constructed in such a way as to repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape (as identified in BLM Handbook H-8410-1). Class III objectives state that the level of change to character of the landscape should be moderate; however, management activities could dominate the view and be the major focus of viewer attention (as identified in BLM Handbook H-8410-1). **Table 4-~~32~~33**, VRM Class by Livestock Grazing Allotment (located in section 4.2.15, Visual Resources), shows the VRM classes that overlay grazing allotments under each alternative.

Effects from Forest Products Management

Short-term and long-term effects due to exclusion of livestock following reforestation are described under Effects from Vegetation—Forests, above.

Effects from Livestock Grazing Management

Intensive management would be implemented in 13 allotments that incorporate rest grazing on 22,615 acres and deferred grazing on 27,700 acres. Intensive management would impact livestock grazing in the short-term by excluding livestock grazing from treatment areas until such time as management objectives are met. The long-term effect of excluding livestock from treatment areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing.

Effects from Minerals Management

Mineral development would impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities. Under Alternative A, mineral leases would be evaluated on a case by case basis in order to determine constraints and stipulations mandated by the lease (i.e., NSO or CSU) (**Table 4-~~50~~51**).

Table 4-51
Mineral Stipulations within Grazing Allotments

Mineral Stipulation	Alternative A	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
NSO	Case-by-case basis	32,950	35,397	32,427
CSU	Case-by-case basis	33,820	30,967	29,428

Source: BLM 2004a

Effects from Recreation Management

General effects of recreation on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 20 percent (24,278 acres) of available grazing areas would continue to be located in SRMAs.

Effects from Renewable Energy Management

Developing solar, biomass, or wind energy could impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities in multiple-use areas. Alternative A does not actively pursue renewable energy development and therefore would not likely impact livestock grazing.

Effects from Transportation and Travel Management

Under Alternative A, 66 percent (80,869 acres) of available grazing areas would continue to be designated as Open travel areas, which would allow cross-country motorized vehicle use (**Table 4-~~51~~52**, Travel Designations within Grazing Allotments). Increased demand for OHV use, could impact livestock grazing by increasing human-caused noise, dust, and vegetation disturbance, and by allowing greater opportunity for the harassment of grazing animals.

Table 4-52
Travel Designations within Grazing Allotments

Travel Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
Open	80,869	0	0	23,814
Limited	30,839	95,657	91,649	100,436
Closed	10,959	9,897	9,633	11,538

Source: BLM 2004a

Effects from Lands and Realty Management

Table 4-~~52~~ 53 displays land tenure actions proposed under all alternatives within available grazing allotments. Approximately 34 percent (41,880 acres) of available grazing allotments would be available for disposal or exchange under Alternative A. These allotments could be impacted if and when exchanges occur, if they result in a reduction in AUMs.

Table 4-53
Land Tenure within Grazing Allotments

Realty Action	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)
Retention Areas	80,855	75,055	72,840	105,286
Disposal Areas	41,880	30,564	28,574	30,564

Source: BLM 2004a

Effects from ACEC/RNA Management

Five ACEC/RNAs (21,484 acres) are located within grazing allotments under Alternative A. ACEC/RNAs could impact livestock grazing by limiting grazing within each ACEC/RNA, depending on the type of management identified. For example, under Alternative A, the Captain John Creek, Long Gulch, and the Skookumchuck ACEC/RNAs exclude livestock grazing. The Lucile Caves ACEC/RNA excludes livestock grazing within 136 acres of a fenced area.

Effects from Wilderness and Wilderness Study Areas Management

Protecting WSAs would impact livestock grazing by limiting additional range improvements and significant changes in grazing within each WSA until released by Congress (if that were to occur) for multiple uses. Approximately 6,045 acres of 13 allotments lie within the Snowhole Rapids WSA, and 528 acres of the Marshall Mountain Allotment lies within the Marshall Mountain WSA under Alternative A.

Alternative B

Effects from Geology Management

Limited public or commercial access to protected geologic sites could affect livestock grazing by preventing grazing in areas identified to be protected and could reduce AUMs that would otherwise be available under Alternative B. This impact would be slightly greater than under Alternative A.

Effects from Vegetation—Forests Management

Estimated treatment acreage of 466 acres of forested vegetation could impact livestock grazing in any two-year period under Alternative B. The short-term livestock grazing effects from reforestation would include the exclusion of livestock from reforested areas until such time as management objectives are met. This would result in a short-term reduction in available grazing acreage and associated AUMs where reforestation coincides with grazing allotments. The long-term effect of excluding livestock from reforested areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing. Less acreage would be impacted under Alternative B, however, these impacts could be greater or less than impacts under Alternative A depending on the time it takes to meet management objectives (greater or less than two years as identified in Alternative A).

Effects from Vegetation—Riparian and Wetlands Management

The 1,880 acres of riparian habitat (2 percent) of the 105,619 acres available for livestock grazing could impact livestock grazing practices under Alternative B. Impacts would be the same as those described under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

No new domestic sheep or goat grazing would be authorized where such would result in risk of disease transmission to bighorn sheep. This would limit potential for additional sheep and goat grazing in some areas. On existing sheep grazing allotments, coordination with grazing lessee's and appropriate state/federal agencies, and tribes would be taken to reduce or eliminate risks for domestic sheep transmission of disease. Primary focus would occur on allotments with high risk for disease transmission to bighorn sheep (**Table 4-15**, BLM Sheep Allotments and Risk Analysis for Disease Transmission to Bighorn Sheep). This would result in potential restrictions or modifications on existing sheep allotments.

Effects from Wildland Fire Management

Effects of Alternative B would be similar to those described in Alternative A, except effects of wildland fire use could occur in the Craig Mountain ~~FMU~~FMA and in portions of the Salmon ~~FMU~~FMA (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

VRM classes within available grazing areas under Alternative B would be similar to Alternative A (**Table 4-~~32~~33**, VRM Class by Livestock Grazing Allotment), as would impacts on new livestock grazing range improvements.

Effects from Forest Products Management

Short-term and long-term effects due to exclusion of livestock following reforestation are described under Effects from Vegetation—Forests, above.

Effects from Livestock Grazing Management

~~The Wapshilla Ridge, Craig Mountain WMA, and Corral Creek allotments that are currently vacant would be permanently closed under Alternative B, making the total number of available grazing allotments 166. AUMs would decrease by 950, a 13 percent reduction from Alternative A~~The Wapshilla Ridge Allotment (36279), Craig Mountain Allotment (36289), and Corral Creek Allotment (36290) have remained vacant for over ten years. These three allotments have remained vacant because the base property owner has no interest in grazing livestock. In addition, these three allotments are intermingled with the base property; consequently, the allotments could not be leased without affecting the private ground. The Wapshilla Ridge Allotment (36279), Craig Mountain Allotment (36289), and Corral Creek Allotment (36290) would be eliminated under Alternative B. In addition, the Lower Otto Creek Allotment would be created as a new allotment. The Lower Otto Creek allotment, when created, would consist of approximately 101 acres and support 15 AUMs and is accounted for in the totals described in this paragraph. The total number of available grazing allotments would be reduced from 168 to 166, the total number of acres would be reduced from 122,732 to 105,619, and the total number of AUMs would be reduced from 7,200 to 6,263, compared to Alternative A.

Effects from Mineral Resource Management

General effects of mineral resource management on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 31 percent (32,950 acres) of the 105,619 acres of available grazing areas would be located in NSO mineral lease areas and 32 percent (33,820 acres) would be located in CSU areas.

Effects from Recreation Management

General effects of recreation on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 25 percent (26,023 acres) of the 105,619 acres of available grazing areas would be located in SRMAs, a 5-percent increase from Alternative A.

Effects from Renewable Energy

Alternative B would actively pursue renewable energy development. Impacts would be greater on livestock grazing than under Alternative A due to the increased demand for supplying renewable energy.

Effects from Transportation and Travel Management

Under Alternative B, no available grazing areas would be designated as Open travel areas (**Table 4-~~51~~52**, Travel Designations within Grazing Allotments). Under Alternative B, 77 percent (80,869 acres) of available grazing areas would be changed from Open to Limited or Closed. Changing motorized vehicle use areas from an Open to a Limited or Closed designation would affect livestock grazing by reducing multiple uses on grazing allotments and thus reducing conflicts from such multiple uses (such as reduced grazing vegetation and harassment of livestock). Impacts to livestock grazing would be less than under Alternative A.

Effects from Lands and Realty Management

Approximately 29 percent (30,564 acres) of available grazing allotments (105,619 acres) would be available for disposal or exchange (**Table 4-~~52~~53**, Land Tenure within Grazing Allotments), which is 5 percent less than under Alternative A.

Effects from ACEC/RNA Management

~~Five~~ Six ACEC/RNAs (~~26,635~~27,720 acres) would overlap grazing allotments under Alternative B, ~~24~~ 29 percent more area than under Alternative A. Under Alternative B, livestock grazing would be excluded from the Wapshilla Ridge, Captain John Creek, Long Gulch, Skookumchuck, and Craig Mountain ACEC/RNAs. In addition, livestock grazing would be excluded from 136 acres of the Lucile Caves ACEC/RNA.

Effects from Wilderness and Wilderness Study Areas Management

Impacts on livestock grazing from WSAs would be similar to Alternative A.

Alternative C

Effects from Geology Management

Impacts would be greater than those identified under Alternative A and the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Estimated treatment acreage of 394 acres of forested vegetation could impact livestock grazing during forest treatments in any two year period under Alternative C. The short-term livestock

grazing effects from reforestation would include the exclusion of livestock from reforested areas until such time as management objectives are met. This would result in a short-term reduction in available grazing acreage and associated AUMs where reforestation coincides with grazing allotments. The long-term effects of excluding livestock from reforested areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing. Less acreage would be impacted under alternative C than under Alternatives A or B, however, these impacts could be greater or less depending on the time it takes to meet management objectives (greater or less than two years as identified in Alternative A).

Effects from Vegetation—Riparian and Wetlands Management

The 1,765 acres of riparian habitat (2 percent) of the 101,350 acres available for livestock grazing could impact livestock grazing practices under Alternative C. Impacts would be the same as those described under Alternatives A and B.

Effects from Wildlife and Special Status Wildlife Management

Potential exists for modification of authorized grazing or elimination of sheep or goat grazing where risks for transmission of disease from domestic sheep and goats to bighorn sheep occur. Effects to Livestock Grazing Management are similar to those described for Alternative B.

Effects from Wildland Fire Management

Effects of Alternative C would be similar to those described in Alternative A, as all areas would be considered for wildland fire use, provided resource goals could be met (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

Table 4-~~32~~33, VRM Class by Livestock Grazing Allotment, displays VRM class designations within available grazing allotments under Alternative C. Fifteen percent of the available grazing acreage would fall within VRM Class I areas, and 22 percent would fall within Class II areas. The impacts to new range improvements would be greater than all of the other alternatives because of the increase in Class I designated acreage.

Effects from Forest Products Management

Short-term and long-term effects due to exclusion of livestock following reforestation are described under Effects from Vegetation—Forests, above.

Effects from Livestock Grazing Management

Twenty-three allotments, which have been vacant for more than ten years would be eliminated as allotments. The total number of available grazing allotments would be reduced from 168 to 145, the total number of acres would be reduced from 122,732 to 101,350, and the total number of AUMs would be reduced from 7,200 to 6,020, compared to Alternative A.~~Twenty-three vacant allotments would be closed to livestock grazing under Alternative C, making the total number of available grazing allotments 145. Alternative C would reduce the acreage available for grazing by 21,321 acres (a 17-percent reduction from Alternative A) and 4,269 acres (a 4-percent reduction from Alternative B. AUMs would be reduced by 1,184 (a 16-percent reduction from Alternative A) and 234 acres (a 4-percent reduction from Alternative B). This would result in short-term and long-term impacts on livestock grazing uses, in greater intensity than the effects under Alternatives A or B.~~

Effects from Mineral Resource Management

General effects of mineral resource management on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 35 percent (35,397 acres) of the 101,350 acres of available grazing areas would be located in NSO mineral lease areas (a 4-percent increase from Alternative B) and 31 percent (30,967 acres) would be located in CSU areas (a 1-percent decrease from Alternative B) under Alternative C.

Effects from Recreation Management

General effects of recreation on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 24 percent (24,039 acres) of the 101,350 acres of available grazing areas would be located in SRMAs, a 4-percent increase from Alternative A and a 1-percent decrease from Alternative B.

Effects from Renewable Energy Management

Impacts would be greater on livestock grazing than under Alternative A and the same as those described under Alternative B.

Effects from Transportation and Travel Management

Impacts would be less than those identified under Alternative A and the same as those described for Alternative B.

Effects from Lands and Realty Management

Approximately 28 percent (28,574 acres) of available grazing allotments (101,350 acres) would be available for disposal or exchange (**Table 4-~~52~~53**, Land Tenure within Grazing Allotments), which is 6 percent less than under Alternative A and similar to Alternative B.

Effects from ACEC/RNA Management

Nine ACECs (28,259 acres) would be located in grazing allotments under Alternative C and would total 32 percent more area than under Alternative A and ~~6~~ 2 percent more than under Alternative B. Under Alternative C, livestock grazing would be excluded from the Wapshilla Ridge, Captain John Creek, Long Gulch, Skookumchuck, and Craig Mountain ACEC/RNAs. In addition, livestock grazing would be excluded from 136 acres of the Lucile Caves ACEC/RNA (same as under Alternative B).

Effects from Wilderness and Wilderness Study Areas Management

Approximately 6,025 acres of 12 allotments lie within the Snowhole Rapids WSA, and 528 acres of the Marshall Mountain Allotment lie within the Marshall Mountain WSA under Alternative C. The impact to livestock grazing would be similar to Alternatives A and B.

Alternative D

Effects from Geology Management

Impacts would be greater than those identified under Alternative A and the same as those described under Alternatives B and C.

Effects from Vegetation—Forests Management

Estimated treatment acreage of 680 acres of forested vegetation could impact livestock grazing during forest treatments in any two-year period under Alternative D. The short-term livestock grazing effects from reforestation would include the exclusion of livestock from reforested areas

until such time as management objectives are met. This would result in a short-term reduction in available grazing acreage and associated AUMs where reforestation coincides with grazing allotments. The long-term effect of excluding livestock from reforested areas would include the improvement in health, biomass, and diversity of forage in the areas once they are reopened to grazing. Less acreage would be impacted under Alternative D than under Alternative A. More acreage would be impacted under Alternative D than under Alternatives B or C. These impacts could be greater or less depending on the time it takes to meet management objectives (greater or less than two years as identified in Alternative A).

Effects from Vegetation—Riparian and Wetlands Management

The 2,324 acres of riparian habitat (2 percent) of the 135,850 acres available for livestock grazing could impact livestock grazing practices under Alternative D. Impacts on livestock grazing from riparian and wetlands vegetation management would be the same as Alternatives A, B, and C.

Effects from Wildlife and Special Status Wildlife Management

Potential exists for modification of authorized grazing or elimination of sheep or goat grazing where risks for transmission of disease from domestic sheep and goats to bighorn sheep occur. Effects to Livestock Grazing Management are similar to those described for Alternative B.

Effects from Wildland Fire Management

There would be no effects from wildland fire use from Alternative D, as wildland fire use would not occur in areas where livestock grazing is authorized (**Figure H-3**, Areas Available for Wildland Fire Use—Alternative D [see **Appendix H** in Volume II~~I~~]).

Effects from Visual Resources Management

Table 4-~~32~~33, VRM Class by Livestock Grazing Allotment, displays VRM class designations within available grazing allotments under Alternative D. Under Alternative D, 4 percent of available grazing acreage would fall under VRM Class I areas, and 21 percent of available grazing acreage would fall under VRM Class II areas. The impact to new livestock grazing range improvements would be similar to Alternatives A and B and less than under Alternative C.

Effects from Forest Products Management

Short-term and long-term effects due to exclusion of livestock following reforestation are described under Effects from Vegetation—Forests, above.

Effects from Livestock Grazing Management

Five grazing allotments would be expanded, and two allotments would be created. The total number of available grazing allotments would be increased from 168 to 170, the total number of acres would be increased from 122,732 to 135,850, and the total number of AUMs would be increased from 7,200 to 8,549, compared to Alternative A~~Two allotments would be opened under Alternative D, making the total number of available grazing allotments 170. Alternative D would increase the acreage available for grazing by 13,115 acres (11 percent) from Alternative A, 30,231 acres (29 percent) from Alternative B, and 34,500 acres (35 percent) from Alternative C. These changes would increase AUMs by 1,336, a 19-percent increase from Alternative A, a 37-percent increase from Alternative B, and a 42-percent increase from Alternative C~~.

Effects from Mineral Resource Management

General effects of mineral resource management on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 24 percent (32,427 acres) of the 135,850 acres of available grazing areas would be located in NSO mineral lease areas (a 7-percent decrease from Alternative B and an 11-percent decrease from Alternative C), and 22 percent (29,428 acres) would be located in CSU areas (a 10-percent decrease from Alternative B and a 9-percent decrease from Alternative C) under Alternative D.

Effects from Recreation Management

General effects of recreation on livestock grazing are described under Effects Common to All Alternatives, above. Approximately 39 percent (52,450 acres) of the 135,850 acres of available grazing areas would be located in SRMAs, a 19-percent increase from Alternative A and an approximate 25-percent increase from Alternatives B and C.

Effects from Renewable Energy Management

Impacts would be greater on livestock grazing than under Alternative A and the same as those described under Alternatives B and C.

Effects from Transportation and Travel Management

Under Alternative D, 18 percent (23,814 acres) of available grazing areas (135,850 acres) would be designated as Open travel areas (**Table 4-~~51~~52**, Travel Designations within Grazing Allotments). Three times as many available grazing areas would be Limited to designated routes. Impacts on livestock grazing would be less than Alternative A, but slightly greater than Alternatives B or C.

Effects from Lands and Realty Management

Approximately 22 percent (30,564 acres) of available grazing allotments would be available for disposal or exchange (**Table 4-~~52~~53**, Land Tenure within Grazing Allotments), which is less than under Alternatives A, B, and C.

Effects from ACEC/RNA Management

Three ACECs (20,866 acres) would overlap grazing allotments under Alternative D. Under Alternative D, livestock grazing would be excluded from the Captain John Creek, Long Gulch, and Skookumchuck ACEC/RNAs. In addition, livestock grazing would be excluded from 136 acres of the Lucile Caves ACEC/RNA. Impacts would be similar to but slightly less than those under Alternative A, and less than both Alternatives B and C.

Effects from Wilderness and Wilderness Study Areas Management

Impacts on livestock grazing from WSAs would be the same as those described under Alternatives A, B, and C.

Cumulative Effects

The region of influence used to analyze cumulative impacts on livestock grazing includes actions that occur on or adjacent to all allotments located entirely or partially within the planning area. Past actions that have affected livestock grazing include human-caused surface disturbances (mineral development, recreation, and prescribed burning), wildland fires, and historic grazing practices that have contributed to current ecological conditions. Present actions affecting livestock grazing are mainly those that reduce available grazing acreage or the level of forage production in those areas.

Key examples include wildland fires, drought conditions, land disposals, OHV use, habitat restoration, and special designations that restrict grazing. Future actions affecting livestock grazing would be similar to present actions including any restriction associated with future species listings under the ESA.

The cumulative impacts under each of the alternatives on livestock grazing would be very similar and would parallel the impacts of the alternatives in the general impact analysis. In general, every alternative would reduce forage for livestock in the short-term during treatment activities, other surface disturbing and disruptive activities, human disturbance, and the presence of grazing wildlife. Forage would increase over the long-term, however, as treated vegetation communities reach potential productivity. Cumulative projects that increase human disturbance in grazing areas could also increase weeds and invasive species. As stated above, weed invasion can reduce preferred livestock forage and increase the chance of weeds being dispersed by roaming cattle. Cumulatively the impact would be greater than all of the alternatives proposed. Cumulative projects that increase human disturbance in grazing areas could also displace, injure, or kill animals. Changes to VRM would cumulatively impact livestock grazing by dictating what type of range improvements are allowed in varying visual resource class areas.

Cumulatively impacts from each resource would be greater on livestock grazing if the cumulative projects were to occur simultaneously, however, standard mitigation identified in the BLM Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) would be implemented across all alternatives and any other cumulative projects, thereby reducing or minimizing cumulative impacts on BLM lands.

4.3.3 Minerals

Goal: Make federal mineral resources available for exploration, acquisition, and production consistent with other resource goals. The federal mineral resource consists of 143,830 acres of public lands (federal surface and mineral) and approximately 84,000 acres of reserved minerals (non-federal surface, federal mineral).

Summary

Development of the various alternatives involved the identification of BLM administered land that is withdrawn from the operation of the mining laws (closed to locatable mineral activities), and open/closed to the mineral laws (includes both leasable and salable mineral activities). On BLM land open to the mineral laws, certain areas would be subject to surface use stipulations in addition to those on the standard lease/permit form. These additional restrictions include NSO, CSU, and TL. In many instances, more than one stipulation may apply on the same parcel of land. **Table 4-~~53~~ 54** indicates the only difference between alternatives is the level of surface use restrictions. Overall, more areas would be open to unrestricted mineral exploration and development under Alternative A than under the other alternatives followed by Alternatives D then B, and Alternative C would be the most restrictive.

Table 4-54
Comparison of Minerals Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres withdrawn from mining laws	21,869	21,869	21,869	21,869
Acres closed to mineral leasing	12,786	12,786	12,786	12,786
Acres closed to mineral material sale	750	750	750	750
Acres discretionarily closed to mineral material sale	12,034	12,034	12,034	12,034
Acres of NSO	0	43,590	68,854	35,045
Acres of CSU	0	42,403	59,122	32,013
Acres with TLs	None	Deer and elk winter range and fawning and calving areas; Bald eagle winter feeding areas	Deer and elk winter range and fawning and calving areas; Bald eagle winter feeding areas	Deer and elk winter range and fawning and calving areas; Bald eagle winter feeding areas

Source: BLM 2004a

Further restrictions on mineral activities under each alternative include the withdrawal from the mining laws of about 8,062 acres of split estate lands within the Lower Salmon River withdrawal. These are parcels that have left federal ownership but the mineral rights were retained by the federal government (i.e., private surface/federal mineral).

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For minerals, the indicators used for impact analysis are identified in **Table 4-~~53~~54**, Comparison of Minerals Indicators by Alternative.

Methods and Assumptions

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the CFO planning area, review of existing literature, and information provided by experts in the BLM or other agencies. Impacts are based on the preliminary design of the alternatives under consideration. Effects are quantified where possible. In the absence of quantitative data, best professional judgment prevailed. All alternatives must comply with the Clean Water Act, the Idaho Forest Practices Act, the ESA, and other laws. The following assumptions were applied to the analysis:

- The possibility of any activity within the planning area related to leasable commodities (oil and gas, solid minerals, and geothermal resources) is considered unlikely;
- Demand for salable and locatable minerals over the next 20 years would follow the current rate of resource development in a given area;
- Proposed activities on existing mineral leases or permits requested post implementation of the Cottonwood RMP may be subject to surface use stipulations (NSO, CSU, and TL); and

- Surface-disturbing and other disruptive activities could still occur at existing authorized facilities, which could result in wildlife disturbance, degradation of visual quality, recreation values and wilderness values, soil erosion, loss of livestock and wildlife forage, and loss of wildlife cover.

Effects Common to All Alternatives

Effects from Geology Management

Allowing appropriate uses of significant geological features under Alternative A and promoting scientific, educational, and recreational uses to unique features under the other alternatives could potentially restrict access for mineral activities in these areas.

Effects from Water Resources Management

Mineral activities could be limited under all alternatives near waters listed on the Clean Water Act 303(d) list for water quality impairment. Individuals and organizations involved in mineral activities could become involved in TMDL processes, which could also restrict mineral activities in affected watersheds, particularly near water bodies.

Effects from Vegetation—Weeds Management

Under all alternatives, individuals or organizations involved in mineral activities may be responsible for implementing weed-control measures. These measures could result in increased costs, which could affect whether individuals or organizations continue mineral activities.

Effects from Wildlife and Special Status Wildlife Management

Under all alternatives, activities (including mineral activities) could be modified or restricted if it were determined that they affect federally listed species or habitat. All alternatives would include a 100-yard nondisturbance buffer around raptor nests, which could exclude some mineral activities.

Effects from Wildland Fire Management

The use of wildland fire management under any of the alternatives could result in short-term lack of access to mineral activities. However, if these treatments prevented larger future wildland fires, then future access to mineral activities would be protected.

Effects from Cultural Resources Management

All of the alternatives could redesign, cancel, or mitigate mineral activities to protect cultural resources.

Effects from Visual Resources Management

All of the alternatives would manage the VRM Classes I and II to minimize disturbance of visual resources. Surface use stipulations under these two classes could redesign, cancel, or mitigate mineral activities.

Effects from Forest Products Management

Mining claimants are entitled to use timber from their claim for mineral activities on that claim. There could be less timber available for use by the claimant in areas identified for timber sales or treatment. Reforestation efforts could add to reclamation costs at any mineral activity site which could affect whether individuals or organizations continue mineral activities.

Effects from Minerals Management

All alternatives would continue the withdrawals on the Lower Salmon River. In total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable mineral entry. Locatable mineral activities in WSAs could continue, however, they would be subject to the more stringent regulations found at CFR 3802: Exploration and Mining, Wilderness Review Program.

Each alternative would include nondiscretionary closures of 12,786 acres to fluid and solid leasable minerals. In addition, each alternative would include 12,~~786~~034 acres of discretionary closures and 750 acres of nondiscretionary closures for mineral material disposals.

Under all alternatives, BLM could require site-specific mitigation measures and/or stipulations during the review of the operations plan. These measures and/or stipulations could limit mineral activities.

Effects from Transportation and Travel Management

Approximately 100 miles of routes would be closed yearlong under each alternative, which would restrict motorized access to mineral activities.

Effects from Lands and Realty Management

All alternatives would continue the withdrawals on the Lower Salmon River. In total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable mineral entry.

Effects from ACEC/RNA Management

No new rights-of-way or road construction would be allowed in the Wapshilla Ridge or Lucile Caves ACEC/RNAs, which could reduce access for mineral activities.

Effects from Wilderness and Wilderness Study Areas Management

Under all alternatives, the Frank Church Wilderness (750 acres) would remain closed to leasable, locatable, and mineral material development, prohibiting all types of mineral activities. The Snowhole Rapids WSA (6,463 acres) and Marshall Mountain WSA (5,571 acres) would remain closed to leasing, and in most cases would remain closed to sale or free use of mineral materials. The WSAs would not be withdrawn from locatable mineral development, but would be subject to more protective regulations. Overall, most mineral activity would be prohibited in these areas.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

All alternatives would continue to benefit public safety through the prevention of illegal hazardous materials actions on public lands; ensuring proper use, authorization, permitting, and regulation of hazardous materials on public lands; conducting timely, efficient, and safe responses to hazardous materials incidences on public lands; and correcting physical hazards and cleanup of hazardous sites on public lands. Reclaiming AMLs could limit future mineral activities at these sites.

Alternative A

Effects from Soils Management

Alternative A would provide the least restricted access to mineral development because BMPs would be implemented from the Riparian Management Guidelines (BLM 1985e). These guidelines establish general management objectives for riparian areas and specific management requirements and

mitigation measures for riparian areas. While these guidelines could restrict activities, they do not specifically address mineral activities.

Effects from Water Resources Management

As described above under Effects from Soils Management, Alternative A would provide the least restricted access to mineral development because BMPs would be implemented from the Riparian Management Guidelines (BLM 1985e).

Effects from Vegetation—Riparian and Wetlands Management

As described above under Effects from Soils Management, Alternative A would provide the least restricted access to mineral development because BMPs would be implemented from the Riparian Management Guidelines (BLM 1985e).

Management of RHCA buffers totaling 24,290 acres would affect mineral activities. Activities would be planned and monitored in these areas to prevent damage to riparian areas and wetlands. This alternative provides more total area of stream buffers, and therefore, limitations on mineral activities along streams, in comparison to Alternatives B and D, but less than Alternative C. This alternative would not include any surface use stipulations for riparian and wetland vegetation.

Effects from Wildlife and Special Status Wildlife Management

Alternative A would include no NSO or TL restrictions for wildlife, special status species, and habitats, including raptors, deer and elk, or bald eagles.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described above under Effects from Vegetation—Riparian and Wetlands Management.

Effects from Special Status Plants Management

Alternative A would include no NSO restrictions for special status plant species and rare plant communities. Mineral activities could still be affected by enforcement of the ESA.

Effects from Cultural Resources Management

OHV limitations to protect cultural resources could restrict access to mineral activities. Alternative A would include no NSO restrictions for cultural resources.

Effects from Visual Resources Management

Alternative A would include no NSO restrictions for VRM Classes I or II.

Effects from Minerals Management

Alternative A would maintain standard stipulations on the existing 131,044 acres open to mineral leasing and mineral material disposals.

Effects from Recreation Management

Alternative A would include 26,682 acres of SRMAs. To the extent that these areas limit road construction or use or limit ground-disturbing mineral activities to provide nonmotorized and other types of recreation opportunities, access to mineral resources could be reduced, and mineral activities could be restricted.

Alternative A also would include 33,197 acres of nonmotorized ROS designations (including 14,381 acres Primitive and 26,206 acres Semiprimitive Nonmotorized). Mineral activities could be restricted in Primitive and Semiprimitive areas because mechanized and motorized vehicles would not be allowed. Because Alternative A would include a slightly smaller area where these uses were restricted, more areas could be available for mineral activities. Alternative A would include no NSO restrictions for developed recreation sites or administrative sites and no CSU restrictions for SRMAs or rivers suitable for the NWSRS.

Effects from Transportation and Travel Management

Alternative A would include the largest area (85,308 acres) Open to yearlong, cross-country motorized travel, which could allow access for mineral activities. An additional 40,437 acres would be Limited to existing routes.

Effects from ACEC/RNA Management

Alternative A would not allow ground-disturbing activities in the Long Gulch ACEC/RNA, which could impact mineral activities. No new rights-of-way or road construction would be allowed, which could reduce access to mineral activities. Alternative A would create an ACEC of the Elk City Dump/American Hill Lake area. OHV use would be excluded and ground-disturbing activities would not be allowed, which could impact mineral activities. Alternative A would include no NSO restrictions for ACECs, although management may be restricted in these areas.

Effects from Wild and Scenic Rivers Management

As indicated above under Effects from Minerals Management (Effects Common to All Alternatives section), in total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable minerals. These proposed mineral withdrawals would require approval by the Secretary of the Interior. Areas withdrawn from the mining laws would be closed to locatable minerals. Alternative A would include no NSO or CSU restrictions for rivers suitable for the NWSRS.

Effects from Wilderness and Wilderness Study Areas Management

~~Although~~ Alternative A would include no NSO restrictions ~~for~~ in~~Wilderness or~~ WSAs. ~~,~~ Current policies and guidelines would continue. ~~mineral activities would be restricted in these areas.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Alternative A would include no NSO restrictions for public safety.

Alternative B

Effects from Soils Management

Alternative B would follow the BMPs described in **Appendix B**, Best Management Practices (see Volume II~~I~~). These include six specific standards and guidelines related to mineral management, restrictions of mineral activities in RCA stream buffers, reclamation requirements, and monitoring procedures. These restrictions would limit mineral activities under this alternative.

Effects from Water Resources Management

As described above under Effects from Soils Management, Alternative B would provide the most restricted access to mineral development because BMPs in **Appendix B**, Best Management Practices (see Volume II~~I~~), would be implemented.

Effects from Vegetation—Riparian and Wetlands Management

As described above under Effects from Soils Management, Alternative B would provide the most restricted access to mineral development because BMPs in **Appendix B**, Best Management Practices (see Volume II~~I~~), would be implemented.

Management of RCA buffers totaling 22,847 acres (6 percent less than Alternative A) would affect mineral activities. Activities would be planned and monitored in these areas to prevent damage to riparian areas and wetlands. These restrictions and monitoring efforts would affect roads and mineral activities. In general, larger areas that are protected in buffers or RCA stream buffers result in greater restrictions for mineral activities.

Alternative B would include 22,847 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-2. Buffers for wetlands and landslide-prone areas are not included in the acreage calculations.

Alternative B would manage ~~1~~ three watersheds as ~~a~~ conservation watershed and ~~32~~ 28 watersheds as restoration watersheds, 2 percent less than prescription watersheds under Alternative A.

Effects from Wildlife and Special Status Wildlife Management

Alternative B would prohibit surface occupancy (NSO-3) when it would result in a "may affect" or "may impact" determination or within one mile of critical habitat niches for listed species. In addition, surface occupancy would be prohibited (NSO-5) within 0.25-mile of identified raptor nests. Alternative B would impose TLs allowing no construction or development activities within important deer or elk winter range between December 15 and March 31 (TL-1), allowing no construction or development activities within key deer or elk fawning or calving areas between May 15 and June 15 (TL-2), and allowing no ground-disturbing activities within bald eagle winter feeding areas between November 1 and March 1.

Alternative B would allow no net increase in motorized vehicle use of roads or trails in some areas. Access to mineral activities in these areas could be restricted.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described above under Effects from Vegetation—Riparian and Wetlands Management.

Effects from Special Status Plants Management

Alternative B would prohibit surface occupancy (NSO-4) when it would result in a "may affect" or "may impact" determination or when it would be within the population perimeter of listed and BLM sensitive plant populations.

Effects from Cultural Resources Management

Alternative B would prohibit surface occupancy (NSO-6) within areas of cultural or spiritual value to Native American Tribes.

Effects from Visual Resources Management

Alternative B would include 12,704 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-9. This NSO restriction would apply to areas

designated as VRM Class I. Alternative B also would include 41,188 acres of CSU restrictions under CSU-1. In areas designated as VRM Class II, facilities could require special visual design.

Effects from Minerals Management

Proposed restrictions would apply to fluid leasable minerals and solid leasable minerals and could apply to mineral materials. Alternative B would impose 43,590 acres of NSO constraints, 42,403 acres of CSU restrictions, and TLs for wildlife habitat. Fluid minerals exploration drilling and field development would comply with the seasonal TLs, while activities associated with production would not. All of these surface use stipulations could be excepted, modified, or waived only as outlined in **Appendix J**, Mineral Leasing Surface Use Stipulations (see Volume II~~I~~).

Effects from Recreation Management

Effects from SRMAs would be similar to those described above under Alternative A, except that Alternative B would include 55,201 acres of SRMAs. Alternative B also would include 42,695 acres of nonmotorized ROS designations (including 6,200 acres Primitive and 36,495 acres Semiprimitive Nonmotorized), more than under Alternative A. Because Alternative B would include a slightly larger area where these uses were restricted, it could limit access to mineral activities more than the other alternatives.

Alternative B would include 631 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-8. This NSO restriction would apply to areas of developed recreation sites or sites used for agency administrative purposes. In addition, Alternative B would include at least 31,770 acres of CSU restrictions under CSU-3. No surface-disturbing facilities would be authorized that could adversely impact the use of SRMAs or rivers suitable for the NWSRS for recreation purposes.

Effects from Transportation and Travel Management

Alternative B would also consider habitat in locating routes, which could reduce access to mineral activities. Alternative B could also create a larger nondisturbance buffer around occupied raptor nests.

Effects from Lands and Realty Management

Alternative B would prioritize retaining public lands with high-value resources, including minerals.

Effects from ACEC/RNA Management

Alternative B would limit soil disturbance in the Lower and Middle Cottonwoods Islands ACEC/RNA, which could restrict mineral activities. Alternative B would not allow ground-disturbing activities with long-term adverse impacts to MacFarlane's' four-o'clock and suitable habitat. These limitations could restrict mineral activities. Roads also would be decommissioned and new roads would not be allowed within 300 feet of Lower Lolo Creek or on slopes greater than 50 percent, which could reduce access to mineral activities. Similarly, Alternative B would create the Upper Lolo Creek ACEC which would decommission roads not needed for long-term management which could reduce access for mineral activities. Alternative B would recommend expanding the Lower Salmon River ACEC by 3 percent (from 15,702 acres to 16,199 acres). No new road construction would be allowed in this ACEC under any alternative. The area would be excluded from mineral entry under the Lower Salmon River withdrawal. Alternative B would create an ACEC in the East Fork American River. Ground disturbance would be minimized on slopes greater than

40 percent. Road construction would not be allowed in RCA stream buffers. These restrictions could impact mineral activities.

Alternative B would implement NSO restrictions for mineral leasing and in most cases mineral materials disposal on all lands identified in ACECs which is 36,153 acres~~Alternative B would include 43,270 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-1. This NSO restriction would apply to ACECs, WSAs, and river corridors suitable for wild designation in the NWSRS~~.

Effects from Wild and Scenic Rivers Management

Alternative B would support renewing the existing withdrawals along the Lower Salmon River. In total, 21,869 acres of public land and 8,062 acres of federal minerals (split estates) would be withdrawn from locatable mineral entry. These proposed withdrawals would require approval by the Secretary of the Interior. Areas withdrawn from the mining laws would be closed to locatable minerals. Under Alternative B, ~~three~~no suitable segments would be recommended for inclusion in the NWSRS.

In addition to continuing the withdrawals from locatable minerals, Alternative B would implement NSO and CSU restrictions for leasable minerals and in most cases mineral materials disposal within 0.25-mile of river segments identified as suitable for inclusion in the NWSRS. These would apply to the existing river segments (112 miles) and an additional 29 miles identified during the RMP process.~~As stated under the Effects from ACEC/RNA Management, Alternative B would include 43,270 acres of NSO restrictions under NSO-1. This NSO restriction would apply to ACECs, WSAs, and river corridors suitable for wild designation in the NWSRS.~~

~~Alternative B would include 31,770 acres of CSU restrictions under CSU-3. CSU restrictions would apply to river corridors suitable for scenic and recreational designation in the NWSRS. These river corridors are ineligible for disposal. No surface-disturbing facilities would be authorized that could adversely impact the use of SRMAs or rivers suitable for the NWSRS for recreation purposes.~~

Effects from Wilderness and Wilderness Study Areas Management

Alternative B would implement an additional restriction (NSO-1) for leasable minerals activities in WSAs. This restriction may also be applied to mineral material activities in WSAs~~As stated under the Effects from ACEC/RNA Management, Alternative B would include 43,270 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-1. This NSO restriction would apply to ACECs, WSAs, and river corridors suitable for wild designation in the NWSRS~~.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Alternative B would include 24 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-7. This NSO restriction would apply to areas with known hazardous materials. Sites with hazardous substances remaining at the site would be restricted with no surface occupancy and sites would be closed to motorized vehicles which would require Plan of operations for mineral actions, increasing mineral restrictions in comparison to Alternative A.

Alternative C

Effects from Soils Management
Effects would be the same as those described under Alternative B.

