CHAPTER 3 – AFFECTED ENVIRONMENT

3.1 INTRODUCTION

The purpose of this chapter is to provide a description of the existing biological, physical, and socioeconomic characteristics, including human uses that could be affected as a result of implementing the alternatives for this RMP/EIS as described in Chapter 2. Certain types of resources that may be present in other planning areas, such as cave and karst resources and wild horses and burros, do not exist in the Coeur d'Alene Field Office (CdA FO) and are therefore not covered in this section. Information from broad-scale assessments was used to help set the context for the planning area. The information and direction for BLM resources and resource uses has been further broken down into fine-scale assessments and information. Specific aspects of each resource discussed in this section (e.g., weeds, fire, OHV use) were raised during the public and agency scoping process. The level of information presented in this chapter is commensurate with and sufficient to assess potential effects discussed in Chapter 4 based on the alternatives presented in Chapter 2 of this RMP/EIS.

3.2 RESOURCES

This section contains a description of the existing biological and physical resources of the CdA FO and follows the order of topics addressed in Chapter 2. These topics are:

- Air Quality
- Geology
- Soils
- Water
- Vegetative Communities
- Fish and Wildlife
- Special Status Species
- Wildland Fire Ecology and Management
- Cultural Resources
- Paleontological Resources
- Visual Resources

3.2.1 Air Quality

The Montana/Idaho Airshed Group (MIAG) has delineated three airsheds within the planning area. An airshed is a "geographical area in which atmospheric characteristics are similar, e.g. mixing height and transport widths" (MIAG 2003). The area of consideration for air quality includes these airsheds, as well as those over lands within 100 kilometers of the planning area. Air quality in the planning area is governed by the 1970 Clean Air Act (CAA) and its amendments and the 1999 Regional Haze Rule regulations. The State of Idaho has been given authority by EPA to oversee air quality in the state and to enforce regulations. The EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants. These include two categories of particulate matter; fine particulates with an aerodynamic diameter of 10 micrometers or less (PM_{10}), and fine particulates with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$). The Idaho Department of Environmental Quality (IDEQ) has included an additional standard for fluorides, bringing the applicable standards in Idaho to seven.

When an area within a state exceeds an ambient air quality standard, it may be designated as a nonattainment area (NAA). It is possible for a geographic area to be an attainment area for one criteria pollutant and a nonattainment area for another. Air monitoring networks that measure ambient air quality have been established to determine whether an area meets ambient air quality standards (IDEQ 2003a).

In the past, PM_{10} concentrations in the Sandpoint (Bonner County) and Pinehurst (Shoshone County) areas have exceeded the PM_{10} NAAQS levels, and the areas were designated as nonattainment areas. Air quality in both of these areas improved in recent years, and the areas have been documented to be in compliance with the PM_{10} NAAQS, though they currently remain designated as nonattainment areas. Air quality in the planning area is now generally in the "good" category of the Air Quality Index.

Smoke has been identified as the primary source of air quality impacts in the planning area. Air quality management in the CdA FO places priority on protecting human health and the environment by reducing the impacts to air quality from wildland and prescribed fire.

PM_{10} data for the planning area have shown an improvement in air quality from ten years ago due to reductions in sources contributing to PM_{10} events, especially during winter stagnation episodes. Monitoring for $PM_{2.5}$ started in 1999 and has fewer years of complete data compared to the PM_{10} database that started in the late 1980s. The annual averages for $PM_{2.5}$ have shown a fairly constant level for the past several years.

Most BLM programs in the planning area are unlikely to affect air quality. Ongoing activities occurring on BLM-administered lands that may have minor impacts to air quality include wildland fire suppression, prescribed fire, mining and mineral processing, forestry, construction, off- and on-road vehicle use, and recreational use.

Areas that have been identified as sensitive to air quality include locations such as NAAs, Class I areas, impact zones, hospitals, airports, major transportation corridors, and population centers. Class I areas are defined in the Clean Air Act as national parks over 6,000 acres and wilderness areas and memorial parks over 5,000 acres, established as of 1977. No Class I areas have been identified in the planning area.

As noted above, the Sandpoint and Pinehurst PM_{10} NAAs have been designated in the planning area. Emission sources for PM_{10} in the Pinehurst area have been identified primarily as residential wood burning. Sources of PM_{10} emissions in the Sandpoint area have been identified as residential wood burning, fugitive dust, and some industrial sources.

3.2.2 Geology

Physiography

The distinct physiographic character of the CdA FO reflects geologic differences in rock types, structures, and chemical and physical weathering processes. Elevation ranges from 2,000 feet up to peaks of 7,000 feet.

The eastern portion of the planning area is located in the Northern Rocky Mountain Physiographic Province. This province consists of a system of northerly trending mountains and broad upland plains. Broad plains of the Tristate Uplands occur in the southwestern extent of the planning area, reaching altitudes of 3,000 to 4,000 feet. The subdued nature of this feature is related to relatively flat volcanic flows in the area. The northern portion of the planning area contains the Purcell Trench, a long narrow valley surrounded by the mountains. The northern portion of the valley is well defined and relatively flat because of glacial scouring. Further south it becomes more diffuse and irregular, reflecting the irregular deposits left by glacial floodwaters.

Geologic History and Units

The geological history of central and northern Idaho is complex and spans billions of years. This discussion focuses on the significant geologic units in the planning area, in order from oldest to youngest.

The oldest rocks in the planning area are metamorphic, including a series called the Belt Super Group. The Belt Super Group, estimated at over 50,000 feet thick, consists of various rocks that have been subjected to low-grade metamorphism. This series and rocks that intruded it provide mineral resources in the planning area.

The southern portion of the planning area includes granitic rocks related to the Idaho Batholith. These large igneous rocks formed beneath the earth's surface by cooling magma. Because of their granular structure, soils that develop in granitic rocks are susceptible to surface erosion.

Volcanic flows of Columbia River Basalt cover a part of the western extent of the planning area. Combined, the flows are several thousands of feet thick. Extensive six-sided, columnar features formed as the basalt cooled. These columnar basalts provide sources of decorative stone in the planning area.

About 100,000 years ago, glaciers formed in southern Canada and began moving southward along main drainages through the planning area. Ice sheets advanced and retreated, scouring Coeur d'Alene and Pend Oreille lakes and leaving thick deposits of sand and gravel. Aggregate resources in the planning area are commonly derived from these glacial deposits.

More recently, alluvium from weathered and reworked material has been deposited along streams and rivers in the planning area. During and following the latest Ice Age, the streams and rivers of Idaho carried a larger volume of water than they do now, enabling them to carry more sediment. The natural, enhanced river flow and the periodic floods scoured out many of the larger river canyons and increased the downcutting and erosion of the rivers and mountains, leaving the landscape that is present today. Runoff is much lower now than during the last glacial event, creating rivers and streams that are undersized compared to the erosional features that they occupy.

3.2.3 Soils

The BLM parcels within the planning area range from bottomlands and terraces to mountain slopes and ridgetops. Most of the planning area is rugged, forested, mountainous, or hilly, with comparatively narrow valleys.

Soil Types

The Natural Resource Conservation Service (NRCS) has prepared detailed soil surveys for most lands in the planning area. Soils across the planning area vary with local geology, topographic relief, and climate. North of Coeur d'Alene, the soil parent material is primarily granitic and metasedimentary bedrock, overlain by glacial deposits. To the east, parent material is primarily metasedimentary rocks, including quartzites and argillites. Soils on floodplains and terraces are more than 60 inches deep and are formed in loamy material deposited by water or glacial drift. All other soils vary in depth from less than 20 inches to more than 60 inches. The temperature gradient in the planning area follows elevation, and precipitation patterns are complex, resulting in local variation in microclimates that affect soil conditions.

Erosion

Limited mass movement has occurred in the past on public land within the planning area. Some geologic and localized erosion, caused by roads and other concentrated uses, still occurs in the planning area (Stevenson 2004). In the Silver Valley, mining has destabilized streams and floodplains, extensively displacing riparian soils. Other impacts include direct soils contamination from mine tailings piles and fluvial deposition of mine waste, most notably in the Canyon and Pine Creek drainages. Decades of deposition of mine waste have also affected the banks and floodplains of the lower Coeur d'Alene River (USEPA 2002). Past timber harvest activities have contributed to erosion and sedimentation of streams, principally from the construction of

landings and roads and in areas of concentrated equipment use (e.g., improperly located skid trails for crawler tractors and/or rubber-tired skidders).

Compaction

Soil compaction occurs in response to pressure exerted by machinery or animals. The risk for soil compaction is greatest when soils are wet. Compacted soil usually allows less water to infiltrate, resulting in greater overland flow of water for longer periods of time. The overland flow has greater energy to detach and transport soil particles, resulting in increased soil erosion. Soil compaction has the potential to affect the long-term productivity of a site by reducing the diameter and height growth of a stand of trees by six to 25 percent over the long term. Soil texture affects the potential for soil compaction. In general, finer-grained soils can withstand less soil compaction before rooting restrictions occur (NRCS 1996).

Locations within the planning area where heavy machinery has worked in the past display some soil compaction. These areas include log landing sites and permanent and temporary roads from timber sales and transmission and distribution system work. Related research suggests that soil compaction from heavy machinery can cause long-term effects (Froehlich and McNabb 1979; Wert and Thomas 1981).

Overall, field observations suggest that current management practices have reduced erosion within the CdA FO since the 1981 MFP. These practices include improved road design, effective stream buffers, treatment of surface disturbance, and rehabilitation of mined areas. Mining practices that led to the current condition have changed over time, causing fewer impacts to soils.

3.2.4 Water Resources

Surface Water

Regional Context

The CdA FO is in the Columbia River Basin. The watersheds in the northeast corner of the CdA FO are the Upper and Lower Kootenai and the Moyie watersheds, all of which drain via the Kootenai River northward to Kootenay Lake in British Columbia. Kootenay Lake drains to the Columbia River, which flows south into Washington.

The central part of the CdA FO, including the Lower Clark Fork, Pend Oreille Lake, Priest, and Pend Oreille watersheds, drains to the Pend Oreille River, which flows north through Washington and makes an abrupt turn into British Columbia before joining the Columbia River near the town of Boundary, Washington.

Most of the southern half of the planning area, including the watersheds of Coeur d'Alene Lake and the Spokane River, drain to the Spokane River, which flows into the south end of Franklin Roosevelt Lake.

The southern portion of the planning area drains to the Snake River, including a small portion of the watershed of the Palouse River, and the northern portions of watersheds of the Upper and Lower North Fork of the Clearwater River.

Table 3-1 shows the distribution of BLM lands within the fourth field Hydrologic Unit Code (HUC) "cataloging units" or "watersheds" of the planning area. More than two-thirds of the BLM lands in the planning area are concentrated in three of these watersheds, including the South Fork Coeur d'Alene, Coeur d'Alene Lake, and St. Joe watersheds, where most of the historical mining activity in the planning area has been concentrated. A block representing about 10 percent of the BLM lands in the planning area is in the watershed of the Lower North Fork of the Clearwater River. The remaining BLM lands are scattered mainly over the watersheds of the Pend Oreille River and the Kootenai River.

Table 3-1 Fourth HUC Watersheds in the Planning Area

Watershed Name	HUC Number	Total Watershed Area (Square Miles)[1]	Watershed Area Within CdA FO (Square Miles)	BLM Land in HUC (acres)
Pend Oreille River				
Lower Clark Fork	17010213	2,343.3	223.2	666.9
Pend Oreille Lake	17010214	1,215.9	1,161.5	10,251.3
Priest	17010215	965.5	761.2	297.2
Pend Oreille	17010216	1,055.3	17.7	200.51
Kootenai River				
Upper Kootenai	17010101	2,278.3	71.7	0.0
Lower Kootenai	17010104	874.3	828.1	5,165.7
Moyie	17010105	211.2	175.2	5.6
Spokane River				
Upper Coeur d'Alene	17010301	899.8	892.0	3,220.2
South Fork Coeur d'Alene	17010302	297.5	297.5	36,555.3
Coeur d'Alene Lake	17010303	645.1	635.6	12,312.8
St. Joe	17010304	1,848.7	358.6	16,613.1
Upper Spokane	17010305	583.6	261.2	199.7
Hangman	17010306	706.2	21.9	0.0
Palouse River				
Rock	17060109	960.0	3.6	0.0
Snake River				
Upper North Fork Clearwater	17060307	1,298.0	70.6	0.0
Lower North Fork Clearwater	17060308	1,157.2	318.6	10,756.1
Totals:		**17,339.9**	**7,906.3**	**96,244.4**

[1]Watershed area from Montana State University 2005

As illustrated in Table 3-1, political boundaries do not necessarily follow watershed boundaries. Only a few of the fourth level HUC watersheds in the planning area are entirely within Idaho, and two of them, the watersheds of the Upper and Lower North Fork of the Clearwater River, are split between the CdA and the Cottonwood BLM field offices. Similar overlapping watershed jurisdictions exist at the county level and between government agencies.

In most of the upper Columbia River Basin, stream flow is dominated by runoff from snow melt. The snowpack accumulates from late fall through spring, and the snow melt begins in spring, which typically results in an early summer surge in runoff that is sustained into mid-summer. Stream water temperatures tend to be cool throughout the year, and water quality is generally considered excellent. Headwater streams are relatively steep and are controlled by bedrock and glacially derived sediments (Forest Service 1995a).

The US Forest Service (USFS) manages most of the federal lands in northern Idaho. BLM lands generally lie either on the margins of the large national forests or in some cases are entirely enclosed within national forests. The BLM lands tend to be the forested lands and nearer the valley floors or lands where the principal historical use has been for mineral extraction. This proximity to the forests has resulted in a relatively high degree of coordination between BLM and the USFS and of parallel development of management approaches. One example of this relationship is BLM's reliance on the USFS's Inland Native Fish Strategy (INFISH) as informal guidance on water quality objectives and management criteria in the planning area.

In addition, the Interior Columbia Basin Ecosystem Management Project (ICBEMP) was a major regional planning effort that involved coordination between many federal and state agencies. The ICBEMP is an attempt to formulate a coordinated approach to the management of the vast watershed of the Columbia Basin in order to protect the incalculably valuable habitat and the water resources contained within it. Due to the relatively small proportion of the watershed within the planning area that is under management by the CdA FO, the influence of the CdA FO on outcomes in the Columbia River Basin overall is likely to be incremental, and to maximize that influence, the CdA FO takes a strategic approach.

This strategic approach has led the CdA FO to focus its efforts on projects that have the greatest potential to achieve beneficial impacts consistent with regional objectives or to provide leadership by initiating small-scale projects to demonstrate techniques that may eventually be applied elsewhere at a larger scale. Among these are the restoration of stream function, riparian habitat, and surface water and groundwater quality along selected stream reaches in the Pine Creek and other watersheds that have been affected by historical mining activities. These watersheds are in the Silver Valley Mining District, which is an area of relatively concentrated BLM land ownership. These efforts are strategic also because the area lies within or adjacent to the Bunker Hill Mining and Metallurgical Complex Superfund Site, which is being addressed by the US EPA.