Effects from Water Resources Management
Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management
Effects would be similar to those described under Alternative B, except that RCA stream buffers under Alternative C would be largest totaling 27,624 acres, which would provide the most restriction for mineral activities. The entire acreage would include NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-2. Buffers for wetlands and landslide-prone areas are not included in the acreage calculations. Alternative C would manage 3 watersheds as conservation watersheds and ~~40~~ 37 watersheds as restoration watersheds, the most of all alternatives.

Effects from Wildlife and Special Status Wildlife Management
Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management
Effects would be the same as those described above under Effects from Vegetation—Riparian and Wetlands Management.

Effects from Special Status Plants Management
Effects would be the same as those described under Alternative B.

Effects from Cultural Resources Management
Effects would be the same as those described under Alternative B.

Effects from Visual Resources Management
Effects would be similar to those described under Alternative B, except that Alternative C would include 26,945 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-9, double that of Alternative B. Alternative C also would include 46,746 acres of CSU restrictions under CSU-1, over 12 percent more than Alternative B.

Effects from Minerals Management
Effects would be similar to those described under Alternative B, except that Alternative C would impose 68,854 acres of NSO constraints and 59,122 acres of CSU restrictions. Overall, Alternative C would impose NSO and CSU constraints on 17 percent more open areas than Alternative B.

Effects from Recreation Management
Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management
Effects would be similar to those described under Alternative B, except that Alternative C would restrict vehicle use in more areas, which would further restrict access to mineral activities.

Effects from Lands and Realty Management
Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

This alternative would have similar effects on minerals as Alternative B, except that Alternative C also would protect Craig Mountain as an ACEC. No new rights-of-way or road construction would be allowed, which could reduce access to mineral activities. ~~Roads not needed for long-term management in the Upper Lolo Creek ACEC would be decommissioned, which could reduce access for mineral activities.~~ Alternative C would create the Partridge/Elkhorn and Little Salmon ACECs, which would minimize new road construction and reduce access for mineral activities.

Alternative C would also implement NSO restrictions for mineral leasing and in most cases mineral materials disposal on all lands identified in ACECs (60,661 acres). This is 68 percent more than under Alternative B.

Effects from Wild and Scenic Rivers Management

Effects would be ~~the same as~~similar to those described under Alternative B except, in addition to the existing river segments suitable for inclusion in the NWSRS (112 miles), 29 miles of river segments identified as suitable would be recommended for inclusion in the NWSRS.

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.

~~Effects would be similar to those described under Alternative B, except Alternative C would include 63,698 acres of NSO restrictions under NSO-1.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be similar to those described under Alternative B, except under Alternative C, sites with hazardous substances remaining at the site would be closed to mineral laws or restricted with no surface occupancy, increasing mineral restrictions in comparison to all alternatives.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except that RCA stream buffers under Alternative D would total 20,710 acres, the least of all alternatives. Larger RCAs would restrict mineral activities in larger areas. The entire acreage would include NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-2. Buffers for wetlands and landslide-prone areas are not included in the acreage calculations. Alternative D would manage ~~1~~ three watersheds as ~~a~~ conservation watersheds and ~~27~~ 24 watersheds as restoration watersheds, the least of all alternatives.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described above under Effects from Vegetation—Riparian and Wetlands Management.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Cultural Resources Management

Effects would be the same as those described under Alternative B.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative B, except that Alternative D would include 7,205 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-9, about half that of Alternative B. Alternative D also would include 36,180 acres of CSU restrictions under CSU-1, which is about 12 percent less than Alternative B.

Effects from Minerals Management

Effects would be similar to those described under Alternative B, except that Alternative D would impose 35,045 acres of NSO constraints and 32,013 acres of CSU restrictions. Overall, Alternative D would impose NSO and CSU constraints on 11 percent less open area acreage than Alternative B.

Effects from Recreation Management

Effects would be similar to those described under Alternative B, except that under Alternative D access routes would be improved in the Craig Mountain WMA, which could provide more access to mineral activities.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

This alternative would have similar effects on minerals as Alternative B, except that the amount of land covered by ACECs would be less (23,924 acres). This is a 34 percent decrease~~This alternative would have similar effects on minerals as Alternative B, except that Alternative D would include 34,714 acres of NSO restrictions for mineral leasing and potential NSO restrictions for mineral material disposals under NSO-1, the least of all alternatives, with the exception of Alternative A. This NSO restriction would apply to ACECs, WSAs, and river corridors suitable for wild designation in the NWSRS~~.

Effects from Wild and Scenic Rivers Management

Effects would be the same as those described under Alternative B. ~~only recommend an additional 24 miles of river segments suitable for designation in the NWSRSEffects would be similar to those described under Alternative B, except Alternative D would include 34,714 acres of NSO restrictions under NSO-1.~~

Effects from Wilderness and Wilderness Study Areas Management

Effects would be the same as those described under Alternative B.~~Effects would be similar to those described under Alternative B, except Alternative D would include 34,714 acres of NSO restrictions under NSO-1.~~

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be similar to those described under Alternative B, except under Alternative D sites with hazardous materials would only be restricted with no surface occupancy, reducing mineral restrictions in comparison to Alternatives B and C, but increasing restrictions in comparison to Alternative A.

Cumulative Effects

Northern Idaho has experienced extensive mineral activities over the past 140 years. Mining will continue on public, tribal, state, and private lands, depending on the price of commodities and the expense of complying with environmental regulations. If the price of gold increased, placer mining and underground lode deposit development would be expected to increase as well. This assumption is supported by the recent renewed interest in developing a gold property on BLM land northwest of Elk City which was prompted by the surge in gold prices. Based on the current knowledge of the geologic environment and past activity levels in the CFO, little to no development of leasable minerals is anticipated over the next twenty years. Development of sand, gravel, aggregate, and dimension stone is expected to grow due to increased demands from a growing population. The population of the CFO is projected to continue to grow at a rate of 11 percent between 2000 and 2020, resulting in a need for more mineral materials to support infrastructure and building construction.

The amount of BLM administered land in the CFO has increased by approximately 7 percent since 1981. Depending on whether mineral rights were acquired, the area open to mineral activities may also have increased. Regardless, the BLM controls the surface management of these areas, potentially allowing more flexibility for mining activities.

Although access from private lands to BLM-administered lands is expected to decrease in the future, overall road construction will likely increase in the future, including on BLM-administered lands in northern Idaho. The future rate of road development is unknown on private and State of Idaho lands. Continued development of recreation opportunities may result in increased access, which would also increase access to minerals.

Wildland fires will continue to be suppressed to reduce the risk to resource values, including minerals. This policy could prevent large wildfires from spreading to areas of mineral activity.

Increased conservation of fish and wildlife may result in more restrictions of mineral activities. As species are delisted under the ESA, increased mineral activities could be allowed in formerly restricted habitat areas. Water quality concerns could result in restrictions of surface disturbances related to mineral activities. Implementing the ICBEMP management strategy could also increase restrictions to mineral activities on public lands. Similarly, increasing restrictions to mineral activities may be imposed to reduce the spread of noxious weeds. Increased enforcement of mineral restrictions related to cultural and archaeological sites could reduce access for mineral activities in the future.

Implementing Forest Plans in National Forests near the CFO could restrict surface disturbances and road access related to mineral activities. These plans emphasize resource protection over commodity production.

All alternatives would withdraw the same acres from the mining laws, which would exclude locatable mineral activities. Alternative A would involve the greatest area open to mineral leasing and mineral material disposals without restrictions. Combined with past, present, and foreseeable future mineral activities on other public lands, state lands, tribal lands, and private lands, the cumulative result of Alternative A would be to allow more mineral activities than the other alternatives. Alternative C would include the most restrictions on mineral activities. Combined with other cumulative projects, the cumulative result of Alternative C would be to allow the least unrestricted mineral activities. Alternative B would include fewer restrictions on mineral activities than Alternative C. Combined with other cumulative projects, the cumulative result of Alternative B would be to allow more unrestricted mineral activities than under Alternative C. Alternative D would include fewer restrictions on mineral activities than Alternatives B or C. Combined with other cumulative projects, the cumulative result of Alternative D would be to allow more unrestricted mineral activities than Alternatives B or C.

4.3.4 Recreation

Goal: Manage public lands and waters to provide a broad spectrum of recreation experiences and benefits. Emphasize resource-based river recreation. Ensure that developed facilities and sites are appropriate for the resource setting, well maintained, safe, secure, and accessible. Provide high value recreation opportunities and receive a fair return for commercial and specialized recreation use.

Summary

Effects on recreation management from the proposed alternatives would result in a wide range of possible outcomes. Surface-disturbing activities such as wildland fire management and mineral development would have short-term and long-term effects on recreational users if areas and activities are restricted or excluded until surface-disturbing activities conclude, or if such activities change the landscape character or recreation opportunities available.

Special designations, including Wilderness Areas, WSAs, ACECs, ACEC/RNAs, and river segments recommended as suitable for designation in the NWSRS affect recreation management. Typically, these designations protect important historical, cultural, and scenic values, which encourage nonmotorized and more-primitive backcountry experiences. Opportunities for this type of recreational user would increase as the percentage of the designated acreage increases. Recreational users who prefer motorized travel as an activity or who require motorized travel to access an area could be affected if previously accessible areas become inaccessible to motorized travel; travel is discussed more in Section 4.3.6, Transportation and Travel Management.

Maintaining and possibly increasing SRMA designations would protect recreational resources and encourage appropriate recreation activities in these areas. Both land- and water-based activities would remain the focus in these designations, including the most popular activities within the CFO such as boating, camping, hiking, fishing, and sightseeing.

Alternative B best meets the goal of providing a broad spectrum of recreation settings and opportunities. Alternative C emphasizes less motorized recreation in more primitive settings, while

Alternative A has more emphasis on motorized recreation opportunities and includes the most acreage for OHV cross-country travel followed by Alternative D. Recreation indicators were identified to assess environmental effects. **Table 4-~~54~~ 55** identifies the indicators that were used to analyze effects on recreation management under each alternative.

Table 4-55
Comparison of Recreation Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
SRMA Areas				
Number of SRMAs	3	5	5	5
Acres of SRMAs	26,682	55,201	55,201	55,201
Acres by ROS Class				
Primitive (P)	14,381	6,200	6,200	6,200
Semiprimitive Nonmotorized (SPNM)	18,816	36,495	36,495	36,495
Semiprimitive Motorized (SPM)	26,206	23,593	23,593	23,593
Roaded-Natural (RN)	55,988	54,867	54,867	54,867
Semi-Urban (SU)	27,349	22,478	22,478	22,478
Urban (U)	40	40	40	40
Unclassified	1,046	0	0	0

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For recreation management, the indicators used for impact analysis are identified in **Table 4-~~54~~55**, Comparison of Recreation Indicators by Alternative.

Methods and Assumptions

To evaluate the potential impact on recreation management from each alternative, information was gathered from recreation specialists and the public during the planning process, and information was assembled during interdisciplinary team meetings. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- The demand for recreational use would continue to increase over the life of the plan;
- Recreational visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase with increasing use of public lands;
- Anticipated increases would focus on nonmotorized or float boating and OHV use, as well as fishing, hiking, mountain biking, camping, photographing, wildlife/bird observing, picnicking, and hunting; and

- User-created trails could continue to be developed throughout the CFO, although such actions are illegal, and creators and users of nondesignated trails will be subject to enforcement actions.~~User-created trails would continue to be developed throughout the CFO~~.

Effects Common to All Alternatives

Effects from Geology Management

Under all alternatives, management actions that establish additional protection for geological features could affect recreation management by improving recreational experiences, such as viewing, hiking, and photography that are associated with these features.

Effects from Soils Management

Under all alternatives, soils management could result in altering the existing roads network if roads are determined to be potentially harmful to the existing soil composition. This could affect recreation management by limiting motorized access and related activities in some areas.

Effects from Water Resources Management

Under all alternatives, implementing plans to improve water quality management could directly affect recreation management if restrictions are implemented on water bodies that are used for recreation activities such as boating and fishing. Some recreation activities, such as fishing, hiking, and wildlife viewing, would be indirectly affected as water quality and stream and river health is improved.

Effects from Vegetation—Forests Management

Direct control measures, as recommended by the Forest Service Insect and Disease Center, would be applied to forest management areas with high recreation value. These actions would directly impact recreational opportunities by preserving and protecting areas with recreation values.

Effects from Vegetation—Weeds Management

Implementing prevention and rehabilitation actions to combat the spread of invasive plant populations could directly affect recreation activities when treated areas overlap areas of desired recreational use. In the short-term, recreation activities would be limited in treatment areas; however, long-term effects on recreation include improved natural communities that enhance primitive recreation experiences.

Effects from Special Status Plants Management

Measures to protect special status plants would affect recreation management under all alternatives. Recreation activities that are found to impact listed plants would be restricted or excluded to avoid further damage.

Effects from Cultural Resources Management

Implementing site-specific measures for cultural resources would protect these resources of interest to the recreating public. However, these measures could also lead to restricting the development of recreational facilities and related opportunities. Employing OHV limitations would preclude recreation users who depend on motorized transportation to access public lands.

Effects from Forest Products Management

Under all alternatives, approximately 25 to 30 percent of the CFO planning area would be apportioned into commercial forest management areas. Recreation activities could be restricted or excluded from areas during forest management activities. Direct control measures to address forest health would occur in areas of high recreation value, directly affecting recreation management by improving forest health in known areas of high recreational use. Effects on recreation activities include enhanced opportunities for camping, hiking, and sightseeing.

Effects from Recreation Management

Under all alternatives, management actions would continue to support an array of recreational opportunities, including boating, camping, hiking, and fishing. The CFO would continue to manage the Lower Salmon River—Scenic, the Lower Salmon River—Recreational, and the Clearwater River SRMAs (totaling approximately 26,682 acres). The CFO would also continue to manage 183 miles of water trails, over 200 undeveloped or semi-developed recreation sites along the Clearwater and Salmon Rivers, and 12 recreation sites scattered across the planning area. Overall, these actions would directly affect recreation management by ensuring that water- and land-based recreational opportunities continue to exist in both designated and undesignated areas.

Special Recreation Permits would continue to be administered for commercial, competitive, organized group recreation activities, and individual use of special areas, affecting recreation management by monitoring the number of recreational users on public lands. This would reduce user conflicts and ensure that the recreation activity level on public lands would not inhibit other resource management objectives. Within SRMAs, issuing Special Recreation Permits would continue to support water-based commercial use on the Salmon River. Any Special Recreation Permits obtained in Extensive Recreation Management Areas would continue to support opportunities for commercial recreation such as big game hunting and trail rides.

Developed and dispersed opportunities remain constant throughout all alternatives. Twelve sites would continue to be managed under all alternatives, providing recreational users in these areas amenities such as toilets, picnic tables, boat ramps, and parking areas. The entire CFO would remain open to dispersed camping, except in areas where specific restrictions or exclusions are in place to meet other resource objectives.

Under all alternatives, 100,861 acres (approximately 70 percent of the CFO planning area) would remain open to over-snow motorized travel, providing opportunities such as snowmobiling to recreational users during winter months. Most of Craig Mountain WMA would remain closed to over-snow motorized travel, except 105 acres, reducing motorized winter activities in this area.

Effects from Lands and Realty Management

Land acquisitions, land exchanges, or conservation easements, regardless of the purpose, could directly affect recreation management. Changes in public land status could provide the public with more (or less) acreage on which to recreate. Land acquisitions could provide additional areas, subject to management actions established to protect sensitive resources.

Effects from ACEC/RNA Management

Measures to protect valuable and sensitive resources within ACECs and ACEC/RNAs designations would create an effect on recreational users throughout the CFO. Visitors to the ACECs and ACEC/RNAs could take part in wildlife viewing, sightseeing, hiking, and camping, all while

protecting important values within the designation. Conflicts between motorized and nonmotorized recreation users would be minimized in these areas, improving the quality of recreation experience for all users.

Effects from Wild and Scenic Rivers Management

Under all alternatives, 29 miles of river segments found suitable, as well as 112 miles of the Salmon River that has been a study river since 1968, would be managed to preserve their outstandingly remarkable values. This would preserve land- and water-based recreational activities in these areas.

Effects from Wilderness and Wilderness Study Areas Management

Under all alternatives, 750 acres would continue to be managed as a Wilderness Area and 12,034 acres would continue to be managed as WSAs, thereby affecting recreational users seeking backcountry and primitive experiences by ensuring the continued protection of the valuable resources contained within these designations.

Effects from Native American Tribal Uses Management

Under all alternatives, management actions would continue to maintain and improve, when possible, natural and cultural resource conditions to enhance opportunities to exercise Native American traditional uses. Recreation activities could be restricted or excluded if activities are interfering with the maintenance and protection of these resources.

Alternative A

Effects from Vegetation—Forests Management

Under Alternative A, current forestry practices would continue to affect recreation management. Forestry practices could initially cause short-term impacts on recreational users if certain areas are closed or restricted during timber production activities. Over the long term, recreation activities would resume. Recreational opportunities such as sightseeing and pleasure driving would be indirectly affected due to altered landscapes.

Effects from Vegetation—Riparian and Wetlands Management

Management actions developed to protect, rehabilitate, and restore riparian areas and wetlands under Alternative A would create impacts on recreational users if activities are occurring within restricted buffer strips, which are designated within riparian management units. Recreation sites (and activities) would be restricted to non-critical aquatic and terrestrial habitats. However, by minimizing disturbances to wildlife and stream habitat, over the long term primitive recreation experiences would be improved, including activities such as fishing, wildlife viewing, and hiking.

Effects from Wildlife and Special Status Wildlife Management

Wildlife and special status wildlife management could affect recreation by increasing restrictions on certain activities. If recreation activities, current or proposed, are determined to create direct or indirect impacts to a species, the activity would be modified. Although several management actions could increase restrictions on recreation activities, recreational opportunities that appreciate wildlife could be expanded as well.

Effects from Wildland Fire Management

Under Alternative A, wildland fire suppression on at least 70 percent of the CFO could affect recreation opportunities by minimizing fire-related interference with activities and protecting scenic

beauty. Areas where wildland fire use would be allowed (**Figure H-1**, Areas Available for Wildland Fire Use—Alternatives A and C [see **Appendix H** in Volume II~~I~~]) would directly affect recreational users in the short-term by restricting activities in burned areas until areas are reopened. Once burned areas are reopened, recreational opportunities could resume.

Effects from Minerals Management

Under Alternative A, minerals management could affect recreation everywhere except the Frank Church Wilderness Area, which is closed to the mineral laws and withdrawn from the mining laws. Lands within 0.25-mile of the Lower Salmon River would continue to be withdrawn from the mining laws, closing the area to locatable mineral exploration and development. Because the BLM would not designate NSO or CSU stipulations under this alternative, the Lower Salmon River area and all other BLM-administered lands currently open to mineral laws within the CFO would be subject to leasable and saleable mineral activity, subject to the BLM's discretion. This minerals management could create an effect on recreational opportunities and experiences.

Minerals management activities involving heavy equipment, new roads, well pads, and other facilities, would directly affect recreational users in the short-term by placing restrictions on areas where these activities are occurring. Over the long-term, surface-disturbances that create effects on the scenic quality and the natural landscape would indirectly affect recreational experiences.

Effects from Livestock Grazing Management

Livestock grazing management actions would include implementing the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]), which set standards for vegetation health, wildlife habitat, and riparian habitat. As a result, recreation opportunities, such as hunting, fishing, and wildlife viewing, would be affected.

Livestock grazing management would result in the continued presence of cattle and sheep and rangeland facilities on public lands. Approximately 24,278 acres of grazing allotments overlap SRMA designations. Recreational experiences in these areas, as well as other high use recreational areas in the planning area, could experience short-term impacts when recreation activities and grazing practices occur on the same public lands. Range improvements, such as adjusting fence locations, could create long-term effects on recreation by interfering with recreational use patterns or by temporarily displacing recreation activities.

Effects from Recreation Management

In addition to effects noted under the Effects Common to All Alternatives section above, under Alternative A the BLM would continue to manage the Elk City, Lolo Creek, Little Salmon River, John Day Creek, Marshall Mountain, and Craig Mountain areas as Extensive Recreation Management Areas.

The BLM would continue to manage public lands for a variety of recreational activities within all ROS settings. This alternative would continue to recognize 14,381 acres as Primitive, 18,816 acres as Semiprimitive Nonmotorized, 26,206 acres as Semiprimitive Motorized, 55,988 acres as Roaded-Natural, 27,349 acres as Semi-Urban, 40 acres as Urban, and 1,046 acres as Undesignated. Roaded-Natural (39 percent) accounts for the largest setting, and Urban (less than 1 percent) followed by Primitive (10 percent) represent the smallest setting in the CFO planning area. These percentages are indicative of the management emphasis for recreation activities on BLM-administered lands. A

much smaller portion of the CFO planning area is reserved for primitive experiences, when compared to opportunities for activities that include motorized uses.

Opportunities for water-based recreation under this alternative would continue. The BLM would allow 44 commercial water-based outfitter permits issued with the Idaho Outfitters Guides Licensing Board on the Salmon and Clearwater Rivers. No permits would be issued for Lolo Creek, and permits for Craig Mountain WMA would require concurrence of the Idaho Department of Fish and Game.

Effects from Transportation and Travel Management

This alternative provides the most motorized public access of any of the alternatives. OHV use on public lands would continue to be managed in accordance with existing OHV designations. Under Alternative A, approximately 85,308 acres would be designated as Open to OHV travel, or 59 percent of the CFO planning area. Approximately 40,437 acres would be managed as Limited, and 18,054 acres would be managed as Closed. The route network within the three designated SRMAs would recognize 9,889 acres as Open, 7,350 acres as Limited, and 9,444 acres as Closed.

Allowing this level of continued OHV use would not address resource and user conflict issues and could result in emergency closures to protect resources from extensive damage. This alternative would have the most opportunities for recreational activities that include the use of motorized travel, such as cross-country and pleasure driving and motorcycling riding; fewer opportunities for recreational users that prefer nonmotorized or backcountry experiences would occur.

Effects from Lands and Realty Management

In addition to the effects noted under the Effects Common to All Alternatives section above, lands and realty management under this alternative identifies approximately 47,361 acres for exchange. Nearly all of the public lands proposed for exchange, however, are scattered, isolated parcels that do not have public access and therefore, would not decrease the area of public lands available for recreation activities.

Under this alternative, public lands that have public access, high-value resources, and areas along the Salmon River would be retained, thereby preserving recreation opportunities in areas that meet those criteria. Realty actions would also be avoided in ACECs, RNAs, SRMAs, and wild and scenic rivers, which would have a positive effect on recreational users seeking primitive experiences.

Withdrawals that emphasize the protection of high-value resources would directly affect recreation management; specifically, the withdrawal on the Lower Salmon River would affect recreation opportunities by preserving the quality of recreational experiences and activities along the river, including boating, fishing, camping, and hiking.

Effects from ACEC/RNA Management

In addition to effects on recreation management noted under the Effects Common to All Alternatives section above, under Alternative A four ACECs would continue to be managed to protect important historical, cultural, scenic, and wildlife values contained within their boundaries. The four ACECs include Craig Mountain (3,956 acres), Elk City Dump/American Hill Lake (30 acres), Lower Lolo Creek (3,678 acres), and Lower Salmon River (15,702 acres).

Under Alternative A, six ACEC/RNAs would continue to be managed to protect important resources contained within their boundaries. The six ACEC/RNAs include Wapshilla Ridge (401 acres), Lower and Middle Cottonwoods Islands (43 acres), Captain John Creek (1,321 acres), Long Gulch (47 acres), Lucile Caves (404 acres), and Skookumchuck (18 acres).

This alternative would designate 23,366 acres as ACECs and 2,233 acres as ACEC/RNAs, a combined total of almost 18 percent of the CFO planning area. Opportunities for certain types of land- and water-based recreation activities such as backpacking, camping, and fishing would continue in these areas.

Alternative B

Effects from Soils Management

Under Alternative B, implementing BMPs and expanding minimum requirements for protecting soil from ground-disturbing activities could affect recreation management. Soil stabilization activities could preclude some recreation activities, such as recreating in streams, during reclamation projects. Temporary or permanent route closures that are implemented to protect soils could limit recreation activities in these areas.

Effects from Water Resources Management

Under Alternative B, implementing BMPs to promote water quality protection and limit nonpoint source pollution could affect recreation management. Alternative B emphasizes actively changing management direction to avoid additional effects on water quality. Changes could include actions to limit boating activities in water sources or to limit OHV activities on roads that cross streams and around water sources, which would minimize the likelihood of nonpoint source pollution. By limiting some recreation activities in these areas, other recreational activities such as wildlife viewing, fishing, and photography could also be affected.

Effects from Vegetation—Forests Management

Impacts on recreation management from forest management are similar to those described under Alternative A. Under Alternative B, forestry treatment projects that are specifically designed to enhance forest health ~~vigor~~ and composition could further affect recreational opportunities due to altered landscapes. Improvements to ranges for snags and coarse woody debris could improve wildlife habitat and contribute indirectly to recreation experiences such as wildlife viewing.

Effects from Vegetation—Riparian and Wetlands Management

Impacts on recreation from riparian and wetlands management are similar to those described under Alternative A. Under Alternative B, additional measures are identified to improve these areas, including restricting land and vehicle uses, both of which could affect recreation. Restrictions on land uses could prohibit recreation activities such as camping, hiking, and mountain biking, and vehicle restrictions could restrict recreation travel patterns, which would limit or prevent access to some sites.

Existing recreation sites and activities that occur within RCA stream buffers that are failing to meet riparian management objectives or that are adversely affecting special status fish will either be relocated or eliminated, directly affecting recreation management. New recreation sites, facilities, and activities would also be required to meet these standards or use would be precluded from designated RCAs.

Effects from Wildlife and Special Status Wildlife Management

Impacts on recreation management from wildlife and special status wildlife management under this alternative are similar to those identified under Alternative A. Additional conservation and restoration measures to protect suitable habitat or habitat niches and to maintain or improve forage species, nesting, or roosting habitat would further restrict recreation activities in certain areas. Depending on site-specific situations, conservation actions such as land tenure adjustments and conservation easements could further preclude recreation activities. Over the long-term, as wildlife habitat is improved, effects on recreational opportunities that relate to appreciating wildlife would develop.

Under this alternative, priority management areas to protect watersheds are identified for no net increase in motorized vehicle use of roads or trails. These areas include Craig Mountain, Lower Salmon River, John Day/Wet Gulch, Slate Creek, East of Riggins, Sheep–Hat Creek–Denny Creek, Elk Creek/Little Elk Creek, Hazard–Hard–Little Salmon River Face, Trail Creek–Boulder Creek, Marshall Mountain, Lolo Creek, and Clearwater River Face/Pardee. Identified areas total 101,526 acres; this would directly affect recreation management. Remote experiences for recreational users would be expanded, but others who are dependant on vehicle use for recreational activities could be restricted if popularity for motorized use in these areas expanded.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Measures to protect and improve aquatic resources, fish, and special status fish would continue to provide opportunities for recreational uses such as fishing and wildlife viewing. However, restrictions to protect these resources could restrict or exclude recreational activities from these areas, including motorized access by roads or trails, or access by boats.

Effects from Wildland Fire Management

Impacts on recreation management from wildland fire management are similar to those described under Alternative A. Under Alternative B, prescribed fire would be used to treat 5 to 15 percent, mechanical would be used to treat 2 to 6 percent, and chemical would be used to treat 5 to 36 percent of CFO FRCC 2 or 3 (moderate to high risk) WUI lands. Impacts on recreation activities would be direct and short-term, as recreational activities would be restricted while fire management activities are in progress.

Effects from Paleontological Resources Management

Developing measures to protect paleontological resources would protect these resources of interest to the recreating public. However, these measures could restrict or exclude recreation activities to protect sensitive resources.

Effects from Minerals Management

Impacts on recreation management from minerals management are similar to those described under Alternative A. Under this alternative, the BLM would designate NSO and CSU stipulations on lands open to leasable and saleable mineral activities. A total of 24,218 acres of SRMAs would be subject to NSO stipulations, and 25,897 acres would be subject to CSU stipulations. Implementing stipulations would reduce surface-disturbing activities, therefore reducing effects on recreational users.

Effects from Livestock Grazing Management

Impacts on recreation management from livestock grazing management are similar to those described under Alternative A. Under Alternative B, 26,023 acres of grazing allotments overlap SRMA designations. This is a 1,745-acre increase in comparison to Alternative A due to an increase in SRMA designations. Therefore, effects on recreational users would be slightly greater under this alternative.

Effects from Recreation Management

In addition to effects noted under the Effects Common to All Alternatives section above, under this alternative the BLM would continue to manage the Elk City, Little Salmon River, John Day Creek, and Marshall Mountain areas as Extensive Recreation Management Areas. Lolo Creek and Craig Mountain would be designated as SRMAs, in addition to the three SRMAs identified under Effects Common to All Alternatives, identifying recreation as the principal use of these lands. The Lolo Creek SRMA (3,635 acres) would emphasize backcountry, dispersed, and nonmotorized recreation opportunities, with an emphasis on whitewater boating and fishing. The Craig Mountain SRMA (24,884 acre) would provide opportunities in a natural setting for big game hunting, hiking, and biking, while promoting backcountry recreation experiences. SRMA designations under this alternative would total 55,201 acres, a 19-percent increase in comparison to Alternative A.

Similar to Alternative A, the BLM would continue to manage public lands for a variety of recreational activities within all ROS settings. This alternative would recognize 6,200 acres as Primitive, 36,495 acres as Semiprimitive Nonmotorized, 23,593 acres as Semiprimitive Motorized, 54,867 acres as Roaded-Natural, 22,478 acres as Semi-Urban, and 40 acres as Urban. Like Alternative A, Roaded-Natural (38 percent) accounts for the largest setting, and Urban (less than 1 percent) and Primitive (4 percent) represent the smallest (10 percent) setting; therefore, effects on recreation from these designations are similar to those described under Alternative A.

Commercial permits issued with the Idaho Outfitters Guides Licensing Board and effects on water-based recreation activities would be identical to those described under Alternative A. Under this alternative, additional zones would be established for both commercial and competitive uses, providing additional opportunities for activities such as boating and fishing. Commercial outfitting and guiding uses in these zones would require BLM Special Recreation Permits and would also be subject to Idaho Outfitters Guides Licensing Board regulations. Other commercial recreation uses in these zones would require permits but would not be regulated by the Idaho Outfitters and Guides Licensing Board (e.g., some Boy Scouts of America groups or University Outdoor Programs). The Lower Salmon River - Scenic SRMA would allow up to 10 permits for commercial recreation use not subject to Idaho Outfitter and Guides Licensing Board regulations; no commercial permits would be issued for Lolo Creek SRMA, and commercial permits for extensive SRMAs would be considered as needed.

Designating additional zones for competitive use or no competitive use would affect recreational users by increasing restrictions on some activities. Restricting competitive uses in the Lower Salmon River - Scenic SRMA, Lolo Creek SRMA, and all designated wilderness would create long-term direct effects on recreation users who prefer to use these areas for activities such as OHV or mountain bike races; however, opportunities for these activities would remain in the Lower Salmon River - Recreation, Clearwater River, and Craig Mountain SRMAs and in all Extensive Recreation Management Areas.

Effects from Transportation and Travel Management

This alternative provides less motorized public access in comparison to Alternative A. Areas designated as Closed would remain the same, however, no Open areas would be designated. Areas designated as Limited would increase to 125,729 acres (a 59-percent increase from Alternative A). The route network within the 5 designated SRMAs would recognize zero acres as Open, 44,117 acres as Limited, and 11,085 acres as Closed.

This alternative would limit areas available for recreational activities that include the use of motorized travel, such as cross-country and pleasure driving and motorcycling riding. Hunting would also be affected because hunters who depend on motorized travel for access, scouting, and retrieval would be limited to designated routes. More opportunities for recreational users that prefer nonmotorized or backcountry experiences would occur.

Alternative B identifies ~~1~~ three conservation and ~~32~~ 28 restoration watersheds, 2 percent more acreage than prescription watersheds under Alternative A. Decommissioning or obliteration of some roads in these areas could limit motorized access.

Effects from Lands and Realty Management

In addition to effects on recreation management noted under the Effects Common to All Alternatives section above, lands and realty management under this alternative identifies approximately 30,098 acres for disposal. Public lands that have public access, high value resources, and areas along the Salmon River would be retained and potential acquisitions of land and conservation easements on the Lower Salmon River, Craig Mountain WMA, Clearwater River, and Lolo Creek would preserve and expand recreation opportunities in areas that meet those criteria. In ACECs, RNAs, SRMAs, and wild and scenic rivers, realty disposal actions would be avoided while acquisition opportunities would be emphasized, which would create an effect on recreational users seeking primitive experiences.

Withdrawals that emphasize the protection of high-value resources would directly affect recreation management; specifically, the withdrawal on the Lower Salmon River would affect recreation opportunities by preserving the quality of recreational experiences and activities along the river, including boating, fishing, camping, and hiking.

Effects from ACEC/RNA Management

In addition to effects on recreation management noted under the Effects Common to All Alternatives section above, under Alternative B ~~five~~ six ACECs would be managed to protect important historical, cultural, scenic, and wildlife values contained within their boundary. The ~~five~~ six ACECs include Upper Lolo Creek (1,625 acres), Lower Lolo Creek (3,678 acres), Lower Salmon River (16,199 acres), Salmon River (5,759 acres), East Fork American River (570 acres), and American River Historic Sites District (6,356 acres). Along with resource protection, public use and access of the Lower Salmon River and Salmon River ACECs would be emphasized.

Similar to Alternative A, this alternative identifies the same six ACEC/RNAs to be managed to protect important resources contained within their boundaries. Under this alternative, the Lucile Caves ACEC/RNA acreage would decrease to 136 acres.

Overall, Alternative B would designate ~~32,562~~34,187 acres as ACECs and 1,966 acres as ACEC/RNAs, a combined total of ~~24~~ 25 percent of the CFO planning area. This represents an

overall increase of ~~6~~ 7 percent in ACEC and ACEC/RNA designations in comparison to Alternative A. Similar to Alternative A, opportunities for certain types of land- and water-based recreation activities, such as backpacking, camping, and fishing, would continue in these areas.

Effects from Watchable Wildlife Viewing Sites Management

Effects on recreation activities such as wildlife viewing and sightseeing would occur if additional watchable wildlife viewing sites were designated.

Alternative C

Effects from Soils Management

Under Alternative C, impacts to recreation management from soils management would be identical to those impacts described under Alternative B.

Effects from Water Resources Management

Under Alternative C, impacts to recreation management from water resource management would be identical to those impacts described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative C, impacts to recreation management from riparian and wetlands management would be similar to those impacts described under Alternative B; however, RCA stream buffers would total 27,624 acres, 21 percent more area than under Alternative B and 14 percent more than Alternative A. Compared to Alternative A, this could increase the impact on recreation management by implementing restrictive measures on additional BLM-administered lands, further reducing recreational activities not meeting riparian management objectives or adversely affecting listed fish species.

Effects from Wildlife and Special Status Wildlife Management

Under Alternative C, impacts to recreation management from wildlife and special status wildlife management would be similar to those impacts described under Alternative B. Additionally, this alternative would strive for a net decrease in motorized vehicle use on roads and trails in priority management areas on 38,733 acres: Sheep–Hat Creek–Denny Creek; Hazard–Hard–Little Salmon River Face, Marshall Mountain, Lolo Creek, and Elk City Township. These limitations would directly affect recreation management by limiting any recreational activities that require motorized vehicle use either during the activity or to access the area where the activity would take place. Remote experiences for recreational users would be further expanded under this alternative when compared to Alternative B, but those who prefer motorized vehicle use for recreational activities would be further restricted.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Under Alternative C, impacts to recreation management from aquatic resources, fish, and special status fish management would be identical to those impacts described under Alternative B.

Effects from Wildland Fire Management

Under Alternative C, impacts to recreation management from wildland fire management would be similar to those impacts described under Alternative B. Under this alternative, prescribed fire would

be used to treat 5 to 20 percent of the CFO FRCC 2 or 3 (moderate to high risk) WUI lands, slightly increasing the effects on recreational activities from prescribed fire when compared to Alternatives B and D.

Effects from Paleontological Resources Management

Under Alternative C, impacts to recreation management from paleontological resources management would be identical to those impacts described under Alternative B.

Effects from Visual Resources Management

Under Alternative C, managing an additional 14,241 acres under Class I and 5,559 acres under Class II provides for better retention of the existing viewshed, which would preserve an important component for recreational users seeking primitive experiences.

Effects from Minerals Management

Impacts on recreation management from minerals management are similar to those described under Alternative A. Under this alternative, the BLM would designate NSO and CSU stipulations on lands open to leasable and saleable mineral activities. A total of 45,552 acres of SRMAs would be subject to NSO stipulations, and 43,795 acres would be subject to CSU stipulations. This is 47 and 41 percent more acres of NSO and CSU stipulations on SRMAs, respectively, compared to Alternative B. This could ~~increase~~ reduce the effects on recreation management by allowing ~~more~~ less surface disturbances in areas where recreation activities occur.

Effects from Livestock Grazing Management

Impacts on recreation management from livestock grazing management are similar to those described under Alternative A. Under Alternative C, 24,039 acres of grazing allotments overlap SRMA designations. This is a 239-acre reduction in comparison to Alternative A. Therefore, effects on recreational users would be slightly reduced under this alternative.

Effects from Recreation Management

In addition to effects noted under the Effects Common to All Alternatives section above, effects on recreation from recreation management would be identical to those described under Alternative B.

Effects from Transportation and Travel Management

Effects on recreation from transportation and travel management would be similar to those described under Alternative B. Under this alternative, priority management areas to protect watersheds include Craig Mountain, Lower Salmon River, John Day/Wet Gulch, Slate Creek, East of Riggins, Elk Creek/Little Elk Creek, Trail Creek–Boulder Creek, and Clearwater River Face/Pardee. Identified areas total 75,772 acres, a decrease of 25,804 acres in comparison to Alternative B.

This alternative identifies ~~40~~ 37 restoration and ~~3~~ three conservation watersheds, 3 percent more than prescription watersheds under Alternative A. Therefore, effects on recreational users from reducing roads and trails would be slightly greater under this alternative.

Effects from Lands and Realty Management

Effects on recreation management from lands and realty management are identical to those described under Alternative B.

Effects from ACEC/RNA Management

In addition to the effects on recreation management noted under the Effects Common to All Alternatives section above, under Alternative C nine ACECs would be managed to protect important historical, cultural, scenic, and wildlife values contained within their boundaries. This represents the most ACEC designations of all alternatives. The nine ACECs include Craig Mountain (23,342 acres), Lower Lolo Creek (3,678 acres), Upper Lolo Creek (1,625 acres), Lower Salmon River (16,199 acres), Partridge/Elkhorn (576 acres), Little Salmon River (590 acres), Salmon River (5,759 acres), East Fork American River (570 acres), and American River Historic Sites District (6,356 acres). Analogous to Alternative B, under this alternative public access and use would be emphasized in the Lower Salmon River and the Salmon River ACECs.

This alternative identifies the same six ACEC/RNAs as Alternative B to be managed to protect important resources contained within their boundaries, with the same amount of acreage for each designation.

Alternative C would designate 58,695 acres as ACECs and 1,966 acres as ACEC/RNAs, a combined total of 42 percent of the CFO planning area. This represents an overall increase of 24 percent in ACEC and ACEC/RNA designations in comparison to Alternative A. Similar to Alternative A, opportunities for certain types of land- and water-based recreation activities such as backpacking, camping, and fishing would continue in these areas.

Effects from Watchable Wildlife Viewing Sites Management

Effects on recreation management from watchable wildlife viewing sites management are identical to those described under Alternative B.

Alternative D

Effects from Soils Management

Under Alternative D, impacts to recreation management from soils management would be identical to those impacts described under Alternative B.

Effects from Water Resources Management

Under Alternative D, impacts to recreation management from water resource management would be identical to those impacts described under Alternative A.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative D, impacts to recreation management from riparian and wetlands management would be similar to those impacts described under Alternative B; however, RCA stream buffers would be slightly smaller (20,710 acres). This could decrease the impact on recreation management by implementing fewer restrictive measures on BLM-administered lands.

Effects from Wildlife and Special Status Wildlife Management

Under Alternative D, impacts to recreation management from wildlife and special status wildlife management would be similar to those impacts described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Under Alternative D, impacts to recreation management from aquatic resources, fish, and special status fish management would be identical to those impacts described under Alternative B.

Effects from Wildland Fire Management

Under Alternative D, impacts to recreation management from wildland fire management would be similar to those impacts described under Alternative B. Under this alternative, mechanical and fire could be used to treat 2 to 15 percent of the CFO FRCC 2 or 3 (moderate to high risk) WUI areas, slightly increasing the effects on recreational activities from mechanical treatments when compared to Alternatives B and C.

Effects from Paleontological Resources Management

Under Alternative D, impacts to recreation management from paleontological resources management would be identical to those impacts described under Alternative B.

Effects from Visual Resources Management

Under Alternative D, managing a decrease of 5,499 acres under Class I and 5,015 acres under Class II, in comparison to Alternative A, provides for less retention of the existing viewshed. Most acres would be moved into Class III, which allows for changes to some of the more undisturbed lands, affecting the amount of acreage available to recreational users and especially those seeking primitive or backcountry experiences.

Effects from Minerals Management

Impacts on recreation management from minerals management are similar to those described under Alternative A. Under this alternative, the BLM would designate NSO and CSU stipulations on lands open to leasable and saleable mineral activities. A total of 23,733 acres of SRMAs would be subject to NSO stipulations and 25,897 acres would be subject to CSU stipulations, which is almost identical to Alternative B and is about 48 and 41 percent lower than NSO and CSU stipulations on SRMAs, respectively, in Alternative C. Effects on recreation management from minerals management would increase compared to other alternatives, but only slightly compared to Alternative B.

Effects from Livestock Grazing Management

Impacts on recreation management from livestock grazing management are similar to those described under Alternative A. Under Alternative D, 52,450 acres of grazing allotments overlap SRMA designations. This is a 28,172-acre increase in comparison to Alternative A. Effects on recreational users would be greater under this alternative due to the amount of allotments that overlay SRMA designations.

Effects from Recreation Management

In addition to effects noted under the Effects Common to All Alternatives section above, effects on recreation from recreation management regarding SRMA designations and ROS settings would be identical to those described under Alternative B.

Commercial permits issued with the Idaho Outfitters Guides Licensing Board and effects on water-based recreation activities would be similar to those identified under Alternative A, except commercial water-based outfitter permits would be based on the number of outfitters authorized by the State of Idaho in 2004, and permits would be issued for Lolo Creek SRMA. Opening the Lolo Creek SRMA for commercial outfitters would expand recreation opportunities for users who

depend on outfitters to access and recreate in areas. Establishing commercial permits would directly affect recreational users, depending on if BLM increases or decreases the amount of permitted use in these areas.

Similar to Alternative B, this alternative would establish additional zones for both commercial and competitive uses. Commercial uses other than outfitting and guiding in these zones would require permits but would not be regulated by the Idaho Outfitters Guides Licensing Board. The Lower Salmon River Scenic SRMA would allow 15 permits, and other recreation permits would be issued for SRMA and Extensive Recreation Management Area zones, including the Lolo Creek SRMA. This alternative slightly expands opportunities for commercial uses when compared to Alternatives B and C. Effects on recreation from designating additional zones for competitive use or no competitive use would be identical to those described under Alternative B.

Effects from Transportation and Travel Management

Under Alternative D, approximately 23,189 acres would be designated as Open to OHV travel, or 16 percent of the CFO planning area. The majority of acreage designated as Open has no legal public access to these lands. Approximately 102,542 acres would be managed as Limited, and 18,054 acres would be managed as Closed. The route network within the 5 designated SRMAs would recognize 349 acres as Open, 7,350 acres as Limited, and 9,444 acres as Closed.

This alternative would have more opportunities for recreational activities that include the use of motorized travel in comparison to Alternatives B and C. However, user conflicts within areas such as SRMAs, where recreation is dominant use, could also increase due to high levels of activity. Similar to Alternative B, hunting would also be affected but under this alternative, more opportunities for motorized access for scouting and retrieval would occur.

Priority management areas to protect watersheds, and effects on recreational users as a result of protecting these areas, are identical to those discussed under Alternative B. This alternative identifies ~~27~~ 24 restoration and ~~1~~ three conservation watershed, 21 percent fewer watershed acres than prescription watersheds under Alternative A. Therefore, fewer impacts on recreational users would occur, providing users more opportunities to access and recreate in watershed areas.

Effects from Lands and Realty Management

Effects on recreation management from lands and realty management are identical to those described under Alternative B.

Effects from ACEC/RNA Management

In addition to effects on recreation management noted under the Effects Common to All Alternatives section above, under Alternative D two ACECs would be managed to protect important historical, cultural, scenic, and wildlife values contained within their boundary. This represents the fewest ACEC designations of all alternatives. The two ACECs include the Lower Salmon River (16,199 acres) and the Salmon River (5,759 acres), both of which emphasize public access and use.

Similar to Alternatives B and C, this alternative identifies the same six ACEC/RNAs to be managed to protect important resources contained within their boundaries, with the same amount of acreage for each designation.

Overall, Alternative D would designate 21,958 acres as ACECs and 1,966 acres as ACEC/RNAs, a combined total of 17 percent of the planning area. This represents an overall slight decrease of less than 1 percent of ACEC and ACEC/RNA designations in comparison to Alternative A. Similar to Alternative A, opportunities for certain types of land- and water-based recreation activities such as backpacking, camping, and fishing would continue in these areas.

Effects from Watchable Wildlife Viewing Sites Management

Effects on recreation management from watchable wildlife viewing sites management are identical to those described under Alternative B.

Cumulative Effects

Effects of past actions including reductions in land mass due to development, changes to the landscape as a result of surface-disturbing activities, and area closures or restrictions for resource protection have affected recreational use in the CFO planning area.

All recreation, including OHV use, is expected to increase as population increases. Idaho's population increased approximately 29 percent between 1990 and 2000, and the population of the CFO planning area has grown on average 13 percent (Idaho Department of Commerce and Labor 2004). Furthermore, the population of the CFO planning area is expected to grow at a rate of approximately 11 percent, and the state is expected to grow approximately 35 percent over the next twenty years (EPA 2004). These numbers indicate continuing growth and popularity for recreational activities throughout the CFO planning area and in surrounding areas.

Surface-disturbances resulting from forestry, minerals, and grazing activities could cumulatively affect recreational users if activities were concentrated in heavily recreated areas and if activities overlapped in duration. Long-term effects to recreational use would also continue to occur as land acquisitions and disposals continue. Land exchanges directly affect management on those parcels and indirectly affect activities and patterns on surrounding lands. Land acquisitions along the river corridors would enhance recreation opportunities and experiences. Fuels treatments and wildfire management across ownerships should protect scenic beauty. Increased population in the CFO planning area will result in increased demand for river based recreation activities.

Implementing any of the alternatives would not contribute to a significant change to recreational opportunities on public lands.

4.3.5 Renewable Energy

Goal: Provide opportunities for the development of renewable energy resources, while minimizing adverse impacts to other resource values.

Summary

All four alternatives contain a mix of actions that would result in varied levels of production of forest byproducts available for use as biomass fuel. Most of these effects are difficult to quantify; however, wildland fire management specifies targets for how much land would be recommended for fuel treatment under Alternatives B, C, and D within any five-year period; Alternative A does not specify any targets for fuels treatments. Alternative D recommends the greatest treatment area, followed by Alternative B and then Alternative C. **Table 4-~~55~~ 56** identifies the indicators that were used to analyze effects on renewable energy under each alternative.

Table 4-56
Comparison of Renewable Energy Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Availability of biomass fuel from fuel treatments and timber harvesting activities	No net change	Net increase	Net decrease	Greater increase than Alternative B

Methods of Analysis

Indicators

Management actions could result in impacts to renewable energy resources if any management actions were to directly or indirectly change the quantity and availability of biomass fuel materials. Changes in the fuel supply could result from changes in timber harvesting and fuel treatment activities. The indicator used to quantitatively and qualitatively assess management changes that could affect timber harvests and fuel treatments are summarized in **Table 4-~~55~~56**, Comparison of Renewable Energy Indicators by Alternative.

Methods and Assumptions

The planning area lacks any geothermal resource, any commercial concentrated solar power and photovoltaic energy potential, and any areas feasible for commercial wind power generation. Also, it is likely that biomass facilities would be sited on private land, and biomass fuel would be obtained from actions on CFO-administered land. Therefore, effects would be limited to conditions that change the availability of biomass fuel. Effect determinations are based on the extent to which each alternative would affect timber harvesting and fuel treatments and the wood products (biomass fuel) that would result.

It is assumed that logging activity and vegetation treatments are directly related to the availability of forest byproducts (wood) that can be used as biomass fuel.

Effects Common to All Alternatives

Effects from Vegetation—Forests Management

Stand conversion treatments and reduction of stands would generate logging byproducts that could be used as biomass fuel.

Effects from Wildland Fire Management

Hazardous fuels-reduction projects would generate forest byproducts that could be used as biomass fuel.

Effects from Minerals Management

Under all alternatives, the Wilderness Area would remain closed to the mineral laws and withdrawn from the mining laws, preventing all renewable energy management activities. Effects on biomass fuel development from minerals management would result from implementing right-of-way exclusion areas. Rights-of-way are necessary for nonrenewable and renewable energy development; therefore, exclusion areas would directly affect all energy development in these areas.

Approximately 11,622 acres, plus buffers along streams and rivers and the Elk City Dump, are identified as right-of-way exclusion areas.

Effects from Wilderness and Wilderness Study Areas

To maintain wilderness characteristics within wilderness areas and WSAs, under all alternatives, fuel treatments and timber harvesting activities would continue to be restricted, limiting the availability of biomass fuel on 11,622 acres, 8 percent of BLM-administered lands.

Alternative A

Effects from Vegetation—Forests Management

Under Alternative A, 24,257 acres are classified for intensive forest practices, 11,500 acres for extensive management, and 37,549 acres for custodial management. Intensive forest practices would maximize timber production on a sustained yield basis, extensive management would manage for timber production on a sustained yield basis but with few intensive practices, and custodial management areas would not be managed for timber production (although harvesting could occur for ecological reasons). These three classifications, in the order presented, would decreasingly contribute sidecast to biomass operations.

Effects from Wildlife and Special Status Wildlife Management

Under Alternative A, a 100-yard nondisturbance buffer would be established around all active raptor nests. This could limit timber harvest and fuel treatment activities around these nests and decrease the amount of sidecast available for biomass fuel.

Effects from Wildland Fire Management

Alternative A would produce the greatest potential biomass of all the alternatives.

Effects from Visual Resource Management

Management of visual resource under Alternative A would provide moderate flexibility in developing renewable energy. VRM Class I and Class II designations (53,899 acres) account for approximately 38 percent of BLM-administered lands. To meet VRM class objectives in these areas, timber harvest and fuel treatment activities would be limited, directly affecting biomass fuel development.

Effects from Forest Products Management

Under Alternative A, timber management activities would not occur in areas where they could destroy or degrade wetland-riparian areas. This could decrease the sidecast available to biomass operations. Alternative A also calls for precommercial thinning under certain conditions, which would increase wood potentially available for biomass fuel prior to timber harvest, contributing to an ongoing, multiple-source supply of biomass fuel.

Effects from ACEC/RNA Management

Under Alternative A, timber harvesting would not be allowed in ACECs or RNAs, except for disease or insect control. This would limit the availability of forest byproducts for use as biomass fuel on 23,366 acres designated as ACECs and 2,233 acres designated as ACEC/RNAs. Combined, special area designations would restrict the availability of biomass fuel from fuel treatments and timber harvesting activities on approximately 18 percent of BLM-administered lands.

Alternative B

Effects from Vegetation—Forests Management

Alternative B includes actions to enhance forest health ~~vigor~~ and/or habitat diversity, to actively manage species composition of the large tree size, and to implement timber harvest activities on forest stands with existing or high risk for extensive stand mortality. This would increase the availability of forest byproducts for use as biomass fuel.

Effects from Wildlife and Special Status Wildlife Management

Alternative B would require minimizing or avoiding disturbance within one mile of known occupied gray wolf denning sites and rendezvous areas, and maintaining or enhancing suitable gray wolf habitat (primarily large stands of cottonwoods). These actions could limit timber harvest and fuel treatment activities and decrease the amount of sidecast available for biomass fuel.

Effects from Wildland Fire Management

Under Alternative B, up to 40 percent of CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas would be treated over any 5-year period. Additional areas could be treated outside the WUI. Alternative B calls for treating 2 to 6 percent of these treatments using mechanical methods. These actions would ensure an ongoing removal of wood products from the forests and a supply of biomass fuel. Alternative B emphasizes biomass use as the preferred solution to meet natural resource management objectives, which would improve the potential for forestry products to be used for biomass energy production.

Under Alternative B, fuel treatment projects within WUI areas would be allowed to take precedence over VRM II designations where public or firefighter safety and/or protect infrastructure at risk due to hazardous fuels. This action would take place in specific areas under specific circumstances and would not have much effect on the supply of forestry products available for biomass energy production.

Effects from Visual Resources Management

Effects would be the same as those described under Alternative A.

Effects from Forest Products Management

Alternative B would expedite salvage activities in forest stands susceptible to or having outbreaks of forest insect or disease or that have mortality related to wildland fire. This could increase the availability of forest products for biomass use.

Effects from Renewable Energy Management

Alternative B would make vegetative treatment byproducts available for use in biomass energy facilities where removing the material from the site would not impede site productivity or prevent attainment of project objectives. Alternative B also calls for actively pursuing partnering opportunities between CFO and entities developing biomass-generating capabilities. Alternative B would improve the transfer of biomass fuels from forests to biomass facilities and encourage development of biomass energy facilities in the region.

Effects from ACEC/RNA Management

Under Alternative B, timber harvesting would not be allowed in ACECs or RNAs, except for disease or insect control and for achieving DFC with emphasis on old forest/old growth

components. Alternative B would also not allow vegetation or ground-disturbing actions that would result in long-term adverse impacts to MacFarlane's four-o'clock and suitable habitats. These actions would decrease the availability of forest byproducts for use as biomass fuel on ~~35,562~~34,187 acres designated as ACECs and 1,966 acres designated as ACEC/RNAs. Combined, special area designations would restrict the availability of biomass fuel from fuel treatments and timber harvesting activities on approximately ~~24~~ 25 percent of BLM-administered lands, an increase of about ~~6~~ 7 percent in comparison to Alternative A.

Alternative C

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Under Alternative C, up to 20 percent of CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated over any 5-year period. Additional areas could be treated outside the WUI. This action would ensure an ongoing removal of wood products from the forests and a supply of biomass fuel, although at a much lower level than the other alternatives. Alternative C emphasizes biomass use as the preferred solution to meet natural resource management objectives, which would improve the potential for forestry products to be used for biomass energy production.

Effects from Visual Resource Management

Effects would be similar to those described under Alternative A, except Alternative C would provide less flexibility in developing renewable energy in comparison to Alternative A and B. VRM Class I and Class II designations (73,699 acres) account for approximately 51 percent of BLM-administered lands, a 14-percent increase from Alternative A and B.

Effects from Forest Products Management

Similar to Alternative A, timber management activities under Alternative C would not occur in areas where they could destroy or degrade wetland-riparian areas, which could decrease the sidecast available to biomass operations. Similar to Alternative B, Alternative C would also expedite salvage activities in forest stands susceptible to or having outbreaks of forest insect or disease or that have mortality related to wildland fire, which could increase the availability of forest products for biomass use.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that the described actions would decrease the availability of forest byproducts for use as biomass fuel on 58,695 acres designated as ACECs and 1,966 acres designated as ACEC/RNAs. Combined, special area designations would restrict the availability of biomass fuel from fuel treatments and timber harvesting activities on approximately 42 percent of BLM-administered lands, which represents the most restrictions of all the alternatives.

Alternative D

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Under Alternative D, up to 60 percent of CFO lands classified as FRCC 2 or 3 (moderate to high risk) WUI areas could be treated over any 5-year period. Additional areas could be treated outside the WUI. Alternative D proposes 2 to 15 percent of these treatment use mechanical methods. These actions would ensure an ongoing removal of wood products from the forests and a supply of biomass fuel. Alternative D emphasizes biomass use as the preferred solution to meet natural resource management objectives, which would improve the potential for forestry products to be used for biomass energy production.

Effects from Visual Resource Management

Effects from the management of visual resource under Alternative D would be similar to those described under Alternative A. This alternative would provide the most flexibility in developing renewable energy in comparison to Alternatives A, B and C. VRM Class I and Class II designations (43,385 acres) account for approximately 30 percent of BLM-administered lands, a 7-percent decrease in comparison to Alternatives A and B.

Effects from Forest Products Management

Effects would be the same as those described under Alternative C.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative B, except that the described actions would decrease the availability of forest byproducts for use as biomass fuel on 23,183 acres designated as ACECs and 1,964 acres designated as ACEC/RNAs. Combined, special area designations would restrict the availability of biomass fuel from fuel treatments and timber harvesting activities on approximately 18 percent of BLM-administered lands, which would be similar to Alternative A.

Cumulative Effects

Past actions and events that have affected renewable energy resources in the panning area include the Idaho Statewide Implementation Strategy for the National Fire Plan, wildland fires, fuel treatments, cyclic insect and disease activity, and timber harvests.

The CFO FMP, completed in 2004, and other FMPs across Idaho will contribute to the awareness of biomass energy technology and to the availability of biomass fuels as forests across the state are treated to remove excess fuel. Wildland fires in the vicinity of the CFO planning area, whether past, present, or future, decrease the availability of biomass fuels. The mechanical treatment aspect of fuel treatments gives rise to an increase in forest byproducts available for biomass fuel. Increases in these

practices in the CFO vicinity will contribute to increases in the amount of biomass fuels available. Cyclic insect and disease activity affecting forest stands often results in tree kills and large amounts of wood available for removal and potential use as biomass fuel. The decline in timber harvesting on public lands over recent years has resulted in a decrease in castoffs available for use as biomass fuel; however, timber harvesting has increased on private lands, resulting in an increase in biomass fuel availability. The overall impact of changes in timber harvests over recent years is unknown and is treated in this analysis as a no net change in biomass availability.

Alternative A would not change the availability of biomass fuels and would not have a cumulative effect on renewable energy in the CFO. Alternatives B, C, and D would increase the availability of biomass fuels and cumulatively affect renewable energy in the CFO.

4.3.6 Transportation and Travel Management

Goal: Manage travel, roads, and trails to provide access and recreational opportunities, while minimizing resource impacts and user conflicts.

Summary

Transportation and travel management affects the number of users able to reach and travel on public lands. The primary cause of effects on or changes to the transportation network is resource protection. Measures that are implemented to protect natural resources, such as wildlife, water, and soil, and cultural resources could result in seasonal or permanent route restrictions or closures. Permitted activities on BLM-administered lands, such as those related to forestry and minerals, could expand the route network.

Approximately 70 percent of designated routes shown in the Proposed RMP (Alternative B from the Draft RMP) were analyzed in past NEPA documents done by the CFO. Therefore, the Proposed RMP assesses the remaining approximately 30 percent of designated routes not previously analyzed.

Alternative B would best manage travel, roads, and trails to provide access and recreational opportunities, while minimizing resource impacts and user conflicts. It would be followed by Alternatives C then D, with Alternative A having the most potential for resource impacts and user conflicts. **Table 4-~~56~~ 57** identifies the indicators that were used to analyze effects on transportation and travel management under each alternative.

Table 4-57
Comparison of Transportation and Travel Management Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Area Designations				
Open (acres)	85,308	0	0	23,189
Limited to existing routes (acres)	40,437	0	0	0
Limited to designated routes (acres)	0	125,729	125,729	102,542
Closed (acres)	18,054	18,069	18,069	18,069

Table 4-57
Comparison of Transportation and Travel Management Indicators by Alternative *(continued)*

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Route Designations within Limited Areas				
Open Routes within Limited Areas:				
Open Routes with Public Access that are Open Yearlong (miles)[1]	40.69	103.26	103.26	100.83
Open Routes with No Public Access that are Open Yearlong (miles)	11.91	104.42	104.42	81.29
Total open routes in Limited areas (miles)	52.60	207.68	207.68	182.12
Approximate density of open routes within Limited areas (miles/square mile)	0.83	1.05	1.05	1.14
Restricted Routes within Limited Areas:				
Full Vehicle Closure Yearlong (miles)	30.82	100.67	100.67	100.65
Open Yearlong for Vehicles under 50 inches (miles)	0	5.92	5.92	5.92
Open 6/15-9/15 for Vehicles under 50 inches (closed 9/16-6/14) (miles)	0	1.24	1.24	1.24
Seasonal Vehicle Closure 10/1-6/15 (open 6/16-9/30) (miles)	0	0.39	0.39	0.39
Two-wheel Motorized Only (miles)	0	0.54	0.54	0.54
Route Restrictions Total (miles)	30.82	108.76	108.76	108.74
Total open and restricted routes in Limited areas (miles)	83.42	316.44	316.44	290.86

Source: BLM 2004a
[1] Note that Alternatives A and D have additional open routes within Open areas.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For transportation and travel management, the indicators used for impact analysis are identified in **Table 4-~~56~~57**, Comparison of Transportation and Travel Management Indicators by Alternative.

Methods and Assumptions

Potential impacts on transportation and travel from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- The demand for recreational use would continue to increase over the life of the plan;
- Recreational visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase with increasing use of public lands;
- Anticipated increases would focus on OHV use, as well as fishing, hiking, mountain biking, camping, motor boating, photographing, wildlife/bird observing, picnicking, and hunting;

- CFO expects some route proliferation, but will make every effort to prevent it~~User-created trails would continue to be developed throughout the CFO; and~~
- Implementation of the travel management plan will include increased public education, signing, enforcement, and resource monitoring in regards to travel management; and
- Technology will continue to advance the ability of motorized vehicles to travel in previously inaccessible terrain.

Effects Common to All Alternatives

Effects from Vegetation—Riparian and Wetlands Management

Measures implemented to protect riparian and wetland areas could directly affect transportation and travel management if routes are restricted or closed to protect sensitive resources. Effects would be short or long term depending on if the route is temporarily or permanently restricted. Closures would be evaluated for need for long-term management prior to closing. Closures for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area.

Effects from Wildlife and Special Status Wildlife Management

Wildlife management activities under all alternatives could directly affect transportation and travel management if routes are restricted or closed to protect wildlife and special status species, including their vegetation and habitat needs. Effects would be short or long term depending on if the route is temporarily or permanently restricted.

Effects from Special Status Plants

Modifying activities to avoid or minimize adverse impacts to listed plants could directly affect transportation and travel management if routes are restricted or closed to protect listed plants species.

Effects from Wildland Fire Management

Route restrictions and closures could occur during wildland fire management activities, directly affecting transportation and travel management. Short-term effects could include an increase of fire-management equipment traffic on BLM-administered routes, an increase of motorized vehicle traffic on routes that remain accessible until fire management activities stop, and an increase of motorized and nonmotorized conflicts on the remaining accessible routes.

Effects from Cultural Resources Management

Under all alternatives, protective measures for cultural resources would affect transportation and travel management when restrictions are implemented to protect cultural values at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and would result in an overall reduction in available routes.

Effects from Livestock Grazing Management

Adjusting grazing allotments with fence modifications Grazing management could directly affect transportation and travel management by adjusting current use and altering routes. Short-term effects would include increased use of the route network for livestock grazing management purposes, such as maintaining livestock developments. New routes established for livestock grazing management could also increase overall route density on BLM-administered lands, thereby expanding the route network.

Effects from Minerals Management

Minerals management, including heavy equipment and truck traffic on the network of routes within the CFO planning area, would directly affect transportation and travel management. However, most effects would be short term and would only occur during mineral-development activities. New routes established for mineral development could also increase overall route density on BLM-administered lands, thereby expanding the route network.

Effects from Transportation and Travel Management

There are approximately 341 miles of existing BLM-administered routes on BLM-administered lands within the CFO. All BLM-administered lands within the planning area would be designated as Open, Closed or Limited. In Open areas, all types of motorized vehicle use would be permitted anywhere at all times (on roads or cross country); Limited designations would restrict motorized vehicles to either existing routes (Alternative A) or designated routes (Alternatives B, C, and D); and Closed areas would prohibit off-road motorized vehicle travel yearlong, and would allow motorized vehicle travel on previously established existing routes to private inholdings or mining claims, where those routes are identified in the BLM designated route system. In general, most route restrictions allow motorized vehicle travel only when authorized by the BLM. Effects vary depending on how much a route is used and the level of restriction placed on the route. Indirect effects would also occur on unrestricted (open) routes because motorized vehicle use would be confined to a reduced route network or density.

Under all alternatives, nonmotorized travel (e.g., pedestrian, equestrian, and mechanized uses such as mountain bikes) would continue on over 99 percent of BLM-administered lands in the planning area (143,076 acres). Mechanized uses would continue to be prohibited in the 750-acre Wilderness. There would be no change from current management, and opportunities would continue for visitors who access public lands by foot, horse, or bicycle.

Over-snow motorized travel would remain Open on 100,861 acres of the planning area, maintaining opportunities for visitors who travel by these modes of transportation on approximately 71 percent of the CFO. Restrictions placed on over-snow motorized travel within the Craig Mountain WMA would create short-term effects on users who prefer to recreate in these areas during restricted periods (November 26 through March 15) and would create long-term effects as a result of permanently closed areas. Within the Craig Mountain WMA, over-snow motorized travel would be Open on 105 acres and Closed on 24,779 acres. With adequate snow cover (18 inches), the Upper Mountain Area would remain Open to over-snow travel from November 26 through March 15.

Effects from Lands and Realty Management

Land acquisitions could increase the overall route network and expand both motorized and nonmotorized opportunities.

Effects from ACEC/RNA Management

Management within ACECs and ACEC/RNAs could affect transportation and travel management. Routes determined to be affecting values for which the designations were established could be relocated, reconstructed, or decommissioned.

Effects from National Trails Management

Continued protection of 21 miles of National Trails within the CFO would maintain the values found along the trail. Access would be maintained, and nonmotorized opportunities would continue.

Effects from Native American Tribal Uses Management

Transportation and travel management activities could be restricted or excluded if routes are interfering with the maintenance and protection of natural and cultural resources important for exercising Native American traditional uses.

Alternative A

Effects from Soils Management

Under Alternative A, prioritizing the existing road network based on sensitive land types could result in altering the existing road network to protect sensitive soils. Roads could be decommissioned, obliterated, or partially recontoured. These measures could affect existing routes by condensing current use on fewer roads, and impacts could be long or short term, depending on whether the route closures would be seasonal or permanent. Closures would be evaluated for need for long-term management prior to closing.

Effects from Water Resources Management

Managing water resources to protect and maintain healthy watersheds could affect transportation and travel management. Routes that cross streams or contribute to nonpoint source pollution, contributing to the degradation of water quality, would be temporarily or permanently closed.

Effects from Forest Products Management

Route restrictions and closures could occur during forest product management activities, directly affecting transportation and travel management. Short-term effects could include an increase of forestry-related traffic on BLM-administered routes, an increase of motorized vehicle traffic on routes that remain accessible until forest product management activities stop, and an increase of motorized and nonmotorized conflicts on the remaining accessible routes. Long-term effects include an increase in the number of routes accessible on public lands through the establishment of new logging roads. This would affect opportunities for both motorized and nonmotorized users overall by increasing road density in the CFO.

Effects from Recreation Management

The ROS setting provides a framework for identifying the types of recreation activities that the public might desire, which is directly related to transportation and travel management opportunities in those areas. In sum, the ROS setting for this alternative would maintain approximately 23 percent of the planning area as primitive and available for nonmotorized opportunities (comprised of 14,381 acres Primitive and 18,816 acres Semiprimitive Nonmotorized). The remaining 77 percent (26,206 acres Semiprimitive Motorized, 55,988 acres Roaded-Natural, 27,349 acres Semi-Urban, 40 acres Urban, and 1,046 acres undesignated) would remain open to motorized opportunities and would encourage a wide variety of recreation uses and activities. Motorized opportunities would be subject to area designations (Open, Limited, and Closed) and route designations.

Effects from Transportation and Travel Management

Alternative A would provide the most motorized and mechanized public access of any of the alternatives. Transportation and travel management would continue to recognize 85,308 acres (59 percent) as Open, 40,437 acres (28 percent) as Limited, and 18,054 acres (13 percent) as Closed. This alternative would retain more than half of the planning area as Open to cross-country travel, thereby providing the greatest opportunity to those who wish to travel by motorized vehicle. Areas designated as Open that receive regular cross-country use include Pardee, the Lucile Caves area

(excluding the ACEC), and portions of Elk City Township. The BLM would continue to manage approximately 33 miles of routes within Open areas as closed to motorized vehicles to protect wildlife and cultural resources, which would preclude unrestricted cross-country travel within some Open areas. Most restricted routes are segments that were once a road but may or may not be passable because of not being maintained or due to natural causes. Therefore, cross-country travel in Open areas would not likely be affected by these route restrictions.

Under Alternative A, Limited areas would continue to be limited to existing routes, which could result in additional route creation because what constitutes an existing route can be difficult for the public to discern on the ground. Limited areas would continue to contain approximately 41 miles of existing BLM-administered routes that are open yearlong; however, 12 of the 41 miles (30 percent) do not have legal public access so likely receive little or no use. Restrictions would continue on 31 miles of routes within Limited areas, all of which would continue to have full vehicle closures yearlong. Within Closed areas, the BLM would maintain about 21 miles of routes open to motorized vehicle use yearlong. Maintaining some open routes within Closed areas would allow travel for specific purposes in otherwise restricted areas.

Effects from ACEC/RNA Management

Management within ACECs and ACEC/RNAs could affect transportation and travel management. Routes determined to be affecting values for which the designations were established could be relocated, reconstructed, or decommissioned.

Alternative B

Effects from Soils Management

Effects would be similar to those identified under Alternative A. Under Alternative B, implementing BMPs and expanding minimum requirements for protecting soil from ground-disturbing activities could directly affect transportation and travel management by increasing restrictions on road planning. Activities such as soil stabilization and reclamation could require seasonal or permanent route closures. Overall, these measures would increase route restrictions and closures compared to Alternative A.

Effects from Water Resources Management

Effects would be similar to those identified under Alternative A. Alternative B would implement additional BMPs that supplement basic guidelines for road planning, construction, drainage, and maintenance. Measures such as limiting transportation networks in riparian areas, minimizing stream crossings, and avoiding certain roads during wet periods would affect travel within the planning area. Direct short-term affects would occur during seasonal closures, and long-term effects would occur if routes were decommissioned, preventing access to previously accessible areas.

Effects from Vegetation—Riparian and Wetlands Management

Effects on transportation and travel management could increase because Alternative B would introduce additional conservation measures. Under Alternative B, RCA stream buffers would total 6 percent less than RHCAs in Alternative A. Routes that occur within RCAs that are failing to meet riparian management objectives or that are adversely affecting special status fish would be relocated, reconstructed, or decommissioned. In sum, all routes would have additional criteria to meet, and the number of new roads in RCAs would be limited and would not be allowed unless long-term

management needs could be identified. Temporary roads would be decommissioned in a maximum of three years after completion of construction.

Effects from Wildlife and Special Status Wildlife Management

No net increase in routes designated as open for motorized vehicle use of roads or trails on BLM lands and on BLM-controlled roads and trails would be allowed in priority management areas totaling 101,526 acres. Transportation and travel management would be directly affected in these areas. Current levels of OHV use could be sustained; however, as the number of recreational users increases and trail density increases, it could become necessary to restrict the level of motorized vehicle use. Opportunities for nonmotorized and mechanized uses in these areas would be expanded.

Measures to decommission or partially or fully obliterated roads and trails in restoration and conservation watersheds totaling 64,481 acres (3 percent more acres than prescription watersheds under Alternative A) would reduce the amount of available routes and trails for all users who depend on this transportation network.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Measures to protect and improve aquatic resources, fish, and special status fish could directly affect transportation and travel management if route restrictions or closures are implemented for resource protection. Effects would be short or long term depending if the route is seasonally or permanently restricted. Alternative B also establishes land use standards and guides within the RCA stream buffers, as discussed above in Effects from Vegetation—Riparian and Wetlands Management. The additional emphasis on restoration actions (**Appendix C**, Conservation and Restoration Watersheds [see Volume II~~I~~]) could affect routes within the planning area if routes are determined to be a contributing cause of degradation.

Effects from Paleontological Resources Management

Under Alternative B, developing protective measures for paleontological resources could affect transportation and travel management if restrictions are implemented to protect identified paleontological resources at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and would result in an overall reduction in routes available to access public lands.

Effects from Forest Products Management

Effects would be similar to those identified under Alternative A. Under Alternative B, the BLM would implement BMPs that supplement basic guidelines for road planning, construction, drainage, and maintenance. Additional requirements could directly affect transportation and travel management by increasing route restrictions. Overall, these measures would increase route restrictions and closures compared to Alternative A.

Effects from Recreation Management

Similar to Alternative A, the BLM would continue to manage public lands for a variety of recreational activities within all ROS settings. Effects on transportation and travel management would be similar to those identified under Alternative A. Under this alternative, the ROS setting establishes approximately 30 percent of the planning area as primitive and available for nonmotorized opportunities (comprised of 6,200 acres Primitive and 36,495 acres Semiprimitive Nonmotorized). The remaining 70 percent (23,593 acres Semiprimitive Motorized, 54,867 acres

Roaded-Natural, 22,478 acres Semi-Urban, and 40 acres Urban) would be open to more motorized and developed activities. This alternative increases nonmotorized experiences by approximately 7 percent compared to Alternative A. As a result, motorized activities would be limited, but nonmotorized uses would be expanded. As under Alternative A, motorized opportunities would be subject to area designations (Open, Limited, and Closed) and route designations.

Under Alternative B, no competitive use zones would be designated in the Lower Salmon River Scenic SRMA, the Lolo Creek SRMA, and in the Wilderness. This would preclude activities such as OHV and motorcycle racing, limiting opportunities for users who desire these activities on BLM-administered lands.

Effects from Transportation and Travel Management

There would be long-term changes to existing motorized vehicle use area designations, including the total elimination of Open areas and the conversion of all areas Limited to existing routes yearlong to areas Limited to designated routes yearlong (and tripling the total acreage of Limited areas to 125,729 acres). There would be no change to Closed area acreage. Eliminating Open area designations would have a long-term direct effect on OHV use by eliminating the area of cross-country travel permitted on BLM-administered lands.~~Eliminating Open area designations would have a long-term direct effect on OHV use by reducing the area of cross-country travel permitted on BLM-administered lands.~~ Areas of high use such as Pardee, Lucile Caves, and portions of the Elk City Township would be directly affected. OHV users in those areas would be restricted to designated routes, and cross-country travel would not be allowed for the general public.

Route designation criteria under this alternative would consider several measures, including designating new routes for motorized travel, closing routes seasonally or yearlong, designating specific modes and types of permitted use, and establishing trail densities. This would affect all recreational users by allowing a balance of uses to protect resource values and to minimize conflicts between different users. Within Limited areas, approximately 254 miles of routes would remain open yearlong (an average route density of 1.29 miles per square mile), almost half of which do not have legal public access so likely receive little or no use. The remaining 109 miles of routes within Limited areas would be subject to vehicle restrictions, the majority (93 percent) of which would be closed yearlong to motorized use. A total of 101 miles of restrictions would be identified for full vehicle closures yearlong, a 70-mile increase compared to Alternative A. Because no Open areas would be designated under this alternative, route closures that currently exist within Open areas would instead be closed within Limited areas, accounting for a large portion of the increase of routes with full vehicle closures yearlong.

About 10 miles of routes within Closed areas would remain open yearlong, maintaining access for specific purposes in otherwise restricted areas. This is a 9-mile decrease compared to Alternative A. The reduction in OHV opportunities in some areas could increase route densities in other areas. Furthermore, eliminating all Open areas and designating all routes within the planning area would create long-term effects on both motorized and nonmotorized users, and would eliminate cross-country motorized vehicle use opportunities on all BLM-administered lands in the CFO. By providing public information such as maps, signs, and kiosks as part of implementing the travel management plan, potential user conflicts would be minimized.

Alternative C

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative C, effects on transportation and travel management from riparian and wetlands management would be similar to those impacts described under Alternative B; however, RCAs would be expanded by 21 percent over Alternative B (and 14 percent over Alternative A). This could increase the impact on transportation and travel management compared to Alternative B by requiring additional route closures to ensure riparian management objectives are met and that special status fish are not adversely affected.

Effects from Wildlife and Special Status Wildlife Management

Effects on transportation and travel management would be similar to those described under Alternative B. Under Alternative C, the same 12 areas as in Alternative B, plus 1 additional area, would be identified for either a no net increase in routes designated open for motorized vehicle use (8 areas totaling 75,772 acres) or management emphasis to decrease routes open for motorized vehicle use (5 areas totaling 38,733 acres). Wildlife and special status wildlife management actions under this alternative would result in the greatest direct effect on transportation and travel management. Although current levels of OHV use could be sustained in some areas, prohibiting a net increase and striving for a net decrease of routes designated open for motorized vehicle use would directly limit access to the identified watershed areas. Opportunities for nonmotorized and mechanized uses in these areas would be expanded.