Operable Unit 3 (OU3) of the Bunker Hill Superfund Site includes areas of mining-related contamination outside of the 21-square-mile "Box." The principal contaminants in this area are dissolved metals in surface water (particularly zinc and cadmium), lead in sediments, and particulate lead suspended in surface water (US EPA 2002). The EPA's remediation priorities in this area are to protect human health by reducing exposure through removing or capping contaminated soils and sediments, by providing safe drinking water, and by conducting public education campaigns and to protect the environment by reducing or removing sources of contamination, by stabilizing stream banks, and by treating surface water. Among the goals of the remedy for OU3 are restoring fish habitat and native fish populations, reducing toxic lead concentrations in sediments to which waterfowl are exposed, and reducing downstream migration of suspended lead-contaminated sediments.

Section 303(d) of the Clean Water Act requires that states identify portions of surface water bodies in which the existing water quality does not support the designated beneficial uses for the water body. Lakes and streams in which the water quality consistently does not meet these criteria are identified as impaired. Impaired stream segments must then be studied to identify the sources of contamination and to develop quantitative total maximum daily loads (TMDLs) that represent the amount of a pollutant that can enter the stream segment without reducing the designated beneficial uses.

Updated 303(d) lists are issued every two years. The 1998 303(d) list is the most recent list approved by the US EPA. Table 3-2 is a summary list of those impaired water quality segments that may have relevance to BLM management decisions due to their location relative to BLM lands. (The segments listed in the table are those judged most likely to be relevant to BLM land management decisions. Other segments that are not listed could also be relevant.) Table 3-2 also lists the completed TMDLs and the schedule for TMDLs under development.

Table 3-2 Impaired Water Bodies Near BLM Land in the Planning Area

Watershed Name	HUC Number	Water Body Name	Impaired Segment	Source of Impairment[1]	Date of TMDL
Lower Clark Fork	17010213	Clark Fork	Montana Line to Pend Oreille Lake	Sediment (metals)	2004
		Lightning Creek	Headwaters to mouth	Sediment (flow, habitat alteration)	2004
Pend Oreille Lake	17010214	Pend Oreille River	Pend Oreille Lake to HUC boundary	Sediment (flow, thermal modification)	2007
		Hoodoo Creek	Hoodoo Lake to Pend Oreille River	Sediment (thermal modification)	2007
		Cocolalla Creek	Cocolalla Lake to Pend Oreille River	Sediment (thermal modification)	2007
		Cocolalla Creek	Headwaters to Cocolalla Lake	Sediment (thermal modification)	2007
		Fish Creek	Headwaters to Cocolalla Creek	Sediment (pathogens, thermal modification)	2007
		Schweitzer Creek	Headwaters to Sand Creek	Sediment	2006
		Pack River	Hwy. 95 to Pend Oreille Lake	Sediment (nutrients, D.O., habitat alteration, pathogens, pesticides)	2007
Pend Oreille	17010216	Pend Oreille River	HUC boundary to Washington line	Sediment (flow, thermal modification)	2007
Lower Kootenai	17010104	Deep Creek	McArthur Lake to Kootenai River	Sediment	2004
		Caribou Creek	Headwaters to Snow Creek	Sediment	2004
Moyie	17010105	Moyie River	Moyie Falls Dam to Kootenai River	Sediment	2005
Upper Coeur d'Alene	17010301	Prichard Creek	Barton Gulch to N. Fork CdA River	Sediment (nutrients, D.O., habitat alteration, pathogens, thermal modification, oil/grease)	2007
South Fork Coeur d'Alene	17010302	S. Fork Coeur d'Alene River	Six segments, from Canyon Creek to Pine Creek	Sediment	2001
		Pine Creek	E. Fork Pine Creek to S. Fork CdA River	Sediment	2001
		E. Fork Pine Creek	Two segments, headwaters to Pine Creek	Sediment	2001
		Ninemile Creek	Headwaters to S. Fork CdA River	Sediment	2001
		Canyon Creek	Goge Gulch to S. Fork CdA River	Sediment	2001
		Moon Creek	Headwaters to S. Fork CdA River	Sediment	2001

Table 3-2 Impaired Water Bodies Near BLM Land in the Planning Area

Watershed Name	HUC Number	Water Body Name	Impaired Segment	Source of Impairment(1)	Date of TMDL
		E. Fork Ninemile Creek	Headwaters to Ninemile Creek	Sediment	2001
		Milo Creek	Headwaters to mouth	Sediment	2001
Coeur d'Alene Lake	17010303	Coeur d'Alene River	S. Fork CdA River to French Gulch	Metals, sediment	
		Baldy Creek	Headwaters to Latour Creek	Temperature	2007
		Larch Creek	Headwaters to Latour Creek	Temperature	2007
St. Joe	17010304	Saint Maries River	Mashburn (town) to St. Joe River	Sediment (nutrients, habitat alterations)	2002
		Saint Maries River	Clarkia to Mashburn (town)	Sediment, temperature	2002
		Gold Center Creek	Headwaters to St. Maries River	Temperature	Reevaluate, no date
		Big Creek	Confluence Middle and West Forks Big Creek	Not listed	Reevaluate, no date
		Marble Creek	Hobo Creek to St. Joe River	Sediment	Reevaluate, no date
		Harvey Creek	Headwaters to St. Joe River	Sediment (D.O., bacteria, temperature)	2002
		Gramps Creek	Headwaters to Gold Center Creek	Temperature (sediment)	2002
		Bear Creek	Headwaters to Marble Creek	Sediment (bacteria, temperature)	2002
		Little Bear Creek	Headwaters to Big Bear Creek	Sediment (bacteria, temperature)	2002
Upper Spokane	17010305	Spokane River	CdA Lake to Huetter	Metals	2007
		Spokane River	Post Falls Bridge to WA border	Metals	2007
Lower North Fork Clearwater	17060308	Floodwood Creek	Headwaters to Breakfast Creek	Sediment (D.O., flow, habitat alteration)	2004

Source: IDEQ 2003
Notes: (1) Pollutants requiring further study or for which TMDL development is not planned are in parentheses.

Groundwater

Most of northern Idaho is in the Northern Rocky Mountain Intermontane Basins Regional Aquifer System. This region extends eastward into Montana and northward into British Columbia. It is bordered on the west by the Columbia River Regional Aquifer System and on the south by the Snake River Plain Regional Aquifer System (Whitehead 1994).

Most of the Northern Rocky Mountain Intermontane Basins Regional Aquifer System consists of small isolated aquifers in pre-Miocene rocks. The geologic materials that compose these aquifers vary widely and include igneous and metamorphic rocks, volcanic rocks, and consolidated marine and nonmarine sedimentary rocks, with a wide range of thicknesses and permeabilities. Water from wells completed in these aquifers is used mostly for domestic and livestock watering supplies.

The principal aquifers in the northern portion of the CdA FO, north of Lake Coeur d'Alene, are in unconsolidated alluvial deposits filling the major alluvial valleys formed in the pre-Miocene rocks. These aquifers are found in the drainage of the Kootenai River and its tributaries, the Priest River and tributaries of Priest Lake, and on the Rathdrum Prairie. These unconsolidated-deposit aquifers provide fresh water for most public, domestic, commercial, and industrial purposes (Whitehead 1994). In Boundary and Bonner Counties, the unconsolidated deposits are chiefly fine grained, or, if coarse grained, they contain a matrix of clay. Most wells in Boundary County range from 10 to 200 feet deep and yield relatively small amounts of water. In southern Bonner and Kootenai Counties, the Rathdrum Prairie Aquifer extends from the southern end of Lake Pend Oreille to the Idaho-Washington border, north of Lake Coeur d'Alene. The aquifer consists of coarse sand and gravel deposits that are locally more than 510 feet thick. Some wells yield as much as 3,000 gallons per minute. The Rathdrum Prairie Aquifer is extremely important for recharging the Spokane Valley Aquifer in northeastern Washington.

West of Lake Coeur d'Alene the Spokane Valley Aquifer represents the extension of the Rathdrum Aquifer onto the margin of the Columbia Plateau. Like the Rathdrum Aquifer, the Spokane Valley Aquifer consists of coarse glacial outwash deposits with high permeabilities. Public water supply wells in the Spokane Valley have yielded up to 19,000 gallons per minute (Whitehead 1994). Water quality in the Rathdrum Aquifer is highly vulnerable to surface pollution sources, because the groundwater is near the surface and there is no aquitard overlying the aquifer. Surface water and groundwater are interconnected, and increased extraction from the aquifer could affect stream flows. Although there are local contaminant sources, the aquifer generally has not been affected by pollutants. The state and the Panhandle Health Department manage the aquifer (Ralston 2000).

The Miocene basalts of the Columbia Plateau Regional Aquifer System extend into the northwest corner and most of the south half of Benewah County. Several isolated Miocene basalt aquifers are present in Bonner and Kootenai Counties. Wells in the basalt aquifers in Benewah County are typically small public supply or domestic wells drilled to depths of 50 to 200 feet, with yields ranging from 1 to 500 gallons per minute (Whitehead 1994).

In general, there are ample supplies of good quality groundwater in the planning area. However, there is little reliance on groundwater because surface water is also generally abundant and the demand for water is relatively low. The BLM's role has generally been to manage watersheds for the protection of both surface water and groundwater resources.

In the Coeur d'Alene River subbasin, the shallow alluvial aquifers that underlie the larger streams are threatened by heavy metal contaminants from historic mining activities in the Silver Valley (Bunker Hill) Mining District. Surface water contaminated by contact with tailings piles and drainage from mines can contaminate the shallow groundwater. The primary pollutants of concern are zinc, cadmium, and lead. In many areas, particularly in the tributary canyons above the major trunk streams, groundwater discharges to streams through the sediments at the margins of steep canyons or along valley floors. In some areas, large volumes of mill or mine tailings have been deposited on valley floors in or adjacent to streams, allowing the shallow groundwater to leach metals from the waste materials (US EPA 2001). Most studies and remediation efforts to date have focused on removing or stabilizing contaminated soils, sediments, and tailings piles, on reducing the transport of contaminated sediments, and on addressing surface water quality.

Canyon Creek is an example of one of the largest contributors of zinc and cadmium in the South Fork of the Coeur d'Alene River. As in other tributary canyons to the South Fork of the Coeur d'Alene River, the shallow aquifer consists of a permeable coarse alluvial aquifer, and there is a high degree of interconnection between

surface water and groundwater. It has been estimated that Canyon Creek has contributed about 150 pounds of zinc per day during low flow conditions. The state initiated a groundwater monitoring study of Canyon Creek in 2003, involving installation of a network of wells to evaluate groundwater quality and flow. A final report for the study is expected late in 2005 (IDEQ 2004).

The BLM has conducted pilot studies of in situ groundwater interception and treatment systems at abandoned mine sites in the Canyon Creek and Ninemile Creek watersheds and has removed or stabilized mine tailings deposits from the floodplain of Pine Creek and has stabilized tailings piles at mine sites near streams. These efforts, combined with similar efforts by other entities, including the US EPA and the State of Idaho, should gradually help to reduce loadings of metals to surface water.

3.2.5 Vegetative Communities

Vegetation Types

The ICBEMP Supplemental Draft Environmental Impact Statement (Forest Service and BLM 2000) identified 15 broad-scale potential vegetation groups for the Interior Columbia Basin, which includes most of the State of Idaho. A potential vegetation group consists of the vegetation types that grow in similar general moisture or temperature environments. Twelve of these groups occur within the planning area and are listed in Table 3-3.

The Idaho Panhandle National Forests that are adjacent to BLM-administered lands in the planning area have developed a method of describing vegetation by Vegetation Response Units (VRUs), defined as aggregations of land having similar capabilities and potential for management (Forest Service 2003). VRUs have similar patterns in potential natural communities, soils, hydrologic function, landform and topography, geology, climate, air quality, and natural processes (nutrient and biomass cycling, succession, productivity, and fire regimes). VRUs provide a means to describe and define the components of ecosystems. The structure and function of the component types that make up the ecosystem are an indication of the relative health of ecosystems. Table 3-3 lists the three VRU groups for forested vegetation present in the planning area.

Table 3-3 Major Vegetation Cover Types on BLM-Managed Lands in the Planning Area

CdA FO Vegetation Cover Type	ICBEMP Potential Vegetation Group	USDA Forest Service Vegetation Response Unit (VRU) Group	Gap Analysis Cover Type	BLM Acres (Percent)
Dry Conifer (representative species--ponderosa pine, lodgepole pine, Douglas-fir, grand fir, western white pine)	Dry Forest	Warm/Dry	ponderosa pine, grand fir, Douglas-fir, mixed xeric, Douglas-fir/lodgepole pine, Douglas-fir/grand fir	29,450 (30%)
Wet/Cold Conifer (representative species--whitebark pine, western white pine, lodgepole pine, mountain hemlock, Engelmann spruce, western larch, subalpine fir, grand fir, Douglas-fir)	Cold Forest	Cool/Moist	Engelmann spruce, lodgepole pine, subalpine fir, western larch, mixed whitebark pine, mixed subalpine, mixed mesic, western larch/lodgepole pine, western larch/Douglas-fir	44,672 (46%)

Table 3-3 Major Vegetation Cover Types on BLM-Managed Lands in the Planning Area

CdA FO Vegetation Cover Type	ICBEMP Potential Vegetation Group	USDA Forest Service Vegetation Response Unit (VRU) Group	Gap Analysis Cover Type	BLM Acres (Percent)
Wet/Warm Conifer (representative species--western red cedar, western hemlock)	Moist Forest	Moist	western red cedar, western hemlock, western red cedar/grand fir, western red cedar/western hemlock	8,384 (9%)
Aspen/Aspen Conifer Mix	Cold Forest Riparian Woodland		mixed conifer/broadleaf forest	2,002 (2%)
Mid-Elevation Shrub	Cool Shrub		mesic shrublands	5,384 (6%)
Perennial Grass	Dry Grass		foothills grasslands, montane parklands, and subalpine meadows	2,451 (3%)
Riparian/Wetland	Riparian Herb Riparian Shrub Riparian Woodland		cottonwood, conifer riparian, broadleaf riparian, mixed conifer/broadleaf riparian, mixed forest/non-forest riparian, grass/forb riparian, shrub riparian, mixed non-forest riparian	1,147 (1%)
Other	Agriculture Urban Rock Water		urban, agriculture, rock, barren land, water	3,326 (3%)

In order to estimate existing acreages by cover type at the planning area level, the BLM correlated the ICBEMP potential vegetation groups and USFS VRUs with vegetation mapping data analyzed by the Idaho Gap Analysis Program of the US Geological Survey (Scott et al. 2002). Gap Analysis is a scientific method used by local, state, and federal land managers in identifying the degree to which native animal species and natural communities are represented in the present-day mix of lands. Using satellite imagery, the Idaho Gap Analysis Program mapped existing natural vegetation (land cover) to the level of dominant or co-dominant plant species. Thirty-eight cover types were mapped in the planning area.

Based upon an assessment of the vegetation cover classifications used by ICBEMP, local National Forests, and the Idaho Gap Analysis Program, seven overall groups of vegetation cover types and one "other" category were derived for the planning area. Table 3-3 displays the correlation of the ICBEMP and Forest Service vegetation groups with the Idaho Gap data, and the resulting acreage including percent by cover type on BLM-managed lands in the planning area.

Vegetation - Forest and Woodlands

Approximately 88 percent of the lands managed by the CdA FO are forested. Indicators in assessing the trend of declining health in the various forest vegetation cover types are the current versus the historic distribution of seral stages across the landscape. Forest health interpretations are based on observations by BLM foresters, as well as from forest inventory data collected in the 1974, 1992, and 2002 extensive forest inventories. Across all forest types, wildfire suppression has resulted in an increasing representation of Douglas-fir *(Pseudotsuga menziesii)* and grand fir *(Abies grandis)*. Current observed levels of tree mortality and insect and

disease (particularly root disease), stocking levels (stand density), and species composition reflect poor conditions when compared with historic composition and structure. Table 3-4 shows the change in characteristics of forests relevant to forest products in the planning area between 1974 and 1992.

Table 3-4 Forest Health and Fuel Indicators in 1974 and 1992

Indicator	1974 Inventory	1992 Inventory	Percent Increase
Number of live trees per acre 5 inches DBH* or less	860	1,341	56
Average diameter at breast height of trees greater than 5 inches DBH	10	11	10
Suppressed live trees per acre	32	107	234
Live white pine blister trees per acre	3	55	1,733
Insect-infected and diseased trees per acre	1	105	10,400
Mortality Trees/Acre	25	75	200

*DBH= Diameter at Breast Height, a standard forestry measurement.
**MBF= Millions of Board Feet (One Board Foot is the volume of a piece of wood 1 foot square and 1 inch deep)

USFS Insect/Disease aerial surveys on BLM ownership have also shown that approximately 1,500 acres of forested land are newly infested with insects on a yearly basis (based on a 5 year average of aerial flight detection from 2000-2004). Most common among these insects are bark beetles including western pine beetle, mountain pine beetle, Douglas-fir beetle, and fir engraver beetle. White pine blister rust is also common in the 5 year survey, and Douglas fir beetle infested the most acres. Root disease is also prevalent. This includes armillaria root disease, annosus root rot, laminated root rot, and schweinitzii root rot. Through the use of aerial photos, USFS research conducted in 1993 concluded that root disease impacts were found on more than 35% of USFS land in the Coeur d'Alene River Basin. BLM inventory data collected in 2003 on approximately 35,000 acres of BLM lands mostly within the Coeur d'Alene River Basin revealed that approximately 39% of the inventory plots had root rot disease noted. BLM estimates that most of the insect activity has occurred and will continue to occur in areas which are infected with root rot disease. As a result of available data, combined with BLM forestry personnel knowledge, BLM estimates that approximately 20,000 acres in areas where vegetation treatments are allowed are currently infested with insects and impacted by root rot disease.

Ecosystem characteristics include three basic components: structure, composition, and function. Composition is the tree, shrub, grass, and forb class components in a stand or community and can be measured by numbers and abundances of the same classes. Structure is the horizontal and vertical physical elements of forests and the spatial interrelationships of ecosystems. Function includes energy flows of materials across and within the landscape and how one ecosystem influences another (Forest Service 2003). Function also relates to energy processes such as fire, hydrological processes (including floods), and matter and energy exchange throughout the food chain.

For this analysis, tree species, determined by cover type, is the primary indicator of the composition of a forest ecosystem. Structure is measured by tree diameter class, canopy cover, and the number of canopy layers. Function is indicated by historical conditions. Ecosystems are more resilient (function properly) when their composition and structure reflect historic conditions.

Structure is expressed by seral stage. The seral stage indicates the progression of overstory development after a disturbance (such as fire). In forested vegetation types, the structure can take between 100 and 300 years to

develop from early seral through late seral stages. Tree diameter class and canopy cover are indicators of seral stage and thus, structure. Table 3-5 displays the historic structural components for the seral stages in each of the three major forest vegetation cover types.

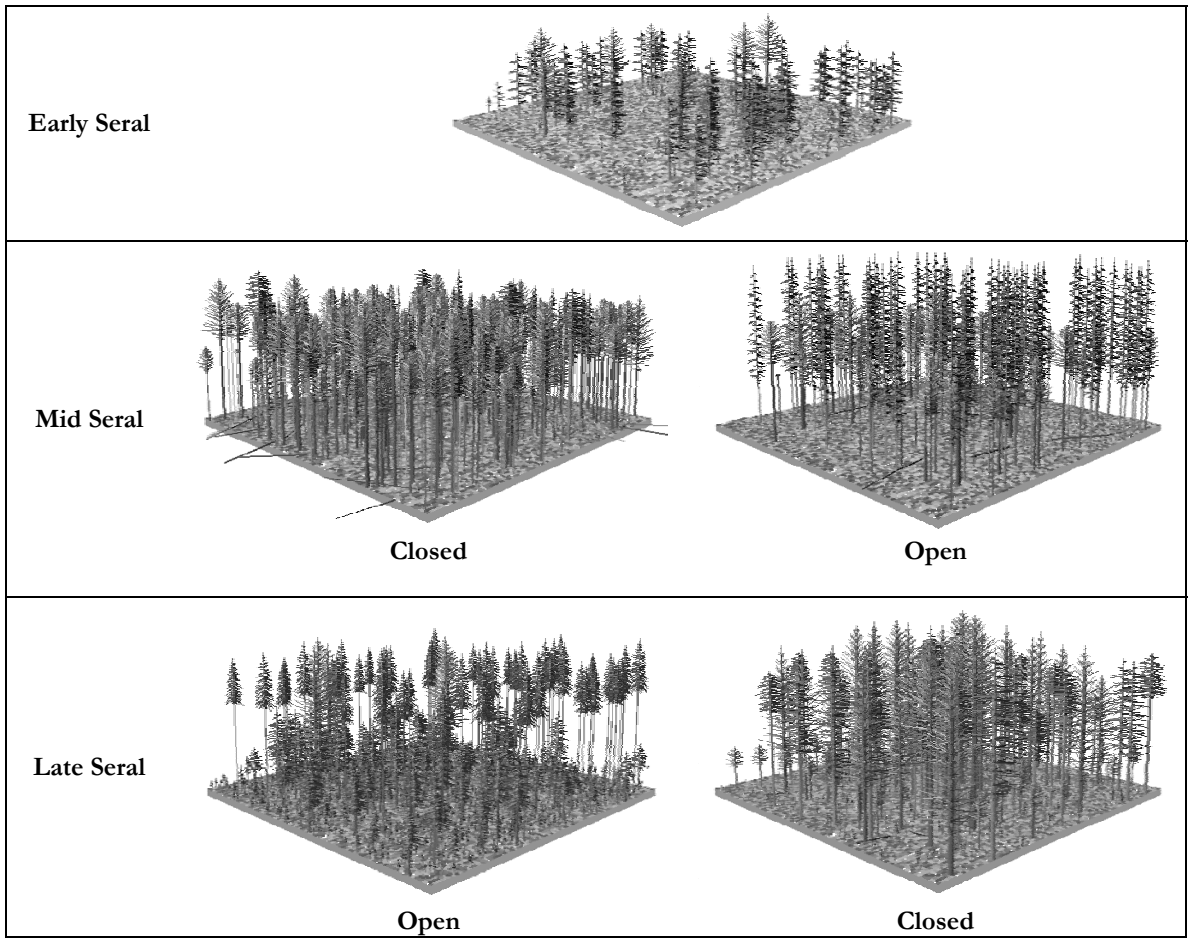
Table 3-5 Historic Seral Stage Descriptions

Cover Type	Component	Early Seral	Mid-Seral Closed	Mid-Seral Open	Late Seral Open	Late Seral Closed
Dry Conifer	DBH (in)	<6	6 to 20	6 to 20	>20	>20
	Canopy	<10% closed	1-2 layer >35%	1 layer <35%	1-3 layer <35%	multi-layer >35%
Wet/Cold Conifer	DBH (in)	< 4	4 to 20	4 to 20	>20	>20
	Canopy	<10%	1-2 layer >35%	1 layer <35%	1-3 layer <35%	multi-layer >35%
Wet/Warm Conifer	DBH (in)	<4	4 to 10	4 to 10	> 10	>10
	Canopy		>40%	<40%	<40%	>40%

Source: Interagency Fire Regime Condition Class Guidebook 2005. Data are rounded to 2-inch diameter class to coincide with Forest Vegetation Simulator (FVS) categories.

Figure 3-1 depicts what these seral stages would look like in the dry conifer cover type.

Figure 3-1 Dry Conifer Seral Stages

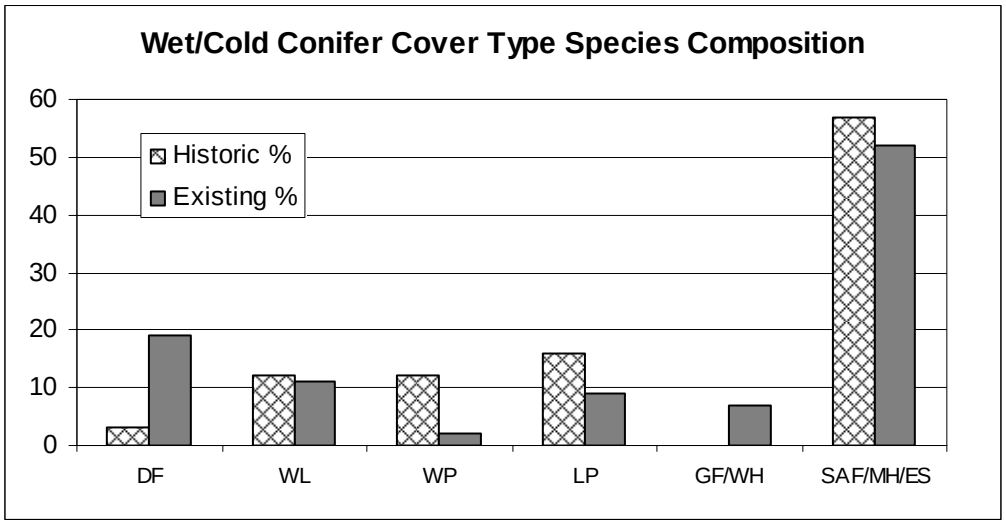


Wet/Cold Conifer

The Wet/Cold Conifer type, which comprises approximately 46 percent of the lands managed by the CdA FO, is in poor forest health due to loss of western white pine (*Pinus monticola*). The amount of WWP that historically existed in this cover type has dropped from approximately 12% to 2% - 4% and is continuing to decrease. Historically, before the introduction of blister rust and wildfire suppression, stocking levels of Douglas-fir and grand fir were much lower than exist today. Whitebark pine *(Pinus albicaulis)* and ponderosa pine *(Pinus ponderosa)* occur incidentally in this cover type, composing less than 1 percent in both historic and current conditions. Douglas-fir and grand fir are replacing the western white pine as this species dies out. Lodgepole pine *(Pinus contorta)* is a common component of these types. Most of the lodgepole pine occurs as a result of the 1910 fires and is consequently dying from insects (mountain pine beetle) and old age. Its decline is reflected in the reduced presence compared to historic levels.

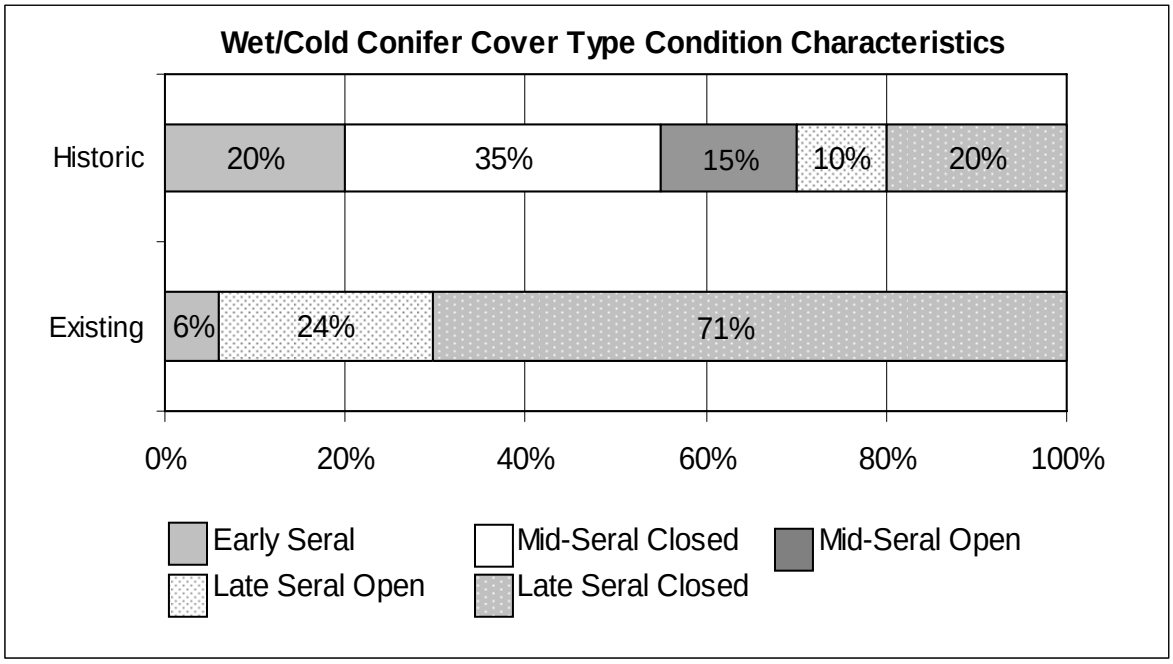
Historic structural stage distribution compared to current conditions indicates serious problems with structure. In the Wet/Cold Conifer type, late seral is overrepresented (95 percent compared to the historic level of 30 percent), and the mid-seral stage, which historically accounted for 50 percent of the cover type, is missing completely (Figures 3-2 and 3-3). Similarly, open canopies historically represented 25 percent of this type, and none are present today.

Figure 3-2 Wet/Cold Conifer Cover Type Species Composition



Source: Historic data from IPNF AMS Technical Report (Forest Service, no date given). CdA FO current situation from 1992 extensive inventory, analyzed with FVS.
DF=Douglas-fir
WL= western larch
WP = white pine
LP = lodgepole pine
GF/WH = grand fir/western hemlock
SAF/MH/ES = subalpine fir/mountain hemlock/engleman spruce

Figure 3-3 Wet/Cold Conifer Cover Type Condition Characteristics



Source: Historic data from the FRCC Reference Condition Characteristics for Forested Biophysical Settings, Western U.S. (DRAFT: 01/11/05), available on the internet at www.frcc.gov. Wet/Cold Conifer Cover Type is equivalent to Interior West Lower Subalpine Forest #1 in the FRCC table. BLM CdA FO data are from the 1992 extensive inventory analyzed by FVS.

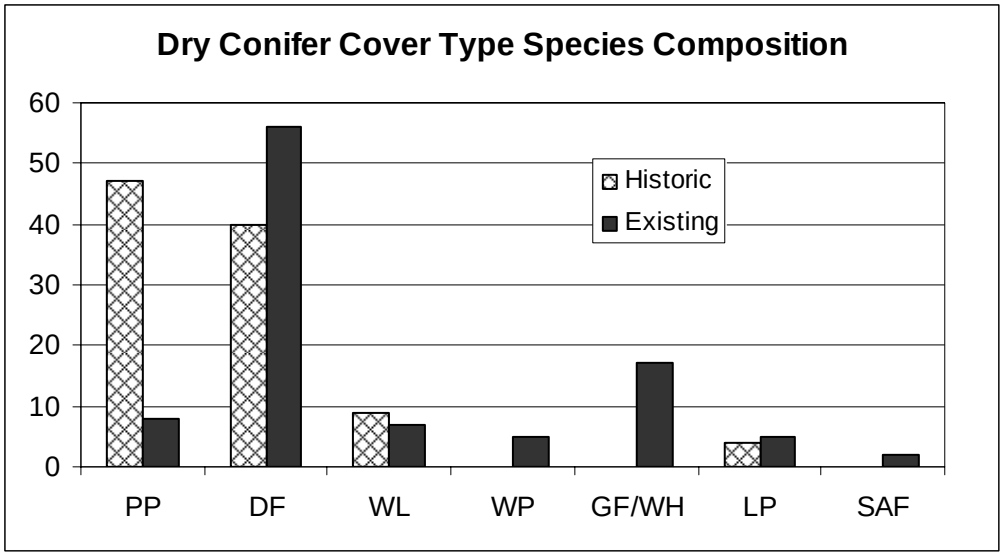
Douglas-fir and grand fir stands are generally in poor health due to high stand densities, infection with root rot, and insects. Natural western white pine continues to be removed from these stands due to blister rust disease and is being replaced by Douglas-fir and grand fir, which are more prone to root rot diseases and insect attacks, especially as stocking densities of these species increase above their historical densities. Reduced density of western white pine continues the trend of reducing the range of this species, which is currently at 5 percent of its historic range.