Measures to decommission or partially or fully obliterated roads and trails in restoration and conservation watersheds totaling 68,359 acres (3 percent more than prescription watersheds under Alternative A) would reduce the amount of available routes and trails for all users who depend on this transportation network. This reduction would be 6 percent more than Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B. Similar to Alternative B, Alternative C establishes land use standards and guides within RCA stream buffers; however, Alternative C has the largest default buffers compared to all Alternatives. The emphasis on restoration actions (**Appendix C**, Conservation and Restoration Watersheds [see Volume II~~I~~]) plus the increase in buffer size could increase the effects on transportation and travel management in comparison to other Alternatives.

Effects from Paleontological Resources Management

Effects would be the same as those described under Alternative B.

Effects from Forest Products Management

Effects would be the same as those described under Alternative B.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management

Effects would be the same as those described under Alternative B.

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative D, impacts would be similar to those described under Alternative B; however, RCA stream buffers would be reduced by 9 percent from Alternative B (and by 15 percent from Alternative A). This could decrease the impact on transportation and travel management in comparison to Alternatives A, B, and C by requiring fewer route closures to ensure that riparian management objectives are met and that special status fish are not adversely affected.

Effects from Wildlife and Special Status Wildlife Management

Priority management areas to protect watersheds, and effects as a result of protecting these areas, would be similar to those described under Alternative B. Measures to decommission or partially or fully obliterated roads and trails in restoration and conservation watersheds (21 percent less than prescription watersheds under Alternative A) would reduce the amount of available routes and trails for all users who depend on this transportation network. Therefore, fewer route restrictions would occur, providing users more opportunities to access watershed areas.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B. Similar to Alternative B, Alternative D establishes land use standards and guides within RCA stream buffers; however, Alternative D has the smallest default buffers compared to all Alternatives. Despite the emphasis on restoration actions (**Appendix C**, Conservation and Restoration Watersheds [see Volume II~~I~~]), the decrease in buffer size would decrease the effects on transportation and travel management in comparison to other Alternatives.

Effects from Paleontological Resources Management

Effects would be the same as those described under Alternative B.

Effects from Forest Products Management

Effects would be the same as those described under Alternative B.

Effects from Recreation Management

Effects on transportation and travel management related to SRMA designations, ROS settings, and competitive use zones would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those described under Alternative B. The main difference between Alternative D and Alternatives B and C is that Alternative D would maintain 23,189 acres as Open for cross-country travel rather than eliminating all Open areas (as would be the case under Alternatives B and C). Open areas under Alternative D would be reduced by 73 percent (62,119

acres) from Alternative A. Approximately 28 percent fewer acres would be Limited to designated routes under Alternative D; Limited areas would total 102,542 acres. As in all other alternatives, approximately 18,000 acres would remain Closed. Open areas under Alternative D would see an increase in cross-country travel as other currently popular Open areas are changed from Open to Limited, thereby restricting cross-country travel. Conflicts between users could continue, as the density of OHV users would increase in smaller and more-confined areas. Nonmotorized users in these areas would undergo a diminished recreation experience because of noise, exhaust fumes, and wheel tracks left behind from motorized cross-country travel.

Effects from route designation criteria would be similar to those described under Alternative B. Within Limited areas, approximately 228 miles of routes would remain open yearlong, about one-third of which do not have legal public access so likely receive little or no use. Similar to Alternatives B and C, the remaining 109 miles of routes within Limited areas would be subject to vehicle restrictions, and approximately 101 miles would be full vehicle closures yearlong, a 71-mile increase compared to Alternative A (and the same as Alternatives B and C). Because Open areas under Alternative D would be reduced by 62,119 acres (73 percent), route closures that currently exist within Open areas would instead be closed within Limited areas, accounting for a large portion of the increase of routes with full vehicle closures yearlong. Effects of routes open within Closed areas would be the same as those described under Alternative B.

Cumulative Effects

Historically, the scattered and fragmented lands that dominate the CFO planning area and the areas rough terrain have been a physical constraint affecting off-road use in the planning area. Past actions such as mineral exploration and development, livestock grazing, forestry practices, and changes to management on lands surrounding the CFO have also contributed to affects on transportation and travel management.

Most past activities are anticipated to continue at a similar level in the foreseeable future. Surface-disturbing activities may contribute to route restrictions and alterations as some areas and existing routes and trails become more heavily traveled and nonmotorized opportunities may be reduced as more development occurs. New routes could increase access to remote areas that were previously inaccessible by motorized vehicles. Accessibility to BLM-lands may change as land acquisitions and disposals continue. Land exchanges would generally result in an increased amount of public land available and accessible to the public.

Idaho's rapidly increasing population would continue to put pressure on the BLM to adequately manage travel and transportation on public lands. Public use of existing routes and trails would continue to increase as population increases. From 1999 to 2003, motorbike and all-terrain vehicle registrations increased approximately 88 percent, and snowmobile registrations increased 13 percent from 2000 to 2004 (Idaho Department of Parks and Recreation 2004). These increases indicate a need for continuing effective transportation and travel management planning throughout the CFO and in surrounding areas.

Alternative A maintains the greatest percentage of land (59 percent) Open to cross-country travel, resulting in the largest opportunity to contribute to motorized and nonmotorized travel. Alternative D would maintain 16 percent of the CFO as Open, while Alternatives B and C do not reserve any

land as Open. Alternatives B and C would provide greater opportunities for nonmotorized travel but overall, would limit motorized travel.

4.3.7 Lands and Realty

Goals: 1) Meet the needs of government agencies and the public for various realty authorizations, access, and land ownership adjustments; and 2) Meet the needs of government agencies and the public for resource protection through public land and minerals withdrawals, acquisition of conservation easements, and resolution of unauthorized use.

Summary

The term "realty authorizations" includes all types of authorizations to use public land that are included in the lands and realty program. These include rights-of-way, land leases, land use permits, Memorandums of Understanding, Cooperative Agreements, reservations to other federal agencies, and license agreements, among others. The term "realty actions" includes all lands and realty activities such as realty authorizations, land tenure actions, and withdrawals, among others.

Alternative A is the only alternative that would specifically prohibit realty authorizations in ACECs (rights-of-way would continue to be prohibited in 20,463 acres of designated ACECs or ACEC/RNAs). In all four alternatives, rights-of-way would be prohibited in both Wilderness Areas and WSAs (11,622 acres). Alternative C would impose the greatest amount of potential limitations based on site-specific analysis for permitting realty authorizations. Alternative C has the most restrictions on allowable uses within ACECs and ACEC/RNAs and would designate the largest amount of land as VRM Class I, the most-restrictive classification. Alternative D would have the fewest restrictions on land uses and realty authorizations within ACECs and ACEC/RNAs and the fewest acres designated VRM Class I and II. Alternative D would best meet the needs of government agencies and the public for realty authorizations, access, and land ownership adjustments, followed by Alternatives B, A, and then C.

All alternatives would similarly meet the needs of government agencies and the public for resource protection through public land withdrawals, acquisition of conservation easements, and resolution of unauthorized use. **Table 4-~~57~~ 58** identifies the indicators that were used to analyze effects on lands and realty under each alternative.

Table 4-58
Comparison of Lands and Realty Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of CFO lands where realty authorizations prohibited	21,213	750	750	750
Acres of land tenure adjustment (retention and potential disposal)	96,465 retention; 35,361 available for disposal (12,000 acres of acquired lands not available for disposal)	113,728 retention; 30,098 available for disposal	113,728 retention; 30,098 available for disposal	113,728 retention; 30,098 available for disposal

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For lands and realty management, the indicators used for impact analysis are identified in **Table 4-~~57~~58**, Comparison of Lands and Realty Indicators by Alternative.

Methods and Assumptions

Potential impacts on lands and realty from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- Retaining larger blocks of public land is advantageous to the BLM's management of all resources and programs since there are increased opportunities to develop long-term habitat and species management plans, watershed management plans, public recreation opportunities, manage forest/vegetal products, administer livestock grazing, protect cultural resources, etc.;
- Further consolidation of public lands and elimination of scattered parcels of public land that lack access and are difficult to manage is beneficial to the BLM and the public; and
- Access to public lands, for both the public and the BLM, and availability of public lands to meet public demands is a high priority of the Lands and Realty program.

Effects Common to All Alternatives

Effects from Soils Resources Management

Soil resources would have the same potential effect on lands and realty actions under all alternatives. When realty authorizations are proposed that would include ground disturbing activities on fragile or erosive soils, the proposed authorization may need to be relocated, redesigned, or denied.

Effects from Water Resources Management

Water resources would have the same potential effect on lands and realty actions under all alternatives. When realty authorizations are proposed that could affect water quality or water use, the proposed authorization may need to be relocated, redesigned, or denied.

Effects from Vegetation—Riparian and Wetlands Management

Realty authorizations proposed in protective riparian buffer areas would analyzed for potential impacts. Realty authorizations that would result in unacceptable levels of disturbance to these areas may need to be relocated, redesigned or denied.

Effects from Wildlife and Special Status Wildlife Management

Proposed realty authorizations that would impact the habitat of special status species may need to be relocated, redesigned or denied. All alternatives would require minimal or no disturbance within 1 mile of occupied gray wolf denning sites and rendezvous locations and within 100 yards of occupied raptor nests. This could conflict with some proposed realty actions; however, such conflicts would be infrequent since consideration is currently given to impacts to raptors and few, if any, realty actions are likely to occur in areas inhabited by wolves.

Effects from Aquatic Resources, Fish and Special Status Fish Management

Proposed realty authorizations that would impact the habitat of special status species may need to be relocated, redesigned or denied.

Effects from Special Status Plants Management

Proposed realty authorizations that would impact the habitat of special status species may need to be relocated, redesigned or denied.

Effects from Cultural Resources Management

Cultural resources would have the same potential effect on lands and realty actions under all alternatives. If important cultural resources were found on public lands, a realty authorization may need to be relocated, redesigned, or denied. The presence of significant cultural resources on public lands could prevent the disposal of public lands through land tenure actions. Cultural resources could reduce the acres available for realty authorizations and could limit land tenure adjustment opportunities.

Effects from Minerals Management

Mining claims and associated mining activities could conflict with right-of-way uses, public access, and other realty authorizations. They also could limit land tenure adjustment opportunities because public lands with valid mining claims cannot be disposed.

Effects from Lands and Realty Management

Under all alternatives, 750 acres of Wilderness Areas would exclude the granting of all rights-of-way and most realty authorizations. There are many other areas where realty authorizations may be denied if they would be incompatible with other authorized uses or result in unacceptable impacts to specific resource values such as species (and their habitat) listed under the ESA, cultural resources, certain VRM classifications, wetlands and floodplains, ACEC/RNAs, critical watersheds, and others. It is not possible to identify all of the possible reasons or areas for which realty authorizations may be found unacceptable. The granting or denial of a realty authorization is the BLM's discretion based upon whether or not the proposed action (including mitigation measures) would result in unacceptable impacts to any resources or values. They must be evaluated case by case. In some instances, one type of realty action may be acceptable in a given location, while a different type of action would be unacceptable.

Effects from Native American Tribal Uses Management

No specific effects have been identified from management actions regarding Native American tribal uses. The BLM would continue to consult with tribes regarding treaty rights, cultural access and use of plants, animals, fish and habitats. Consultation could result in identifying areas where land tenure adjustments or right-of-way actions may need to be modified to accommodate or maintain tribal uses or to avoid resources important to tribes. However, it is unlikely that accommodating tribal uses would be inconsistent with lands and realty goals and objectives within the CFO in the long term.

Alternative A

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative A, riparian and wetlands management would maintain 24,920 acres of buffers around lakes, rivers, and streams to prevent damage to riparian and wetlands habitats. These buffers

would protect the soil and vegetative cover, thus limiting the use of these areas for some realty authorizations that would cause unacceptable levels of disturbance.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Prescription watersheds would identify 66,077 acres to be managed to promote activities that help achieve fisheries and water quality objectives and DFCs. Management of these watersheds could restrict ground-disturbing activities in high-priority watersheds, although the focus of the management would vary. Implementing these management actions could limit realty actions in those areas.

Effects from Visual Resources Management

Class I VRM lands (12,704 acres) could constrain some realty authorizations, although they are not designated as exclusion areas. These lands could be available for fewer land tenure adjustment opportunities because of their high visual resource qualities; however, it is possible that in certain circumstances they could be subject to adjustment.

Realty authorizations would continue to be limited but not prohibited on the 41,195 acres of Class II VRM lands, depending on the extent and permanence of any disturbance. More of ~~T~~these lands could be ~~more~~ available for disposal actions than Class I lands. VRM designation of Class III and IV lands, which total 62,289 acres and 27,639 acres, respectively, would probably not affect lands and realty management.

Effects from Lands and Realty Management

Realty Authorizations. Alternative A is the only alternative that would specifically prohibit realty authorizations in ACECs (rights-of-way would continue to be prohibited in 20,463 acres of designated ACECs or ACEC/RNAs). There would be no changes in the granting or administration of realty authorizations.

Land Tenure Adjustment. Under Alternative A, all public lands within the management areas identified in the Land Tenure Adjustment Plan Amendment would continue to be retained (96,465 acres). Public lands outside the management areas, known as the Adjustment Area (35,361 acres), would continue to be available for consideration of disposal. The BLM would continue to acquire private lands by land exchange, purchase, and donation when such lands contain important resource values, consolidate surface and subsurface interests, provide access to public lands, or eliminate inholdings in the management areas. Acquisition of private lands in the adjustment area would be possible, although the overall objective would be to consolidate public lands.

Access and Easements. Under Alternative A, road easement acquisition will be initiated only after development of activity plans including road use plans with a route analysis with early and frequent involvement of affected parties.

Withdrawn Lands. Under Alternative A, 18,532 acres of public lands and 8,062 of reserved mineral estates would continue to be withdrawn from mineral entry. Although the Salmon River withdrawals are due to expire in 2006 and 2008, respectively, a renewal of these withdrawals is currently being processed.

Effects from ACEC/RNA Management

Under Alternative A, ACEC and ACEC/RNA designations would prohibit new rights-of-way on 20,463 acres. Alternative A would designate 25,600 acres as ACECs and ACEC/RNAs.

Alternative B

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative B, riparian and wetlands management would maintain 22,847 acres of buffers around lakes, rivers, and streams to prevent damage to riparian and wetlands habitats, 6 percent less area than under Alternative A RHCA buffers. Within these RCA stream buffers, development and relicensing of hydroelectric facilities would be limited to those projects meeting certain standards for fish passage and habitat requirements and applicants would be encouraged to locate (or relocate) hydroelectric facilities outside RCA stream buffers where feasible. This would complicate the granting or renewal of permits or licenses for hydroelectric development and would limit the amount of lands available for such development.

The riparian management objectives would be considered when BLM grants or renews realty authorizations within RCA stream buffers or in areas that could affect RCAs. Authorizations would be subject to stipulations or mitigation measures designed to avoid effects that could interfere with the attainment of the riparian management objectives or that could impact ESA-listed fish. This obligation to ensure that riparian management objectives are met could reduce the number and scope of realty authorizations by reducing the amount of area available for such activities. It may be necessary to realign or relocate BLM easements across private lands and realty authorizations on public land to avoid RCAs or effects on RCAs.

Land tenure adjustment also would be affected by riparian and wetlands management actions since the disposal of public lands with RCA stream buffers may be difficult or undesirable, resulting in fewer lands available for land tenure actions.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

The Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) would identify 64,481 acres in 33 watersheds to be managed for restoration (32 watersheds) and conservation (1 watershed), 2 percent less than prescription watersheds under Alternative A. Both levels of management could restrict ground-disturbing activities in high-priority watersheds, although the focus of the management would vary. Implementing these management actions could limit realty actions in those areas.

Effects from Visual Resources Management

Impacts would be the same as those described under Alternative A.

Effects from Renewable Energy Management

Under Alternative B, development of electrical generation using biomass would be encouraged. If this type of energy development occurs on, or near, public lands, there would be an increase in the number of realty authorizations such as leases, permits, and rights-of-way (for transmission lines, access roads, etc.).

Effects from Lands and Realty Management

Rights-of-way. Under Alternative B, priority for rights-of-way would be granted to energy-related projects. Exclusion areas where no realty authorizations would be allowed are Wilderness Areas (750 acres). Avoidance areas would include some ACECs and RNAs, designated or proposed wild and scenic rivers, and some areas with special resource values. Prior to granting rights-of-way in avoidance areas, applicants would be required to implement mitigation to limit impacts to valuable resources or interference with other uses. No right-of-way corridors are identified under Alternative B; however, applicants would be encouraged to consolidate linear rights-of-way which would reduce widespread impacts. The BLM would consider establishing right-of-way corridors in the future if they are needed and feasible. Under Alternative B, fewer acres would be available for realty authorizations than under Alternative A, and restrictions or limitations would be imposed on such authorizations on a larger amount of land.

Land Tenure Adjustment. Under Alternative B, the BLM would retain ownership of more public lands than in Alternative A. There are 113,728 acres of public land identified in **Appendix M**, Land Tenure Adjustments (see Volume III), as management blocks (18 percent more than retained lands in Alternative A). Some lands within most management areas could be transferred out of federal ownership if there is not a substantial overall reduction in the amount of federal land within the management area. Scattered and isolated public lands outside the management blocks (30,098 acres) would potentially be available for disposal. Priority would be given to disposal of public lands through land exchanges that would serve to consolidate public land ownership.

Access and Easements. Under Alternative B, the BLM would seek to acquire access to inaccessible federal lands. This can be achieved by acquiring public ownership of property or easements across non-federal land. Implementing this alternative would result in the public and agency personnel obtaining access to more public lands.

Withdrawn Lands. Under Alternative B, the 18,532 acres of public land and 8,062 acres of reserved mineral estate withdrawn along the Salmon River would be considered for renewal. Any public lands along the Salmon River which are not currently withdrawn will be considered for withdrawal. This may result in a small increase in the amount of public land that is withdrawn than currently exists under Alternative A.

Effects from ACEC/RNA Management

Alternative B would not prohibit new realty actions (including rights-of-way) in any ACECs or ACEC/RNAs. New applications for rights-of-way in ACECs would be considered on a case-by-case basis. Alternative B would designate ~~34,528~~36,153 acres as ACECs and ACEC/RNAs.

Alternative C

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative C, riparian and wetlands management would maintain 27,624 acres of buffers around lakes, rivers, and streams to prevent damage to riparian and wetlands habitats, 14 percent more area than RHCA buffers under Alternative A. Impacts would be similar to those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those described under Alternative B, except that under Alternative C, more watersheds would be managed as conservation watersheds (3) and restoration watersheds (~~40~~37) totaling 68,359 acres; therefore, the geographic scope of limitations on ground-disturbing activities, including some realty authorizations, would be 6 percent greater than Alternative B and 3 percent greater than prescription watersheds in Alternative A.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects from ACEC/RNA management under Alternative C would be similar to those under Alternative B, except Alternative C would designate 60,661 acres as ACECs and ACEC/RNAs, more than double that in Alternative A and ~~57~~ 40 percent more than Alternative B.

Alternative D

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative D, riparian and wetlands management would maintain 20,710 acres of buffers around lakes, rivers, and streams to prevent damage to riparian and wetlands habitats, 15 percent less area than under Alternative A. Impacts would be similar to those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be similar to those under Alternative B. However, under Alternative D, fewer watersheds would be managed as conservation watersheds (~~1~~three) or as restoration watersheds (~~27~~24), totaling 52,118 acres; therefore, the geographic scope of limitations on ground-disturbing activities, including some realty authorizations, would be 19 percent smaller than under Alternative B and 21 percent smaller than prescription watersheds under Alternative A.

Effects from Visual Resources Management

Effects would be similar to those described under Alternative A, except that, in Alternative D, 43 percent fewer lands would be classified as VRM Class I (7,205 acres), which would result in fewer restricted acres than Alternative A.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects from ACEC/RNA management under Alternative D would be similar to those under Alternative B, except Alternative D would designate 23,922 acres as ACECs and ACEC/RNAs,

Cumulative Effects

Realty Authorizations. Effects of past actions include various authorizations and agreements to use BLM land such as right-of-way grants and road use agreements under several different authorities, permits, and leases pursuant to Section 302 of the FLPMA and Recreation and Public Purposes Act leases. There have been no designations or requests for designations of right-of-way corridors on CFO lands. No new potential right-of-way corridors on BLM lands within the CFO have been identified.

Alternative A would have the greatest effect on realty authorizations, by contributing to an overall reduction in land available for realty actions. Future actions such as ESA listings, increased tribal coordination, implementation of the ICBEMP, etc. could result in limitations imposed on realty authorizations in additional areas. However, in the future there would be increased demands for many kinds of uses on the public lands such as rights-of-way, leases, permits, recreation, and extractive uses as a result of increased population in the area. Overall, the cumulative effects of realty authorizations in the greater planning area would be minimal due to the small percentage of land that is managed by the BLM.

Land Tenure Adjustment. Land tenure adjustments for BLM lands that have occurred within the planning area during the 20-year period following the implementation of the first Land Tenure Adjustment Amendment to the MFP in 1984 include acquisition of 22,050 acres and disposal of 4,943 acres. While the percentage of land managed by the BLM within the planning area is small, acquisitions of key parcels for resource protection and scenic values have made important contributions to the quality of life and the environment in the planning area. Continued realty actions to consolidate parcels and acquire new holdings would result in positive cumulative effects for the planning area.

4.4 SPECIAL DESIGNATIONS

4.4.1 Areas of Critical Environmental Concern and Research Natural Areas

Goal: Maintain or enhance relevant resource values of more than local importance, or protect life and promote safety where natural hazards exist.

Summary

Under Alternative A, 10 ACEC/RNAs have been designated; however, no specific management goals or objectives for management were identified. The goals and objectives under Alternatives B, C, and D is to designate and manage areas as ACEC/RNAs where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. The designation of ACEC/RNAs allows focused management to occur on these lands, which enhances the values for which they were set aside, and minimize detrimental impacts. Alternative C best meets the goal of maintaining or enhancing resource values by designating the most acreage of ACECs and RNAs, followed by Alternatives B, A, and D (**Table 4-~~58~~59**).

Table 4-59
Comparison of ACECs and RNAs Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Number of ACEC/RNAs	10	~~11~~12	15	8
Acres of ACEC/RNAs	25,600	~~34,528~~36,153	60,661	23,924
ACEC/RNA management	No specific goals	Existing and newly designated ACECs managed to meet relevance and importance criteria	Existing and newly designated ACECs managed to meet relevance and importance criteria	Existing and newly designated ACECs managed to meet relevance and importance criteria

Source: BLM 2004a

The designation of ACEC/RNAs does not prevent appropriate land uses that are not detrimental to the unique features or values that receive special focused management or protection. Appropriate management plans would be developed to enhance the relevance and importance criteria, specific to the ACEC/RNA designation. To ensure protection, conservation, or restoration for specific ACEC/RNA relevance and importance criteria; measures for land uses (e.g., pre-development, development, and post-development) would be incorporated into management plans or would be addressed at the activity or project level.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For ACECs and RNAs, the indicators used for impact analysis are identified in **Table 4-~~58~~59**, Comparison of ACECs and RNAs Indicators by Alternative.

Methods and Assumptions

Potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the assumption that management prescribed for the potential ACECs would protect the relevant and important values identified during the evaluation process.

Effects Common to All Alternatives

Effects from Wildland Fire Management

The BLM would base suppression methods on resource values (e.g., streams, listed plant populations, cultural sites, WSAs, ACECs, VRM Class I and II areas, slopes and soils, and access), consistent with the Values at Risk identified in **Appendix H**, Wildland Fire Management (see Volume II~~I~~). By taking into consideration the special characteristics of ACECs, fire suppression methods would be designed and implemented to minimize the effects of fire suppression on the special characteristics of ACECs. As a result, ongoing effects would include attempts to preserve the special characteristics of ACECs from fire suppression actions during a wildland fire.

Effects from Minerals Management

ACECs that include lands within the Salmon River withdrawal(s) would be closed to mineral entry. The only difference between the alternatives is that current conditions would be less restrictive than Alternatives B, C, and D. The number of acres of ACECs closed to mineral entry would increase from current conditions but is the same under Alternatives B, C, and D.

Effects from Wilderness and Wilderness Study Areas Management

The 6,178 acres of Snowhole Rapids WSA within the Lower Salmon River ACEC would be closed to leasable minerals and, in most instances, no sales of mineral materials would occur. This reduces chances of surface-disturbing activities occurring in ACECs.

Effects from Native American Tribal Uses Management

No specific effects have been identified from management actions regarding Native American tribal uses. The BLM would continue to consult with tribes regarding treaty rights, cultural access and use of plants, animals, fish and habitats within the ACEC/RNAs. Consultation may result in identifying areas where actions or restrictions on access would need to be modified to accommodate tribal uses. However, it is unlikely that accommodating tribal uses consistent with resource goals and objectives would affect the ACEC/RNA objectives. Consideration of tribal knowledge of natural and cultural resources may also enhance the management of resources within ACEC/RNAs.

Alternative A

Effects from Vegetation—Weeds Management

The BLM would continue weed control efforts by working with partner agencies to inventory, prevent, control, and monitor weed populations. It would also rehabilitate areas that have been affected by weeds. Long-term effects would include protecting native vegetation, such as flora found in ACECs, from weeds.

Effects from Wildland Fire Management

The BLM would manage the following number of urban and rural WUI acres in ACEC/RNAs according to **Table 4-~~59~~60**.

Table 4-60
WUI Locations by ACEC/RNA for Alternative A

ACEC or ACEC/RNA	Urban WUI (acres)	Rural WUI (acres)
Captain John Creek ACEC/RNA	0	748
Craig Mountain ACEC	0	1,129
Elk City Landfill and American Hill Lake ACEC	30	0
Lower Lolo Creek ACEC	2,213	3,678
Lower Salmon River ACEC	937	14,640
Lucile Caves ACEC/RNA	404	0
Wapshilla Ridge ACEC/RNA	0	2
Long Gulch ACEC/RNA	47	0
Skookumchuck ACEC/RNA	18	0
Total	**3,649**	**20,197**

Source: BLM 2004a

Under Alternative A, urban WUI areas would cover 14 percent and rural WUI areas would cover 79 percent of ACEC/RNA designations. Wildland fire prevention and suppression activities would provide for human safety and protect property, and secondarily would also avoid or minimize effects on resource values identified for designation of ACEC/RNA. The Healthy Forest Restoration Act requires that WUI projects implemented under its authority maintain, or contribute to the restoration of presuppression characteristics in existing old-growth forest stands when implementing covered projects.

Effects from Livestock Grazing Management

The BLM would manage the following livestock grazing allotments in ACEC/RNAs according to **Table 4-~~60~~61**.

Table 4-61
Livestock Grazing Allotments by ACEC/RNA for Alternative A

ACEC or ACEC/RNA	Within Livestock Grazing Allotments (acres)
Captain John Creek ACEC/RNA	0
Craig Mountain ACEC	3,881
Elk City Landfill and American Hill Lake ACEC	29
Lower Lolo Creek ACEC	2,778
Lower Salmon River ACEC	14,395
Lucile Caves ACEC/RNA	0
Wapshilla Ridge ACEC/RNA	401
Long Gulch ACEC/RNA	0
Skookumchuck ACEC/RNA	0
Total	**21,484**

Source: BLM 2004a

There would continue to be 21,484 acres of livestock grazing allotments in 25,600 acres of ACEC/RNAs. This accounts for 92 percent of the total area of ACEC/RNAs. Areas where grazing allotments overlap sensitive areas within these designations are often fenced or are not authorized for livestock grazing use, thereby protecting the special values within these designations. There would be no change in the management of livestock grazing allotments from current management.

Effects from Minerals Management

Alternative A would continue to manage minerals activities on lands open to leasing, location, or sale on a case-by-case situation following current laws, policies, and regulations. The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~61~~62**. These minerals designations result from wild and scenic rivers and WSA management.

Table 4-62
Minerals Designations by ACEC/RNA for Alternative A

ACEC or ACEC/RNA	Leasables Open (acres)	Leasables Closed (acres)	Locatables Open (acres)	Locatables Closed (acres)	Salables Open (acres)	Salables Discretionary Closures (acres)
Captain John Creek ACEC/RNA	1,320	0	1,320	0	1,320	0
Craig Mountain ACEC	3,955	0	3,955	0	3,955	0
Lower and Middle Cottonwood Islands ACEC/RNA	43	0	43	0	43	0
Elk City Landfill and American Hill Lake ACEC	29	0	29	0	29	0
Lower Lolo Creek ACEC	3,678	0	3,678	0	3,678	0
Lower Salmon River ACEC	10,021	6,178	963	14,738	10,021	6,178
Lucile Caves ACEC/RNA	403	0	146	257	403	0
Wapshilla Ridge ACEC/RNA	401	0	401	0	401	0
Long Gulch ACEC/RNA	47	0	0	47	47	0
Skookumchuck ACEC/RNA	17	0	2	15	17	0
Total	**19,914**	**6,178**	**10,537**	**15,057**	**19,914**	**6,178**

Source: BLM 2004a

There would be no change in the designation of open and closed areas for mining activities in ACEC/RNAs. Leasable, locatable, and salable mineral activities would continue to be allowed on approximately 75 percent, 40 percent, and 75 percent, respectively, of ACEC/RNAs. Leasable minerals activities would not be constrained by NSO and CSU stipulations. Ongoing effects would continue, such as surface disturbances associated with minerals activities that could damage the special characteristics of ACEC/RNAs.

Effects from Lands and Realty Management

Under Alternative A, no new rights-of-way would be permitted in Lower Lolo Creek ACEC (3,678 acres), Lower Salmon River ACEC (15,702 acre), Craig Mountain ACEC (3,956 acres), Wapshilla Ridge ACEC/RNA (401 acres), and Lucile Caves ACEC/RNA (404 acres), a total of 20,463 acres. In areas where realty authorizations are permitted, the BLM maintains discretionary authority and would only permit actions that do not impair or conflict with an ACEC/RNA.

Effects from ACEC/RNA Management

Alternative A would continue to designate 25,600 acres (or approximately 18 percent of BLM-administered land) of ACECs and RNAs. Ongoing effects would include concern for designating additional ACECs in order to protect, for example, special scenic, recreational, cultural, and

biological resources associated with the Salmon River, American River, and American River Historic Sites District.

Effects from Wild and Scenic Rivers Management

Lands within ACECs that are also identified for inclusion in the NWSRS would be withdrawn from locatable mineral entry. The withdrawal reduces chances of surface-disturbing activities occurring on these lands.

Alternative B

Effects from Vegetation—Weeds Management

The BLM would work with partners in coordinated weed management areas to develop and implement annual treatment strategies. It would also implement treatment strategies outside of weed management areas in accordance with other resource goals. Long-term effects would include protecting native vegetation, such as flora found in ACECs, from weeds.

Effects from Wildland Fire Management

The BLM would manage the following number of urban and rural WUI acres in ACEC/RNAs according to **Table 4-~~62~~63**.

Table 4-63
WUI Locations by ACEC/RNA for Alternative B

ACEC or ACEC/RNA	Urban WUI (acres)	Rural WUI (acres)
Captain John Creek ACEC/RNA	0	748
Lower and Middle Cottonwood Islands ACEC/RNA	43	0
Lower Salmon River ACEC	937	15,137
East Fork American River ACEC	570	0
American River Historic Sites District ACEC	5,256	4,570
Salmon River ACEC	3,044	5,756
Upper Lolo Creek ACEC	635	1,198
Lower Lolo Creek ACEC	2,213	3,678
Wapshilla Ridge ACEC/RNA	0	2
Long Gulch ACEC/RNA	47	0
Lucile Caves ACEC/RNA	136	0
Skookumchuck ACEC/RNA	18	0
Total	**12,899~~26~~4**	**31,089~~29,891~~**

Source: BLM 2004a

Under Alternative B, urban WUI areas would cover 36 percent and rural WUI areas would cover ~~87~~ 86 percent of ACEC/RNA designations. Compared to Alternative A and represented as a percentage of total land containing ACEC/RNA designations, this is an increase of 22 percent and ~~8~~ 7 percent, respectively. Effects would be similar to those described under Alternative A.

Effects from Livestock Grazing Management

The BLM would manage the following livestock grazing allotments in ACEC/RNAs according to **Table 4-~~63~~64**.

Table 4-64
Livestock Grazing Allotments by ACEC/RNA for Alternative B

ACEC or ACEC/RNA	Within Livestock Grazing Allotments (acres)
Captain John Creek ACEC/RNA	0
Lower Salmon River ACEC	13,012
East Fork American River ACEC	461
American River Historic Sites District ACEC	4,034
Salmon River ACEC	5,466
Upper Lolo Creek ACEC	3,210
Lower Lolo Creek ACEC	3,662
Wapshilla Ridge ACEC/RNA	0
Long Gulch ACEC/RNA	0
Lucile Caves ACEC/RNA	0
Skookumchuck ACEC/RNA	0
Total	**29,845~~26,635~~**

Source: BLM 2004a

There would be ~~26,635~~29,845 acres of livestock grazing allotments in ~~34,528~~36,153 acres of ACEC/RNAs. This accounts for ~~77~~ 83 percent of the total area of ACEC/RNAs. Compared to Alternative A, ~~15~~ nine percent fewer acres of ACEC/RNAs would be open to livestock grazing. Additionally, grazing would be removed entirely from the Wapshilla Ridge ACEC/RNA, further protecting unique values. Overall, impacts from grazing management on ACEC/RNAs would be reduced in comparison to Alternative A.

Effects from Minerals Management

Alternative B would be similar to Alternative A; however, because of the implementation of leasing stipulations, all leasable activities and, in most instances, mineral material disposal activities, would be subject to NSO-1 in ACECs. This stipulation reduces chances of minerals activities that could damage the important and relevant ACEC values. The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~64~~65**. These minerals designations result from wild and scenic rivers and WSA management.

The BLM would enforce NSO and CSU stipulations for leasables according to **Table 4-~~65~~66**.

Under Alternative B, ~~100~~ 99 percent of BLM land within ACEC/RNAs open to leasable and saleable mineral activity would contain NSO stipulations, and ~~75~~ 74 percent would contain CSU stipulations (~~20,960~~22,325 acres), in comparison to Alternative A which does not identify any stipulations within these designations. Implementing stipulations would reduce the number of surface disturbances associated with leasable and saleable minerals activities that could damage the special characteristics of ACEC/RNAs.

Table 4-65
Minerals Designations by ACEC/RNA for Alternative B

ACEC or ACEC/RNA	Leasables Open (acres)	Leasables Closed (acres)	Locatables Open (acres)	Locatables Closed (acres)	Salables Open (acres)	Salables Discretionary Closures (acres)
Captain John Creek ACEC/RNA	1,320	0	1,320	0	1,320	0
Lower and Middle Cottonwood Islands ACEC/RNA	43	0	43	0	43	0
Lower Salmon River ACEC	10,021	6,178	963	14,753	10,021	6,178
East Fork American River ACEC	569	0	569	0	569	0
American River Historic Sites District ACEC	6,355	0	6,355	0	6,355	0
Salmon River ACEC	5,758	0	505	5,253	5,758	0
Upper Lolo Creek ACEC	1,624	0	1,624	0	1,624	0
Lower Lolo Creek ACEC	3,678	0	3,678	0	3,678	0
Wapshilla Ridge ACEC/RNA	401	0	401	0	401	0
Long Gulch ACEC/RNA	47	0	0	47	47	0
Lucile Caves ACEC/RNA	135	0	0	135	135	0
Skookumchuck ACEC/RNA	17	0	2	15	17	0
Total	**29,968** ~~**28,344**~~	**6,178**	**15,460** ~~**13,836**~~	**20,203**	**29,968** ~~**28,344**~~	**6,178**

Source: BLM 2004a

Table 4-66
Mineral Leasing Stipulations by ACEC/RNA for Alternative B

ACEC or ACEC/RNA	NSO (acres)	CSU (acres)
Captain John Creek ACEC/RNA	1,320	0
Lower Salmon River ACEC	9,991	9,991
East Fork American River ACEC	569	0
American River Historic Sites District ACEC	6,322	1,550
Salmon River ACEC	5,725	5,700
Upper Lolo Creek ACEC	1,544	1,365
Lower Lolo Creek ACEC	3,677	3,521
Wapshilla Ridge ACEC/RNA	401	0
Long Gulch ACEC/RNA	47	47
Lucile Caves ACEC/RNA	136	136
Skookumchuck ACEC/RNA	15	15
Total	**29,747** ~~**28,203**~~	**22,325** ~~**20,960**~~

Source: BLM 2004a

Effects from Lands and Realty Management

In areas where realty authorizations are permitted, the BLM maintains discretionary authority and would only permit actions that do not impair or conflict with an ACEC/RNA.

Effects from ACEC/RNA Management

Alternative B would designate ~~34,528~~36,153 acres (or approximately ~~24~~ 25 percent of BLM-administered land) ~~of~~ as ACECs and RNAs. This would increase the percentage of BLM-administered land designated as ACECs and RNAs from 18 to 25 percent. Greater protection would be afforded the special values associated with the Upper Lolo Cree, Salmon River, the East Fork American River, and the American River Historic Sites District. However, the Elk City Land Fill and American Hill Lake ACEC would no longer be designated as an ACEC. This area meets the relevance and importance criteria for being an ACEC because of the presence of buried hazardous materials and the potential threat to public safety and welfare. Therefore, public health and safety concerns could develop if this area is no longer designated as an ACEC and is not managed to safeguard the public. The Craig Mountain ACEC also would no longer be designated as an ACEC. This area meets the relevance and importance criteria for being an ACEC because of its high-value scenic, cultural, fisheries, and wildlife resources. Therefore, these special values could receive less protection from, for example, surface-disturbing activities or recreation activities if this area is no longer designated as an ACEC and is not managed to preserve the special resources. Management of forested areas would receive less protection for wildlife resources and for achievement of DFC supporting historical range of variability, particularly old forest stands. In addition, the area provides occupied and suitable habitat for Spalding's silene, a listed plant. Weed encroachment in these populations is an identified threat. Finally, Lucile Caves ACEC/RNA would be reduced in size because it does not fully meet the relevance and importance criteria identified for the original designation, as a result of updated inventories and analysis.

Effects from Wild and Scenic Rivers Management

Effects would be similar to those described under Alternative A, except that lands within ACECs that are also identified for inclusion in the NWSRS (and would be withdrawn from locatable mineral entry) would include more acres under Alternative B.

Alternative C

Effects from Vegetation—Weeds Management

The effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

The BLM would manage the following number of urban and rural WUI acres in ACEC/RNAs according to **Table 4-~~66~~67**.