Dry Conifer

Approximately 30 percent of the lands managed by the CdA FO occur in the Dry Conifer cover types. Historically, these types contained about equal amounts of ponderosa pine and Douglas-fir (Figures 3-4 and 3-5).

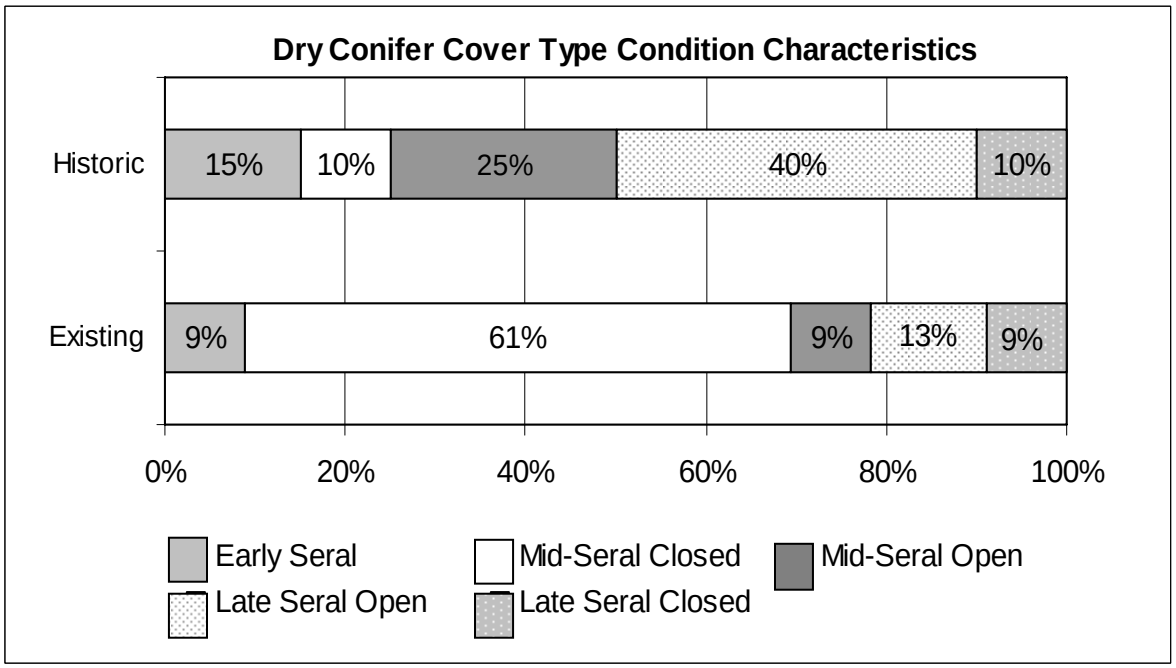
This is a type that can produce "open, park-like" stands of ponderosa pine when fire plays its natural role (Smith and Fischer 1997). The Forest Vegetation Inventory System (FORVIS) inventory contract (Section 3.3.1, Forestry and Woodland Products), currently being completed, is expected to show continued increases in stocking levels as well as increases in diseased trees and mortality trees. USFS data and observations from BLM field staff show that this increase has continued into the present within the planning area. Not shown here are the effects of the 1997 ice storm, the significant increases in Douglas-fir bark beetle that started in 1997 (initiated from the ice storm and exacerbated by increased tree densities, root rot, and drought), and the increasing population of mountain pine beetle now infecting the lodgepole pine stands.

Figure 3-4 Dry Conifer Cover Type Species Composition



Source: Forest Service 2003. CdA FO current situation from 1992 extensive inventory, analyzed with FVS.
PP = ponderosa pine
DF=Douglas-fir
WL= western larch
WP = white pine
GF/WH = grand fir/western hemlock
LP = lodgepole pine
SAF = subalpine fir

Figure 3-5 Dry Conifer Cover Type Condition Characteristics



Source: Historic data from the FRCC Reference Condition Characteristics for Forested Biophysical Settings, Western U.S. (DRAFT: 01/11/05), available on the internet at www.frcc.gov. Dry Conifer is equivalent to Ponderosa Pine-Douglas-fir (Inland NW) in the FRCC table. BLM CdA FO data are from the 1992 extensive inventory analyzed by FVS.

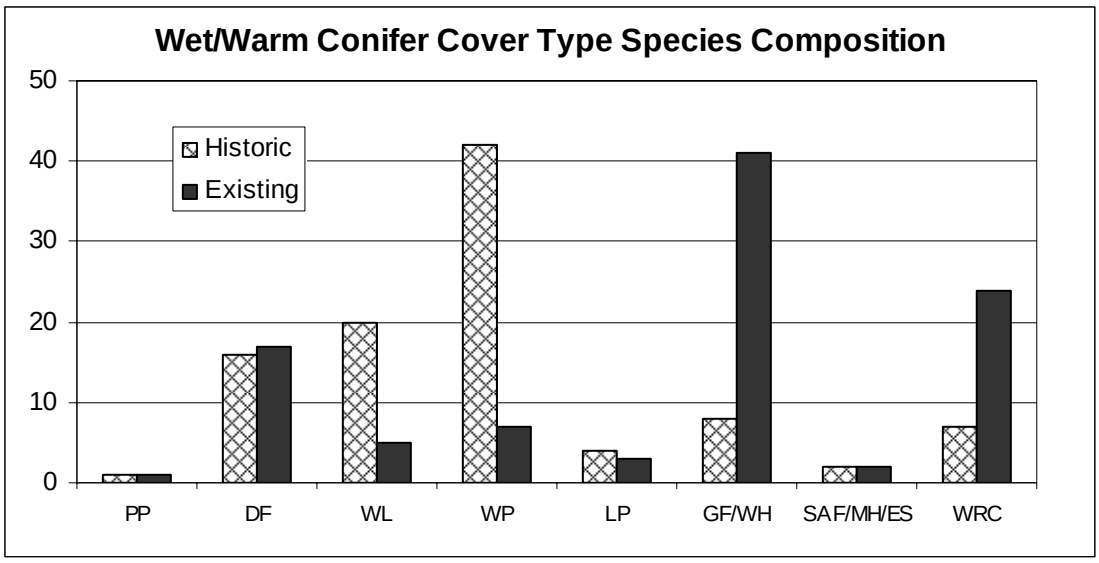
Existing seral stages in Dry Conifer are skewed toward closed canopy and mid-seral stages at the expense of late-seral stages (Figure 3-4). Compared against historical conditions, 20 percent of this cover type should be closed canopies, while current conditions reflect 70 percent, indicating very high tree densities. Mid-seral should account for approximately 35 percent, yet current conditions indicate that it accounts for 70 percent. Late seral should be represented on 50 percent of the acres but currently only occupies 22 percent (Figure 3-5).

Wet/Warm Conifer

The Wet/Warm Conifer type, which comprises nine percent of the upland forest sites in the planning area, is generally dominated by western red cedar *(Thuja plicata)*, western hemlock *(Tsuga heterophylla)*, and grand fir (Figures 3-6 and 3-7). Historically, this type would have been dominated by seral species, including white pine and western larch *(Larix occidentalis)*. Currently this cover type is in fair to poor health due to high stand densities, root rot, and significant loss of western white pine due to blister rust. Additionally western larch has decreased due to logging (Forest Service 1997 and 2003).

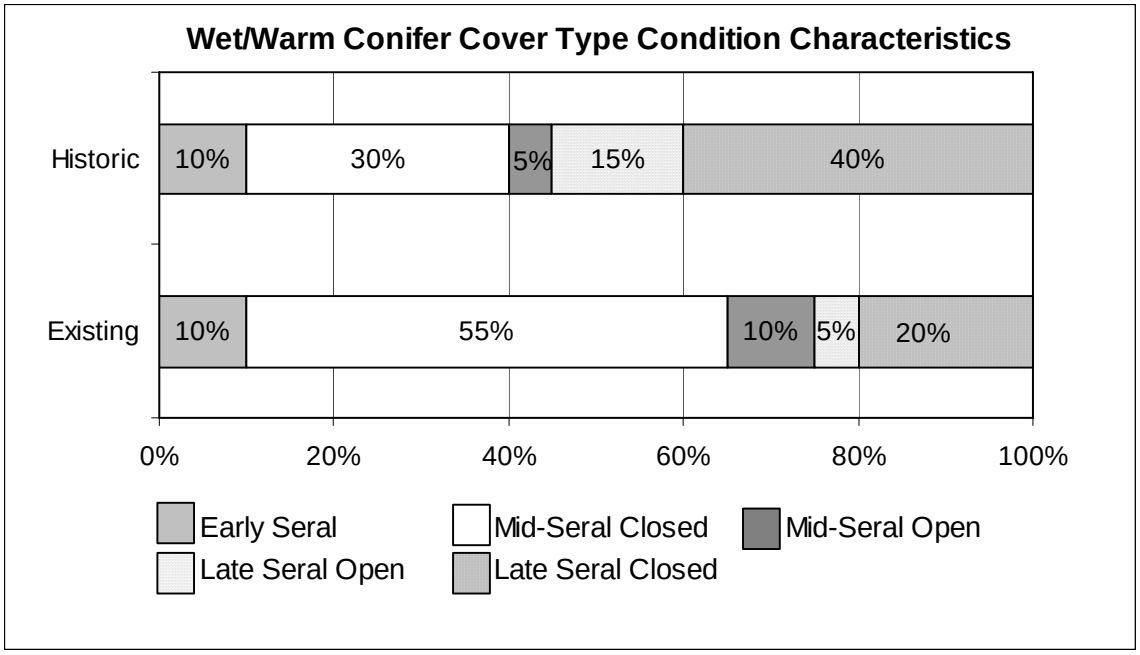
Structurally, existing conditions reflect an overabundance of the mid-seral stage, while late seral is underrepresented. Late seral should account for 55 percent but is only reflected at 25 percent. Mid-seral should be 35 percent and is currently at 65 percent.

Figure 3-6 Wet/Warm Conifer Cover Type Species Composition



Source: Forest Service 2003. CdA FO current situation from 1992 extensive inventory, analyzed with FVS.
PP = ponderosa pine
DF=Douglas-fir
WL= western larch
WP = white pine
LP = lodgepole pine
GF/WH = grand fir/western hemlock
SAF/MH/ES = subalpine fir/mountain hemlock/Engleman spruce
WRC = western red cedar

Figure 3-7 Wet/Warm Conifer Cover Type Condition Characteristics



Source: frcc.gov
Wet/Warm Conifer Type is equivalent to Cedar-Hemlock Douglas-fir (Interior) in the FRCC table. BLM CdA FO data are from the 1992 extensive inventory analyzed by FVS.

Aspen/Aspen Conifer Mix

The Aspen/Aspen Conifer Mix type, which comprises approximately two percent of the lands managed by the CdA FO, is found between 2,200 and 6,000 feet on a variety of soils. It grows best in deep, moist loamy soils in a range of precipitation zones (16 to 40 inches). Quaking aspen *(Populus tremuloides)* occur in pure stands or in association with various conifers such as subalpine fir *(Abies lasiocarpa)* and Douglas-fir. Associated understory vegetation consists of mallow ninebark *(Physocarpus malvaceus),* sticky currant *(Ribes viscosissimum),* Rocky Mountain maple *(Acer glabrum.),* elk sedge *(Carex geyeri),* pinegrass *(Calamagrostis rubescens),* blue wildrye *(Elymus glaucus),* and snowberry *(Symphoricarpos albus).* In many aspen stands, conifer encroachment is a natural pattern, resulting in an increased dominance by conifers and reducing the extent of aspen-dominated stands. Forest health for the Aspen/Conifer Mix type is considered to be generally good to fair, with some mature stands of aspen undergoing succession to conifers.

Decisions in the Emerald Empire MFP regarding forest vegetation management emphasized commodity (wood products) production. However, national and BLM policy regarding management of forest vegetation on federal lands has changed. Much of the current management of forest vegetation within the planning area is guided by the Healthy Forest Restoration Act of 2004 (HFRA) and the ICBEMP Strategy (Forest Service and BLM 2003). The HFRA emphasizes retention of larger trees and removal of smaller diameter (ingrowth) trees to promote healthy, more fire-resistant forests. The ICBEMP Strategy identifies a management strategy for promoting and sustaining a healthy regionwide ecosystem, while supporting economic and social needs, and helping to restore and maintain habitats of plant and animal species. Guidance is also included under the NFP for management of forest vegetation to restore damaged landscapes (tree planting, watershed restoration, etc.) and to reduce fire risk by addressing fuel ladders and downed material through thinning and prescribed fire.

Vegetation – Nonforested

Nonforested vegetation constitutes a small portion of the planning area and is mainly composed of foothills grasslands, montane parklands and subalpine meadows, and mid-elevation shrublands.

Mid-Elevation Shrub vegetation occurs on approximately six percent of the lands managed by the CdA FO. While this cover type is often found on south- and west-facing slopes that have experienced large fires, factors such as soil type and other disturbances may influence the distribution of this vegetation across the landscape as well. Generally, this type of vegetation is found at or below 4,000 feet and is primarily composed of species such as alder *(Alnus* spp.), mallow ninebark, oceanspray *(Holodiscus discolor),* snowberry, ceanothus *(Ceanothus* spp.), and Rocky Mountain maple. Some management efforts have occurred in these shrub habitats with the goal of enhancing wildlife forage.

The Perennial Grass type occurs on approximately three percent of lands managed by the CdA FO. This cover type primarily consists of foothills grasslands, montane parklands, and subalpine meadows, with minor amounts of Palouse prairie limited to small areas in the southwestern part of the planning area. Dominant species in this vegetation type include bluebunch wheatgrass *(Pseudoroegneria spicata),* Idaho fescue *(Festuca idahoensis),* and green fescue *(Festuca viridula).*

The greatest threat to these nonforested communities is from invasion by noxious weeds and other exotic species (see the discussion on Noxious Weeds, below).

Riparian Zones and Wetlands

Riparian and wetland areas occupy transition zones between aquatic and upland habitats, with the term "riparian" generally applied to the vegetated zones adjacent to rivers and streams. These areas are important from an ecological standpoint as they supply cover for wildlife that access aquatic environments and are a source of food for fish and wildlife. They also influence water quality by filtering out nutrients from runoff, maintaining water temperature by providing shade, and controlling erosion.