Under Alternative C, urban WUI areas would cover 21 percent and rural WUI areas would cover 75 percent of ACEC/RNA designations. In comparison to Alternative A and represented as a percentage of total land containing ACEC/RNA designations, this is an increase of 7 percent and a decrease of 4 percent, respectively. Effects would be similar to those described under Alternative A.

Table 4-67
WUI Locations by ACEC/RNA for Alternative C

ACEC or ACEC/RNA	Urban WUI (acres)	Rural WUI (acres)
American River Historic Sites District ACEC	5,256	4,570
Captain John Creek ACEC/RNA	0	748
Lower and Middle Cottonwood Islands ACEC/RNA	43	0
Craig Mountain ACEC	0	13,539
East Fork American River ACEC	570	0
Little Salmon River ACEC	20	590
Upper Lolo Creek ACEC	635	1,198
Lower Lolo Creek ACEC	2,213	3,678
Lower Salmon River ACEC	937	15,137
Partridge/Elkhorn ACEC	0	576
Salmon River ACEC	3,044	5,756
Wapshilla Ridge ACEC/RNA	0	2
Long Gulch ACEC/RNA	47	0
Lucile Caves ACEC/RNA	136	0
Skookumchuck ACEC/RNA	18	0
Total	**12,919**	**45,794**

Source: BLM 2004a

Effects from Livestock Grazing Management

The BLM would manage the following livestock grazing allotments in ACEC/RNAs according to **Table 4-~~67~~68**.

Table 4-68
Livestock Grazing Allotments by ACEC/RNA for Alternative C

ACEC or ACEC/RNA	Within Livestock Grazing Allotments (acres)
American River Historic Sites District ACEC	4,034
Captain John Creek ACEC/RNA	0
Craig Mountain ACEC	438
East Fork American River ACEC	461
Little Salmon River ACEC	590
Upper Lolo Creek ACEC	1,085
Lower Lolo Creek ACEC	3,210
Lower Salmon River ACEC	12,430
Partridge/Elkhorn ACEC	576
Salmon River ACEC	5,435
Wapshilla Ridge ACEC/RNA	0
Long Gulch ACEC/RNA	0
Lucile Caves ACEC/RNA	0
Skookumchuck ACEC/RNA	0
Total	**28,259**

Source: BLM 2004a

There are 28,259 acres of livestock grazing allotments in 60,661 acres of ACEC/RNAs. This accounts for 47 percent of the total area of ACEC/RNAs. This alternative would have 45 percent less total area of ACEC/RNAs open to livestock grazing than Alternative A, and ~~30~~ 36 percent less total area than Alternative B due to an increase in ACEC/RNA designations. Under this alternative 25 allotments would be retired throughout the CFO and grazing would be eliminated entirely in the Wapshilla Ridge ACEC/RNA, thereby protecting unique values. Overall, impacts from grazing management on ACEC/RNAs would be reduced in comparison to Alternatives A, B and D.

Effects from Minerals Management

The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~68~~69**. These minerals designations result from wild and scenic rivers and WSA management.

Table 4-69
Mineral Designations by ACEC/RNA for Alternative C

ACEC or ACEC/RNA	Leasables Open (acres)	Leasables Closed (acres)	Locatables Open (acres)	Locatables Closed (acres)	Salables Open (acres)	Salables Discretionary Closures (acres)
American River Historic Sites District ACEC	6,355	0	6,355	0	6,355	0
Captain John Creek ACEC/RNA	1,320	0	1,320	0	1,320	0
Craig Mountain ACEC	23,341	0	23,261	80	23,341	0
Lower and Middle Cottonwood Islands ACEC/RNA	43	0	43	0	43	0
East Fork American River ACEC	569	0	569	0	569	0
Little Salmon River ACEC	584	6	583	6	590	0
Upper Lolo Creek ACEC	1,624	0	1,624	0	1,624	0
Lower Lolo Creek ACEC	3,678	0	3,678	0	3,678	0
Lower Salmon River ACEC	10,021	6,178	963	14,753	10,021	6,178
Partridge/Elkhorn ACEC	576	0	576	0	576	0
Salmon River ACEC	5,758	0	505	5,253	5,758	0
Wapshilla Ridge ACEC/RNA	401	0	401	0	401	0
Long Gulch ACEC/RNA	47	0	0	47	47	0
Lucile Caves ACEC/RNA	135	0	0	135	135	0
Skookumchuck ACEC/RNA	17	0	2	15	17	0
Total	**54,469**	**6,184**	**39,880**	**20,289**	**54,475**	**6,178**

Source: BLM 2004a

The BLM would enforce NSO and CSU stipulations for leasables according to **Table 4-~~69~~70**.

Table 4-70
Mineral Leasing Stipulations by ACEC/RNA for Alternative C

ACEC or ACEC/RNA	NSO (acres)	CSU (acres)
American River Historic Sites District ACEC	6,322	1,550
Captain John Creek ACEC/RNA	1,320	1,306
Craig Mountain ACEC	23,162	18,306
East Fork American River ACEC	569	0
Little Salmon River ACEC	590	504
Upper Lolo Creek ACEC	1,544	1,365
Lower Lolo Creek ACEC	3,677	2,404
Lower Salmon River ACEC	9,991	9,952
Partridge/Elkhorn ACEC	576	0
Salmon River ACEC	5,725	5,700
Wapshilla Ridge ACEC/RNA	401	401
Long Gulch ACEC/RNA	47	47
Lucile Caves ACEC/RNA	136	136
Skookumchuck ACEC/RNA	15	15
Total	**54,077**	**41,687**

Source: BLM 2004a

Under Alternative C, 99 percent of BLM land within ACEC/RNA designations open to leasable and saleable mineral activity would contain NSO stipulations, and 77 percent would contain CSU stipulations, implementing the most stipulations of any alternative. Similar to Alternative B, implementing stipulations would reduce the number of surface disturbances associated with leasable and saleable minerals activities that could damage the special characteristics of ACEC/RNAs.

Effects from Lands and Realty Management

The effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Alternative C would designate 60,661 acres (or approximately 42 percent of BLM-administered land) of ACECs and RNAs. This would increase the percentage of BLM-administered land designated as ACECs and RNAs from 18 to 42 percent. Greater protection would be afforded the special values associated with the Salmon River and its tributaries, the East Fork American River, the American River Historic Sites District, Upper Lolo Creek, and Craig Mountain. The effects on the Lucile Caves ACEC/RNA would be the same as Alternative B.

Effects from Wild and Scenic Rivers Management

Same as Alternative B.

Alternative D

Effects from Vegetation—Weeds Management

The effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

The BLM would manage the following number of urban and rural WUI acres in ACEC/RNAs according to **Table 4-~~70~~71**.

Table 4-71
WUI Locations by ACEC/RNA for Alternative D

ACEC or ACEC/RNA	Urban WUI (acres)	Rural WUI (acres)
Long Gulch ACEC/RNA	47	0
Captain John Creek ACEC/RNA	0	748
Lower and Middle Cottonwood Islands ACEC/RNA	43	0
Lower Salmon River ACEC	937	15,137
Salmon River ACEC	3,043	5,754
Wapshilla Ridge ACEC/RNA	0	2
Lucile Caves ACEC/RNA	136	0
Skookumchuck ACEC/RNA	18	0
Total	**4,224**	**21,641**

Source: BLM 2004a

Under Alternative D, urban WUI areas would cover 18 percent and rural WUI areas would cover 90 percent of ACEC/RNA designations. In comparison to Alternative A and represented as a percentage of total land containing ACEC/RNA designations, this is an increase of 4 percent and 11 percent, respectively. Effects would be similar to those described under Alternative A.

Effects from Livestock Grazing Management

The BLM would manage the following livestock grazing allotments in ACEC/RNAs according to **Table 4-~~71~~72**.

Table 4-72
Livestock Grazing Allotments by ACEC/RNA for Alternative D

ACEC or ACEC/RNA	Within Livestock Grazing Allotments (acres)
Long Gulch ACEC/RNA	0
Captain John Creek ACEC/RNA	0
Lower Salmon River ACEC	15,000
Salmon River ACEC	5,465
Wapshilla Ridge ACEC/RNA	401
Lucile Caves ACEC/RNA	0
Skookumchuck ACEC/RNA	0
Total	**20,866**

Source: BLM 2004a

There are 20,866 acres of livestock grazing allotments in 23,924 acres of ACEC/RNAs. This accounts for 87 percent of the total area of ACEC/RNAs. Alternative D would have 5 percent fewer ACEC/RNA acres open to livestock grazing than Alternative A, and more than Alternatives B

and C. Alternative D would have the least acres designated as ACEC/RNAs, thereby allowing greater risk to resource values identified within the ACEC/RNAs in comparison to Alternatives A, B, and C.

Effects from Minerals Management

The BLM would manage areas designated as open and closed to minerals according to **Table 4-~~72~~73**. These minerals designations result from wild and scenic rivers and WSA management.

Table 4-73
Mineral Designations by ACEC/RNA for Alternative D

ACEC or ACEC/RNA	Leasables Open (acres)	Leasables Closed (acres)	Locatables Open (acres)	Locatables Closed (acres)	Salables Open (acres)	Salables Discretionary Closures (acres)
Long Gulch ACEC/RNA	47	0	0	47	47	0
Lower and Middle Cottonwood Islands ACEC/RNA	43	0	43	0	43	0
Captain John Creek ACEC/RNA	1,320	0	1,320	0	1,320	0
Lower Salmon River ACEC	10,021	6,178	963	14,753	10,021	6,178
Salmon River ACEC	5,758	0	505	5,253	5,758	0
Wapshilla Ridge ACEC/RNA	401	0	401	0	401	0
Lucile Caves ACEC/RNA	135	0	0	135	135	0
Skookumchuck ACEC/RNA	17	0	2	15	17	0
Total	**17,742**	**6,178**	**3,234**	**20,203**	**17,742**	**6,178**

Source: BLM 2004a

The BLM would enforce NSO and CSU stipulations for leasables according to **Table 4-~~73~~74**.

Table 4-74
Mineral Stipulations by ACEC/RNA for Alternative D

ACEC or ACEC/RNA	NSO (acres)	CSU (acres)
Long Gulch ACEC/RNA	47	47
Captain John Creek ACEC/RNA	1,320	0
Lower Salmon River ACEC	9,991	9,991
Salmon River ACEC	5,723	5,698
Wapshilla Ridge ACEC/RNA	401	0
Lucile Caves ACEC/RNA	136	136
Skookumchuck ACEC/RNA	15	15
Total	**17,633**	**15,887**

Source: BLM 2004a

Under Alternative D, 100 percent of BLM land within ACEC/RNA designations open to leasable and saleable mineral activity would contain NSO stipulations, and 90 percent would contain CSU stipulations. Except for Alternative A, which does not identify any stipulations, this alternative would implement the least stipulations of any alternative. Similar to Alternative B, implementing stipulations would reduce the number of surface disturbances associated with leasable and saleable minerals activities that could damage the special characteristics of ACEC/RNAs.

Effects from Lands and Realty Management

The effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Alternative ~~B~~ D would designate 23,924 acres (or approximately 17 percent of BLM-administered land) of ACECs and RNAs. This would decrease the percent of BLM-administered land designated as ACECs and RNAs from 18 to 17 percent. Greater protection would be afforded the special values associated with the Salmon River. The effects on the Lucile Caves ACEC/RNA would be the same as those described under Alternative B.

Effects from Wild and Scenic Rivers Management

Same as Alternative B.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to ACEC/RNAs have resulted primarily from surface-disturbing activities and population growth.

Utilization of natural resources within the CFO planning area is expected to remain at current or slightly increased levels As a result, surface disturbing activities affecting ACEC/RNAs could continue, however, the BLM maintains discretionary authority over most land uses and would only permit actions that do not impair or conflict with an ACEC/RNA, reducing cumulative effects on these areas. As population increase, activity and use within or adjacent to ACEC/RNAs increases. An increasing population could continue to build housing closer to ACEC/RNAs, thereby affecting the scenic quality and visual resources of the area.

As there are no mineral lease stipulations under Alternative A, surface-disturbances associated with leasable and saleable minerals activities could continue in ACEC/RNAs. These activities would be limited under Alternatives B, C, and D, which would implement NSO and CSU stipulations in ACEC/RNAs, and rights-of-way would not be authorized in ACEC/RNAs. The cumulative effects to ACEC/RNAs would depend on the intensity and proximity of surface-disturbing activities.

4.4.2 Back Country Byways

There are no Back Country Byways on BLM-administered lands in the planning area. ~~No alternatives would affect Back Country Byways, because there are no Back Country Byways on BLM-administered lands in the planning area. There would be no effects on Back Country Byways.~~

4.4.3 National Trails

Goal: Manage National Trails to protect the values for which they were designated.

Summary

Under all of the alternatives, measures would continue to be developed to protect National Trail resources on a case-by-case basis. Under Alternatives B, C, and D, sections of the Lewis and Clark and the Nez Perce (Nee-Me-Poo) National Historic Trails (21 miles total) would be inventoried and recorded (**Table 4-~~74~~75**), and information and interpretive materials would be developed for public distribution. Alternatives B and C provides the greatest overall protection to National Trail resources. Alternatives B and C would protect and enhance the Nez Perce (Nee-Me-Poo) and the Lewis and Clark National Historic Trails via designating the new Upper Lolo Creek ACEC.

Table 4-75
Comparison of National Trails Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Miles of National Trails (BLM land)	21 (No net change)			
Protection and enhancement of National Trails	No net change	Increased protection and enhancement through designation of Upper Lolo Creek ACEC~~No net change~~	Increased protection and enhancement through designation of Upper Lolo Creek ACEC	No net change

Source: BLM 2004a

Methods of Analysis

Indicators

Miles of National Trails and their protection and enhancement are the indicators used to assess impacts to National Trails (**Table 4-~~74~~75**, Comparison of National Trails Indicators by Alternative).

Methods and Assumptions

The four alternatives were reviewed for actions that could affect National Trails. Impact analysis and conclusions are based on interdisciplinary team knowledge of the planning area and review of existing literature. The analysis is based on the assumption that National Trails use would continue to increase over the life of the RMP.

Effects Common to All Alternatives

Effects from National Trails Management

The BLM would develop measures to protect 21 miles of National Trail resources on a case-by-case basis. This would continue to protect known resources, such as the trail setting and archeological resources. Ongoing effects include the potential loss of unknown National Trail resources because of a lack of understanding about site-specific resource values.

Alternative A

Effects from ACEC/RNA Management

There are no protective measures specifically identified for National Trails within any ACECs.

Effects from National Trails Management

There are no actions related to inventorying and recording sections of National Trails or developing interpretive materials for public distribution. This could result in damage to National Trail resources from incompatible uses, such as OHVs.

Alternative B

Effects from ACEC/RNA Management

The BLM would protect and enhance 0.4-mile of the Nez Perce (Nee-Me-Poo) and 0.4-mile of the Lewis and Clark National Historic Trails via designation of the Upper Lolo Creek ACEC. The BLM would cooperate with partners in managing these trails. This would help preserve the integrity of the trails from, for example, misuse and land-disturbing activities.

~~Effects would be the same as those described under Alternative A.~~

Effects from National Trails Management

The BLM would inventory and record 21 miles of the Lewis and Clark and the Nez Perce (Nee-Me-Poo) National Historic Trails and would develop information and interpretive materials for public distribution. Documentation of site-specific resource values would improve the understanding of and protection of National Trail resources. These actions would also inform the public about the value of National Trail resources, thereby increasing the likelihood of preserving National Trail resources, such as the trail setting and archeological resources.

Alternative C

Effects from ACEC/RNA Management

The BLM would protect and enhance 0.4-mile of the Nez Perce (Nee-Me-Poo) and 0.4-mile of the Lewis and Clark National Historic Trails via designation of the Upper Lolo Creek ACEC. The BLM would cooperate with partners in managing these trails. This would help preserve the integrity of the trails from, for example, misuse and land-disturbing activities.

Effects from National Trails Management

The effects would be the same as those for Alternative B.

Alternative D

Effects from ACEC/RNA Management

Effects would be the same as those described under Alternative A.

Effects from National Trails Management

The effects would be the same as those for Alternative B.

Cumulative Effects

Past actions and events that have affected National Trails include archaeological investigations, illegal activities (e.g., cultural resource site vandalism or collecting), and development and maintenance activities (e.g., grazing, mining, recreation use, and OHV use).

In the foreseeable future, archaeologists would continue to inventory, identify, document, and preserve National Trail resources. Illegal activities and development and maintenance activities

would continue and threaten the discovery of, quality of, and integrity of National Trail resources on BLM-administered lands, as well as elsewhere in the cumulative effects analysis area.

Implementation of any of the proposed alternatives would not contribute to a significant change in National Trail resources.

4.4.4 Wild and Scenic Rivers

Goal: Fulfill the BLM's obligations under Section 5(d)(1) of the WSR Act for the life of this RMP.

Summary

By~~Upon~~ finalizing the Wild and Scenic Rivers Eligibility and Suitability Study (**Appendix K** [see Volume II~~I~~]), the CFO has~~will have~~ determined which rivers and streams are suitable for inclusion in the NWSRS. These include two segments determined to be suitable during previous studies, the Lower Salmon River from Long Tom Bar to Hammer Creek and from Hammer Creek to the Snake River confluence. All segments determined to be suitable must be managed for the protection of their outstandingly remarkable values and free-flowing nature until such time as Congress acts upon the determination finding and either designates the river segment in the NWSRS or removes it from consideration. If the segment is removed from consideration by Congress, the BLM would manage the segment according to the management provisions of the RMP.

Under all alternatives, six river segments would be managed for the protection of outstandingly remarkable values as described in the ~~Draft~~ Final Wild and Scenic Rivers Eligibility and Suitability Study Report (**Appendix K** [see Volume II~~I~~]). These river segments include 59 miles of the Lower Salmon River (Long Tom Bar to Hammer Creek), 53 miles of the Lower Salmon River (Hammer Creek to the Snake River confluence), 2.18 miles of Lake Creek, 1.52 miles of Hazard Creek, 1.64 miles of Hard Creek, and 24 miles of Lolo Creek.

The difference between alternatives would be whether the BLM would recommend that Congress designate each particular segment. This recommendation or nonrecommendation could influence the Congressional decision and increase or decrease the likelihood of permanent legislative protection. All alternatives recommend both segments of the Lower Salmon River for designation. Alternatives A, B and D would not recommend any of the four additional segments. ~~Alternatives B and C would recommend all four additional segments, and~~ Alternative C would recommend all four additional segments for inclusion in the NWSRS. ~~Alternative D would recommend only one of the four additional segments (Lolo Creek) for designation.~~ **Table 4-~~75~~ 76** identifies the indicators that were used to analyze effects on wild and scenic rivers under each alternative.

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For wild and scenic rivers, the indicators used for impact analysis are identified in **Table 4-~~75~~76**, Comparison of Wild and Scenic Rivers Indicators by Alternative.

Table 4-76
Comparison of Wild and Scenic Rivers Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Miles of rivers or river segments determined suitable previously and carried forward	112	112	112	112
Miles of rivers or river segments determined preliminarily suitable	29	29	29	29
Miles of suitable rivers or river segments recommended for inclusion in the NWSRS	~~0~~112	~~29~~112	~~29~~141	~~24~~112

Source: BLM 2004a

Methods and Assumptions

Potential impacts on wild and scenic rivers from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Impacts were identified using best professional judgment and were assessed according to the assumption that most resource uses would be restricted from adversely impacting the outstandingly remarkable values and free-flowing nature of rivers suitable for inclusion in the NWSRS. Wild and Scenic River suitability tends to affect other resource uses rather than be affected.

Effects Common to All Alternatives

Effects from Recreation Management

Continued acquisition of lands and conservation easements within the Salmon River and Lolo Creek SRMAs could provide protection to aquatic habitats from private land uses, including timber harvest. Acquisition and conservation easements would enhance the BLM's ability to manage the segments.

Effects from Wild and Scenic Rivers Management

The two Lower Salmon River segments totaling 112 miles and 29 miles on four segments (Lolo, Lake, Hazard, and Hard Creeks) would be managed for the protection of outstandingly remarkable values and free-flowing nature until Congress should act upon the suitability determinations and either designate the segments or remove them from consideration (**Table 4-~~75~~76**, Comparison of Wild and Scenic Rivers Indicators by Alternative).

Alternative A

Effects from Wild and Scenic Rivers Management

Under Alternative A, the BLM would not recommend any additional segments for inclusion in the NWSRS.

Alternative B

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Nine subbasins in the Lower Salmon River would be classified as restoration watersheds. Improvements to the riparian and aquatic condition of these watersheds would indirectly enhance the resource values of the Lower Salmon River segment.

Effects from Wild and Scenic Rivers Management

~~Four~~ No additional river segments ~~29~~ would be recommended for designation in the NWSRS. Management of suitable segments would be coordinated with the Idaho Department of Water Resources and Forest Service. ~~This would increase the chances for the segments to be designated, thereby affording the segments greater protection.~~

Alternative C

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Ten subbasins in the Lower Salmon River would be classified as restoration watersheds. Improvements to the riparian and aquatic condition of these watersheds would indirectly enhance the resource values of the Lower Salmon River segment.

Effects from Wild and Scenic Rivers Management

Four additional river segments totaling 29 miles would be recommended for designation in the NWSRS. This would increase the chances for the segments to be designated, thereby affording the segments greater protection. Management of suitable segments would be coordinated with the Idaho Department of Water Resources and Forest Service. ~~Effects would be the same as those described under Alternative B.~~

Alternative D

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Effects would be the same as those described under Alternative B.

Effects from Recreation Management

Increasing the use of Lolo Creek by issuing commercial permits could result in shoreline and aquatic habitat degradation. Increased use could result in increased impacts from people walking in the streambed and disturbing salmon eggs (redds) and bank disturbance from people coming in and out of the river channel in areas with limited access.

Effects from Wild and Scenic Rivers Management

~~Effects would be similar to those described under Alternative B, except under Alternative D only one of the four additional segments (Lolo Creek) would be recommended for designation in the NWSRS, increasing the chances for one 24-mile segment to be designated, but reducing the overall recommendation, in comparison to Alternatives B and C, by 5.34 miles~~Same as Alternative B.

Cumulative Effects

Wild and scenic river eligibility and suitability determinations are based on current conditions. Consequently, the effects of past actions are not really a factor unless such actions effect a segment previously determined suitable, such as the two Salmon River segments. Since the Salmon River segments were determined suitable BLM has managed for the protection of its river values and past actions have not affected these values. The four segments which have been found to be preliminarily suitable were evaluated based upon current ~~conditions,~~conditions; consequently past actions were determined not to be a factor.

All RMP alternatives include management of two segments of the Lower Salmon River determined suitable and four additional segments identified as preliminarily suitable for designation within the NWSRS. The two segments of the Lower Salmon River are currently managed as suitable based on a prior study. The other four segments include Hazard, Hard, Lolo, and Lake Creeks which ~~are being~~were studied concurrently with the RMP process.

There are National Forest lands located adjacent to (upstream of, downstream of, or in some cases intermingled with) the segments. Management activities on these adjacent National Forest lands could impact the outstandingly remarkable values within these segments. The National Forest Plan revisions, in most cases, will include a Wild and Scenic River~~s~~ suitability determination similar to the Cottonwood RMP for these segments. This determination, if concurrent with the BLM determination in the same watersheds, would complement BLM management measures, potentially enhancing the outstandingly remarkable values. If the Forest Service determines that these adjacent segments are not suitable, it would result in management challenges for the BLM, which could make protection of the outstandingly remarkable values on BLM-administered lands infeasible. In particular, a final suitability determination of the Hazard and Hard Creek segments (BLM portions) are dependent upon a similar determination on the Forest Service segments. Consequently, cumulative effects on Wild and Scenic Rivers are likely to occur as a result of National Forest Plan Revisions, but whether these would enhance or degrade river values cannot be determined until Forest Plan revisions are complete.

The Idaho Department of Water Resources completed the Comprehensive Water Plan – Part B on the Little Salmon River Basin in October 2001. The plan designated Hazard and Hard Creeks as State protected recreational rivers. BLM would coordinate protective management of these segments with the Idaho Department of Water Resources.

~~Alternatives B and C~~ Alternative C would recommend the largest amount (29 miles) of suitable segments for inclusion in the NWSRS, therefore contributing to the continuation of preserving these segments by managing them for the protection of their outstandingly remarkable values and free-flowing nature. Alternatives A, B, and D would not recommend any segments for inclusion in the NWSRS. However, following coordination with the Idaho Department of Water Resources and Forest Service, the BLM would determine whether or not to recommend the 2.18-mile Lake Creek segment.~~contribute to a lesser extent by recommending 24 miles., and no additional miles would be recommended under Alternative A.~~

4.4.5 Wilderness and Wilderness Study Areas

Goal: Manage wilderness areas and WSAs to maintain wilderness characteristics.

Summary

Under all of the alternatives the following protective management of wilderness and WSAs would continue: discretionary and nondiscretionary closures to leasable and salable minerals, prohibiting motorized and mechanized vehicles in wilderness areas, excluding realty authorizations and managing wilderness areas and WSAs to maintain wilderness characteristics. These alternatives also establish management parameters for the WSAs should Congress release them from wilderness consideration. **Table 4-~~76~~ 77** identifies the indicators that were used to analyze effects on wilderness and WSAs under each alternative.

Table 4-77
Comparison of Wilderness and Wilderness Study Areas Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of Wilderness Areas	750 (No net change)			
Acres of WSAs	12,034 (No net change)			

Source: BLM 2004a

Methods of Analysis

Indicators

For wilderness areas and WSAs, the acres and overall protection of these areas are the indicators used to assess impacts, as shown in **Table 4-~~76~~77**, Comparison of Wilderness and Wilderness Study Areas Indicators by Alternative.

Methods and Assumptions

The four alternatives were reviewed for actions that could affect wilderness and WSAs, the impacts of which are discussed below. Impact analysis and conclusions are based on interdisciplinary team knowledge of the planning area and review of existing literature. The analysis is based on the assumption that wilderness would continue to be managed in accordance to the Wilderness Act of 1964, and subsequent wilderness legislation and WSAs would continue to be managed under the Interim Management Policy for Lands under Wilderness Review (BLM Handbook H-8550-1). This would remain in effect until such time as Congress either designates all or portions of the WSA as wilderness or releases the WSA or portions of WSAs from any further wilderness consideration, at which time the lands would revert back to general land use management.

The six practical effects of the Interim Management Policy for Lands under Wilderness Review are:

- The general standard for interim management is that lands under wilderness review must be managed so as not to impair their suitability for preservation as wilderness. This is referred to as the nonimpairment standard and applies to all uses and activities except those that the FLPMA specifically exempts from this standard (such as grandfathered uses);
- Permitted activities in WSAs (except grandfathered and valid existing rights) are temporary uses that create no new surface disturbance or involve permanent placement of structures;
- Those grazing, mining, and mineral leasing uses that existed on October 21, 1976 (the date FLPMA was approved) may continue in the same manner and degree as on that date, even if this would impair wilderness suitability;

- Lands under wilderness review may not be closed to appropriation under the mining laws in order to preserve their wilderness character;
- Valid existing rights must be recognized; and
- All lands must be managed to prevent unnecessary or undue degradation.

Effects Common to All Alternatives

Effects from Minerals Management

Under all alternatives, the Frank Church Wilderness (750 acres) would remain closed to leasable, locatable, and mineral material development. The Snowhole Rapids WSA (6,463 acres) and Marshall Mountain WSA (5,571 acres) would remain closed to leasing, and in most cases would remain closed to sale or free use of mineral materials. Although WSAs are not withdrawn from locatable mineral activities, they are subject to more restrictive federal regulations designed to protect the wilderness characteristics~~The Marshall Mountain WSA would not be withdrawn from locatable mineral development, but would be subject to more protective regulations; the Snowhole Canyon WSA would continue to be withdrawn from locatable mineral development under the existing administrative withdrawal and under VRM 1 classification. Restrictions placed on mineral development in these designations would protect the wilderness characteristics~~.

Effects from Transportation and Travel Management

The BLM would allow all types of nonmotorized travel yearlong on all BLM-administered lands in the CFO, except on 750 acres of the Frank Church/River of No Return Wilderness, where no mechanized use is allowed. This would continue to protect wilderness characteristics from the effects of motorized vehicle use, such as noise and scarring of the terrain.

Effects from Wilderness and Wilderness Study Areas Management

The BLM would manage the Wilderness and WSAs to maintain wilderness characteristics. This would continue to protect the characteristics of wilderness areas and WSAs.

Alternative A

Effects from Recreation Management

The BLM would consider competitive use permits on a case-by-case basis. There would be no new effects, and ongoing effects would continue.

Effects from Lands and Realty Management

There are no actions related to exclusion areas in the Wilderness or WSAs. Potential effects from certain forms of development (such as rights-of-way) in the Wilderness and WSAs would continue.

Effects from Wilderness and Wilderness Study Areas Management

There are no actions related to the management of WSAs should Congress release them from wilderness consideration. Due to a lack of specified management actions, there could be long-term effects if lands were released and no protective measures remained in place for sensitive natural resources that were previously identified in these designations.

Alternative B

Effects from Recreation Management

The BLM would designate wilderness areas for no competitive use. This would prevent competitive uses, such as group events and outings, from occurring in wilderness areas, thereby providing additional protection to the primitive characteristics of wilderness areas.

Effects from Lands and Realty Management

Exclusion areas where no realty authorizations would be allowed include the Wilderness (750 acres). This would protect the characteristics of the Wilderness from surface disturbances, such as rights-of-way.

Effects from Wilderness and Wilderness Study Areas Management

Should the WSAs be released from wilderness consideration by Congress, the BLM would manage lands within the Snowhole Rapids WSA in conformance with the Lower Salmon River Scenic SRMA, under VRM Class I and Semiprimitive Nonmotorized ROS, as open to mineral location, and as open to mineral leasing with NSO and CSU restrictions. Also, the BLM would manage lands within the Marshall Mountain WSA to conform with VRM Class II and Semiprimitive Motorized ROS, as open to mineral location, as open to mineral leasing with NSO restrictions (on all acres), and as open to mineral leasing with CSU restrictions (only on 74 acres). These management guidelines would not be as protective as current WSA management guidelines, because, for example, mineral leasing would be allowed. Therefore, the wilderness characteristics for which the areas were designated WSAs could be diminished should the WSAs be released from wilderness consideration by Congress.

Alternative C

Effects from Recreation Management

The effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

The effects would be the same as those for Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

The effects would be the same as those for Alternative B.

Alternative D

Effects from Recreation Management

The effects would be the same as those for Alternative B.

Effects from Lands and Realty Management

The effects would be the same as those for Alternative B.

Effects from Wilderness and Wilderness Study Areas Management

The effects would be the same as those for Alternative B.

Cumulative Effects

Historical and projected population increases influence wilderness areas and WSAs, which are typically used for primitive recreation. The CFO planning area's projected 11-percent population

growth and Idaho's projected 35-percent population growth over the next 20 years would continue to increase demand for primitive recreation areas in and around the CFO planning area. Use of these areas, especially the Frank Church/River of No Return Wilderness, would intensify as population increases.

The Frank Church/River of No Return Wilderness is over 2.3 million acres spanning 6 National Forests, of which less than 0.5-percent is on BLM-administered lands in the CFO. Additionally, there are another 1.7 million acres of other Wilderness Areas within or immediately adjacent to the 6-county planning area, including the Selway-Bitterroot Wilderness (1.3 million acres on National Forest lands), Gospel Hump Wilderness (205,000 acres on National Forest lands), and Hells Canyon Wilderness (215,000 acres on National Forest and BLM [Vale District, Oregon] lands). As such, there are ample other Wilderness Area opportunities to attract and accommodate this population growth. Implementing protective management would cumulatively protect these areas from development and surface-disturbing activities while meeting the increasing population demands.

4.4.6 Watchable Wildlife Viewing Sites

Goal: Maintain or enhance wildlife habitats and opportunities for wildlife viewing areas.

Summary

All of the alternatives would continue to maintain or improve wildlife habitat resources and would provide wildlife viewing opportunities for the existing watchable wildlife areas. Alternatives B, C, and D would also support management efforts that designate new high-value wildlife viewing areas, provide information and educational materials and promote opportunities to cooperatively manage high-value areas. These additional actions would increase watchable wildlife viewing opportunities, education, and monetary support through partnerships. **Table 4-~~77~~ 78** identifies the indicators that were used to analyze effects on watchable wildlife viewing sites under each alternative.

Table 4-78
Comparison of Watchable Wildlife Viewing Sites Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Number of watchable wildlife areas	4 (No net change)			
Acres of watchable wildlife areas	24,435 (No net change)			
Support efforts to designate new areas, provide information, and cooperatively manage areas	No net change	Increased		

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators used to evaluate impacts include the number and size of watchable wildlife viewing sites, and how each alternative would or would not support efforts to designate new areas, provide

information about areas, and cooperatively manage areas (**Table 4-~~77~~78**, Comparison of Watchable Wildlife Viewing Sites Indicators by Alternative).

Methods and Assumptions

The four alternatives were reviewed for actions that could affect watchable wildlife viewing sites. Impact analysis and conclusions are based on interdisciplinary team knowledge of the planning area and review of existing literature. The analysis is based on the assumption that use of watchable wildlife viewing sites would continue to increase over the life of the RMP.

Effects Common to All Alternatives

Effects from Watchable Wildlife Viewing Sites Management

The BLM would implement actions to maintain or improve wildlife habitat resources and to provide wildlife viewing opportunities on over 235 miles and 24,000 acres, including the Lower Salmon River Canyon (87 miles), Middle Salmon River Canyon (80 miles), Snake River in Hells Canyon (68 miles), and Craig Mountain WMA (24,200 acres).

Alternative A

Effects from Watchable Wildlife Viewing Sites Management

There would continue to be no specific actions related to designating new watchable wildlife viewing sites, to providing information and educational materials, or to forming cooperative management partnerships. There would continue to be difficulties in identifying and developing new watchable wildlife viewing sites and in educating the public about the value of biological resources.

Alternative B

Effects from Watchable Wildlife Viewing Sites Management

The BLM would support management efforts that designate new high-value wildlife viewing areas for the public, support efforts that provide information and educational material that enhance wildlife viewing opportunities and enjoyment, and promote opportunities to cooperatively manage high-value areas for viewing wildlife with partners, such as the Idaho Department of Fish and Game Red River Ranch. Although no specific areas are identified for future watchable wildlife viewing sites, these activities would aid in establishing new sites and educating the public about biological resources.

Alternative C

Effects from Watchable Wildlife Viewing Sites Management

The effects would be the same as those for Alternative B.

Alternative D

Effects from Watchable Wildlife Viewing Sites Management

The effects would be the same as those for Alternative B.

Cumulative Effects

Cumulative effects on watchable wildlife viewing sites affect habitat for wildlife and disturbances to wildlife. Numerous cumulative projects, such as mineral development, timber harvesting, and motorized recreation, have the potential for diminishing habitat and disturbing wildlife. Assuming

watchable wildlife viewing sites preserve sufficient habitat for wildlife and limit disturbances to wildlife, cumulative effects would be minimal.

4.5 SOCIAL AND ECONOMIC CONDITIONS

4.5.1 Native American Tribal Uses

Goal: Manage natural and cultural resources consistent with treaty and trust responsibilities to Native American tribes.

Summary

This section presents potential impacts from management actions on Native American tribal use of BLM-administered lands in the planning area. Alternative A would maintain current management practices and therefore would not induce any changes to the indicators listed below. The growth and concentration of recreation, including hunting, fishing, and gathering, could impact the availability of resources, disturb culturally important areas, or interfere with religious uses. In general, Alternatives B, C, and D propose more actions than Alternative A designed to improve water quality, fisheries, and plant and animal habitat and restore watersheds. These actions would be consistent with maintaining Native American tribal uses under treaty rights in the long-term. These alternatives would also further restrict cross-country travel and surface occupancy for mineral development and create more closures and exclusion and avoidance zones. These actions would provide additional protection to natural and cultural resources that may be used or that may be important to tribes. Temporary loss of access during treatments or permanent changes in access or permitted activities may affect tribal uses. Further government-to-government consultation with tribes would be needed as actions are implemented to determine whether there are tribal uses present that could be impacted and to resolve impacts. Overall, Alternative C, followed by Alternative B, D, then A would provide the most protective measures for tribal use of the CFO, primarily due to a reduction in ground disturbances and incompatible activities and the emphasis on resource conservation and protection.

The following resources are not addressed because management of these resources is not expected to affect Native American tribal use: air quality, geology, soils, paleontology, VRM, national trails management, and public safety. **Table 4-~~78~~ 79** identifies the indicators that were used to analyze effects on Native American tribal uses under each alternative.

Table 4-79
Comparison of Native American Tribal Uses Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Changes in availability, access, or land use that would affect the natural resource base used by the tribes, including fish, game, plants, minerals, and springs	No changes in availability, access, or land use would occur, so no net changes in the natural resource base are expected under Alternative A. In time recreational uses and public presence in some areas could affect the availability of resources, disturb culturally significant areas and inhibit religious use.	Vegetation treatment programs and animal habitat enhancement could enhance traditional tribal uses for those species and habitats. However, temporary, seasonal, and permanent closures of roads and other areas for treatment programs, public health and safety, or other reasons, while protecting resources, could also limit tribal access to and availability of resources in those areas. Increased recreational uses and public presence in some areas could affect the availability of resources, disturb culturally significant areas, and inhibit religious use.		
Changes in access to or impacts on cultural resource sites, including ethnographic resources and traditional cultural properties	No changes in management are expected, so no net changes to access or impacts on cultural resource sites, ethnographic resources, or traditional cultural properties are expected.	Ground disturbances, possible erosion, and increased public access associated with most resource management objectives could directly affect culturally significant areas and tribal use. Temporary, seasonal, and permanent closures of roads and other areas for treatment programs or other reasons, while protecting resources from additional public access and potential vandalism and looting, could also limit tribal access to and availability of resources in those areas. Additional efforts above and beyond those of current management to increase tribal consultations could better protect tribal use, tribal access, and cultural resources. Alterations in the setting of traditional cultural properties and ethnographic resource collection areas by promoting incompatible uses, such as harvesting, prescribed fires, VRM designations, and increased recreational and motorized uses, could affect tribal use and access.		

Table 4-~~78~~79
Comparison of Native American Tribal Uses Indicators by Alternative *(continued)*

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Changes in general ecosystem health, water quality, and riparian function	No changes in current management are expected under Alternative A. As more people use the CFO, more demands combined with static management will decrease the general ecosystem health.	Efforts to maintain native plants, animals, and habitats in general could enhance the general ecosystem, water quality, and riparian areas for tribal use.		
Changes in land tenure or land use that could impair future exercise of treaty rights	No changes in land tenure or land use are expected to occur under Alternative A. No net changes or impairments to the future exercise of treaty rights are expected.	New restrictions on actions that would otherwise increase the likelihood of impacts on tribal use. The increase in CFO land would decrease the possibility for loss of federal protection of cultural resources and tribal treaty rights. However, the loss of transferred lands would increase the likelihood of these impacts in those areas.		