In 1991, the BLM Director approved the *Riparian-Wetland Initiative for the 1990s*. This initiative established national goals and objectives for managing riparian-wetland resources on public lands. One of the principal goals was to restore and maintain riparian-wetland areas so that 75 percent or more would be in proper functioning condition (PFC) by 1997 (BLM 1993). PFC inventories have been completed on about 76 percent of the riparian/wetland resources in the CdA FO (Table 3-6).

Table 3-6 Functional Condition Summary for Flowing and Standing Water Managed by the BLM in the Planning Area

Type	PFC	Functional at Risk	Nonfunctional	Unknown	Total
Flowing Water (miles)	126	12	5	94	237
Standing Water (acres)	141	333	0	254	728

The CdA FO manages 237 linear miles of streams, including 108 miles of intermittent streams and 129 miles of perennial streams (Flowing Water, Table 3-6). The BLM has assessed functioning condition of approximately 58 percent (143 miles) of these. Of those assessed, about 86 percent (126 miles) are in PFC, nine percent (12 miles) are functional-at-risk, and four percent (5 miles) are nonfunctional. Of the streams (riparian corridors) identified as functional-at-risk, fewer than five percent (<1 mile) are improving, fewer than 10 percent (1 mile) are declining, and no trend is discernable for the remainder.

The CdA FO also manages 263 acres of lakes and 465 acres of wetlands (Standing Water, Table 3-6). The BLM has assessed the functioning condition of approximately 65 percent (474 acres) of these. Of those assessed, 30 percent (141 acres) are in PFC and 70 percent (333 acres) are in functional-at-risk. The PFC for approximately 254 acres has not been determined.

Six main types of riparian and wetland vegetation, based upon the US Fish and Wildlife Service's wetland classification system, occur within the planning area: forested, scrub-shrub, emergent, aquatic bed and lacustrine littoral, moss-lichen, and peatland (Bursik and Moseley 1995; Jankovsky-Jones 1997; Jankovsky-Jones 1999).

Forested Vegetation

Broad-leaved deciduous forests occur along major rivers such as the Kootenai, Clark Fork, parts of the Coeur d'Alene, St. Joe, and St. Maries. These forests are most commonly dominated by black cottonwood *(Populus trichcarpa),* with occasional stands of quaking aspen. Black cottonwood and quaking aspen are also associated with higher gradient streams or seeps. Paper birch *(Betula papyrifera)* may be present along lake shorelines. Conifer riparian forests occur on upper reaches and tributaries of major rivers and on the perimeter of emergent wetlands. Western redcedar, subalpine fir, Engelmann spruce *(Picea englemannii),* and less commonly grand fir dominate conifer riparian forests. Western hemlock may be co-dominant with western redcedar on wet floodplains. On high gradient streams, riparian vegetation may be absent or poorly developed due to minimal floodplain development.

Scrub-Shrub Vegetation

Shrublands dominated by willows *(Salix* spp.), thinleaf alder *(Alnus incana),* red-osier dogwood *(Cornus stolonifera),* and other shrubs occur along low-gradient channels, as stringers or on narrow floodplains along high gradient streams, as patches within riparian forests, and on margins of meadows and peatlands. At mid to upper elevations, willow-dominated shrublands are associated with low gradient meandering channels. Willows are frequently absent or a minor component of shrublands associated with high gradient streams, where thinleaf alder, red-osier dogwood, and alder buckthorn *(Rhamnus alnifolia)* occur as dominants. Patches of red-osier dogwood and willow are common in association with cottonwood forests on larger stream systems. Channel bars are often vegetated with willow. Thinleaf alder is also frequently present on meadow margins. Sitka alder *(Alnus sinuata)* is found at upper elevations on pond margins and along streams. Margins of many emergent wetlands commonly have a dense monoculture of hardhack *(Spiraea douglasii)* or thinleaf alder around the perimeter.

Emergent (Herbaceous) Vegetation

Herbaceous wetlands are usually dominated by sedges *(Carex* spp.), rushes *(Juncus* spp.), bulrushes *(Scirpus* spp.), spikerushes *(Eleocharis* spp.), and common cattail *(Typha latifolia).* Moist grasslands and seasonally flooded wetlands may be dominated by reed canarygrass *(Phalaris arundinacea),* redtop bentgrass *(Agrostis stolonifera),* or Kentucky bluegrass *(Poa pratensis),* with some tufted hairgrass *(Deschampsia cespitosa),* bluejoint reedgrass *(Calamagrostis canadensis),* or sedge remnants. Thick layers of sedge and moss peat accumulate where water tables are at or near the surface for most of the year.

Aquatic Bed and Lacustrine Littoral Vegetation

Aquatic bed vegetation occurs in littoral (< 2 meters) and limnetic (> 2 meters) zones of ponds and lakes in the planning area. Vegetation types correspond to water depth to form somewhat concentric rings. Pondweeds *(Potamogeton* spp.), water-milfoils *(Myriophyllum* spp.), and bladderworts *(Utricularia* spp.) occur alone or in combination in shallow littoral zones. Yellow pond lily *(Nuphar polysepalum)* and water-shield

(Brasenia schreberi) are frequently present as monocultures in deep littoral zones. Pondweeds are common in limnetic zones.

Moss-Lichen Vegetation
Standing water moss-lichen wetlands are defined as areas where mosses or lichens cover surface substrates, and vascular plants make up less than 30 percent of the areal cover. Although moss-lichen vegetation and peatlands comprise a very small percentage of decision area vegetation, they are among the most floristically diverse of the six major vegetation types.

Peatlands
The forested, scrub-shrub, and emergent vegetation types discussed above may occur and moss-lichen types always occur as peatlands, where accumulation of organic matter exceeds decomposition. Peatlands in the planning area can be further divided into paludified forests, ombtrophic bogs, poor fens, intermediate fens, and rich fens. A combination of plant species such as sedges, lichens, mosses, cattails, bluejoint reedgrass, tufted hairgrass, bog birch *(Betula glandulosa),* or willow species characterizes these habitats.

The CdA FO has placed a priority on restoration of degraded riparian areas, particularly those affected by mining activities. Management of riparian and wetland areas in the planning area is challenging due to intermingled and scattered land ownership patterns. The BLM has made considerable restoration efforts in the Pine Creek (Shoshone County) watershed, which have halted the degradation of plant communities along certain streams (see Section 3.1.3, Water Resources) and are some of the key features of the CdA FO resource management program. Other challenges in restoration of riparian zones occur because some watersheds are shared with other land management agencies that may have different management priorities.

Noxious Weeds
On public lands administered by the BLM and throughout northern Idaho, noxious weeds have invaded and now dominate many roadsides, disturbed areas, and susceptible habitats across the landscape. Invasive species on BLM-administered lands are most likely to be found in disturbed areas, such as forest roads, timber sale areas, and mine sites, though noxious weeds also are invading undisturbed areas, especially dry, open, ponderosa pine forest types.

Noxious weed species having the greatest effect on BLM land in the CdA FO area include spotted knapweed *(Centauria maculosa)*, Dalmatian toadflax *(Linaria genistifolia)*, meadow hawkweed *(Hieracium pratense)*, and common tansy *(Tanacetum vulgare)*. These and other invasive species were historically introduced by livestock, grain production, contaminated hay, wildlife, waterways, and escaped ornamentals. New invasive species continue to be introduced and spread by vehicles, machinery, animals, and humans.

Noxious weed management is coordinated under a cooperative agreement through the Idaho State Department of Agriculture (ISDA) Cooperative Weed Management Areas (CWMAs), which designate weeds for eradication, containment, or management, based on the degree of infestation and the threat that they pose to native habitats. This cooperative agreement is between the USDA-Forest Service, Idaho Panhandle National Forest (IPNF); BLM; Natural Resource Conservation Service (NRCS); Idaho Department of Lands (IDL); Idaho Department of Fish & Game (IDFG); Idaho Department of Transportation (IDT); Coeur d'Alene Tribe; Idaho Department of Parks & Recreation; Kootenai Tribe; Nature Conservancy; Boundary, Bonner, Kootenai, Shoshone, and Benewah Counties; and four local soil conservation districts. Weed management in the CdA FO is based on integrated pest management principles using manual, mechanical, biological, and chemical treatment methods for controlling noxious weeds, as outlined in the *Record of Decision for the Vegetation Treatment on BLM Lands in Thirteen Western States* (BLM 1991). These principles place priority

on strengthening the health of the overall plant community, thereby making it more weed resistant. The CdA FO is a member of two CWMAs, which create weed management plans for large geographical areas.

Inventories in the planning area have not been conducted repeatedly over time to show quantitative trends in weed species populations between data years. However, specific points in time that each weed species was not found in the planning area are known. Deductions can be made for the trend of each species depending on when it was first identified in the planning area compared to the extent of the current population as shown by recent inventory efforts and observations. These are very broad scale trends based on estimated dates of infestations and estimated current extent of individual weed species.

Many noxious weeds are expected to continue to expand concurrently with human disturbances as well as from natural factors such as drought and wildfires. New invaders are threatening to establish in the planning area, potentially compounding the problem. Progress is being made in control of certain widespread weeds with the use of insect biological controls on weeds such as purple loosestrife, Dalmatian toadflax, and spotted knapweed. The threat of the new invaders overshadows much of the progress that has been made. In too many instances, the control of one weed species leads to open space that can be quickly colonized by a different species of noxious weed. Integrated pest management programs are necessary to establish fully functioning stable ecosystems resistant to weed invasions.

Key features of the weeds-control program in the planning area are the presence of CWMAs, which have so far had the greatest impact on populations and outbreaks of weed species. CWMAs provide an efficient means of handling, controlling, and communicating about noxious weed management in the geographic area covered by the CWMA. The sharing of knowledge and resources will achieve better control of weeds, while improving working relationships with the partners and members of the public served by each.

3.2.6 Fish and Wildlife

BLM manages habitat, while fish and wildlife populations are administered by the Idaho Department of Fish and Game (IDFG) or the US Fish and Wildlife Service (USFWS).

Wildlife habitat management in the planning area consists of maintaining and improving food, water, and cover for over 100 species of mammals, 214 species of birds, 37 species of fish, 13 species of reptiles, and 11 species of amphibians. Data regarding the abundance and distribution of nongame species, fur-bearers, and predators are limited. Significant differences in habitat requirements exist between species, whereby good habitat conditions for one species may not meet adequate habitat conditions for another species. To maintain diverse, viable, and abundant populations of wildlife, a mosaic of biologically and structurally diverse habitat types is necessary. Habitats of terrestrial wildlife and special status species are shown in Map #4 in Volume III.

Riparian zones are regarded as the most important habitats for wildlife, providing water and highly variable structural diversity. Aspen stands provide nest sites for cavity-nesting birds, in addition to providing forage and thermal and hiding cover for many other species. Snag trees in aspen and conifer stands are essential to cavity-nesting nongame birds. Large, old, mature live trees provide a habitat component necessary to support many species of birds, bats, and other vertebrate and invertebrate species. These habitat features are found in variable amounts throughout the CdA FO.

Idaho conservation effort, habitat conservation assessment, and conservation strategies have been prepared and are being implemented for 13 BLM sensitive species. These species occupy a variety of the upland, riparian, and aquatic habitats previously described. The goals, objectives, and proposed actions of these

conservation agreements and strategies will be incorporated into the RMP by reference and are further discussed in the Section 3.2.7 of this document.

Fish

More than 11,000 miles of perennial streams cross all lands in northern Idaho. About 129 miles of these perennial streams cross BLM lands. There are also 263 acres of lakes and 465 acres of wetlands that provide potential habitat for 37 fish species (18 native and 18 nonnative [introduced] species) in the Kootenai, Pend Oreille, and Spokane Rivers (includes St. Joe, St. Maries, and Coeur d'Alene Rivers) (Table 3-7).

Table 3-7 Fish Species within the Planning Area [1]

Common Name	Scientific Name	Native or Nonnative	Probable Distribution
Arctic grayling	*Thymallus arcticus*	Nonnative	Kootenai and Spokane drainages
Black bullhead	*Ictalurus melas*	Nonnative	Lakes, ponds, and reservoirs in Spokane River drainage
Black crappie	*Pomoxis nigromaculatus*	Nonnative	Lakes, ponds, and reservoirs in all drainages
Bluegill	*Lepomis macrochirus*	Nonnative	Lakes, ponds, and reservoirs in all drainages
Bridgelip sucker	*Catostomus columbianus*	Native	Spokane River drainage
Brook trout	*Salvelinus fontinalis*	Nonnative	All drainages
Brown bullhead	*I. nebulosus*	Nonnative	Lakes, ponds, and streams in all drainages
Brown trout	*Salmo trutta*	Nonnative	Pend Oreille and Spokane drainages
Channel catfish	*I. punctatus*	Nonnative	All drainages
Golden trout	*Oncorhynchus aguabonita*	Nonnative	Higher elevations in Kootenai and Spokane drainages
Kokanee salmon	*O. nerka-kinnerlyi*	Native	All drainages[2]
Lake chub	*Couesius plumbeus*	Native	Kootenai River
Lake trout	*S. namaycush*	Nonnative	Lake Pend Oreille
Lake whitefish	*Coregonus clumpeaformes*	Nonnative	Lakes in Pend Oreille River drainage
Largemouth bass	*Micropterus salmoides*	Nonnative	Lakes, ponds, and reservoirs in all drainages
Largescale sucker	*Catostomus macrocheilus*	Native	All drainages
Longnose dace	*Rhinichthys cataractae*	Native	All drainages
Longnose sucker	*Catostomus catostomus*	Native	All drainages
Mountain whitefish	*Prosopium williamsoni*	Native	All drainages and lakes
Northern pike	*Esox lucius*	Nonnative	Chain lakes of the Coeur d'Alene River drainage, and throughout system; Lake Pend Oreille
Northern pikeminnow	*Ptychocheilus oregonensis*	Native	All drainages
Peamouth	*Mylocheilus caurinus*	Native	Tributaries below Shoshone Falls and the Coeur d'Alene, Pend Oreille, and Kootenai River systems
Pumpkinseed	*Lepomis gibbosus*	Nonnative	Small lakes and ponds or in shallow weedy bays of larger lakes in all drainages
Pygmy whitefish	*Prosopium coulteri*	Native	All drainages
Rainbow trout	*O. mykiss*	Native	All drainages and lakes
Redside shiner	*Richardsonius balteatus*	Native	All drainages
Slimy sculpin	*Cottus cognatus*	Native	Kootenai and Pend Oreille drainages
Smallmouth bass	*M. dolomieui*	Nonnative	Lakes and some streams in Pend Oreille and Spokane drainages
Speckled dace	*R. osculus*	Native	Spokane River drainages
Tench	*Tinca tinca*	Nonnative	Pend Oreille and Coeur d'Alene systems and at least one farm pond in Latah County

Table 3-7 Fish Species within the Planning Area [1]

Common Name	Scientific Name	Native or Nonnative	Probable Distribution
Tiger muskie	*Esox lucius* x. *masquinongy*	Nonnative	Lakes throughout northern Idaho in all drainages
Yellow perch	*Perca flavescens*	Nonnative	Lakes, ponds, and reservoirs in all drainages

[1]Planning area includes the Spokane, Kootenai, Pend Oreille, and Coeur d'Alene river drainages. Special status species fish are listed in Table 3-8.
[2]Native in part of the state, but introduced into this drainage.
Source: IDFG 2001

Sculpin species, trout, and whitefish inhabit cold-water streams. Arctic grayling inhabit Crater Lake in the headwaters of Delaney Creek (Shoshone County). Such species as black crappie, largemouth bass, northern pike, and yellow perch inhabit warm-water bays and lakes, such as Cougar Bay (Lake Coeur d'Alene) and Gamlin Lake (Bonner County). Many introduced populations, such as brook trout, have replaced native populations of bull trout and westslope cutthroat trout.

Priority habitat areas include riparian and aquatic habitats within the BLM's jurisdiction. These include designated Riparian Conservation Areas (RCAs, where aquatic/riparian-dependent species receive management emphasis. RCAs include streams/rivers, ponds, lakes, springs, and wetlands. RCAs are buffers that change depending on the type of system and are in accordance with INFISH standards and guides.

Wildlife

The planning area is within the north-central portion of the interior Columbia Basin and includes the Northern Glaciated Mountains and Lower Clark Fork Ecological Reporting Units of ICBEMP. Most of the current wildlife habitat and population parameters within the ICBEMP assessment area can be found in the planning area, including changes in forest stand structure, increases in exotic vegetation, decreased biodiversity, habitat fragmentation, and changes in fire frequency and severity.

The complex of topography, vegetation, and climate occurring in the planning area provides diverse habitats for a variety of wildlife species. There are 332 species of wildlife known to occupy northern Idaho. The presence of any species may be seasonal or year-round based on individual species requirements.

Forested habitats largely dominate the landscape in the CdA FO and contain valuable riparian habitat. More species of wildlife inhabit riparian and wetland areas than any other habitat because of the proximity of food, water, and shelter. Approximately 165 animal species inhabit mostly riparian and wetland habitats during some period or season of the year. Twenty-two of these species are designated as special status and are described in Section 3.2.7, Special Status Species. The vegetative communities section (Section 3.2.5) provides additional vegetation and wildlife habitat information. The fragmented land ownership pattern in the CdA FO has made lands managed by the BLM of particular importance because these public lands provide wildlife with critical habitat niches and preferred habitats used by species for breeding, rearing young, foraging, travel between areas (connectivity corridors), and security (refuge) areas.

Of 53 selected wildlife species that use cavities in living, dying, and dead trees, nearly 50 percent are migratory birds and 28 percent are special status species. Sixty-eight percent require trees that are at least 12 inches in diameter at breast height. Many of these animals eat the insects that eat the trees. Many bat species roost in tree cavities and in crevices within tree bark. Bats, especially Townsend's big-eared bat *(Plecotus townsendii),* also roost inside abandoned mine shafts. There are fewer bats in Silver Valley than in the rest of northern Idaho, possibly due to contaminated waters (Keller 2000).

Eleven medium to large carnivores are key species in wildlife communities. These are coyote *(Canis latrans),* gray wolf *(C. lupus),* bobcat *(Lynx rufus),* lynx *(L. canadensis),* mountain lion *(Felis concolor),* fisher *(Martes pennati),* marten (*M. Americana),* river otter *(Lutra canadensis),* wolverine *(Gulo gulo),* black bear *(Ursus americanus),* and grizzly bear *(Ursus arctos horribilis).* These species are mostly far-ranging, elusive, shy, and inconspicuous; are found in low densities; and are active mainly at night. Because they ultimately depend on other populations (e.g., preferred prey species) and processes, carnivores are one gauge of the health of ecosystems. Carnivore interactions with prey populations create dynamics crucial to the balance of these ecosystems and their long-term sustainability. Also, forest carnivores are vulnerable to habitat alteration and exploitation, and they have a long and complex historical relationship with humans (Witmer et al. 1998, including original citations).

Big Game

Game animals, which are hunted on BLM lands, include elk *(Cervus elaphus),* white-tailed deer *(Odocoileus virginianus),* mule deer *(O. hemionus),* moose *(Alces alces),* black bear *(Ursus americanus),* and mountain lion *(Felis concolor).* The mountain goat *(Oreamnos americanus)* is also present in the planning area, although not in significant numbers.

The IDFG has developed management objectives for big game animals and worked with various federal agencies in setting and achieving these objectives. The current *IDFG White-Tailed Deer, Mule Deer, and Elk Management Plan* (1999) includes species status and management objectives and is designed to be reviewed and updated regularly.

The CdA FO's resident big game animals typically move between spring/summer ranges and winter ranges annually. Important habitat (crucial habitat) is defined as being habitats essential to some aspect of the animal's life history. These are typically winter range, calving, or fawning grounds for elk and mule deer. Elk winter ranges are found throughout the CdA FO on mid- to low-elevation mountain shrub sites. Elk do not seem to have a fidelity to a particular winter range but may move among them from year to year (Ackerman et al. 1984).

Of the almost 1 million acres of elk winter range that occurs in the entire five-county region that contains CdA FO lands, 28,000 acres (3 percent) occur on BLM-managed lands (RMEF 1999). About 7,700 acres (28 percent) considered critical/crucial elk winter range occur on BLM land.

Close proximity to water remains an important factor within spring, summer, and fall habitats and is provided by both natural sources (streams, lakes, springs, seeps) and some artificial sources (stock watering ponds and tanks) in the CdA FO. Year-long or spring-summer-fall elk ranges are present throughout the region at higher elevations wherever forested habitat and topography provide good security from roads, motorized trail, and other human activities. Major summer habitats preferred by elk include aspen/conifer, mountain shrub, dry conifer, mid-elevation shrub, and riparian vegetation types. The location of and scattered nature of public lands means that the amount of elk summer habitat managed by the BLM is minimal.

Mule deer populations are presently considered low, with current management direction focused on improving existing numbers. Current efforts by IDFG include improving habitat through cooperation with land management agencies and private landowners. Preferred habitats are characterized by vegetation mosaics of aspen/conifer or tall brush hiding cover, mixed with grass foraging sites. Winter ranges are mid- to low-elevation shrub. Proximity to water is an important factor during spring, summer, and fall, which enhances deer dependency on riparian zones. Aspen stands provide an important required habitat component for fawning and fawn-rearing cover. Year-long or spring-summer-fall mule deer ranges are present throughout

the region at higher elevations wherever forested habitat and topography provide good security from roads, motorized trails, and other human activities.

White-tailed deer in the CdA FO are predominantly associated with major riparian areas, such as the Kootenai and Coeur d'Alene Rivers. As Black (2004) indicated, white-tailed deer populations are rapidly expanding across their range, while mule deer populations have declined across the western US. White-tailed deer are displacing mule deer on several different ranges, including the eastern plains of Montana, Snake River plains in Idaho, Blackfoot Indian Reservation in Idaho, and in many places throughout Canada.

White-tailed deer and mule deer often occupy the same habitats, have almost identical food preferences, and have similar habitat preferences. However, white-tailed deer will out-compete mule deer for available resources, such as food and shelter, in most habitat types. The major difference between the two is that white-tailed deer tend to occupy their habitats year-round, where the mule deer migrate between summer and winter ranges. This allows mule deer to use higher elevation habitats that could not be occupied year-round.

Moose populations in the planning area are considered to be increasing, with management direction focused on improving or maintaining existing numbers. Generally, moose territories tend to be yearlong with elevational changes from winter to summer within the territory. Winter habitats are characterized by mid-elevation and mountain shrub species, such as serviceberry and willow. These species, interspersed with coniferous and deciduous trees, provide adequate winter forage and thermal cover requirements. Throughout the spring, summer, and fall, moose use riparian habitat areas as well as the adjacent aspen and wet/cold conifer cover types, which provide calving, foraging, and thermal cover.

Habitat loss and fragmentation and unrestricted harvest have significantly changed the distribution and abundance of black bears in North America since colonial settlement. Although bears have been more carefully managed in the last 50 years and harvest levels are limited, threats from habitat alteration and fragmentation still exist. Black bear populations are difficult to inventory and monitor because the animals occur in relatively low densities and are secretive by nature. Black bears are an important game species in Idaho, but because bears have low reproductive rates, their populations recover more slowly from losses than do those of most other North American mammals (Vaughan and Pelton 1995).

Black bear distribution in Idaho corresponds closely to the distribution of coniferous forests. Vaughan and Pelton (1995) indicated that in Idaho the black bear population is somewhere between 20,000 and 25,000 animals, with a slightly decreasing population trend. In the CdA FO, most bear habitat is found in the higher elevations of the national forests, including the mountain shrub, dry and wet conifer, and aspen-conifer cover types.

The mountain lion is usually associated with remote rough topography and is generally a solitary animal. Its annual home range varies greatly in different areas. In Idaho, home ranges of males were from 36 to 152 square miles (mi^2), while females had home ranges of 9 to 98 mi^2. However, home ranges of up to 969 mi^2 have been reported. Seasonal movements occurred within home range in response to prey movements; mountain lions moved farther in summer than in winter while hunting their prey, and some altitudinal movement was associated with ungulate movements and snows in winter. Natural enemies include large predators such as bears, other lions, and wolves.

The mountain lion relies heavily on mule deer, which may comprise up to 75 percent of their diet throughout the year. They also occasionally prey on livestock, primarily sheep and cattle. The mountain lion is managed as

a game species in Idaho. Generally, mountain lions will be found where there are healthy deer populations in the CdA FO.

Upland Game Birds and Small Game
The CdA FO contains habitat for many small game and upland game birds that are of interest to hunters and outdoor enthusiasts alike. Much of the habitat for these species is found in the transition areas from BLM land to Forest Service land or BLM land to private land, particularly agricultural lands.

The primary upland game species found on the public lands throughout the region are blue grouse *(Dendragapus obscurus),* ruffed grouse (*Bonasa umbellus),* and mourning dove. Mourning doves nest throughout the CdA FO in most habitat types. Preferred blue grouse and ruffed grouse habitat is closely associated with dry conifer, aspen, and riparian habitat types. Blue grouse winter in high-elevation timber, both on BLM-administered lands and adjacent National Forests, where they feed on needles of Douglas-fir and buds of both Douglas-fir and aspen. Riparian areas are important to forest grouse for brood rearing due to the presence of insects, preferred forbs, and berry-producing shrub species. Additionally, herbaceous cover is an important component of brood-rearing habitat, directly affecting areas of use and brood survival (Harju 1974; Zwickel 1972). Spruce grouse *(Falcipennis canadensis),* white-tailed ptarmigan *(Lagopus leucurus),* ring-necked pheasant *(Phasianus colchicus),* and gray (Hungarian) partridge *(Perdix perdix)* are also found in the planning area.

Wild turkeys occur in various locations of the CdA FO. Preferred habitats include riparian zones and adjacent woodland areas. Public lands along river corridors provided the most habitat requirements, especially roosting and escape cover. Populations apparently occur in suitable habitats, ranging in elevation up to the aspen and conifer habitats.

Cottontail rabbits are present in variable numbers throughout the region, inhabiting many of the low elevation shrub and riparian areas.

The snowshoe hare typically lives in forested areas and is not very common on public lands. In the summer it has a thin brown coat, which changes to a heavy white coat in winter. Hares feed on grasses, forbs, shrub shoots, tree bark, woody twigs, and tree buds from aspen, willow, and maple, which are found in aspen, conifer, and higher elevation riparian habitats. Many species prey on snowshoe hare, including coyotes, foxes, Canada lynx, bobcats, great horned owls, and larger hawks. In addition to the small game species previously mentioned, IDFG maintains a season for the American crow.

Other Animals
The categories below are defined by regulations published by IDFG.

- ***Fur-bearers*** include beaver, mink, muskrat, otter, and raccoon; these species depend on aquatic or riparian habitats. Bobcats tend to be found in various habitats in hilly or rugged country, often associated with extensive cliffs or rock outcrops. Red fox occupy the more extensive and varied upland habitat types. Badgers are found throughout the perennial grassland and low-elevation shrub habitats, where ground squirrels and other rodents are prevalent.
- ***Predatory wildlife*** are classified by IDFG as predators in Idaho and include coyotes, jackrabbits, skunks, weasels, and starlings, all of which are found in a variety of habitats in the planning area (Idaho State Code Chapter 2-Section 36-202). Coyotes occupy most habitat types throughout the region and are considered extremely opportunistic in prey selection.

- ***Unprotected Wildlife*** are species the IDFG considers as unprotected wildlife, meaning that these species can be harvested at any time and in any number with a valid hunting license. These species include marmots, fox squirrels, porcupines, English sparrows, and feral pigeons.
- ***Protected Nongame Wildlife*** are nongame wildlife species found in the planning area that are protected by Idaho law; these species include red squirrels, wolverines, chipmunks, golden-mantled ground squirrels, rock squirrels, pikas, northern flying squirrels, migratory song birds, hawks, owls, eagles, and vultures. All native bats, reptiles, and amphibians are protected by Idaho Department of Fish & Game Commission Rule.

All Idaho bats feed on insects and use a wide variety of habitat for foraging and roosting, ranging from caves and cliffs to conifer trees. Some bats hibernate in Idaho during winter, whereas others migrate to warmer regions. Of the 14 species of bats found in Idaho, 11 species have been found in the planning area throughout most habitat types. Townsend's big-eared bat and fringed myotis are considered sensitive by the BLM.

The raptors that spend all or part of the year in Idaho include 13 species of owls, one species of vulture, and 18 species of hawk-like birds, including falcons, eagles, buteos, accipiters, harriers, and osprey (BLM 2004c). Many of the aforementioned species of raptors are found in various habitats in the planning area.

Migratory Birds

Migratory birds include a number of species that spend the winter in the southern latitudes and fly north to nest and fledge their young in the summer. Some migrate as far as from the Arctic Circle to the southern tip of South America. Others may only move from Idaho to Arizona. Migrants vary in size from hawks to waterfowl.

Many species that are protected by the Migratory Bird Treaty Act are found in the planning area. Most of these species are waterfowl and songbirds, but the list also includes species such as gulls, owls, and hawks.

Throughout the planning area, numerous species of waterfowl inhabit wetlands, riparian areas, and reservoirs. These areas provide nesting, brood rearing, and spring/fall migration habitat. Additionally, some important seasonal habitat for a variety of shorebird species is found in the mudflats around the major reservoirs. Some of the more important areas providing habitat for waterfowl and shorebirds include Spokane, Kootenai, and Coeur d'Alene River.

Songbirds are a group of birds that includes those most familiar to people, such as warblers and sparrows. Because this is such a large group, it is difficult to discuss details of the numerous lives and habitats involved.

All of these species depend on quality habitats containing adequate nesting substrate with sufficient cover to hide the female on the nest, diverse vegetation to supply insects during brood rearing, and seeds or fruits, for those that eat them, for the remainder of the year.

Crucial raptor nesting habitat in the planning area includes cliff-nesting sites used by golden eagles, prairie falcons, peregrine falcons, and red-tailed hawks. Wet/Cold and Dry Conifer types, aspen, and riparian areas (containing mature cottonwood trees) are used by forest hawks, including northern goshawks, Cooper's hawks, and sharp-shinned hawks, as well as many of the owl species and bald eagles. Artificial nest platforms and power poles near riparian areas provide nesting sites for osprey, although none are currently located on public land. Those species that BLM considers sensitive (goshawks and peregrine falcons) are further discussed in the special status species section of this document.

The Idaho Bird Conservation Plan describes the most important habitats, which were prioritized by looking at the number of birds that use a habitat as primary breeding habitat and by the numbers of high priority birds that use the habitats. Idaho Partners in Flight (IPIF) also considered the loss of habitat in quantity and quality, including the area of habitat within the state, management status, and whether that habitat area provides moderate to good protection from degradation. Based on these criteria, IPIF identified their priorities as riparian, nonriverine wetlands, and ponderosa pine.