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For Native American tribal uses, the indicators used for impact analysis are identified in **Table 4-~~78~~79**, Comparison of Native American Tribal Uses Indicators by Alternative

Methods and Assumptions

Native American tribal uses considered in this analysis are based on rights established by treaty and the unique trust relationship between tribes and the federal government. The federal trust responsibility includes the obligation to protect tribal lands, trust assets, and treaty rights and to carry out the mandates of federal law. A variety of federal laws, executive orders, regulations, and BLM guidance related to land use, subsistence, endangered species, and cultural resources specifically address tribal rights in the context of this trust relationship. These rights include consulting with tribal representatives on identifying and protecting cultural and sacred sites, provisions for reasonable access to these sites, and access for tribal members to harvest and gather plant, animal, and aquatic resources. While the focus of this section is on treaty rights and traditional uses, there is necessarily some overlap with cultural resources and other resources in the impact discussion.

There are no lands in the CFO that are formally held in trust for tribes by the BLM, nor are tribes dependent on commodity resources from lands managed by the CFO. Members of the Nez Perce Tribe exercise their hunting, fishing, and gathering rights on federal lands outside the boundaries of their reservation, including BLM-administered within the CFO. These pursuits include fishing for resident and anadromous ~~game~~ fish species, hunting large and small game, and gathering natural resources for subsistence and cultural purposes. Specific locales of cultural, traditional use, or

religious significance may also be considered by the tribes to be traditional cultural properties. Impacts to traditional cultural properties are discussed in Section 4.2.13, Cultural Resources.

To analyze impacts of the RMP alternatives on Native American tribal uses within the CFO, certain assumptions were made. These assumptions include:

- The extent of current tribal use is not known. It is expected that the demand from Native Americans to exercise their treaty rights and traditional uses on BLM-administered lands will continue and potentially increase in the future;
- There is little specific information on the exact species sought or locations used by Native Americans exercising treaty rights or traditional uses in the CFO. Culturally important locations are often not discussed outside of the community and may be present in the CFO. The Nez Perce Tribe has expressed concerns over natural resource management, especially as it pertains to water quality and its relationship with fisheries;
- Within the CFO, Nez Perce tribal members hunt and gather a variety of plant and animal species. It is anticipated that many of the species targeted by tribal users are the same as those sought by other communities;
- The BLM, as a federal agency, will continue to maintain government-to-government relationships with federally recognized Indian tribes. Ongoing consultation with and participation by tribes in resource management planning is necessary to determine whether actions would impact Native American tribal uses. Typically, planning-level impact analysis can only identify trends or potential impacts. Implementation-level impact analysis is needed to determine whether there are Native American tribal uses present, whether there would be impacts, and what the context, intensity, and duration of those impacts would be. Focused consultation with the affected community is required to resolve impacts. Overall impacts could be minimized with mitigation measures, including avoidance;
- The BLM will continue to comply with Section 106 of the NHPA for undertakings under each of the RMP alternatives. Tribal groups have a special role in the Section 106 process in the identification, evaluation, effect determination, and resolution of adverse effects on cultural resources, including ancestral sites and traditional cultural properties. Likewise, the BLM would continue to respect the consultation roles and rights of tribes under Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, American Indian Religious Freedom Act, NEPA, FLPMA, ESA, executive orders, regulations, and BLM guidance; and
- The current road network provides sufficient access to traditional use areas for tribal members.

Effects Common to All Alternatives

Effects from Cultural Resources Management

Under all alternatives, cultural resource management is complementary to maintaining and protecting tribal uses. Consultation with Native American tribes in the context of cultural resource management activities can help identify those uses, places, and activities that are important to the tribes, and thus provide support and protection of tribal use of resources. Identifying opportunities for cultural heritage education could limit the possibilities for vandalism and improper activities at traditional cultural properties and other sites by educating the public of cultural values. Creating

cultural resource management plans could provide additional protections to culturally significant areas and tribal uses.

Effects from Minerals Management

Very little mineral activity is expected through the life of the RMP. Current management of minerals within the CFO would retain 120,532 acres as open to locatable mineral exploration and development and 129,623 acres as open to fluid and solid mineral leasing and mineral material disposal. The areas open to exploration, development, leasing, and/or material disposal could experience increased incidence of impacts on tribal use (compared to areas that are closed) from change in access, physical disturbance of habitat, or locations and intrusions to setting. Implementing site-specific management criteria in ACECs and other areas could limit such impacts where cultural and ethnographic resources exist.

Effects from Wild and Scenic Rivers Management

Under all alternatives, protecting the outstandingly remarkable values of segments found suitable for inclusion in the NWSRS could enhance or maintain the ecosystem and natural resource base within the river segments, while doing the same for the setting and integrity of traditional cultural properties and other culturally significant areas.

Effects from Wilderness and Wilderness Study Areas Management

Maintaining the wilderness characteristics of wilderness areas and WSAs would retain the setting and integrity of culturally significant areas.

Effects from Watchable Wildlife Viewing Sites Management

Maintaining or improving habitat conditions in wildlife viewing areas could retain or enhance the general ecosystem and natural resource base used by the Nez Perce. Increasing recreational opportunities in these areas, however, could increase the possibility for impacts to culturally significant areas by affecting their setting and/or integrity.

Alternative A

Effects from Water Resources Management

Efforts to maintain or improve watersheds and waterways can protect the natural resource base and fisheries from degradation. The Nez Perce have identified water quality and restoration of fisheries as important to their tribal uses. Tribes are working with US EPA and IDEQ in developing TMDLs. Implementing the MFP Road Guidelines (BLM 1981a), Riparian Management Guidelines (BLM 1985e), PACFISH prescription watersheds (BLM and Forest Service 1995), and Fisheries and Water Quality Objectives and Sediment Budgets (BLM 1985d) provide protection of these resources under Alternative A but do not provide the degree of protection and enhancements as other alternatives.

Effects from Vegetation—Forests Management

Alternative A would minimize the availability of natural resources in areas that are intensively or extensively managed. Custodial management areas would maximize the availability of natural resources. Fewer protocols for management and treatment programs would be available under Alternative A.

Effects from Vegetation—Weeds Management

Weeds management could restore native plant resources that would be available for tribal use. Under Alternative A, areas where rehabilitation or restoration could be successful would be identified, but actions would be limited to areas where it would also be cost effective. Fewer measures to improve ecosystems and the natural resource base through weeds management would be available under Alternative A than under the other alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Actions to promote and restore healthy ecosystems in riparian areas would benefit fisheries and plant and animal resources that have been used traditionally by tribes. The protection of such areas could therefore benefit those sites and their use by tribes. Alternative A provides RHCA buffers totaling 24,290 acres.

Effects from Wildlife and Special Status Wildlife Management

The natural resource base used by the Nez Perce and general ecosystem health can be enhanced by efforts to protect or improve wildlife, special status, and non-special status species. Efforts include ongoing and project-specific review of activities to determine impacts to federally listed species and their habitats. However, actions to monitor and protect listed species are minimal compared to other alternatives. Listed species, including bald eagle, Canada lynx, gray wolf, and yellow-billed cuckoo, and one habitat type, elk habitat, would have management that is specific to that species or habitat. Although habitat treatments could enhance the natural resource base used by the Nez Perce, any area closures or use restrictions that would result from management actions could temporarily impact tribal access to the affected areas. Similarly, permanent nondisturbance buffers around active raptor nests could preclude Native American access to affected areas and limit the availability of natural resources within the buffer zone.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Under Alternative A, management of aquatic resources, fish, and special status fish would focus on sensitive areas. These efforts could enhance general ecosystem health and increase the numbers of such resources within the natural resource base used by the Nez Perce. However, this availability could be counterbalanced by limited tribal access resulting from the imposition of use restrictions in sensitive areas.

Effects from Special Status Plants Management

Efforts to restore and protect special status plants and their habitats could improve and increase the availability of the natural resource base used by the Nez Perce. Monitoring, surveys, inventories, and adjusting actions to avoid impacting listed and BLM sensitive plants would ensure populations are maintained and protected.

Effects from Wildland Fire Management

Wildland fires, whether naturally occurring or prescribed, could improve the general ecosystem health and ultimately the natural resource base used by the Nez Perce. However, fire could also damage locations and temporarily remove tribal access to and the availability of natural and cultural ethnographic resources. Additionally, although protocols for fire suppression techniques call for coordination with the BLM archaeologist and the Nez Perce, as well as avoidance of known cultural resources, techniques could damage resources through ground disturbance or the application of chemicals.

Rehabilitation efforts to mitigate the adverse effects of fire could contribute to the recovery of ecosystem health and the natural resource base used by the Nez Perce following a fire.

Effects from Forest Products Management

Removal of vegetation from the CFO decreases the availability of the natural resource base used by the Nez Perce and could temporarily limit tribal access to areas of active harvesting. Alternative A could offset these impacts by disallowing timber harvest activities where they could destroy or degrade riparian areas, thereby protecting riparian function and resources that are possibly used by the tribe. Similarly, snag management under forest product management aims to preserve the habitat of wildlife that could be used by the tribe, maintaining the availability of those species.

Current ASQ, estimated at 6,600 MBF would continue on an estimated average annual usage area of 358 acres. The removal of timber could be a long-term impact because of changes in setting. Short-term impacts could also occur from temporary loss of access to use locations during treatment or closures.

Effects from Livestock Grazing Management

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) provide protective measures for ecological health, wildlife habitat, and significant cultural and archaeological values. Additional standards for maintaining or improving native plant communities and general ecosystem health, including riparian function, are also included. Such measures could protect tribal use of the natural resource base and culturally significant areas by reducing physical damage to sites and restricting incompatible uses.

Effects from Minerals Management

Under Alternative A, no stipulations on lands open for leasing and mineral material development would be identified, providing only a minimum level of protection as required by law. The potential for impacts on tribal uses of the natural resource base from minerals management would be the greatest under this alternative.

Effects from Recreation Management

Recreational use, including fishing, hunting, plant gathering, and vehicle use, would increase. The availability of these natural resources for tribal uses could be affected, and there would be an increase in the potential for impacts to culturally important areas through physical disturbances and alterations to setting. Infrastructure that supports recreation can provide Native Americans with better access to resources, but it can also increase the intensity of use leading to impacts. Under Alternative A, the entire CFO planning area would be subject to these effects to varying degrees based on intensity of use in designated areas.

It is assumed that in coordinating issuance of commercial permits with the Idaho Outfitters and Guides Licensing Board, consideration would be given to the effects of such permitting on tribal use of natural and cultural resources and traditional cultural properties.

Continuing land acquisitions within the Salmon River, Lolo Creek, and Clearwater River SRMAs could increase use areas and resources available to tribes in the CFO.

Effects from Transportation and Travel Management

It is assumed that the existing road network provides sufficient access for Native American tribal uses. Under Alternative A, 85,308 acres (59 percent) would continue to be managed as Open to cross-country motorized vehicle use, while 40,437 acres (28 percent) would be managed as Limited to existing routes, and 18,054 acres (13 percent) would be designated as Closed to off-road motorized vehicle use. Impacts from vehicle use would be more likely to occur in Open areas than in Limited areas. Motorized vehicles and mechanical transportation methods can physically damage use locations and culturally significant areas through crushing, ground disturbances, and erosion. Establishing use restrictions in areas with known high resource values could provide additional protection to resources used by the Nez Perce. Closed areas would not risk any of these impacts, with the exception of times when it is necessary to allow emergency vehicle passage.

New roads can provide improved access to Native Americans seeking out resource uses, but they can also increase the possibility of impacts on culturally significant areas. However, designing the road network to avoid adverse effects to water quality and fish habitat could protect the general ecosystem, riparian health, and natural resource base used by the Nez Perce. Closing or demolishing roads could impede Native American access to and the availability of resources.

Effects from Lands and Realty Management

Alternative A would consider disposal of 35,361 acres (25 percent) and would retain 96,465 acres (67 percent). Changes in land tenure that remove land from federal control could affect tribal access to use areas, protection of tribal treaty rights, and preservation of resources important to tribes. Land tenure adjustments would be subject to further review, including government-to-government consultation. The criteria and priorities for acquisition and disposal of land would include consideration of unique and important resources. Acquiring new land could provide access and use rights and further enhance protection of resources important to tribes.

Effects from ACEC/RNA Management

Alternative A would designate 25,600 acres (18 percent of the CFO) as ACECs or ACEC/RNAs. Establishing or maintaining RNAs and ACECs can increase or maintain the amount of land afforded protection of the natural resource base, ecosystems, and riparian areas mandated by those designations. Such protective measures could include prohibiting or limiting timber harvest, road construction, right-of-way designations, livestock grazing, or prescribed burning. The natural resource base and cultural and ethnographic resources used by the Nez Perce are typically improved by goals in RNAs and ACECs. Goals in these areas typically seek to protect or enhance ecosystem health, water quality, riparian function, and/or cultural and scenic values. Expanding such areas would increase the total area within which these goals and effects would be applicable.

Effects from Native American Tribal Uses Management

Actively working with Native American tribes to identify culturally significant natural resources would ensure that the concerns of tribes for the natural resource base they use are addressed in management decisions. The collection of vegetal resources, consistent with other resource goals and objectives, would also ensure the ability of tribes to exercise their tribal treaty rights for such activities.

Alternative B

Effects from Water Resources Management

Effects from water resources management under Alternative B would be similar to Alternative A, except that Alternative B would provide more improvements and protections of these resources. Implementing BMPs and monitoring and restoration programs for water resources management could further protect these resources from degradation that could impact use by the Nez Perce. The development of interdisciplinary monitoring plans for long-term activities and programs, requirements for tribal cooperation in achieving or maintaining beneficial use criteria, and water quality standards would ensure Native American concerns and treaty rights are considered in the planning process. Additionally, maintaining claim files, databases, and maps for water rights could maintain a record of tribal water rights and ensure their consideration in the planning process.

Remediation plans that include road or area closures could impede tribal access to and the availability of traditional cultural properties and ethnographic resources. Ground disturbances associated with remediation plans or removal of hazardous materials and structures could further impact the integrity of use locations. However, the removal of hazardous materials could ultimately improve resource availability.

Effects from Vegetation—Forests Management

Treatment projects that enhance forest health ~~vigor~~ and/or habitat diversity in WUI areas under Alternative B could increase the availability of natural resources within the ecosystem; this effect would be limited by the possibilities for improvements by restricting such projects to WUI areas. Using site-specific analysis for programs and projects could reduce the potential for impacts to the integrity and sacred quality of traditional cultural properties and other use locations.

Promoting the use of high-risk or damaged stands for timber harvest would enhance the ecosystem and natural resource base used by the Nez Perce by removing high-mortality vegetation and promoting the establishment of healthier vegetation. However, during treatment of high-mortality stands, safe tribal access to the affected areas could be impeded.

Effects from Vegetation—Weeds Management

Implementing physical, mechanical, biological, or chemical control methods for invasive plants could cause ground disturbances. This could impact use areas or other locations. Additionally, tribal access to the treatment areas could be restricted during treatment periods. However, rehabilitating treated areas to provide competitive plant communities and avoid reestablishment of invasive plant populations could counterbalance some of these effects by providing additional or new availability of ethnographic resources.

Effects from Vegetation—Rangelands Management

Using interdisciplinary-based management changes or projects to meet rangeland management objectives would ensure the consideration of cultural and tribal concerns and treaty rights are considered in the planning process. By prioritizing the use of native species, the natural resource base used by the Nez Perce would be improved. Similarly, implementing actions to convert nonnative plant communities to desired plant communities could improve the health of the ecosystem and natural resource base used by the tribe. Alternative B would promote native plant community health in two separate areas to achieve resource objectives.

Effects from Vegetation—Riparian and Wetlands Management

Riparian and wetlands management under Alternative B would result in effects similar to Alternative A. However, Alternative B would provide smaller RCA buffers (totaling 22,847 acres). New adaptive management actions under Alternative B would more effectively restore or improve the natural resource base of ecosystems used by the Nez Perce by altering management as necessary if actions are realized to be ineffective or other resources are being negatively impacted. However, the actions necessary to create these improvements in RCA stream buffers could sometimes necessitate road closures or treatment programs that could restrict tribal access to affected areas and limit the availability of resources from those areas.

Effects from Wildlife and Special Status Wildlife Management

Impacts from wildlife and special status wildlife management under Alternative B would be similar to Alternative A, except the numerous additional efforts to protect or improve wildlife, special status, and non-special status species would further enhance the natural resource base used by the Nez Perce, as well as general ecosystem health. These new efforts would include the addition of specific protection protocols for more species, habitats, and active raptor nests. This would enhance the natural resource base used by the Nez Perce. Additionally, new adaptive management could allow for flexibility in the efforts. Fewer restrictions on tribal access to buffer areas around active raptor nests would enhance tribal access in the affected areas. Although the buffer would be the same size under all alternatives, under Alternative B, the restriction would be only temporary.

By including new management that could improve populations of listed species to the point that they could be delisted could enhance the ability of the Nez Perce to exercise their tribal treaty rights.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Alternative B would provide more and mostly new protective and conservation measures for aquatic resources, fish, and special status fish than Alternative A. The additional area and resources afforded protection under Alternative B would enhance the general ecosystem, riparian functions, and availability of the natural resource base used by the Nez Perce.

Effects from Special Status Plants Management

Effects from special status plants management under Alternative B would be similar to Alternative A, but in addition to maintaining and restoring special status plant species' habitats, Alternative B also would implement conservation and restoration measures identified within Recovery Plan(s), contributing towards recovery and delisting. Alternative B would provide new measures to control invasive plants, possibly establish new populations of listed and BLM sensitive plants, and possibly conduct land tenure adjustments that support conservation and restoration efforts. These new goals and actions would contribute additional enhancements to the availability of the natural resource base used by the Nez Perce.

Effects from Wildland Fire Management

The effects from wildland fire management under Alternative B would be slightly less than Alternative A in actions to reduce the potential for stand-replacing fire in WUIs or areas in community wildfire protection plans. This would provide additional enhancements to ecosystem health and the natural resource base used by the Nez Perce. However, all methods could also represent additional possible impacts on use locations and ethnographic resources. Emphasis on

biomass use as the preferred solution to meet natural resource management objectives could limit the availability of the natural resource base used by the Nez Perce.

Effects from Forest Products Management

Under Alternative B, forest products management would provide new objectives and actions and would modify existing ones. Collection of forest and vegetal products would be allowed based on tribal and public demand, allowing tribal access and input. Although such activity would be permitted ~~only where~~when consistent with ~~forest management and~~ other resource goals, the Tribe's treaty rights would ensure their access to and the availability of necessary resources.

Under Alternative B, the estimated annual PSQ for timber harvesting would be 3,129 MBF with an estimated average annual usage area of 242 acres (an estimated 32-percent decrease from current management). This decreases the possibility of impacts on use and cultural areas from changes in setting and tribal access from area closures. Forest product management would focus on stands susceptible to fire or disease, which could enhance the quality and integrity of setting at locations by improving the viewshed and protecting the area from fire damage. However, treatment programs could temporarily restrict access to the affected areas.

Adoption of Road Construction Guidelines and the Aquatic and Riparian Management Strategy (**Appendix F** [see Volume II~~I~~]) under Alternative B would minimize impacts to tribal use of the CFO by preventing disturbances. Although both aim to maintain access to areas, required closures would limit tribal access to and the availability of the natural resource base used by the Nez Perce.

Effects from Livestock Grazing Management

Effects from livestock grazing management under Alternative B would be similar to Alternative A, except that site-specific and adaptive management under Alternative B would provide better protection for use locations and ethnographic resources.

Effects from Minerals Management

Under Alternative B, NSO stipulations would be placed on 43,590 acres and CSU stipulations on 42,403 acres open to leasable and salable minerals activities. These more-specific designations would aim to protect ACECs but would also provide more-protective measures for river corridors, withdrawal areas, the natural resource base, cultural resources, and VRM Class I and II areas. Additional TL and seasonal restrictions would be placed on mineral activities on open lands to protect wildlife, which is part of the natural resource base used by the Nez Perce. Implementing site-specific management criteria would limit impacts where use areas and ethnographic resources exist.

Effects from Recreation Management

Effects from recreation management under Alternative B would be similar to those from Alternative A. Emphasizing big game hunting in the Craig Mountain WMA would benefit the Nez Perce's use of the area and the availability of the natural resource base. However, emphasizing additional, non-hunting activities in the area would contribute to an increased public presence in other areas that may be considered culturally significant.

Effects from Renewable Energy Management

Analysis of proposed renewable energy developments on a case-by-case basis for consistency with other resource management goals would ensure that the concerns of the Nez Perce are addressed and that cultural, ethnographic, and natural resources used by the Tribe are minimally affected.

Effects from Transportation and Travel Management

Effects from transportation and travel management under Alternative B would be similar to those under Alternative A, except that there would be no Open areas under Alternative B, thereby eliminating the identified impacts from Open cross-country travel. Limited areas would triple compared to Alternative A and would be established on 125,729 acres, and Limited areas would further limit motorized travel to designated routes, rather than existing routes under current management. Closed areas would essentially be similar to Alternative A. Closed areas would continue to not be susceptible to impacts with the exception of times when it is necessary to allow emergency vehicle passage.

Route modifications would be based on access needs and natural and cultural resource constraints and would involve coordination with tribes and interdisciplinary review. Allowing route modifications based on these principles would ensure protection of tribal access to and the availability and preservation of resources. Establishing an annual environmental/resource monitoring plan in key or problem areas, including cultural resources, riparian and wetland areas, and vandalism, would further enhance this protection.

Effects from Lands and Realty Management

Effects from lands and realty management under Alternative B would be similar to those under Alternative A, but with additional restrictions on actions that would otherwise increase the likelihood of impacts on tribal use. The total amount of land that would be considered for disposal would be 30,098 acres, while the amount of land retained would be 113,728 acres. This increase in retained land would increase the amount of land where federal protections for resources would be applied. The expansion of the Salmon River withdrawals and efforts to acquire conservation easements on nonfederal lands would further increase federally protected areas.

Effects from ACEC/RNA Management

Effects from ACEC/RNA management under Alternative B would be similar to those described under Alternative A, except Alternative B would designate ~~34,528~~36,153 acres as ACECs and ACEC/RNAs, ~~6~~ 7 percent more than Alternative A. With these additional ACEC/RNA designations, Alternative B would protect more of the ecosystem and natural and ethnographic resources and locations used by the Nez Perce.

Effects from Native American Tribal Uses Management

Effects from Alternative B's management of Native American tribal uses would be similar to those under Alternative A. However, Alternative B would improve the availability of the natural resource base used by Native Americans by incorporating important habitat information into monitoring protocols.

Alternative C

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

The impacts from rangeland management under Alternative C would be similar to Alternative B but with additional promotion of native plant community health to achieve resource objectives. This would further enhance the natural resource base used by the Nez Perce within the CFO.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be similar to those described under Alternative B, except RCA buffers would be larger than under any other alternatives.

Effects from Wildlife and Special Status Wildlife Management

Impacts from wildlife and special status wildlife management under Alternative C would be similar to Alternative B but with additional efforts to protect or improve habitats and wildlife, special status, and non-special status species, which would enhance the natural resource base used by the Nez Perce, as well as enhancing general ecosystem health. The same species and habitats are protected, but Alternative C could provide enhancements in a larger area than Alternative B. Conservation and restoration projects, including areas to achieve DFC, would instead focus on priority subwatersheds in BLM forested contiguous areas that are more than 500 acres. Through this action, more area within the ecosystem and natural resource base would benefit from DFC than under Alternative B. However, treatment actions could reduce tribal access through roadway closure or decommissioning.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

The impacts from aquatic resources, fish, and special status fish management under Alternative C would be similar to under Alternative B. However, Alternative C would apply management actions in more designated areas than any other alternative. This would result in a larger area that would experience the effects of this resource management.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

The effects from wildland fire management under Alternative C would be similar, but slightly higher than Alternative B. However, Alternative C would limit the amount of fuels treatments. This could limit the possible enhancements of ecosystem health and the natural resource base used by the Nez Perce. However, decreasing the land percentages to be treated would limit the possible impacts on tribal use areas and ethnographic resources.

Effects from Forest Products Management

Effects from forest product management under Alternative C would be similar to Alternative B, except that Alternative C would decrease the acreage available for timber harvesting more than Alternative B. Alternative C would decrease the estimated annual PSQ for timber harvesting to 3,101 MBF, a slight reduction in comparison of Alternative B, with an estimated average annual usage area of 191 acres (an estimated 47-percent decrease from current management). Compared to current management, this decreases the possibility of impacts on use areas from changes in setting, tribal access from area closures, and ethnographic resources from their removal through harvesting.

Effects from Livestock Grazing Management

Effects from livestock grazing management under Alternative C would be similar to Alternative B but with additional areas removed from grazing availability. The further reductions in grazing area within the CFO could increasingly limit the possibility for impacts on tribal use from unlikely limited access and incompatible uses near traditional use areas.

Effects from Minerals Management

Alternative C management of minerals would be similar to Alternative B and would have similar effects. Alternative C would restrict more lands open to leasing by stipulating 68,854 acres as NSO and 59,122 acres as CSU. These increases would provide more protection for tribal use of and access to resources than all other alternatives.

Effects from Recreation Management

Effects would be the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be the same as those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects from ACEC/RNA management under Alternative C would be similar to those under Alternatives A and B but with more protection of the ecosystem and natural and ethnographic resources and use areas. The increased protection stems from the increase in ACEC/RNA designations, as Alternative C would designate 60,661 acres as ACECs and ACEC/RNAs, more than double than in Alternative A and ~~76~~ 40 percent more than Alternative B.

Effects from Native American Tribal Uses Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Water Resources Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Forests Management

Effects from forest management under Alternative D would be similar to those under Alternative B.

Effects from Vegetation—Weeds Management

Effects would be the same as those described under Alternative B.

Effects from Vegetation—Rangelands Management

The impacts from rangeland management under Alternative D would be similar to Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects would be the same as those described under Alternative B, except RCA buffers would be smaller than under any other alternatives.

Effects from Wildlife and Special Status Wildlife Management

Effects would be the same as those described under Alternative B.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

The impacts from aquatic resources, fish, and special status fish management under Alternative D would be similar to Alternative B but would apply management actions in fewer designated areas.

Effects from Special Status Plants Management

Effects would be the same as those described under Alternative B.

Effects from Wildland Fire Management

Effects would be the same as those described under Alternative C.

Effects from Forest Products Management

Alternative D would increase the average annual acreage available for timber harvesting (361 acres, a 1-percent increase from current management) compared to the other alternatives, and the estimated annual PSQ for timber harvesting would increase to 4,823 MBF, an increase in comparison to Alternatives B and C but a 27-percent decrease from current management. Compared to current management, this would have little change on the area where impacts on tribal use areas from changes in setting, tribal access from area closures, and ethnographic resources from harvesting would be possible.

Effects from Livestock Grazing Management

Effects would be the same as those described under Alternative B.

Effects from Minerals Management

Alternative D management of minerals would be similar to Alternative B and would have similar effects. Alternative D would restrict fewer lands open to leasing by stipulating 35,045 acres as NSO and 32,013 acres as CSU. Except for Alternative A, which does not identify stipulations, these decreases would provide the least protection for tribal use of and access to resources.

Effects from Recreation Management

Effects from recreation management under Alternative D would be similar to those under Alternative B but could increase public access to recreation areas. Although this could ease tribal access to such areas, the possible increased public presence could also lead to increased incidents of vandalism, physical disturbances, and incompatible uses at or near traditional use areas.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects would be similar to those under Alternative B, except that Alternative D would maintain 23,189 acres as Open to cross-country motorized travel, which represent 27 percent of areas currently Open under Alternative A. As under Alternative B, motorized vehicle use in Limited areas would be restricted to designated routes, except that under Alternative D, Limited areas would

comprise 102,542 acres, 18 percent less than under Alternative B. The reduction in areas designated as Limited would reduce the area that could receive additional protections of a Limited designation.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Effects would be similar to those under Alternative A, but with less protection of the resources and locations used by the Nez Perce because Alternative D would designate slightly fewer ACEC/RNAs. Alternative D would designate 23,924 acres as ACECs and ACEC/RNAs, 1,676 acres (7 percent) less than current management.

Effects from Native American Tribal Uses Management

Effects would be the same as those described under Alternative B.

Cumulative Effects

The area of analysis for cumulative impacts to Native American values and tribal uses is the six Idaho counties in which the CFO is located: Latah, Clearwater, Nez Perce, Lewis, Idaho, and Adams Counties. Past actions and events that have affected tribal resources include loss of setting, incremental disturbances from use or access, changes in species populations, the effects of natural processes such as erosion and weathering, loss of access to traditional cultural properties, and effects from vandalism and unauthorized collection.

Many of these historical affects on tribal uses would continue in the foreseeable future. Access to and use of natural and cultural resources on public lands could be limited by land tenure adjustments that reduce public land holdings; by wildfires and suppression techniques; and by increases in mineral development. Similarly, the expected increase in private land ownership could make tribal access to portions of northern Idaho increasingly difficult. Increased road construction could improve access, but it could also lead to increased vandalism and looting.

The availability of ethnographic resources could be affected by fluctuations in species populations. Wildfires, plant diseases and insect infestations, noxious weed invasions, increases in human populations, projected declines in fish and wildlife populations, and limited and poor water quality streams could reduce the number of plant and animal species available for hunting and collecting for cultural or subsistence purposes.

Traditional cultural properties and other culturally significant areas could also be impacted by increased size and occurrence of wildfires; fire suppression techniques; fuels treatment programs; changes in the natural resource base brought about by insect and disease activity, invasive noxious weed species, or other management plans; road construction; increases in human populations; and demand for recreation opportunities. Such actions could increase the likelihood for tribal access to traditional cultural properties to be temporarily impeded, the setting of traditional cultural properties and other cultural sites to be disrupted, vandalism to occur at traditional cultural properties and culturally significant areas, ethnographic resources to be reduced or removed from traditional use areas, and ground disturbances to occur that could eliminate traditional areas or impact the integrity of traditional cultural properties. However, actions that restore or improve the natural resource base around traditional cultural properties or culturally significant areas could improve the setting of such

locations and enhance their use; such actions include the development of regional management programs and the projected reduction in livestock grazing, timber harvesting, and mining. Continued tribal coordination efforts could continue to ensure protection of specific areas from the above effects.

All alternatives could contribute to the continuation of tribal coordination to ensure protection of specific areas from effects identified above. Alternative A could contribute by maintaining tribal treaty rights and use of BLM public lands. Alternative B could contribute by preserving and protecting natural resources, decreasing risk for degradation of ethnographic and natural resources and impacts on the integrity and setting of traditional cultural properties and traditional use areas. Alternative C could contribute to a similar extent as Alternative B, but with greater emphasis on preserving and protecting natural resources. Alternative D could contribute by increasing risks that could limit tribal access, degrade ethnographic resources and natural resources used by the Nez Perce, and impact the integrity and setting of traditional cultural properties and traditional use areas. This increased risk would be caused by the focus of Alternative D on developing economically viable resources.

4.5.2 Public Safety—Abandoned Mines and Hazardous Materials

Goal: Protect the public and the environment from exposure to hazards associated with hazardous materials and AMLs.

Summary

Nearly all management activities on CFO lands could affect public safety to some extent. The AML and HMM programs are part of the BLM's public safety efforts. Current AML and HMM actions in the CFO are not predicated on specific previous decision documents because the programs were not in existence at the time of the MFP (BLM 1981a). The AML and HMM programs focus on immediate and urgent threats to human health and the environment. Most of the hazardous materials issues are associated with illegal dumping and past mining activities and AMLs.

Essentially any management activity that improves access to BLM-administered lands increases the likelihood that the public and BLM employees could come into contact with AMLs, hazardous material sites, and other hazard sites. and safety from each alternative. Alternatives B and C do not allow cross-country travel and would best protect the public from exposure to hazardous materials and abandoned mine sites. The proposed public safety management deals with the identification, tracking, taking corrective actions and protecting hazard sites. Current management has limited procedures and safeguards, along with effective protection of old landfills. Alternative B adds procedures and safeguards for hazard sites and protection for significant sites. Alternative C has some added restrictions on hazard sites more than Alternative B and Alternative D is nearly the same as Alternative B with slightly less restrictions but at more sites. Long-term management of any completed AML environmental cleanup projects and physical safety closures should include periodic maintenance and monitoring to determine success and stability of these measures. Provision should be made to document locations and protect mine-stabilization efforts and/or repositories and safety mitigation from future disturbance.

Table 4-~~79~~ 80 identifies the indicators that were used to analyze effects on public health and safety from each alternative.

Table 4-80
Comparison of Public Safety—Abandoned Mines and Hazardous Materials Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Access to BLM lands	Most access; allows cross-country travel	Less access than Alternative A	Similar to Alternative B	More access than Alternative B and less than Alternative A
Procedures and safeguards	Limited	More protective than Alternative A	Like Alternative B but slightly more protective	Similar to Alternative B; Less than Alternative C

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For abandoned mines and hazardous materials, the indicators used for impact analysis are identified in **Table 4-~~79~~80**, Comparison of Public Safety—Abandoned Mines and Hazardous Materials Indicators by Alternative.

Methods and Assumptions

The alternatives were reviewed for actions that would affect the public and the environment by exposure to hazardous materials and AMLs, based on the following assumptions:

- The population of the CFO planning area will continue to increase, and there will be a corresponding increase of use of public lands;
- Promotion of the areas within the CFO as vacation and outdoor recreational destinations by certain interested parties will continue and potentially result in an increasing number of visitors encountering hazards on public lands; and
- Interest in mineral extraction on public lands within the CFO will persist into the future.

Effects Common to All Alternatives

Effects from Air Quality Management

Air quality management objectives would generally protect public safety by minimizing airshed degradation. The impacts of air quality on the status of AML and other hazardous sites would be negligible. The air quality program could have bearing on ground-disturbing activities of the AML and HMM programs in terms of fugitive dust (PM_{10} and $PM_{2.5}$) and other emissions.

Effects from Soils Management

Soils management objectives would complement those of the AML and HMM programs. Soils management could have a measurable impact on public safety. Actions that specify the avoidance of sensitive land types, which should include AMLs and hazardous sites, and the prioritization of existing roads, which may include road closure, would be protective of public safety. Implementation of BMPs for projects that entail soil-disturbing activities (**Appendix B**, Best Management Practices [see Volume II~~I~~]) under Alternatives B, C, and D would have greater potential to help reduce the effects of erosion of hazardous materials. Erosion protection, site

stabilization, and better vegetative cover would reduce exposure and movement of contaminated soils and also would reduce runoff and flood potential. Soils management would only limitedly affect the mitigative and remediative ground-disturbing activities of the AML and HMM programs.

Effects from Water Resources Management

Water resources management goals and objectives would complement hazardous site cleanup efforts across alternatives. Watershed and stream improvements would reduce the potential for erosion and migration of contaminants. The specified cooperation with adjacent landowners, agencies, tribes, communities, and municipalities would help remediate and restore AML and hazardous waste sites. Actions to maintain, improve, and restore water quality, including compliance with state and federal standards and regulations to protect watersheds and implementation of BMPs, would be applicable to the remediative and restorative programs for AMLs and other hazard sites.

Effects from Vegetation—Forests Management

Fuels reduction with a more resilient forest, similar to historic conditions, would help ensure public safety from the standpoint that the public would be less likely to be injured by wildfire. However, forest management actions could cause undesirable ground disturbance on or around AML and hazardous material sites. In addition, logging requires road construction, thereby potentially increasing access to hazardous sites. The potential of these impacts occurring depend on amount of timber harvested, which would vary by alternative.

Effects from Vegetation—Weeds Management

Weeds management would affect public safety. Weeds are common at AML/hazardous material sites. The invasive species and noxious weeds program helps control weeds in and around these types of sites. Weed control is part of public safety cleanup and follow-up efforts. The revegetation of areas treated for weeds would complement the objectives of the AML and HMM programs. However, one possible short-term impact of weeds management on public health and safety is that weeds, even noxious weeds, can provide surface stabilization in poor or disturbed soils at AML and hazardous materials sites, where other more desirable species of flora refuse to grow. The removal of such flora without rapid implementation of other measures could further impact on- and off-site conditions.

Effects from Vegetation—Rangelands Management

Many AML/hazardous material sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety. Improving watershed conditions would help protect sites, like contaminated floodplains.

Effects from Vegetation—Riparian and Wetlands Management

Many AML/hazardous materials sites have limited vegetation, so improving riparian and wetland conditions would help protect AMLs and other hazardous materials sites, thereby protecting public health and safety. Wetlands and good riparian conditions would aid in removing and storing contaminants. All the alternatives would improve streams and establish RHCA and RCA buffers, all aiding in removing and storing contaminants. The differences among alternatives would not result in measurable impacts on public safety.

Effects from Wildlife and Special Status Wildlife Management

Fencing, avoidance of sensitive areas, and grazing restrictions under Alternative A would reduce the likelihood of the public coming into contact with AMLs, hazardous material sites, and other hazard

sites. Alternatives B, C, and D would be more protective than Alternative A in terms of public safety by specifically protecting the habitats of more species (maintaining buffers means less human access) and enhancing riparian and wetland areas. Bat considerations would be a major inventory item and constraint in future closure of mine adits and tunnels. The differences among alternatives would not result in measurable impacts on public safety.

Controls on vehicle use and closures under Alternative A would reduce the likelihood of the public coming into contact with AMLs, hazardous material sites, and other hazard sites. The other alternatives are more protective by not allowing a net increase in, or resulting in a decrease of, motorized vehicle use of BLM-administered routes (less access means less likelihood of exposure).

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Conservation and restoration of special status fish habitats would improve water quality and thereby enhance public safety, as would promoting actions that achieve good-quality aquatic and riparian habitats. Alternative C has the greatest potential to protect public safety through managing the most watersheds (68,359 acres), followed by Alternative A (66,077 acres). The differences among alternatives would not result in measurable impacts on public safety.

Effects from Special Status Plants Management

Impact of special status plants management on public safety would be negligible. However, implementation of conservation easements and ACEC designations would help reduce access to, thus possible exposure to, hazards.

Effects from Wildland Fire Management

Wildfire management would affect public safety by reducing the likelihood that the public would be injured by wildfire. The FMPs would assist in protecting AML/hazardous material sites across alternatives. One possible impact is the emphasis on biomass use under Alternatives B, C, and D, which could cause ground disturbance on or around AML and other hazard sites. The differences among alternatives would not result in measurable impacts on public safety.