Past impacts on riparian areas have resulted from channelization/diversion (mostly at lower elevations), fire suppression, livestock grazing, recreational development, agriculture, road location, and past mining. Additionally, the loss of beaver and the dam complexes they constructed has resulted in accelerated erosion, loss of water storage capacity, and wetland/meadow maintenance.

Reptiles
Eleven species of reptiles, including two turtles, five lizards, and four snakes, are found in various habitats in the planning area.

Two garter snakes occur throughout Idaho in many habitats, including wooded areas. However, they prefer moist habitats near riparian areas, lakes, or damp meadows. They feed on toads, frogs, fish, salamanders, small mammals, earthworms, slugs, leeches, and insects. While still seen, they don't seem to be as abundant as they have been in the past (Stebbins 2003).

Amphibians
Most amphibians have complex life cycles (adults, eggs, and larvae that metamorphose into juveniles) that require habitats with standing/still water for at least part of the year. Five salamander, one toad, and five frogs are found in the planning area. The boreal subspecies of the western toad and the northern leopard frog are sensitive species and are discussed in Section 3.2.6.

Trends
In general, with the settlement of northern Idaho during the past century there as been a downward trend in habitat health as wildlife has responded adversely (e.g., avoidance of areas and decrease in suitable habitat for feeding, breeding, and resting) to the following changes in vegetation:

- Early successional tree species replaced by late successional tree species;
- Larger older trees replaced by smaller younger trees (decreased cavity-nest niche);
- Multistory canopies replaced by single-story canopies (decreased complexity);
- Native species replaced by noxious weed species;
- Large stands of forest replaced by small stands of forest (increased habitat fragmentation); and
- Increased numbers and densities of roads (habitat fragmentation and disturbance from human activities).

Habitats for most species declined strongly from historical to current periods across large areas of the Columbia Basin (Wisdom et al. 2000). Severe declines have occurred for species that depend on low-elevation, old-forest habitats and those that depend on combinations of rangelands or early seral forests with late-seral forests.

Widespread, but less severe, declines have occurred for the following:

- Species dependent on old-forest habitats;
- Species dependent on early seral forests; and
- Species dependent on native herbland, shrubland, and woodland habitats.

The primary causes for the decline in old-growth forest and early-seral habitats are intensive timber harvest and fire suppression. Additional causes for the decline in low-elevation, old-forest habitats are conversion of land to agriculture and to residential or urban development. Primary causes for decline in native herbland, shrubland, and woodland habitats are excessive livestock grazing, invasion of exotic plants, and conversion of land to agriculture and residential and urban development. Altered fire regimes also are responsible for the decline in native grassland and shrubland habitats (Wisdom et al. 2000). Noss et al. (1995) concurred with this conclusion when they reported 60 to 70 percent of the old-growth ponderosa pine forest in Idaho has been degraded from fire suppression and logging of superior trees in more accessible areas.

Among the 132 migratory land bird species that breed in the Interior Columbia River Basin, 38 species showed significant population trends over two periods: 1968 to 1994 (26 years) and 1984 to 1994 (10 years). Fourteen species had significant declines over the 26-year period and 13 over the 10-year period; 13 and 12 species showed significant increases over those same periods, respectively. More species were predicted to be more negatively affected by consumptive demand than any other theme (Saab and Rich 1997).

The historical harvest of large roost trees has influenced populations of bats that inhabit those trees, and it appears, although it has not been proven, that populations have been reduced with the loss of these trees.

Several carnivores in the western United States have declined dramatically in the last century and a half and are listed as threatened or endangered species or are considered sensitive by land management agencies, as described in Section 3.2.7 (Witmer et al. 1998, including original citations). Increasing development and use of roads, including both forest roads and highways, are primary factors affecting carnivores. Highways also act as significant barriers to movements for some species, although the impacts of roads and other barriers to animal movements are not well documented. Studies of wolves and grizzly bears suggest that reducing the number of roads in forest environments is important to maintaining normal habitat use patterns and to lowering human-caused mortality (Witmer et al. 1998).

Many habitats likely are underused by some species due to the effects of roads and associated factors; this may be especially true for species of carnivorous mammals, particularly gray wolf and grizzly bear (Wisdom et al. 2000).

Native wildlife populations are likely to continue at a rate similar to recent years, but less severe than historic times, unless specific and comprehensive measures are undertaken to restore habitat quality, quantity, and important migratory corridors. State and federal agencies are attempting to reverse the trends that threaten native biodiversity and abundance within the planning area. This includes recovery plans for threatened and endangered species, forest plans, and executive orders. However, it has not yet been determined whether these management actions will be sufficient to stave off this decline when countered by the predicted increase in population, development, recreational activities, and commodity extraction in the planning area.

Priority habitat areas that have been identified for restoration and protection include old-growth forest habitats, early seral forests, snags, riparian and wetland habitats, mines and caves supporting bats, and roadless areas. These habitats are critical to the integrity of the northern Idaho ecosystem and in supporting fish and wildlife species native to the planning area.

3.2.7 Special Status Species

Special Status Fish

The planning area is within the north-central portion of the interior Columbia Basin, and it includes the Northern Glaciated Mountains and the Lower Clark Fork Ecological Reporting Units of ICBEMP. Rivers and streams flowing through BLM lands in the CdA FO do not contain anadromous fish species. Five special status fish species have been identified within the planning area (Table 3-8).

Table 3-8 Special Status Fish Species in Northern Idaho

Status	Type	Common NAME	Scientific Name	Habitat
Federally endangered	1	White sturgeon (Kootenai River)	*Acipenser transmontanus*	Kootenai River—large cool rivers or streams
Federally threatened	1	Bull trout	*Salvelinus confluentus*	Cold-water lakes, rivers, and streams; spawns in rivers and streams
Sensitive species	2	Burbot	*Lota lota*	Kootenai River—cool waters of large rivers and lakes; spawns in shallow sandy bays or gravel shoals
Sensitive species	3	Westslope cutthroat trout	*Oncorhynchus clarki lewisi*	Cold-water lakes, rivers, and streams; spawns in rivers and streams
Watch list	5	Shorthead sculpin	*Cottus confusus*	Cold-water rivers and streams

Type:
1 Threatened, endangered, proposed, and candidate species
2 Rangewide/globally imperiled species
3 Regional/state imperiled species
4 Peripheral species
5 Watch list

Table 3-9 shows the amount of habitat available for sensitive fish species in northern Idaho. Priority habitat areas include aquatic and riparian habitats in stream and river segments containing sensitive fish populations. These habitats are critical to the integrity of the northern Idaho ecosystem and in supporting fish species native to the planning area.

Table 3-9 Available Sensitive Fish Species Habitat in Northern Idaho

Fish Species	Total Miles	BLM Miles	Percent BLM
Perennial streams	11,050	129	1.2
White sturgeon (Kootenai River)	217	0	0
Bull trout	1,732	11	0.7
Burbot (Kootenai River)	245	0	0
Westslope cutthroat trout	4,657	68	1.5
Sculpin species	849	19	2.2

Note: The BLM manages 3.84 acres of streambank on an inside corner of the Kootenai River.

The Kootenai River white sturgeon inhabits 217 miles of the Kootenai River. These fish have not successfully spawned in recent years. Changes in flows from Libby Dam are the biggest threat to this population. Land management activities are considered a secondary impact on populations of this species (Lee et al. 1997).

Bull trout are widely distributed across the interior Columbia River basin, although their estimated current range is about 60 percent of their historic range. This species is in widespread decline, and many local

extirpations have occurred across their range. Watersheds that are currently predicted to be strong spawning and rearing areas represent six percent of the historic range. Migratory life histories have been lost or limited throughout the range (Lee et al. 1997). Bull trout currently inhabit about 11 miles of streams across BLM public lands, as compared to 1,732 miles across all of northern Idaho. Spawning and rearing habitat for these species is found in the Little North Fork Clearwater River, and migration corridors and juvenile rearing habitat occur in the Coeur d'Alene River and Coeur d'Alene Lake. Bull trout can also been found in both the Kootenai and St. Joe Rivers and some of their tributaries.

Burbot, also known as ling cod, has been petitioned for listing under the ESA. This species inhabits about 245 miles of the Kootenai River, and its population is very depressed from historic levels. Changes in hydrologic flows caused by Libby Dam are the biggest threat to this population.

Westslope cutthroat trout was petitioned for listing under the ESA, although the USFWS determined its listing to be "not warranted," a decision that is undergoing a court-ordered status review. Westslope cutthroat trout are still widely distributed, but remaining populations may be seriously compromised by habitat loss and genetic introgression (Lee et al. 1997). This subspecies is estimated to occur in 11 percent of its historic range in Idaho (Rieman and Apperson 1989). Most of the populations in northern Idaho are depressed. Migration barriers, such as dams and irrigation diversions, have isolated or eliminated habitat once available to migratory populations. Small and often isolated populations persist throughout the range, but the long-term outlook for many of these populations is poor. The core of strong populations is associated with the Central Idaho Mountains. The Upper Clark Fork regions are important but are more fragmented and restricted to a relatively smaller portion of the historical distribution (Lee et al. 1997). Westslope cutthroat trout inhabit about 68 miles of streams across BLM public lands, as compared to 4,657 miles across all of northern Idaho.

Shorthead sculpins live in similar waters as trout throughout the Coeur d'Alene and St. Joe Rivers. This species prefers cool clear water in streams but can also be found in larger rivers (Simpson and Wallace 1982). Specific data on shorthead sculpins are limited, although sculpin species occupy 849 stream miles in northern Idaho, of which 19 cross BLM public lands.

Prior to human-caused disturbances, major changes in native biodiversity have resulted from shifts in climate and/or geology. However, human influences have substantially affected ecological processes and biodiversity and will likely continue. In general, water quality and riparian and fish habitats have experienced slight upward trends during the past decade. This is due to environmental cleanups, habitat improvements, and protection measures (such as INFISH) to preserve the species and the existing habitat.

Since 1979, the status of several species has changed; Kootenai River white sturgeon changed from BLM sensitive species to federally endangered, bull trout changed from unlisted to federally threatened, burbot and westslope cutthroat trout changed from unlisted to BLM sensitive species, and shorthead sculpin became a BLM watch list species (Table 3-10).

Table 3-10 Change of Special Status Species from MFP to RMP

Common Name	1979 Status	2004 Status
White sturgeon Kootenai River	Sensitive species	Federally endangered
Bull trout	None	Federally threatened
Burbot	None	Sensitive species
Westslope cutthroat trout	None	Sensitive species
Shorthead sculpin	None	Watch list

It is likely that general water quality and riparian and fish habitat will continue to experience slight improvements from continued implementation of protective measures. However, because the primary factor affecting white sturgeon and burbot in the Kootenai River is the operation of Libby Dam, the future trends of these species is uncertain.

Special Status Terrestrial Wildlife

Threatened and endangered terrestrial wildlife species include federally listed threatened and endangered wildlife occurring within the planning area (Table 3-11). Species are woodland caribou (endangered), bald eagle (threatened), Canada lynx (threatened), gray wolf (endangered north of I-90, experimental/nonessential south of I-90), and grizzly bear (threatened). Table 3-12 lists the acreages of habitat in the planning area and on BLM-managed lands. The yellow-billed cuckoo is a federal candidate species that could occur within the planning area. Twenty-eight BLM-designated sensitive terrestrial species occur within the planning area.

Woodland Caribou

The current population of woodland caribou is approximately 50 animals in two herds in northern Idaho, northeastern Washington, and southeastern British Columbia. Three augmentations of animals in northern Idaho with a total of 60 caribou from British Columbia were conducted from 1987 to 1990. An additional 43 caribou were released in the Recovery Zone during a second population augmentation effort from 1996 to 1998. Woodland caribou are generally found above 4,000 feet elevation in mature and old growth Engelmann spruce/subalpine fir and western red cedar/western hemlock forest types. The BLM manages 89 acres of caribou winter habitat within the Selkirk Wilderness Study Area (WSA) (Table 3-12). Because caribou only winter in the planning area, only winter activities impact the species. The recovery objectives for woodland caribou are to maintain an increasing population and to secure and enhance at least 443,000 acres of habitat in the Selkirk Mountains (USFWS 1994).

Table 3-11 Federally Listed and Candidate Terrestrial Wildlife Species in the Planning Area

Common Name	Status	
Woodland caribou	Endangered	Habitat loss and mountain lion predation have been the largest contributing factors for downward trend.
Canada lynx	Threatened	The lack of administrative protection measures for this species was the major contributing factor for listing.
Northern gray wolf	Endangered (north of I-90) Experimental/ Nonessential (south of I-90) (classification under the Endangered Species Act, meaning that the population is not considered essential to the survival of the species, but remains protected).	The USFWS was exploring options for delisting because wolf populations have increased beyond the recovery goals. Idaho, Montana, and Wyoming would take over management of this species within their boundaries when the USFWS approves each state's management plan. A US District Court decision in January 2005 struck down a previous downlisting of gray wolf from endangered to threatened.
Grizzly bear	Threatened	In 1999, the USFWS determined that the Selkirk and Cabinet/Yaak grizzly bear ecosystems should be combined,

Table 3-11 Federally Listed and Candidate Terrestrial Wildlife Species in the Planning Area

Common Name		Status
		and the grizzly bears in both warranted but were precluded from reclassification as an endangered species.
American bald eagle	Threatened	The USFWS proposed delisting this species in 1999 because its national population has increased beyond the recovery goals.
Western yellow-billed cuckoo	Candidate for listing	One siting of a cuckoo in 2004.

Table 3-12 Threatened and Endangered Species Habitat Acreages in Northern Idaho

Species	Total Area (Acres)	Area (Acres) on BLM Lands	Percentage on BLM Lands
Woodland caribou	290,397	89	0.03
Bald eagle		15.95 miles	
Canada lynx	156,725	49,331	31.5
Gray wolf	5,062,421	96,243	1.9
Grizzly bear	376,640	4,324	0.01
Yellow-billed cuckoo	16,395	111	0.7

The status of woodland caribou has changed from a BLM sensitive species in 1979, when the previous plan was written, to federally threatened at present. Losses of habitat and mountain lion predation have been the largest contributing factors for this downward trend.

Bald Eagle

In 1989, biologists monitored 11 active bald eagle nests producing 11 chicks in northern Idaho. In 2003, biologists monitored 49 active nests, producing 64 chicks in northern Idaho. One nest near Morton Slough and three nests along the Kootenai River are on BLM public lands. Also, biologists have conducted a mid-winter survey of bald eagles during the second week of January since 1980. In northern Idaho, the numbers have ranged from 84 to 389 eagles, with an average of 172 bald eagles. The wintering population around Wolf Lodge Bay has ranged from 10 birds in 1983 to 156 birds in 2004.

Returning to the same territory each year, bald eagles nest from March through July. They construct and reuse stick nests in trees that are near water. Trees must be large enough to support the heavy nest and provide open space between branches to accommodate a seven-foot wingspan. The adult pair will occasionally use alternate nest trees within the same territory. During the day, eagles will perch in different trees, both living and dead, which allow easy approach and departure by the large birds. Bald eagles eat mostly fish, but will also eat waterfowl and carrion. Bald eagles are normally intolerant to human disturbance during the breeding season.