Effects from Cultural Resources Management

Cultural resources management could preserve old mine structures, which could threaten the public safety because of chemical and physical hazards that may be present. Such inventories would aid in AML and physical hazard identification.

Effects from Visual Resources Management

Visual resources are a concern during site cleanups and generally improve the appearance of AML and hazardous material sites in the long term (for example, by allowing the regeneration of vegetative cover when absent).

Effects from Forest Products Management

Logging within the WUI would reduce the risk of wildfire to communities and private property and would have an indirect effect on public health and safety from the standpoint of protecting the public from wildfire injury. However, logging on or near AML and other hazardous material sites could produce unwanted ground disturbance. In addition, logging requires road construction, thereby potentially increasing access to hazardous sites. The potential of these impacts occurring depend on the number of acres harvested, which would vary by alternative.

Effects from Livestock Grazing Management

Livestock grazing could impact public health and safety where grazing animals gain access to disturbed sites resulting in increased site disturbance. Grazing could also reduce or degrade vegetation used to stabilize conditions on or near AML and other hazardous material sites. Range improvements also could disturb hazardous materials, as could weed-control efforts. Many AML/hazardous material sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety. Improving watershed conditions would help protect sites, like contaminated floodplains. Improved range management can also improve and control access which can also aid in protecting hazard conditions. Impacts would depend on the character of specific allotments. Overall, impacts from livestock grazing management on public health and safety would not affect long-term rehabilitation and stability of sites.

Effects from Minerals Management

Minerals management would impact public safety and the efforts of the AML and HMM programs. Based on the previous mineral extraction activities that have occurred on public lands within the CFO, these activities generally affect water quality, soil quality, and, as a result, public safety. The impact of extracting salables such as sand and gravel and geothermal ventures would have less impact on public safety than that of mining, and the extraction of petroleum minerals. Reopening closed mining sites would undo reclamation measures that have been employed and to increase the likelihood that contaminants would be released into the environment. No minerals activities on lands withdrawn from the mining laws and lands closed to the mineral laws would improve public safety.

Effects from Recreation Management

Increased recreational demand and use of public lands would increase the likelihood that the public could come into contact with AML or other hazardous sites. SRMAs, which would be managed for intensive recreation use, increase this likelihood. Contrarily, SRMA activity plans could include restrictions that help protect AML and hazardous material sites. Recreation programs assist in collecting solid waste, which would mitigate illicit solid waste dumping. Recreation program maintenance, signage, and information efforts aid in reducing exposure to physical hazards and other types of hazards.

Effects from Renewable Energy Management

The renewable energy program could affect AML sites, hazardous material sites, and public safety by improving access and by causing ground-disturbing activities resulting from the acquisition of biomass and during the development of fluid minerals. Protection of public health and safety would continue, however, as right-of-way grants would not be issued in areas that would jeopardize remediation activities.

Effects from Lands and Realty Management

The lands and realty program could affect public health and safety through inadvertently providing access to hazard sites, designating rights-of-way or authorizing ground-disturbing activity on or near hazard sites, or authorizing development near hazard sites. Public health and safety would continue to be protected because such authorizations or designations would not be issued in areas that would jeopardize remediation activities.

Effects from Watchable Wildlife Viewing Sites Management

Watchable wildlife viewing sites could impact public safety across alternatives by increasing access and bringing the public into contact with AMLs, hazardous materials sites, and other hazard sites.

Effects from Native American Tribal Uses Management

Native American tribal uses could impact public safety across alternatives by encouraging Native Americans to access traditional use areas for purposes of collection, hunting, and other traditional uses, which could also expose them to hazard sites.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

The AML and HMM programs focus on immediate and urgent threats to human health and the environment. Most of the hazardous materials issues are associated with illegal dumping and past mining activities and AMLs. Implementation of management actions that could reduce BLM employee and the public's health risk and exposure to AML sites, hazardous materials sites, solid waste sites, and other hazard sites would include:

- Identifying, prioritizing, and ranking high-risk sites in need of corrective actions in terms of ease of access by the public;
- Continuing to maintain inventories of AML sites and hazardous material sites;
- Inspecting and mitigating new physical and chemical hazards to ensure public safety;
- Correcting physical hazards and cleaning up and reclaiming hazardous sites;
- Conducting periodic evaluations of closed sites to ensure protection of human health and the environment; and
- Safeguarding human health, preventing environmental damage, and limiting BLM liability from hazards by appropriate use authorization actions on public lands.

Alternative A

Effects from Geology Management

Alternative A would not promote scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Increased access to public lands increases the likelihood of exposure to AMLs, hazardous material sites, and other hazard sites. Thus, Alternative A is the most protective of public safety by not increasing access to public lands.

Effects from Forest Products Management

Based on timber harvest output since 1992, the current annual ASQ is estimated at about 6,600 MBF on approximately 35,757 acres. This estimate serves as a baseline for comparing alternatives.

Effects from Recreation Management

Alternative A would designate three SRMAs totaling 26,682 acres. The likelihood that the public could come into contact with AML or other hazardous sites would be increased in these SRMAs.

Effects from Transportation and Travel Management

The transportation and travel management program could affect public safety through inadvertently providing access to hazard sites and producing ground-disturbing activity on or near AML sites and hazardous material sites. Alternative A has the least potential to protect public safety because it offers the most acreage for Open, cross-country OHV use (85,308 acres). The Open designation presents the greatest potential for encountering AML, hazardous material sites, and other hazard

sites. Alternative A also provides for fewer miles of yearlong vehicle use closure for roads, fewer miles of yearlong vehicle use closure for trails, and fewer miles for all-terrain vehicle use only when compared to Alternatives B and C.

Effects from ACEC/RNA Management

ACEC/RNA management could affect public safety by limiting access to or prohibiting manipulation of BLM-administered lands, thereby reducing exposure to AMLs, hazardous materials sites, and physical hazard sites. ACEC designations for watersheds, stream features, lakes, wetlands, riparian areas, and forest areas would also positive affect water quality, and thus further the goals of the AML and HMM programs. Alternative A includes 10 ACEC/RNA designations totaling 25,600 acres. In particular, the existing Elk City Dump/American Hill Lake ACEC under Alternative A would continue to protect the public from hazards present at that site.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Alternative A would have the least potential to protect public safety, mainly because of the comparative lack of management actions outlined under Alternative A when compared to the other alternatives. Current AML and HMM actions in the CFO are not predicated on specific previous decision documents because the programs were not in existence at the time of the MFP (BLM 1981a). In comparison to Alternatives B, C, and D, which share numerous management actions in common, Alternative A does not outline specific site inventorying practices or subsequent hazard remediation, monitoring, or tracking.

The HMM program has dealt with some hazardous and solid waste materials at sites and from dumping in the CFO. Mine and AML sites with hazardous conditions have been investigated to a limited extent under the AML and HMM programs. Physical hazards at these sites have been addressed under other programs, as required, although hazards have not been inventoried. If mine water issues are present at these sites, they have not been investigated.

Alternative A continues an ACEC to protect the Elk Creek Landfill and the NWSRS withdrawals to protect the Blackhawk Bar and Riggins Landfill to protect public health and safety.

Alternative B

Effects from Geology Management

Alternative B, like Alternatives C and D, promotes scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Increased access to public lands increases the likelihood of exposure to AMLs, hazardous material sites, and other hazard sites.

Effects from Forest Products Management

Alternative B would offer 3,129 MBF of timber for extraction on 40,598 acres. This constitutes approximately 47 percent of the timber that would be extracted under Alternative A on about 12 percent increase of the base acreage that could be disturbed. As such, Alternative B would be more protective of public safety by offering less timber for extraction, but on a larger base acreage for ground disturbance.

Effects from Minerals Management

Alternative B would protect public safety on 43,590 acres open to leasable and salable minerals activities with NSO stipulations and 42,403 acres with CSU stipulations.

Effects from Recreation Management

Alternative B would designate 5 SRMAs totaling 55,201 acres. The likelihood that the public could come into contact with AML or other hazardous sites would be increased in these SRMAs, which would affect double the acreage of SRMAs under Alternative A.

Effects from Transportation and Travel Management

Alternative B would have the greatest potential to protect public safety from transportation and travel management impacts because no areas would be Open for cross-country OHV use; all areas would be Limited or Closed. Alternative B would also provide more miles of yearlong vehicle use closure for roads, more miles of yearlong vehicle use closure for trails, and more miles for all-terrain vehicle use only when compared to Alternative A.

Effects from ACEC/RNA Management

Impacts of ACEC management on public health and safety would be similar to those described under Alternative A, except that Alternative B would designate ~~11~~ 12 ACEC/RNAs totaling ~~34,528~~36,153 acres, a ~~6~~7 percent increase in comparison to Alternative A. Also, the existing Elk City Dump/American Hill Lake ACEC under Alternative A would not continue to be an ACEC under Alternatives B, C, and D. As such, the public would not be protected from hazards present at the site. Protection of historical mining sites through the designation of the American River Historical Sites District ACEC under Alternatives B, C, and D would also be protective of public safety.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Similar to Alternative A, Alternative B would place emphasis on identifying potential hazard sites, such as hazardous material sites, solid wastes, and other hazards sites. However, unlike Alternative A, Alternative B also emphasizes identifying AMLs.

Hazard sites would be assessed for level of risk and subsequently prioritized for mitigative and remediative actions across alternatives, but Alternative B specifies additional follow-up actions. Physical hazards would be ranked for corrective actions. Recreation facilities and use areas would be regularly assessed for safety hazards, and corrective actions would be taken to correct these hazards, when necessary. An inventory of AML and hazardous material sites with site files and databases would be maintained. Physical safety hazards would be corrected and hazardous materials sites would be cleaned up.

Correcting physical safety hazards and cleaning up hazardous material sites is an action that is consistent across alternatives, but Alternative B also specifies that site cleanup and reclamation be conducted in accordance with the National Oil and Hazardous Substances Pollution Plan (Federal Register 1994) and the Comprehensive Environmental Response, Compensation, and Liability Act. Alternative B also specifies that BLM employees who work around contaminated areas and other hazard areas be property trained and equipped to do so.

Alternative B specifies that public land records be noted with the location of closed landfills and that files be maintained about closed landfills and other closed/remediated sites. For comparison, Alternative A highlights an ACEC to protect the Elk Creek Landfill and NWSRS withdrawals to protect the Blackhawk Bar and Riggins Landfills. The withdrawals and another ACEC by other management programs continue the protection also.

Conversely, Alternative B would be more protective of public safety than Alternative A with regard to ensuring that the remedies employed at closed/remediated sites remain protective. The effectiveness of corrective actions at sites where hazardous substances remain would be monitored

following written monitoring plans. The performance of remedies implemented at sites where hazardous substances remain would be reviewed no less than every five years to ensure the remedies remain protective. All actions authorizing the use of, or potential for disturbance, of closed and remediated sites on public lands, where potentially hazardous substances remain at the site, would comply with federal and state regulations, and where appropriate, special stipulations would be developed as part of the permit, lease, or other action to ensure human and natural resource safety.

Alternative B specifies that closed and remediated sites where hazardous substances remain and sites with significant known hazardous conditions can be restricted by NSO stipulations and special conditions requiring no disturbance of the hazardous materials present unless they are properly handled and the parties doing so are appropriately bonded. Mineral developments would be appropriately handled and the involved parties would be bonded. Also, sites with significant known hazardous conditions would also be closed to motorized vehicles where appropriate.

Alternative B would be more protective of public safety and would limit BLM liability more than Alternative A by applying special stipulations, beyond those of state of federal regulations, to permits, leases, plans, or other actions involving potential use of hazardous materials on public lands, when deemed appropriate. Alternative B also specifies periodic review not only of compliance with state and federal regulations, but also with the special stipulations.

Alternative B would also be more protective of public safety and would limit BLM liability more than Alternative A by specifying that exchange or disposal of lands with hazardous materials can be done only with Potentially Responsible Parties. Alternative B would not permit unauthorized treatment, storage, or disposal of hazardous materials on public lands and specifies corrective actions on all unauthorized actions found.

Alternative C

Effects from Geology Management

Impacts would be the same as those described under Alternative B.

Effects from Forest Products Management

Alternative C is more protective of public safety than Alternatives A and B by offering the least board feet of timber for extraction (3,101 MBF) and the least base acreage for ground disturbance (34,611 acres).

Effects from Minerals Management

Alternative C has the greatest potential to protect public safety by making the most lands open to leasable and salable minerals activities subject to NSO and CSU stipulations (68,854 acres and 59,122 acres, respectively). Overall, Alternative C would impose NSO and CSU constraints on 37 percent more open areas than Alternative B.

Effects from Recreation Management

Impacts of SRMA designation under Alternative C would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Impacts on public health and safety from transportation and travel management under Alternative C would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

Impacts of ACEC management on public health and safety would be similar to those described under Alternative B, except that Alternative C would designate the most (15) ACECs totaling 60,661 acres, which is twice as much land in comparison to Alternative A, and 18 percent more land in comparison to Alternative B.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Impacts would be similar to those described under Alternative B, except as follows. Alternative C would provide more potential to protect public safety and environmental health than Alternative B because it would close under the mineral laws closed and remediated sites where hazardous substances remain and at sites with significant identified hazardous materials. However, Alternative C would not close significant hazardous materials sites to motorized vehicles, where appropriate. Such increased use of public lands would result in:

- An increase in dumping and releases;
- An increase in the number of people accessing hazard sites; and
- An increase in the disturbance of hazard sites.

Alternative D

Effects from Geology Management

Impacts would be the same as those described under Alternative B.

Effects from Forest Products Management

Alternative D is less protective of public safety than Alternatives B and C but more protective than Alternative A by offering 4,823 MBF for timber for extraction on 45,190 acres.

Effects from Minerals Management

Compared to Alternatives B and C, Alternative D would have the least potential to protect public safety by making the least acreage open to leasable and salable minerals activities subject to NSO (35,045 acres) and CSU stipulations (32,013 acres). This would constitute about 46 percent fewer lands with stipulations than Alternative C, and about 25 percent fewer lands with stipulations than Alternative B.

Effects from Recreation Management

Impacts of SRMA designation under Alternative D would be similar to those described under Alternative B.

Effects from Transportation and Travel Management

Alternative D has less potential to protect public safety than Alternatives B and C, but more potential to protect public safety than Alternative A. Alternative D would offer approximately 73 percent less acreage for Open, cross-country OHV use than Alternative A (23,189 acres Open under Alternative D and 85,335 acres Open under Alternative A). More than 150 percent of lands would be Limited under Alternative D than under Alternative A, but 19 percent fewer lands would be Limited under Alternative D than under Alternatives B and C. Alternative D, like the Alternative A, would provide fewer miles of yearlong vehicle use closure for roads, fewer miles of yearlong vehicle use closure for trails, and fewer miles for all-terrain vehicle use only, when compared to Alternatives B and C.

Effects from ACEC/RNA Management

Impacts of ACEC management on public health and safety would be similar to those described under Alternative B, except that Alternative D would designate the fewest (eight) ACECs totaling 23,924 acres, which is a slight decrease (1 percent) in comparison to Alternative A.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Impacts would be similar to those described under Alternative B, except as follows. Alternative D would have NSO restrictions and bonding for all sites with hazardous materials instead of sites with significant known hazardous materials, but would not close them to motorized vehicles. Compared to Alternative C, Alternative D would not close sites under the mineral laws. Overall, Alternative D has more potential to protect public safety than Alternative A but less potential than Alternatives B and C.

Cumulative Effects

Effects of past actions and natural events that have affected public safety generally stem from activities in the CFO planning area that have improved access, such as land tenure actions, and caused ground disturbances such as timber, grazing, mineral, and recreation activities.

Any foreseeable future activities that could have an effect on public safety would be mitigated by management actions that specify surface use restrictions such as closures, withdrawals, no surface occupancy, and seasonal restrictions. Protective buffers, special designations, and avoidance areas also would help mitigate cumulative effects to public safety. Activities that lead to cumulative public safety effects in the CFO would be interrelated and synergistic: increased access would lead to greater likelihood of exposure to chemical and physical hazards that may be present and to increased ground disturbance, which in turn destabilizes AML and hazardous materials sites, diminishing public safety.

The continuance of land tenure actions that consolidate BLM-administered lands could result in exchanging lands near AML, hazardous material sites, and other hazard sites. The exchange of lands near hazard sites would increase as consolidation of holdings progresses.

Domestic livestock have grazed and will continue to graze most of the CFO planning area, including BLM-administered lands, Nez Perce and Coeur d'Alene Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands. Livestock grazing increases access, causes ground disturbance, and reduces foliage, thereby impinging on hazard sites.

Timber has been and is harvested on private lands, State of Idaho lands, BLM-administered lands, and National Forest lands. Despite the decline in timber sales from National Forests in Idaho as a result of the North Idaho Timber Management Plan (in 1982) and the anticipated further decline in timber sales in the foreseeable future, logging will continue on public lands at a reduced rate and on private lands at a projected increasing rate. Continuing logging activities would result in future access to and ground disturbance on or around AMLs, hazardous materials sites, and other hazards sites.

Mineral revenues in the CFO and Clearwater, Idaho, and Latah Counties make up a small percentage of Idaho's total mineral revenues, and these have diminished in royalty value over time. Renewed interest in hard-rock mining for gold may occur in the foreseeable future if gold prices increase. Future mining for gold would likely be geographically confined to areas around Elk City and

Marshall Mountain. Close oversight of future gold mining activity would be required to reduce effects to water quality and public safety.

Development of various industrial minerals in the CFO planning area, including sand, gravel, and aggregate; dimension stone; and limestone, is expected to continue to expand in response to urban growth and construction in Idaho. Development of industrial minerals and/or salables can impact public safety through increasing access, ground-disturbing activity, fugitive dust, and creation of physical hazards. Runoff from industrial mineral sites could cause sedimentation of nearby stream features and affect the reproduction of aquatic species. Petroleum products would be required to run mineral extraction equipment, and hazardous substances could be used to service this equipment. The increased presence of heavy trucks on secondary roads in the CFO required to transport salable minerals could also be a public safety issue.

Past exploration activity in the CFO for oil and gas, geothermal, and solid leasables (both energy and non-energy) has been low. The potential for these resources is also low. Future prospecting for these resources could impact public safety by improving access and creating ground disturbance.

Road construction associated with timber harvesting and mining on BLM-administered lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands has recently slowed because of less harvesting and mining activity on National Forest and BLM lands when compared with the recent past. However, this activity is expected to continue at a steady rate on BLM-administered and National Forest lands and at an unknown rate on private and State of Idaho lands. Road construction has a generally negative effect on public safety by causing ground disturbance and increasing access and the likelihood that the public will come into contact with hazards. Increased access could also lead to an increase in illicit dumping of materials, both of the hazardous and relatively innocuous solid waste varieties.

The continuing increase in Idaho's population affects public safety by increasing the number of people that would visit BLM-administered lands and encounter the chemical and physical hazards that are present; increasing the number of people that can cause ground disturbance, either by foot travel or vehicular traffic; and increasing the number of people that may engage in illicit disposal activities.

Increased recreation use increases the likelihood that AML sites, hazardous material sites, and other hazard sites could be encountered by motorized off-road vehicle users, mountain bikers, hikers, hunters, and other recreationists. Recreation has increased, and use patterns and motorized technology have changed. Recreational activities would continue to contribute to soil effects by foot traffic and off-road vehicle use. An increase in the use of developed recreation sites and campgrounds is likely as the population increases, which could lead to an increase in illicit dumping activity and could result in an increase in releases of petroleum products and hazardous materials.

Noxious weed invasion is increasing and will continue, potentially increasing treatment efforts. Noxious weed treatment efforts could impact public safety by disturbing AML and hazardous material sites, which frequently lack good vegetative cover and have noxious weeds infestations. Use of chemical treatments, such as herbicides, to control noxious weeds also raises human and environmental health issues.

Hazardous fuels reduction, WUI projects, and activities that develop defensible space under the Idaho Statewide Implementation Strategy for the National Fire Plan would be protective of public safety by protecting the public from wildfire. However, such activities could cause ground disturbance and erosion around AMLs and other hazard sites and lead to site instability. Fuels treatments, including prescribed fire and mechanical treatment methods and wildland fire use, is expected to increase.

The development and implementation of ICBEMP would be protective of public safety by maintaining and promoting healthy, productive, and diverse ecosystems and by restoring areas that are degraded. Developing a coordinated multiscale and interagency approach to planning and decision making should also be protective of public safety by expediting the improvement of watersheds and ensuring that AML and other hazard site are avoided. Re-patterning succession and disturbance regimes to reduce events such as uncharacteristically large and severe wildland fires would also protect public safety. However, restoration of natural hydrologic process and disturbance patterns in watersheds, such as presumably unmanaged seasonal flooding, under ICBEMP could have a short-term effect on public safety and environmental health by allowing stream and floodplain sediments that contain toxic metals to be mobilized.

The Cottonwood RMP Alternatives B, C, and D could contribute to protecting public health and safety by outlining assessment, mitigation, and corrective protocols for AML, hazardous material, and other hazard sites, which are absent under Alternative A. The specification of these protocols would generally protect public safety across alternatives by providing specific future management for these items. However, proposed management actions for some resource areas, such as recreation, transportation and travel management, would be less protective of public safety across alternatives.

4.5.3 Social and Economic Conditions

Goal: Provide varied social and economic opportunities through multiple use management.

Summary

This section describes the important social, economic, and environmental justice effects of the management actions described in Chapter 2. Most social and economic effects from the implementation of the alternatives would be indirect as a result of land use decisions and limits or emphasis placed on uses that could affect the dominant industry sectors on BLM-administered lands, including forestry, grazing, tourism and recreation, and minerals development.

The RMP makes land allocations that provide for commercial uses (grazing, timber, tourism, recreation, mining, outfitter/guiding) of BLM lands in designated areas. These commercial uses provide economic benefits to local communities and to the greater public. The RMP alternatives vary in where and how these commercial uses are allowed and/or restricted.

Continued implementation of Alternative A would result in no net change to social and economic conditions in the planning area. Alternative B would be the same as A, or would have a slight decrease in employment and income. Although PSQ is reduced in all action alternatives (from Alternative A), increased fuel-reductions projects are expected to generate new employment opportunities. Alternative C would provide a decrease in employment and income potential (from Alternative A) because of the greatest number of restrictions to commercial uses due to resource protection measures. Alternative D would provide the greatest potential increase (from Alternative

A) in economic benefits because of the least restrictions for resource protection placed on commercial uses.

Table 4-~~80~~ 81 identifies the indicators that were used to analyze effects on social and economic conditions under each alternative. It is not possible to predict if the indirect effects of protective measures would ultimately result in changes in income, employment, or BLM receipts to counties. **Table 4-~~80~~ 81** presents the potential for indirect effects to economic indicators, based on management of the economically important resource uses on BLM-administered lands (management of recreation, forest products, livestock grazing, minerals, and renewable energy), as well as the potential for land tenure adjustments to affect the area available for tribal uses.

Table 4-81
Comparison of Social and Economic Conditions Indicators by Alternative

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Change in number of jobs	Recreation connected with amenities and resources on CFO lands continues (and increases with population growth) to contribute to local economies. Variations across alternatives for levels of PSQ and AUMs and variations in NSO and CSU restrictions could result in small, localized changes to numbers of jobs in the timber, construction, ranching, and mining industries. Levels of restoration actions also vary among alternatives resulting in small, localized changes to number of jobs in the contracting and construction industries.			
Change in personal income	Recreation connected with amenities and resources on CFO lands continues (and increases with population growth) to contribute to local economies. Variations across alternatives for levels of PSQ and AUMs and variations in NSO and CSU restrictions could result in small, localized changes to personal income in the timber, construction, ranching, and mining industries. Levels of restoration actions also vary among alternatives resulting in small, localized changes to personal income in the contracting and construction industries.			
Change in dollar returns to counties from grazing	No net change	Potential for slight decrease due to reduction in AUMs	Potential for slightly greater decrease than B due to reduction in AUMs	Potential for slight increase from grazing due to increase in AUMs
Identify changes in acres for Nez Perce Tribe to exercise off-reservation tribal rights	No net change			
Identify effects on tribal interests	No net change	Potential for increase due to increased land retention and increased economic coordination		

Source: BLM 2004a

Methods of Analysis

Indicators

Indicators are used to identify the level of impact. For social and economic conditions, the indicators used for impact analysis are identified in **Table 4-~~80~~81**, Comparison of Social and Economic Conditions Indicators by Alternative.

Methods and Assumptions

Impact analyses and conclusions are based on the existing and projected population, employment, income, housing, earnings, social values, economic contribution of BLM lands, and government services conditions presented in Chapter 3, Section 3.5.3, Social and Economic Conditions. This socioeconomic and demographic data within the planning area was examined to determine these resources' sensitivity to the changes in resource management proposed under each alternative. Impacts described in this section are based on the preliminary design of the alternatives under consideration. Effects are quantified where possible, but potential socioeconomic impacts were not modeled.

BLM-administered lands provide locally important values, natural resources, and recreation amenities within the regional economy and are part of the cultural identities of the local communities. As such, changes in management on BLM-administered lands could affect the economies and social well-being of these communities. In addition, BLM contributes directly to local employment and expenditures through hiring for seasonal tasks, such as weed abatement, river patrols, campground maintenance, and archaeological inventories, and awarding contracts for timber sales and recreation site development.

Of the important industry sectors on public lands within the CFO planning area (recreation, forest products, livestock grazing, and minerals activities), recreation is the greatest contributor to the economies of the surrounding communities. By far the greatest influence on the demand for recreation in the planning area is the increasing population and the increasing demand for recreational opportunities (see Section 3.5.3, Social and Economic Conditions, Economic Influence of BLM-managed lands). Because the BLM manages only ~~1.5~~2 percent of planning area lands, changes in management of these BLM-administered lands could contribute but not cause region-wide economic effects on the natural resource and recreation-based industries that rely on them. Wildlife habitat and salmon and steelhead fisheries found on CFO lands contribute to world-class hunting and fishing opportunities that are important economic drivers of local economies.

Forestry is more prevalent on Forest Service and private lands within the planning area, which contain a much larger percentage of the region's commercial timber than BLM-administered lands. The region's forest products industry has been substantially affected by regional fluctuations in the demand and price for timber. Natural resources, particularly forest products, however, continue to be a important source of income and employment for planning area residents. The increasing regional demand for timber has fueled recent investment in mills and milling equipment in the planning area.

Similarly, the amount of livestock grazing occurring on public lands utilizes ~~is~~ a small fraction of the available forage within the planning area boundary. In general, privately-owned parcels provide more forage per acre than public grazing lands.

Public lands in the CFO provide limited opportunities for minerals activities. Currently, there is no potential for fluid leasables on public lands within the planning area. There are no active mineral leases within the planning area. There are 12 permits and plans for locatable minerals within the CFO, two of which are pending and could affect one acre and the remainder are inactive or reclamation efforts. There are three salable minerals (mineral materials) contracts that cover crushed stone used for aggregate, totaling 80 acres in Idaho County. In addition there are two right-of-way

leases for mineral materials covering 35 acres along the Salmon River. Active (not including reclamation) or planned minerals operations now cover approximately 116 acres (0.08-percent of public lands) (see the Mineral Occurrence and Development Potential and Report). Most of the minerals operations are made up of small-scale local miners or junior companies (Sanner 2005).

Renewable energy is increasing in importance as fuel prices increase and greater emphasis is placed on domestic sources; therefore, the socioeconomic effects of management actions on renewable energy, particularly biomass, also is discussed. The effects of management actions as they relate to these sectors are described qualitatively, based on changes in the acreage of land available for each use under each alternative. Dollar values are estimated where available. In the absence of quantitative data, impacts are described using ranges of potential impacts or in qualitative terms, as appropriate. In general, alternatives with restrictions on the most acreage on the resource uses identified above would have the highest potential for increased operations costs and decreased incomes.

Effects Common to All Alternatives

Effects from Soils Management

Management measures designed to limit soil erosion and ground-disturbing activities in sensitive areas could result in increased operating costs and potentially employment reduction in the economic sectors that are active on BLM lands. Land available for timber harvest could be restricted and timber operations costs increased.

In areas of permanent or temporary closure to protect sensitive soils, BLM would change the season of operation for livestock grazing or fence off the affected area, allowing continued grazing outside the exclosure. These measures would not affect the grazing operations or the incomes of ranchers using BLM lands in the planning area. If these actions were not feasible and a relatively large area required restriction, permanent or temporary closure of areas available for grazing could potentially reduce the number of AUMs available to ranchers. Permittees could be required to lease additional private land, purchase additional forage, or reduce livestock numbers during interim periods when grazing is temporarily suspended. These costs to ranchers would result in a loss of income and a reduction in grazing fees to the BLM and returns to counties from grazing. This loss could be offset through the use of vacant unleased allotments. The amount that these effects could be offset would depend on the number of AUMs affected, whether all AUMs in the affected allotments are in use, and the vacant allotments/AUMs available. The potential reduction in leased AUMs would vary by alternative, based on the AUMs in steeply sloped areas; however, steep slopes probably would not be the focus for a reduction of livestock grazing, since these areas receive very little use compared to moderate sloped areas.

Under all alternatives, soils management could limit access for motorized recreation in some areas. Unless these restrictions covered a large area and limited a wide variety of activities, they would be unlikely to result in a reduction of recreational use of BLM-administered lands, for which demand is projected to increase, or a reduction in local sales, employment, and income.

Effects from Water Resources Management

Similar to the economic effects from soils management, management actions to protect riparian areas and water quality would impose restrictions on economic activities on BLM lands, including timber harvest, grazing, minerals development, and recreation. While these measures could potentially increase operating costs, and ultimately result in a reduction in local employment in and

income from these activities, these effects would be unlikely for the reasons described above (in Effects from Soils Management). Road management actions specified in **Appendix F**, Aquatic and Riparian Management Strategy (see Volume II~~I~~), could result in areas where timber is not economically feasible or could require using other potentially more-expensive systems. Water quality protection measures would affect transportation and logging systems. This could reduce timber volume, and thus sales, and BLM receipts.

Management changes in areas where livestock grazing inhibits riparian areas from meeting PFC could result in a reduction in available AUMs and the associated socioeconomic effects on grazing described under Effects from Soils Management. The potential reduction in leased AUMs would vary by alternative, based on the AUMs in riparian areas.

Limiting mineral activities near waters listed on the Clean Water Act 303(d) list for water quality impairment, or restricting mineral activities near water bodies subject to TMDL limitations, could restrict areas open to mining and increase local minerals operators' costs to extract the minerals and decrease their incomes. If these costs became prohibitive, the affected operations could be forced to scale down or cease operating on BLM lands, which could eliminate jobs.

Effects from Vegetation—Forests Management

Forest health and fuel-reduction projects would generate logging byproducts that could be used as biomass fuel. Increased biomass fuels availability could decrease energy costs for timber companies or individuals involved in biomass fuels collection and energy generation or result in increased sales of biomass fuels.

The AUM value of treated lands could increase, potentially allowing for additional grazing, receipts from grazing to the BLM, and returns to counties from grazing.

Improvement of forest habitat for wildlife would increase opportunities for hunting and viewing of wildlife, improving the social value of recreation on public lands. Enhanced opportunities for camping, hiking, and sightseeing that could result from forest products management could draw more visitors, potentially increasing expenditures within the local economy.

Effects from Vegetation—Weeds Management

Under all alternatives, all authorized users of public land, could be responsible for implementing weed-control measures. These measures could result in increased costs to mining operations, which could affect whether individuals or organizations continue mineral activities on BLM lands. If these costs became prohibitive, the affected operations could potentially be forced to scale down, which could eliminate jobs.

Invasive species have resulted in a loss in rangeland values for grazing. Weeds management actions under all alternatives would improve the forage base for livestock grazing and could enhance incomes to ranchers.

Weeds management could improve recreational opportunities and maximize the areas available to visitors. Loss of native habitat due to invasive plant species, which can result in lost hunting and fishing opportunities, would be limited by weed management measures, and potential reductions in areas available for undeveloped camping and hiking as a result of invasive species also would be minimized through weeds management measures.

In addition, BLM would also be working with the counties, private contractors, and local businesses through partnerships to complete weed treatment projects. This could increase revenues to these private entities.

Effects from Vegetation—Rangelands Management

Vegetation treatment areas would receive short-term deferment to allow vegetation to recover. Vegetation management also would result in grazing management adjustments in the season and duration of use. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management, above.

Effects from Vegetation—Riparian and Wetlands Management

Protection measures to conserve or restore RCAs would vary by alternative depending on RCA widths. Volume of timber harvested would decrease for Alternatives B, C, and D compared to baseline conditions in Alternative A (see **Table 4-12**, Comparison of Vegetation—Riparian and Wetlands Indicators by Alternative). ~~Protecting riparian buffers could reduce the potential volumes of timber sales.~~ In addition, a reduction in the timber volume available for sale could reduce the amount and value of timber available for stewardship contracts within local communities, potentially affecting local economies.

Riparian-restoration measures, such as permanently or temporarily closing areas affected by grazing (such as high-erosion or runoff areas), could affect the amount of grazing allowed within the planning area. This could potentially reduce the number of AUMs available to ranchers, as described under Effects from Soils Management. The potential reduction would vary by alternative, based on the AUMs in riparian areas, and by the need for restoration measures.

Improvements in fish habitat as a result of riparian restoration measures could improve salmon and steelhead fisheries, potentially drawing more anglers and benefiting the economies of local river communities, as described under Effects from Aquatic Resources, Fish and Special Status Fish Management. Protection of riparian habitats would improve wildlife habitat and potential increase opportunities for hunting and wildlife viewing. Protection of riparian areas could enhance the quality of recreation experiences.

Route closures and restrictions to protect riparian areas could result in an overall net decrease of available BLM-administered routes. Effects of this are discussed under Effects from Transportation and Travel Management, below. Transportation management measures also could result in increased local contracts to maintain roads, improve stream crossings, and install culverts, increasing local business incomes and potentially generating jobs.

Effects from Wildlife and Special Status Wildlife Management

Providing suitable habitat for and reducing impacts on federally listed species could result in areas where forest product removal would be prohibited or restricted. The effects depend on the listed species and the requirements for each species. These measures, in turn, could limit the potential for timber sales and the receipts associated with such timber sales.

Actions to protect federally listed and BLM sensitive species and their habitats could affect livestock grazing by limiting grazing areas and seasons of use, as described under Effects from Soils Management. In addition, the potential for direct losses of livestock, as a result of predation where wolves are reintroduced, could increase. Increased livestock losses and measures to protect livestock

from predation, such as increasing the number of herd dogs, could increase costs to ranchers and decrease their incomes.

Implementation of measures to protect federally listed species or habitat could increase the costs and decrease the incomes of authorized users. All alternatives would include a 100-yard nondisturbance buffer around raptor nests, which could temporarily exclude some mineral activities during the season that the nondisturbance buffer was in place or require project modifications, which could increase operating costs.

Effects from Aquatic Resources, Fish, and Special Status Fish Management

Fisheries actions that restrict grazing access or alter the timing and duration of grazing could reduce the number of AUMs available to ranchers. The associated costs to ranchers would be the same as those described under Effects from Soils Management, above.

The potential beneficial economic effects of the protection of aquatic resources, fish, and special status fish on salmon and steelhead fisheries, with the resultant direct and indirect angler expenditures, would be substantial (Ben Johnson Associates, Inc. 2005).

Effects from Special Status Plants Management

Management actions to protect special status plants would impose restrictions on economic activities on BLM lands, including timber harvest, grazing, minerals development, and recreation. These measures could increase operating costs and restrict areas of operation, which could ultimately result in reduced income from and local employment in these activities, particularly if operations were forced to scale back to cover increased costs. Actions that could occur under all alternatives that could have these results include restricting or prohibiting forest product removal to avoid or minimize adverse impacts on listed plants and limiting livestock grazing areas and seasons of use to protect federally listed and BLM sensitive plant species. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management. Restricting or excluding recreation activities that are found to impact listed plants would be unlikely to result in a decline in recreational use unless restrictions covered large contiguous areas and a wide variety of activities.

Effects from Wildland Fire Management

In the short term, wildland fire use could reduce the amount of merchantable forest products, which could limit timber sales. Suppressing fires could prevent merchantable forest products from being burned, allowing them to continue growing and increase in value, improving timber sales. In the long term, wildland fire use could result in increased forest health and vigor, creating quality wildlife habitat and stands of merchantable trees, improving timber sales. Treating areas to reduce FRCC or hazardous fuels would produce forest products and opportunities for employment and income.

Fuels treatments and wildland fires could result in deferred livestock use, temporary modifications in grazing patterns or reductions in grazing, or complete removal of livestock from allotments. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management, above. These restrictions would be short-term effects. In the long term, fuels treatments would be expected to open the overstory, and increase the available forage in the understory.

Wildland fire management under any alternative could result in short-term lack of access to authorized activities, which could increase short-term operating costs and cause a short-term decrease in income to these operations. However, if wildland fire management prevented larger future wildland fires, then future access to authorized activities would be protected, ultimately protecting long-term income from these operations.

Hazardous fuels-reduction projects would generate forest byproducts that could be used as biomass fuel. Increased biomass fuels availability could provide opportunities for the generation of electrical energy through biomass utilization and could provide additional jobs and income that this industry would create.

Wildland fire use also could result in a short-term lack of access to recreation in the affected area and displacement of wildlife. It is unlikely that this would result in a reduction in the number of visitors to or the level of hunting activities on public lands, since other areas would still be accessible. Therefore, short-term reductions in the economic activity resulting from recreation and hunting expenditures would not be expected.

Effects from Cultural Resources Management

Minimizing effects to cultural resources through project design could result in small decreases in timber sale volumes and it could result in increases to mining operations costs.

Implementing site-specific measures for cultural resources would protect these resources of interest to the recreating public, potentially increasing the amenity value of recreation on BLM lands. This could draw more visitors and increase expenditures within the local economy. Site specific protections could restrict the development of recreation facilities in certain areas.

Effects from Forest Products Management

Reductions in the sale quantity of timber would reduce the volume of forest products available for processing or use, which would decrease the incomes of local timber harvest operations and could affect jobs.

Short-term effects resulting from livestock exclusion following reforestation could necessitate that permittees lease additional private land, purchase additional forage, or reduce livestock numbers during periods when grazing is temporarily suspended. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management, above.

Effects from Livestock Grazing Management

Requiring adjustments to grazing operations to comply with the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]) could necessitate that permittees lease additional private land, purchase additional forage, or reduce livestock numbers over the long term. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management, above.

Effects from Minerals Management

Mineral development would impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities. Salable mineral production would decrease grazing forage in areas closed for excavation and production.

Mineral development along rivers and in recreation areas would impact recreation values through a reduction in scenic values and natural landscapes which are an important part of the recreation experience.

Effects from Recreation Management

Recreation activities that reduce forage through disturbance could affect ranchers' incomes to the extent that expenditures would be made to protect livestock from harassment and ensure that animals receive adequate forage.

Management actions under all alternatives would continue to support an array of recreational opportunities, including boating, camping, hiking, and fishing. These actions would ensure that water- and land-based recreational opportunities continue to be available to the increasing population of the planning area. Special Recreation Permits, which would continue to be administered for commercial, competitive, and organized group recreation activities, would provide a means for monitoring and adjusting to meet the increasing demand for recreation opportunities and reduce user conflicts. These actions would maintain the social value of public lands for existing and additional new users, and maintaining this value would allow for continued expenditures within the local economy by users of public lands.

Effects from Renewable Energy Management

Developing solar, biomass, or wind energy could impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of such facilities in multiple-use areas.

Renewable energy development also could result in a loss of wildlife habitat and visual impacts that could affect the value of the affected public lands to recreation users. It is unlikely that this effect would cause a decrease in the number of visitors or the amount of recreational use because of overall projected population increases and increases in the demand for recreation opportunities. Visitors would be more likely to increase use of other areas, rather than a reduction in the number of visitors and consequent decline in expenditures in the local economy.

Effects from Transportation and Travel Management

Route reductions and restrictions could reduce the value of BLM lands to visitors involved in OHV recreation, potentially resulting in a decrease in this type of recreational use and a potential decrease in this group's expenditures within the local economies, which could thereby cause a decrease in employment and income. However, the majority of routes identified for closure under all alternatives are already closed to vehicle use or are receiving negligible motorized use. It would be more likely that restrictions or closures would result in more intense use of open routes and Open areas. Between approximately 40 miles (Alternative A) and 100 miles (Alternatives B, C, and D) of routes would be closed yearlong under each alternative, which would restrict access to other activities, such as minerals exploration and development. The potential socioeconomic effects are described above under Effects from Recreation Management.

Route restrictions and cross-country travel restrictions could increase the recreation values for nonmotorized and primitive recreation uses, resulting in a potential increase in economic benefits to local communities and outfitters.

Effects from Lands and Realty Management

Most land tenure adjustments occur in the form of land exchanges, and most lands designated for potential exchange are isolated parcels surrounded by private lands and are difficult to manage for livestock grazing and other uses due to their isolation. When such grazing lands are exchanged, the adjacent rancher is almost always the recipient. Using these isolated, difficult-to-manage parcels in a land exchanges to create larger blocks of public lands elsewhere greatly increases management efficiencies and opportunities, not only for grazing, but all uses of public lands, including recreation, minerals development, and timber harvest. Improved management for grazing could increase the number of AUMs available or allow for the extension of the season of use, limiting the need for and costs to ranchers of obtaining alternate sources of forage. Potential short- and long-term forage loss from rights-of-way and facilities could necessitate that permittees lease additional private land, purchase additional forage, or reduce livestock numbers to compensate for these effects. The associated socioeconomic effects on grazing would be the same as those described under Effects from Soils Management, above.

Exclusion of mineral activities along the Lower Salmon River could limit the extent of minerals operations. However, the minerals on the Lower Salmon River have been withdrawn for 37 years, and BLM mineral reports indicate that there are few, if any, mineral deposits that would be even marginally economically feasible to mine on the Salmon River. It is, therefore, unlikely that continuation of the withdrawals would have new impacts. Prioritizing acquisition of nonfederal lands with high-value resources, including minerals, could offset limitations on minerals activities.

Land acquisitions could improve the value of the recreational resource provided by the planning area to users and as an amenity value in general. Land exchanges could lead to a decline in some uses; however, lands identified for potential land exchanges lack public access and are generally unavailable for public use. The incomes of outfitters that rely on recreation could improve as a result of land exchanges, since land exchanges tend to consolidate areas of high value for recreation and/or wildlife.

The more federal acres that are transferred into private ownership within the CFO, the larger the benefit to due to increases in the tax base. Idaho County, which contains the majority of the public lands in the CFO, receives the maximum payments in lieu of taxes allowable under the current payments in lieu of taxes formula. Because the county is composed primarily of federal lands (mostly Forest Service), a reduction of hundreds of thousands of federal acres would be required before it would receive a reduction in payments in lieu of taxes.

Land exchanges which dispose of public lands for the acquisition of lands that offer public access would benefit the public and the Tribe. The Tribe would be consulted on all proposed land tenure adjustments and impacts to the Tribe would be taken into consideration. Land exchanges generally result in comparatively small changes in the overall federal land base, and most lands designated for potential disposal would be isolated parcels surrounded by private lands. The public, and the Tribe, would have negligible access to, or benefits from, the lands available for disposal.

Effects from ACEC/RNA Management

Restrictions on timber harvesting, grazing, and hydroelectric facility construction within ACECs could have slight impacts on these industries.

Effects from Native American Tribal Uses Management

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations could reveal previously unidentified resources that would require protection. Additional restrictions that could be placed on such areas could limit production of forest products in areas not previously identified. These measures could potentially limit timber sales and the receipts associated with such timber sales. These measures also could curtail biomass collection and sales.

Recreation activities could be restricted or excluded by measures to enhance opportunities for Native American traditional uses. For example, recreational uses that would affect important habitats or plants might have seasonal use restrictions. This would be unlikely to generate economic effects unless restrictions resulted in a substantial decline in the number of recreational users.

Tribal consultation to maintain and enhance important natural and cultural resources would be unlikely to alter tribal economic conditions, because much of the tribal employment, income, and finances for services are derived from Nez Perce Tribe-operated casinos in the region.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Actions to clean up newly discovered waste sites could temporarily impact livestock grazing practices, which would have short-term effects similar to those described above under Effects from Soils Management, above.

Access to minerals would be reduced by several health and safety-related proposals, including proposed withdrawals and site restrictions (requiring mining plans and bonding), potentially increasing operating costs and decreasing income based on minerals activities.

In addition, the safety and social well-being of public land users such as recreationists and tribal members engaged in activities on BLM lands, would be protected by the clean up of newly discovered sites and restrictions on sites where potentially hazardous substances remain.

Effects from Social and Economic Conditions Management

Specific social and economic conditions management measures would be undertaken under Alternatives B, C, and D. Actions to provide opportunities for commercial use of natural resources could affect livestock grazing by allowing ranchers to increase their economic livelihood through grazing. Establishment of public and private partnerships would facilitate the creation of biomass fuel-supply chains from CFO forests to private biomass energy facility developers and operators, which could increase incomes and employment on the suppliers' side and reduce local energy costs. Working with the Nez Perce Tribe to develop sustainable economic opportunities also could improve tribal employment and incomes. Specifically providing for economic opportunities, in addition to other forms of multiple use, would encourage the development of programs that would be designed specifically to increase employment and incomes in local communities.

Alternative A

Effects from Soils Management

Under Alternative A, approximately 55,067 acres of grazing allotments would be on BLM lands of 60-percent slope or greater, the greatest acreage of all alternatives except Alternative D. The potential general socioeconomic effects of soils management on livestock grazing are described above under Effects Common to All Alternatives.

Effects from Vegetation—Forests Management

The potential for 760 acres of forested vegetation treatment to be temporarily unavailable for grazing for two years would represent a loss in fees to the BLM and a consequent reduction in returns to counties based on grazing receipts. The cost of treatment to ranchers where reforestation coincides with grazing allotments would be the same as those described under Effects from Soils Management under Effects Common to All Alternatives, above. The potential for this short-term effect would be the greatest under Alternative A because the treatment acreage is the greatest.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative A, limiting timber extraction in the RHCA buffer zones along Class I and Selected Class II streams except to benefit wildlife or to improve the stream habitat conditions would limit the potential for timber sales and the receipts associated with such timber sales. Under Alternative A, approximately 24,290 acres within RHCAs would have timber harvest restrictions.

Approximately 2,128 acres available for grazing are within riparian habitat. At a value of $1.43 per AUM in 2004 and an average of 0.06 AUMs per acre, a total of approximately $183 in grazing fees could potentially be eliminated by riparian-restoration measures under Alternative A.

Effects from Forest Products Management

The current annual ASQ is estimated at about 6,600 MBF. Assuming all harvested timber is sold, Alternative A would have the highest level of timber sales and associated receipts of all of the alternatives. Given that 1,037,100 board feet were sold in 2004 at a value of $130,479 ($0.13 per board foot), the sale of 6,600 MBF would result in a timber sales value of $858,000.

Effects from Livestock Grazing Management

Under Alternative A, the potential for disruption of recreation patterns and reduced visitor satisfaction as a result of the overlap of permitted grazing with high-use recreation areas, such as SRMAs, could result in a decrease in use of BLM-administered lands that currently experience user conflicts in favor of recreation on other nearby federal lands.

Effects from Minerals Management

Because there are no NSO or CSU restrictions under Alternative A, minerals operations would be more likely to conflict with recreational use both in the short term during active development and production, potentially restricting recreational activities in active locations, and in the long term by affecting the scenic quality and natural landscape that could undermine the quality of the recreational experience. In the short term, this could reduce the social value of public lands and recreational use of public lands during the period of intense minerals activity. In the long term, visitors desiring a natural setting would be more likely to use other planning area BLM-administered lands more intensely, or they could seek out other more-pristine lands.

Effects from Recreation Management

Similar percentages of grazing lands would be located within SRMAs under Alternatives A, B, and C (20, 25, and 24 percent, respectively), exposing livestock to similar levels of disturbance and affording them similar levels of protection.

The potential for effects of recreation management on the costs of minerals activities, incomes from minerals activities, jobs, and returns to counties under Alternative A would be the lowest of the alternatives. Alternative A would include a slightly smaller area where these uses would be restricted.

There would be no restrictions regarding surface occupancy restrictions on developed recreation sites or administrative sites and no CSU restrictions for SRMAs or wild and scenic rivers.

Alternative A would be most likely to provide utility to user groups who favor motorized uses, because a much smaller portion of the planning area would continue to be reserved for primitive experiences, compared to opportunities for activities that include motorized uses. Continued water-based recreation would ensure that local economic activity based on these activities would continue to follow existing trends.

Effects from Transportation and Travel Management

Alternative A would designate the most acreage for Open travel within available grazing areas (approximately 59 percent or 85,308 acres). The effects of cross-county motorized vehicle use, potential new route development, and the increased demand for OHV use could disrupt livestock grazing , which could affect ranchers' costs and incomes.

Access to minerals also would be greatest under Alternative A, which could keep minerals operating costs down, maximizing incomes to minerals operators.

The effects on motorized recreation would be the same as those described above under Effects from Recreation Management. Within the areas designated for Open travel the potential for conflicts with other user groups, such as hunters, anglers, bird watchers, and hikers, would continue and could diminish the level of satisfaction of the users who prefer more primitive, nonmotorized, experiences.

Effects from Lands and Realty Management

Disposal or exchange of forested land could reduce the incomes of local timber harvest operators, if these lands were no longer available for timber harvest. However, if these private lands were available for timber harvest, the potential income for loggers would greater, since in general there are fewer harvest restrictions on privately owned timberland than federal timberland. In addition, since most land tenure adjustments would be the result of exchanges, lands with greater access and greater potential for management that would improve timber harvest could be obtained in place of the exchanged federal lands. Under Alternative A, approximately 5,263 more acres than under Alternatives B, C, and D would be available for land tenure adjustment. The potential for impacts to incomes to local operators as a result of this type of management action, therefore, would be greater.

Effects from ACEC/RNA Management

Livestock grazing could be limited within several ACECs, which could reduce incomes to ranchers and returns to counties from grazing. Grazing would not be allowed in Captain John ACEC/RNA, Long Gulch ACEC/RNA, and approximately one-third of Lucile Caves ACEC/RNA (a total of 1,504 acres). Approximately 1,759 acres of these ACECs are within grazing allotments (including a portion of Lucile Caves ACEC/RNA that is not closed to grazing).

Limiting ground disturbing activities in the Long Gulch ACEC/RNA, Craig Mountain ACEC, and Elk City Dump/American Hill Lake ACEC (3,957 acres) could preclude minerals development in these areas or increase the costs of operations, which also could preclude development and reduce the incomes of minerals operators.

The effects from ACEC/RNA management on biomass fuels are described in Section 4.3.5, Renewable Energy. Limiting the availability of forest byproducts would limit cogeneration potential and potential reductions in energy costs.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Alternative A would not include NSO restrictions for public safety. The increases in operating costs and decreases income from minerals activities that would be associated with NSOs, therefore, would not occur under Alternative A.

Alternative B

Effects from Soils Management

Under Alternative B, approximately 46,152 acres of grazing allotments would be in areas of 60-percent slope or greater, lower than Alternatives A and D.

Effects from Vegetation—Forests Management

The potential for 466 acres of forested vegetation treatment to be temporarily unavailable for grazing for two years would represent a loss in fees to the BLM and a consequent reduction in returns to counties based on grazing receipts. Under Alternative B the cost of treatment to ranchers where reforestation coincides with grazing allotments would be similar to those described under Effects Common to All Alternatives under Effects from Soils Management, above. The potential for this short-term effect would be intermediate between alternatives C and D, since the treatment acreage is intermediate between these two alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Under Alternative B, limiting timber extraction within riparian buffer zones to levels that would enhance or preserve riparian conditions would limit the potential for timber sales and the receipts associated with such timber sales. Under Alternative B, approximately 22,847 acres are within RCA stream buffers, approximately 6 percent less than current conditions.

Under Alternative B, the cost of riparian-restoration measures to ranchers where riparian restoration coincides with grazing allotments would be similar to those described above under Effects Common to All Alternatives under Effects from Soils Management. Approximately 1,880 acres available for grazing would be within riparian habitat, and approximately 27,230 acres of grazing land would be within RCAs.

The increased emphasis for riparian enhancement in restoration and conservation watersheds under Alternative B would promote improvements in the salmon and steelhead fisheries in the planning area, which could result in economic gains to river communities from increased angler expenditures in these communities (see Effects Common to All Alternatives, Effects from Water Resources Management).

Effects from Wildland Fire Management

Use of mechanical treatment on 2 to 6 percent of CFO FRCC 2 or 3 lands would release these potential fuels for timber sale and collection, which could increase incomes for local timber operations and increase BLM receipts from timber activities.

Fuels treatments on up to 40 percent of CFO FRCC 2 or 3 (moderate and high risk) WUI lands would restrict recreational activities in the short term, potentially reducing the incomes of outfitters

who rely on the restricted areas. The potential for this reduction under Alternative B is intermediate between Alternatives C and D, since the treatment acreage is intermediate between these two alternatives.

Effects from Forest Products Management

An estimated PSQ of 3,129 MBF would be 3,471 MBF lower than the current annual 6,600 MBF, resulting in resulting in total receipts of $406,770, assuming the entire projected annual PSQ was harvested and sold.

Effects from Livestock Grazing Management

The closure of three vacant allotments would reduce the potential for increased cattle grazing on BLM lands and the potential for increased returns to counties from grazing. The 13-percent decrease in public lands available for grazing would be lower than under Alternative C.

Under Alternative B, the potential for disruption of recreation patterns as a result of the overlap of permitted grazing with high-use recreation areas, such as SRMAs, could result in a decrease in use of BLM-administered lands that currently experience user conflicts in favor of recreation on other nearby federal lands. The potential for reduced recreation would be slightly higher under Alternative B than Alternative A because acreage overlap between SRMAs and grazing allotments would be 1,745 acres greater under Alternative B than under Alternative A.

Effects from Minerals Management

Due to wildlife considerations, Alternative B would impose 43,590 acres of NSO constraints, 42,403 acres of CSU restrictions, and TLs on leasable mineral and mineral material activities. These restrictions could increase operating costs and decrease the incomes of local minerals operations. If these costs became prohibitive, the affected operations could be forced to scale down or cease operating on BLM lands, which could eliminate jobs.

Under Alternative B, NSO and CSU restrictions would reduce the potential for conflict between recreational and minerals use, maintaining the quality of the recreational experience for visitors, decreasing the likelihood that operations involving leasable minerals would alter use patterns that could result in a reduction in the social value of recreation on public lands.

Effects from Recreation Management

Effects of grazing lands within SRMAs would be similar to those described under Alternative A.

The potential for effects of recreation management on the costs of minerals activities, incomes from minerals activities and jobs under Alternative B would be higher than under Alternative A. Alternative B would include a slightly larger area where these uses were restricted, as well as including NSO and CSU restrictions.

SRMA designations under Alternative B would total 55,201 acres, an approximate 19-percent increase over Alternative A. The potential to increase commercial activity in these areas, stimulate the local economy (potentially increasing incomes and jobs), and draw more recreational visitors would be higher than under Alternative A because Alternative B would promote active development of business plans for recreation sites and SRMAs. Under Alternative B, additional zones would be established for both commercial and competitive uses, providing additional opportunities for

activities such as boating and fishing, which could stimulate the local economy, potentially increasing incomes and jobs.

Effects from Renewable Energy Management

The active pursuit of partnering opportunities to develop biomass energy generating capabilities under Alternative B could decrease energy costs for the entities involved in biomass fuels collection and energy generation and for those who purchase biomass energy, effectively increasing incomes.

Effects from Transportation and Travel Management

Decommissioning or obliterating roads would make them unavailable for most forest vegetation management actions, potentially increasing the cost of forest vegetation management actions. Increased operating costs for minerals activities would decrease the incomes of those involved in local minerals operations. If these costs became prohibitive, the affected operations could be forced to scale down or cease operations on BLM lands in favor of less costly operations.

Under Alternative B, eliminating the Open travel designation would remove the conflicts between cross-country travel and livestock grazing (described under Alternative A) and could decrease the costs of adjusting for these disruptions and increase the incomes of local ranchers.

Under Alternative B, restrictions in motorized travel could increase operating costs, decreasing the incomes of minerals operations on BLM-managed lands. The required consideration of habitat and special status wildlife for route location also could limit access and increase minerals operating costs.

Effects from Lands and Realty Management

Prioritizing the retention of public lands with high-value minerals resources under Alternative B would decrease the likelihood of a reduction in BLM receipts from minerals.

Under Alternative B, the effects on local timber harvest operations as a result of land tenure adjustments would be similar to those described under Alternative A. Approximately 5,263 fewer acres would be available for land tenure adjustment under Alternative B than under Alternative A, and the potential for impacts to the incomes of local operators as a result of this type of management action, therefore, would be lower than under Alternative A.

Effects from ACEC/RNA Management

Effects would be similar to those described under Alternative A, except that a total of 201 acres within the Long Gulch ACEC/RNA, Skookumchuck ACEC/RNA, and Lucile Caves ACEC/RNA (which would be closed to grazing) would be located in grazing allotments under Alternative B. As such, the potential for a reduction in incomes to ranchers and returns to counties from grazing would be lower in Alternative B than in Alternative A.

The acreage of restrictions placed on activities that affect minerals access and entry under Alternative B would be greater than under all other alternatives, except Alternative C. Therefore, it would be more likely that ACEC/RNA management under Alternative B could preclude minerals development in these areas or increase the costs of operations in these areas which also could preclude development and reduce the incomes of minerals operators more than under Alternatives A and D.

The effects from ACEC/RNA management on biomass fuels under Alternative B are described in Section 4.3.5, Renewable Energy. Limiting the availability of forest byproducts would limit cogeneration potential and potential reductions in energy costs. The area over which this would occur under Alternative B would be higher than under Alternative A; therefore, the potential for these effects also would be higher under Alternative B.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Alternative B would include 24 acres of NSO restrictions for areas with known hazardous materials. The minimal acreage covered by these restrictions would be unlikely to increase operating costs or decrease income from minerals activities.

Alternative C

Effects from Soils Management

Under Alternative C, approximately 43,954 acres of grazing allotments (roughly 2,637 AUMs) would be in areas of 60-percent slope or greater, similar to Alternative B and the lowest of all the alternatives. The potential general socioeconomic effects of soils management on livestock grazing are described above under Effects Common to All Alternatives.

Effects from Vegetation—Forests Management

Under Alternative C the costs of treatment to ranchers where reforestation coincides with grazing allotments would be similar to those described under Alternative A. The potential for this short-term effect would be lowest under Alternative C, since the treatment acreage under this alternative is the smallest.

Effects from Vegetation—Riparian and Wetlands Management

Effects of limiting timber extraction within riparian buffer zones would be similar to those described under Alternative B. Under Alternative C, approximately 27,624 acres would be within RCA stream buffers, the largest of all alternatives. In addition, a reduction in timber available for sale could reduce the amount and value of timber available for stewardship contracts within local communities, potentially affecting local social infrastructure and employment.

Under Alternative C, the cost of riparian-restoration measures to ranchers where riparian restoration coincides with grazing allotments would be similar to those described under Alternative A. Approximately 1,765 acres available for grazing would be within riparian habitat.

The increased emphasis for riparian enhancement in restoration and conservation watersheds under Alternative C would promote improvements in the salmon and steelhead fisheries in the planning area, which could result in economic gains to river communities from increased angler expenditures in these communities (see Effects Common to All Alternatives, Effects from Water Resources Management). Alternative C has the highest potential for this type of economic gain, since it has the greatest acreage within restoration and conservation watersheds.

Effects from Wildland Fire Management

The potential for increased timber sales as a result of mechanical treatment of vegetative fuels under Alternative C would be similar to under Alternative B. Restrictions on recreational activities in the short term from fuels treatments would be similar to those described under Alternative B, except that Alternative C would treat up to 20 percent of CFO FRCC 2 or 3 (moderate and high risk) WUI

lands. The potential for restrictions on recreation under Alternative C is the lowest of all alternatives because the treatment acreage is lowest of the alternatives.

Effects from Forest Products Management

A PSQ of 3,101 MBF would be 3,499 MBF lower than the current annual 6,600 MBF, resulting in total receipts of $403,130, assuming the entire projected annual PSQ was harvested and sold. The PSQ under Alternative C represents the highest potential reduction in timber sales.

Effects from Livestock Grazing Management

Under Alternative C, approximately 101,350 acres (6,020 AUMs) would be available for grazing. Effects would be similar to those described for Alternative B, except there would be a 21,382-acre decrease in the amount of land available to grazing under Alternative C. This would decrease the number of AUMs available by 1,184. Under Alternative C, the potential for increased cattle grazing on BLM lands and increased returns to counties from grazing, associated with unleased allotments, would be lower than under Alternative B.

The potential for reduced recreation would be similar to those described under Alternative A, except that the overlap between SRMAs and grazing allotments under Alternative C would be 4 percent greater than under Alternative A.

Effects from Minerals Management

The effects from minerals management on minerals operations under Alternative C would be similar to those described under Alternative B. Alternative C would impose 68,854 acres of NSO constraints, 59,122 acres of CSU restrictions, and TLs for wildlife habitat on leasable mineral and mineral material activities. The potential for economic effects on minerals operations under Alternative C would be the highest of all the alternatives because the acreage of restrictions would be greatest under Alternative C.

The effects from minerals management on recreation under Alternative C would be similar to those discussed under Alternative B. Greater NSO and CSU restrictions under Alternative C would be likely to reduce the potential for conflict between recreational and minerals use further than under Alternative B.

Effects from Recreation Management

Effects of grazing lands within SRMAs would be similar to those described under Alternative A.

The potential for effects of recreation management on the costs of minerals activities, incomes from minerals activities and jobs under Alternative C would be the same as those described under Alternative B.

The effects on incomes and jobs based on recreation, resulting from recreation management, would the same as those described under Alternative B.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Effects of transportation and travel management on local minerals operations and livestock grazing would be the same as those described under Alternative B.

Restrictions in areas available for motorized travel would be greater than under Alternative B. This could increase operating costs, decreasing the incomes of minerals operations on BLM-managed lands to a greater extent than under Alternative B.

Effects from Lands and Realty Management

Under Alternative C the potential socioeconomic effects from lands and realty management on minerals activities and timber harvesting would be the same as under Alternative B.

Effects from ACEC/RNA Management

Under Alternative C the potential for impacts to ranchers' incomes as a result of ACEC/RNA management would be the same as under Alternative B.

The acreage of restrictions placed on activities that affect minerals access and entry under Alternative C would be greater than under all other alternatives. Therefore, it would be more likely that ACEC/RNA management under Alternative C could preclude minerals development in these areas or increase the costs of operations in these areas, which also could preclude development and reduce the incomes of minerals operators to a greater extent than under the other alternatives.

The effects from ACEC/RNA management on biomass fuels Under Alternative C are described in Section 4.3.5, Renewable Energy. Limiting the availability of forest byproducts would limit cogeneration potential and potential reductions in energy costs. The area over which this would occur under Alternative C would be the greatest of all the alternatives; therefore, the potential for these effects also would be the greatest under Alternative C.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects would be the same as those described under Alternative B.

Alternative D

Effects from Soils Management

Under Alternative D, approximately 61,050 acres of grazing allotments (roughly 3,663 AUMs) would be in areas of 60-percent slope or greater, the highest amount of all the alternatives. The potential general socioeconomic effects of soils management on livestock grazing are described above under Effects Common to All Alternatives.

Effects from Vegetation—Forests Management

Under Alternative D the costs of treatment to ranchers where reforestation coincides with grazing allotments would be similar to those described under Alternative A. The potential for this short-term effect would be intermediate between Alternatives A and B, since the treatment acreage is intermediate between these two alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Effects of limiting timber extraction within riparian buffer zones would be similar to those described under Alternative B. Under Alternative D, approximately 20,710 acres would be within RCA stream buffers, the lowest of all alternatives.

Under Alternative D, the cost of riparian-restoration measures to ranchers where riparian restoration coincides with grazing allotments would be similar to those described under Alternative A. Approximately 2,324 acres available for grazing would be within riparian habitat.

The increased emphasis for riparian enhancement in restoration and conservation watersheds under Alternative D would promote improvements in the salmon and steelhead fisheries in the planning area, which could result in economic gains to river communities from increased angler expenditures in these communities (see Effects Common to All Alternatives, Effects from Water Resources Management). Since Alternative D has the least acreage within restoration and conservation watersheds (as compared with Alternatives B and C), it has the lowest potential among Alternatives B, C, and D for this type of economic gain.

Effects from Wildland Fire Management

The potential for increased timber sales as a result of mechanical treatment of vegetative fuels under Alternative D would be similar as those described under Alternative B, except that Alternative D would use mechanical treatment on 2 to 15 percent of CFO FRCC 2 or 3 (moderate and high risk) WUI lands. The potential for increased timber sales under Alternative D would be the greatest of all alternatives because Alternative D would allow for a greater percentage of mechanical treatments.

Restrictions on recreational activities in the short term from fuels treatments would be similar to those described under Alternative B, except that Alternative D would treat up to 60 percent of CFO FRCC 2 or 3 (moderate and high risk) WUI lands. The potential for this reduction under Alternative D is the highest among the alternatives because the treatment acreage is the greatest under Alternative D.

Effects from Forest Products Management

A PSQ of 4,823 MBF would be 1,777 MBF (27 percent) lower than the current annual 6,600 MBF, resulting in resulting in total receipts of $626,990, assuming the entire projected annual PSQ was harvested and sold. The PSQ under Alternative D represents the lowest potential reduction in timber sales.

Effects from Livestock Grazing Management

Effects would be similar to those described for Alternative A, except there would be a 13,118-acre increase in the amount of land available to grazing under Alternative D. This would increase the number of AUMs available by 1,336. An increase in the number of leased AUMs could increase BLM receipts from grazing and subsequent annual returns to counties derived from grazing receipts. The potential for increased returns to counties from grazing due to increased acreage available to grazing on public lands would be highest under Alternative D, with approximately 11 percent more land available for grazing and 156 percent more land than is currently leased.

The potential for reduced recreational use would be similar to those described under Alternative A. The potential for this effect under Alternative D would be the greatest of all the alternatives because acreage overlap between SRMAs and grazing allotments would be the greatest (28,182 acres greater than under Alternative A).

Effects from Minerals Management

The effects from minerals management on minerals operations under Alternative D would be similar to those described under Alternative B. Alternative D would impose 35,045 acres of NSO constraints, 32,013 acres of CSU restrictions, and TLs for wildlife habitat on leasable mineral and mineral material activities. The potential for economic effects on local minerals operations under Alternative D would be the lowest of Alternatives B, C, and D, because the acreage of restrictions would be lower than those under Alternatives B and C.

The effects from minerals management on recreation under Alternative D would be similar to those discussed under Alternative B. Less-extensive NSO and CSU restrictions under Alternative D would be likely to increase the chances for conflict between recreational and minerals use more than under Alternative B, increasing the potential for a decline the quality of the recreational experience for visitors and in the social value of recreation on public lands.

Effects from Recreation Management

Under Alternative D, the costs of and income from livestock grazing would be more likely to be affected by recreation management than under Alternatives A, B, and C, because approximately 39 percent of available grazing acres would be located in SRMAs, a 19-percent increase from Alternative A and an approximate 25-percent increase from Alternatives B and C.

The potential for effects of recreation management on the costs of minerals activities, incomes from minerals activities and jobs under Alternative D would be lower than under Alternatives B and C. Although Alternative D would include restrictions similar to those described to protect recreation opportunities under Alternative B, additional access would be provided by improved routes in the Craig Mountain WMA.

The potential economic effects on recreation from recreation management regarding SRMA designations and the active development of business plans for recreation sites would be the same as those described under Alternative B. The expansion of potential commercial uses within the Lower Salmon River Scenic SRMA and Lolo Creek SRMA could potentially increase the incomes of permittees above the levels that would be achieved under Alternatives B and C.

Effects from Renewable Energy Management

Effects would be the same as those described under Alternative B.

Effects from Transportation and Travel Management

Under Alternative D, the socioeconomic effects from transportation and travel management on local minerals operations would be the same as those described under Alternative B.

The area designated Open within available grazing areas under Alternative D (18 percent or 23,814 acres of available grazing areas of BLM-administered lands) would be lower than under Alternative A. The socioeconomic effects of cross-county motorized vehicle use, potential new road development, and the increased demand for OHV use on livestock grazing, therefore, would be lower than under Alternative A. However, the effects from the increase in Limited areas could offset any reduction in Open areas.

The effects of travel restrictions on minerals operations would be similar to those described under Alternative B.

Effects from Lands and Realty Management

Effects would be the same as those described under Alternative B.

Effects from ACEC/RNA Management

A total of 1,503 acres within the Long Gulch ACEC/RNA, Captain John Creek ACEC/RNA, and Lucile Caves ACEC/RNA (which would be closed to grazing) would be located in grazing

allotments under Alternative D. The potential for a reduction in incomes to ranchers and returns to counties from grazing, would be under Alternative D would be the same as under Alternative A.

Effects of ACEC/RNA management on minerals activities would be the same as those described under Alternative B.

The effects from ACEC/RNA management on biomass fuels Under Alternative D are described in Section 4.3.5, Renewable Energy. Limiting the availability of forest byproducts would limit cogeneration potential and potential reductions in energy costs. The area over which this would occur under Alternative D would be slightly lower than under Alternative A; therefore, the potential for these effects also would be slightly lower under Alternative D.

Effects from Public Safety—Abandoned Mines and Hazardous Materials Management

Effects on resource uses, including timber harvest, grazing, minerals activities, or recreation, would be slightly less than those described under Alternative B due to the absence of closures to motorized uses.

Cumulative Effects

Past, present, and planned future projects that have affected or would affect the economy, social structure, or tribal interests in the six planning area counties or the major resource uses occurring on BLM-managed lands would result in cumulative socioeconomic impacts. Since the BLM manages only ~~1.5~~2 percent of planning area lands, it is unlikely that changes in management of these BLM-administered lands in combination with other federal, state and local actions, would result in pronounced changes to existing cumulative effects. The following past and current activities have affected the trends in natural resource uses in the planning area and the incomes and employment derived from theses uses. Land tenure adjustments since 1981 have increased public lands available for grazing, timber harvest, minerals activities, recreation, and tribal uses. Past management actions and natural events, including fire, logging, insect and disease outbreaks, road construction, and regulatory restrictions for the protection of endangered species have resulted in a decrease in PSQ and timber harvest levels on BLM-managed lands and all federal lands. Decreasing levels of timber harvest have resulted in a decreased role for forest products within the planning area, resulting in income and employment reductions. Recent increases in regional demand for timber have fueled recent investment in mills and milling equipment in the planning area and could increase the economic activity generated by forest products. Past and current mineral development, recreation, prescribed burning, wildland fires, spread of noxious and invasive weeds, and historic grazing practices, drought conditions, land disposals, OHV use, habitat restoration, and special designations ~~that~~ have resulted in a limited reduction in grazing on public lands. ~~and the associated income from livestock grazing on public lands.~~ Past and ongoing management actions that would increase available forage include the continued application of the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) (**Appendix A** [see Volume II~~I~~]). Population growth, as well as an increase in the number of annual visitors to Idaho, has created a rising demand for recreation opportunities. Declining fish species have resulted in a decline in recreational fisheries incomes regionally and within local planning area communities. In general, past and ongoing fire management activities have increased the availability of biomass fuels.

Foreseeable future actions that could affect the trends in natural resource uses in the planning area and future incomes and employment derived from theses uses include the following: implementing

the National Fire Plan and fuel-reduction treatments could produce more commercial forest products that were not included in the Cottonwood RMP PSQ determinations, as well as contribute to the availability of biomass fuels as forests across the state are treated to remove excess fuel. More mills would be equipped to handle small-sized forest products, allowing for a greater contribution to the forest products industry. Continued suppression of wildland fires would limit risk to resource values, including timber, livestock grazing, minerals activities, and recreation. The population of the CFO is projected to continue to grow at a rate of 11 percent between 2000 and 2020, resulting in a need for more mineral materials to support infrastructure and building construction and an increasing demand for recreation opportunities. Increased conservation measures could result in more restrictions on mineral activities; however, ~~as~~ if species are delisted under the ESA, increased mineral activities could be allowed in formerly restricted habitat areas. Implementing Forest Plans in National Forests near the CFO would likely restrict surface disturbances and road access related to mineral activities.

The effects on the local economy and social values of past and future actions in combination with the proposed RMP are described below. The combined effects on the local forest products industry would likely be minimal because of the small percentage contributed to the market by BLM-administered lands. Public lands would continue to contribute to the wood products industry in the planning area through the production of commercial forest products, which would provide more income as more mills become equipped to handle small-sized forest products and biomass derived from treatments. Biomass also could contribute to the growth of the developing industry of biomass power generation within the planning area. In addition, local seasonal employment would continue to benefit from these treatment activities. BLM would continue to support the grazing industry through the provision of grazing permits on public lands within the CFO. There would be no perceived change to the cumulative effects for socioeconomics from the management of grazing under any of the alternatives, as none of the alternatives vary greatly from current management. Given the limited participation in minerals activities occurring on planning area public lands, the proposed RMP in combination with current and proposed future management actions in the region would be unlikely to affect local or regional incomes and employment in the minerals industry. BLM would continue to contribute to the mineral materials industry, as the demand for these resources increases with population growth. Land tenure adjustments that could improve management efficiencies and provide additional opportunities for activities that contribute to the local economy, could increase the amount of land available for public uses such as livestock grazing, recreation, and utilities and for management purposes such as timber, wildlife, and fisheries. Permittees who derive their incomes from the use of public lands would benefit from the consolidation of public lands and resource uses. Efforts to improve the status of salmon and steelhead in conjunction with protective measures that would be undertaken under the proposed RMP would move toward the restoration of the salmon and steelhead fisheries, which could inject the state, regional, and particularly the local economy with substantial recreation expenditures (Ben Johnson Associates, Inc. 2005).

The CFO planning area encompasses both low-income populations and the Nez Perce Tribe that were considered regarding issues of environmental justice. No disproportionately high or adverse effects to these populations regarding human health or environmental effects have been identified through the analysis of the RMP alternatives. Proposed management actions are expected to benefit low-income populations by allowing resource utilization on BLM lands, thereby contributing to the support of local industries and resultant jobs and income. The Nez Perce Tribe is expected to

benefit from proposed management actions because of both resource protection and resource utilization measures.

4.6 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 National Register of Historic Places-eligible, unevaluated, and undiscovered cultural resources associated with dispersed recreation activities, OHV use, vandalism, and other types of activities not authorized by the 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 also could be short-term increases in stream sedimentation and soil erosion from these activities. 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 also cause a reduction in canopy coverage and leave soils subject to increased erosion. 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 RMP 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.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a powerline rights-of-way or road.

Mineral and energy development could result in an irreversible loss of vegetation resources, primitive recreational experiences, wildlife habitat, and livestock forage. Reclamation of disturbed areas would reduce the magnitude of these impacts following the action, but changes in migration

patterns and displacement of local populations during the activities could cause an irreversible loss in localized wildlife populations. Irretrievable losses to visual characteristics near mining sites could occur during development and operation.

The extraction and development of mineral resources results in the irretrievable and irreversible loss of those minerals. The withdrawal of areas from leasable, locatable, and salable mineral entry would cause an irretrievable loss of mineral extraction during the life of the RMP.

Undiscovered cultural resources could be unintentionally affected by management activities. Cultural resources are by their nature irreplaceable, so the alteration or elimination of any such resource, be it National Register eligible or not, represents an irreversible and an irretrievable commitment.

The exact nature and extent of any irreversible and irretrievable commitment of resources cannot be defined due to uncertainties about location, scale, timing, and rate of implementation, as well as the relationship to other actions and the effectiveness of mitigation measures.

4.8 RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT TO LONG-TERM PRODUCTIVITY

Section 102(c) of NEPA requires a discussion of the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, short term is defined as anticipated to occur within one to five years of implementation of the activity. Long term is defined as following the first five years of implementation but within the life of the RMP.

Management activities under all alternatives would result in various short-term effects, such as increased localized soil erosion, damage to vegetation and wildlife habitat, and decreased visual resource quality. Some short-term effects could improve long-term productivity, while others effects could create impairment.

For example, short-term effects such as vegetation treatments would affect long-term productivity for wildlife and rangeland management by increasing available forage. Short-term effects from forest product harvest could reduce the long-term risk of large wildland fires. Short-term effects of wildland fire management and vegetation treatments could result in long-term improvements for scenic quality. On the contrary, short-term effects, such as those associated with mineral development, could result in long-term degradation of wilderness values and scenic quality. Short-term effects associated with route designations, maintenance, and alterations could result in long-term effects on recreation and rangeland management activities, and wildlife movement within corridors.

Management actions and BMPs would minimize the effect of short-term uses and reverse the change during the long term. However, BLM lands are managed to foster multiple uses, and some long-term productivity impacts might occur regardless of management approach. Overall, surface-disturbing and disruptive activities, including mineral and energy development, dispersed recreation, livestock grazing, infrastructure development, vegetation treatments, and human use, would result in the greatest potential for impacts on long-term productivity.