Bald eagles migrate from Canada into northern Idaho during November. Some birds will continue moving south, while others will stay near open water through February. During the day, the eagles perch in large trees, both living and dead, which allow easy approach and departure by the large birds. At night, the eagles roost in communal sites away from the water that offer more protection from weather than daytime perches. Bald

eagles feed daily on post-spawned Kokanee salmon from early morning through the afternoon. Waterfowl provide alternate food when the supply of salmon diminishes.

The status of bald eagle has changed from federally endangered in 1979 to threatened at the present (Table 3-11). The USFWS proposed delisting this species in 1999 because its national population has increased beyond the recovery goals. This potential delisting has not yet occurred.

Canada Lynx

The USFWS concluded that a self-sustaining resident population of Canada lynx does not exist in Idaho, but individual animals are present. From 1901 to 1999, there have been 45 recorded sightings of Canada lynx in northern Idaho, 26 of which were made in the 1990s. The BLM manages 49,331 acres of lynx habitat (Table 3-12).

In northern Idaho, Canada lynx have been seen in forests composed of western red cedar and western hemlock at lower elevations and lodgepole pine, subalpine fir, and Engelmann spruce at higher elevations. Secondary vegetation, when interspersed within subalpine forests, includes moist Douglas-fir, grand fir, western larch, and aspen forests. Lynx require denning habitat during birthing and rearing of kittens until they are mobile. The common component appears to be large amounts of coarse woody debris, such as downed logs and root wads, which provides escape and thermal cover. Denning habitat may be found either in older mature forest of conifer or mixed conifer/deciduous types or in regenerating stands (more than 20 years since disturbance).

Lynx are specialized predators that hunt primarily snowshoe hares and secondarily red squirrels. Foraging habitat supports these animals. The best snowshoe hare habitats support a high density of young trees or shrubs (over 4,500 stems or branches per acre) that are tall enough to protrude above the snow. These conditions may occur either in early successional stands following disturbance or in older forests with a substantial amount of shrubs and young conifer trees. Coarse woody debris, especially in early successional stages (created by harvest regeneration units and large fires), provides important cover for snowshoe hares and other prey. Red squirrel densities tend to be highest in mature cone-bearing forests with substantial quantities of coarse woody debris.

Lynx habitat, currently in unsuitable condition, is in early successional stages as a result of recent fires or vegetation management, where the vegetation has not sufficiently developed to support snowshoe hare populations during all seasons. Management-created openings would likely include clear-cut and seed tree harvest units and might include shelterwood and commercially thinned stands, depending on unit size and remaining stand composition and structure. Unsuitable areas, such as lakes, low elevation ponderosa pine forests, and alpine tundra, do not support snowshoe hare populations and are not considered to be capable of providing lynx habitat.

The status of Canada lynx has changed from sensitive species in 1979 to federally threatened at present. The lack of administrative protection measures for this species was the major contributing factor for this change of legal status (Table 3-11). Recovery objectives have not been established for Canada lynx.

Gray Wolf

Gray wolves are currently designated endangered north of Interstate 90, and experimental/ nonessential south of Interstate 90 (Table 3-11). Gray wolf populations were extirpated from the western US by the 1930s. Wolves occasionally dispersed into Montana and Idaho from Canada but failed to survive long enough to reproduce. Subsequently, USFWS released 35 gray wolves into central Idaho in 1995 and 1996. By the end of 2002, nineteen wolf packs with 284 animals were in the central Idaho recovery area. The Marble Mountain

wolf pack had at least six animals, produced three pups, and experienced two mortalities from unknown sources in 2002 (USFWS et al. 2004).

Transient wolves move throughout northern Idaho. Wolves inhabit large contiguous, coniferous forests that are relatively free of human disturbance. Deer, elk, and moose are primary prey species, and small mammals and grouse are alternate prey. Adult female wolves give birth from late March to late April inside dens excavated out of the earth. The wolf pack will depart the whelping den for a series of rendezvous sites during summer and early fall. Wolves will travel along or across roads and trails. Wolf packs range throughout their territories in search of deer, elk, and moose, especially during winter. Size of the pack can vary from one pair to an entire family group.

The gray wolf north of Interstate 90 was downlisted from federally endangered to threatened in 2003 (Table 3-11). The USFWS was recently exploring options for delisting the wolf because its populations have increased beyond the recovery goals. Idaho, Montana, and Wyoming would take over management of this species within their boundaries when the USFWS approves each state's management plans. A court decision in January 2005 struck down the 2003 rule that downlisted gray wolf from endangered to threatened, so that the current status of wolf has been returned to endangered north of I-90. The experimental nonessential population south of I-90 has not changed its status. The recovery goal for northern Rocky Mountain wolf is to secure and maintain a minimum of ten breeding pairs of wolves in each of the three recovery areas (northwest Montana, central Idaho, and the greater Yellowstone area) for a minimum of three successive years (USFWS 1987). All lands within the CdA FO could potentially support wolves (Table 3-11).

Grizzly Bear

Grizzly bears have been eliminated from approximately 98 percent of their historic range within the lower 48 states. Today, approximately 1,200 to 1,400 grizzly bears remain in five scattered populations in Idaho, Montana, Washington, and Wyoming. Only the Yellowstone Ecosystem and Northern Continental Divide Ecosystem have populations of several hundred grizzlies. Wakkinen and Kasworm (2002) estimated the populations to be 30 to 40 bears for the Cabinet-Yaak and 40 to 50 bears for the Selkirk Mountains recovery zones.

Grizzly bears are solitary animals except when breeding, caring for young, or congregating at abundant sources of food. They inhabit densely covered forests, especially for bedding sites, adjacent to open parks for feeding sites. Bears excavate dens on steep slopes at higher elevations where wind and topography allow an accumulation of deep snow. They hibernate from about November 15 through April 1 each year. After emerging from their dens, bears move to lower elevations seeking green plants and wintering ungulates. As summer progresses, bears move upslope as they follow maturing plants. Bears bulk up on berries and nuts during late summer and fall in preparation for their long winter sleep.

The Interagency Grizzly Bear Committee (IGBC 1998) recommended that core habitat consist of all lands at least 500 meters (0.31 mile) from any road (open or restricted), motorized trail, or high intensity use area. Core habitat may contain restricted roads, but such roads must be closed with devices, including but not limited to earthen berms or barriers, or naturally closed by vegetative growth. Wakkinen and Kasworm (1997) recommended that all bear management units (BMUs) have at least 55 percent core habitat. The Selkirk/Cabinet-Yaak Subcommittee (1998) approved this recommendation for only Priority 1 BMUs and a "no net loss" of existing core habitat on federal ownership for all BMUs. The USFWS (2004) believes any reduction from 55 percent core habitat is likely to have adverse effects on grizzly bears.

Wakkinen and Kasworm (1997) concluded that open motorized route densities (OMRD) greater than one mile per square mile should not exceed 33 percent of the area of an individual BMU and that total motorized route densities (TMRD) greater than two miles per square mile should not exceed 26 percent of the area of an individual BMU. The USFWS (2004) believes any addition to these OMRD and TMRD standards are likely to have adverse effects on grizzly bears.

Effective grizzly bear habitat is defined as the amount of secure grizzly bear habitat (habitat at least one quarter mile from open roads, developments, and high levels of human activity) remaining within BMUs after affected areas are subtracted from the total habitat within the BMUs. Controlling the quantity of open and total roads within BMUs (i.e., access management) offers probably the strongest tool for providing effective grizzly bear habitat. The BLM manages more than 1,500 acres of grizzly bear habitat, primarily within the Selkirk Wilderness Study Area (WSA) (Table 3-12).

The status of the grizzly bear has not changed from federally threatened in 1979 to the present time. In 1999, the USFWS determined that the Selkirk and Cabinet/Yaak grizzly bear ecosystems should be combined, and the grizzly bears in both were warranted but precluded from reclassification as an endangered species (Federal Register Vol. 58, No. 28, 1993, pp. 8250-8251).

Yellow-Billed Cuckoo

The status of yellow-billed cuckoo has changed from no status in 1979 to a candidate for federal listing at the present (Table 3-11). Yellow-billed cuckoos inhabit large groves of cottonwood trees. The only observation of yellow-billed cuckoo in northern Idaho were "recorded by Merrill (1897) who reported one bird seen July 30, 1895, at Fort Sherman (Coeur d'Alene)" (Burleigh 1972), and a siting of a single cuckoo on the CdA golf course in 2004. The species probably no longer inhabits northern Idaho, although there about 111 acres of suitable cuckoo habitat on BLM-managed lands in the CdA FO (Table 3-12).

Trends

The overall trend for wildlife has been defined by the loss of greater amounts of habitat and their exposure to the growing amount of disturbance that has occurred since settlement of northern Idaho in the past century. Although eight wildlife species have been removed from the BLM Sensitive Species list since implementation of the 1981 MFP, 24 species have been added to the list. Three species were added to the Idaho list, and 20 species were added to the BLM watch list.

If the historic trend of habitat loss and disturbance does not slow down or reverse, then species currently listed as sensitive are likely to be listed as threatened or endangered. Wolverine and species that inhabit old-growth forests are the next likely candidates in northern Idaho for federal listing. The future for Canada lynx and grizzly bear would remain similar to current conditions or would worsen without additional action. Numbers of bald eagle and gray wolf would likely continue to show modest increases.

Key features identified for terrestrial wildlife in Section 3.2.6 apply to special status terrestrial wildlife as well, especially roadless mature forested areas and areas that could be returned to this condition, den sites for lynx and wolf, and bald eagle nests if found on BLM lands.

Special Status Plants

BLM special status plants are defined as those species currently listed as threatened or endangered under the Endangered Species Act, as well as species that are proposed or candidates for listing (Table 3-13). It also includes species designated as sensitive by the BLM State Director. BLM sensitive species are protected, managed, and conserved in the same manner as federal candidate species. In Idaho, the BLM has defined and

Table 3-13 Special Status Plants Known from or with the Potential to Occur within the Planning Area

Common Name and Scientific Name	Habitat	Idaho BLM Status	# of Occurrences in Decision Area/Planning Area[1]
Deerfern *(Blechnum spicant)*	Moist forest and riparian areas in cedar/hemlock forest.	Watch	0/26
Slender moonwort *(Botrychium lineare)*	Grassy slopes, streamside edges, and forest stands.	Candidate	0/1 (historical)
Mingan moonwort *(B. minganense)*	Western red cedar, western hemlock, grand fir, subalpine fir, and lodgepole pine forests, as well as brushfields.	Sensitive	2/45
Moonwort species *(Botrychium* spp.)	Found in a variety of habitats ranging from damp meadows and boggy areas to moist western hemlock and western red cedar forests.	Watch	1/104
Cascade reedgrass *(Calamagrostis tweedyi)*	Subalpine fir/beargrass habitat type; most often in mid-successional stands.	Sensitive	1/1
Constance's bittercress *(Cardamine constancei)*	Moist, partially to fully shaded sites within western red cedar and western hemlock forest types; also, drier brushy hillsides.	Sensitive	6/26
Bristly sedge *(Carex comosa)*	Shorelines, marshes, bogs, fens, and forested wetlands.	Sensitive	1/6
Henderson's sedge *(C. hendersonii)*	Western red cedar/hemlock and grand fir forests, often near streams or seeps, and on moist benches upslope from streams.	Watch	0/25
Bulb-bearing water hemlock *(Cicuta bulbifera)*	Marshes, bogs, wet meadows, and shallow standing water.	Sensitive	1/21
Short-spored jelly lichen *(Collema curtisporum)*	Moist riparian forests, usually on the bark of older black cottonwood trees.	Sensitive	0/25
Clustered lady's-slipper *(Cypripedium fasciculatum)*	Moist western red cedar/hemlock and dry Douglas-fir/grand fir forests.	Watch	0/21
Swamp willow-weed *(Epilobium palustre)*	Marshes, bogs, and fens.	Watch	0/21
Chatterbox orchid *(Epipactis gigantea)*	Moist areas along streambank, lake margins, seeps, and springs.	Watch	0/1
Water howellia *(Howellia aquatilis)*	Small, vernal, freshwater pothole ponds or the quiet water of abandoned river oxbow sloughs.	Threatened	0/1 (historical)

Table 3-13 Special Status Plants Known from or with the Potential to Occur within the Planning Area

Common Name and Scientific Name	Habitat	Idaho BLM Status	# of Occurrences in Decision Area/Planning Area[1]
Large Canadian St. John's-wort *(Hypericum majus)*	Marshes, bogs, and wet meadows.	Sensitive	1/28
Bank monkeyflower *(Mimulus clivicola)*	South aspects with slopes of 60 percent or greater on bare mineral soil. Most often in openings in ponderosa pine, Douglas-fir, or, occasionally, grand fir forest dominated by a grass or shrub understory.	Watch	2/39
Hoary willow *(Salix candida)*	Bogs, fens, marshes, pond edges, and seepage areas.	Sensitive	1/5
Water clubrush *(Schoenoplectus subterminalis)*	Quiet, shallow water, and boggy margins of ponds, lakes, and sloughs.	Sensitive	1/21
Spalding's catchfly *(Silene spaldingii)*	In Idaho, occurs in communities supporting Idaho fescue.	Threatened	0/0
Purple meadow *(Thalictrum dasycarpum)*	Moist areas along streambanks, lake margins, seeps, and springs.	Sensitive	1/5
Sierra woodfern *(Thelypteris nevadensis)*	Moist woods, streambanks.	Sensitive	1/1
Douglas clover *(Trifolium douglasii)*	Moist meadows and along streams within open ponderosa pine to Douglas-fir forests.	Sensitive	0/2
Idaho barren strawberry *(Waldsteinia idahoensis)*	Open, cool, moist forest sites, from toe to mid-slopes in the grand-fir, upper western red cedar, and subalpine fir zones.	Sensitive	0/1

[1]One occurrence may not translate to one population; i.e., several occurrences may combine to form one population. Source: USFS 1995; Shelly and Gamon 1996; Lichthardt 2003; BLM 2003, 2004; Goodnow 2004; Hays 2004; Hill and Gray 2004; Idaho Conservation Data Center 2004; USFS 2004.

further clarified the management of special status plants by designating species as either BLM sensitive or watch list. There are two federally threatened species, water howellia *(Howellia aquatilis),* and Spalding's catchfly *(Silene spaldingii),* as well as slender moonwort *(Botrychium lineare),* a candidate for federal listing, that have the potential to occur within the planning area. Thirteen BLM sensitive and seven watch list species occur within the planning area.

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 planning area.

Trends. Overall vegetative changes that have occurred across the planning area include the following (USFS 2003b):

- A shift from species that generally need high quantities of sunlight to persist (more sun-loving) to those that can tolerate denser and more shaded forest conditions. This condition is considered to be a factor in reducing the resilience and sustainability of the forest; and
- A shift in forest structure, including the pattern or arrangement of the forest communities, has occurred and could affect resilience and the sustainability of historic ecological relationships.

When the Emerald Empire MFP was finalized in November 1981, no plant species in the planning area were listed and had protection under the Endangered Species Act. In 1994, water howellia was listed as threatened, and there is a historical collection of this plant reputedly from the Spirit Lake area in Kootenai County. In 2001, Spalding's catchfly was listed as threatened, with the closest known location of this species at Liberty Lake, Washington, and now presumed lost to land development. In 2001, slender moonwort, known from a historical collection in the upper Priest Lake area, became a candidate species. Since 1981, a BLM-wide special status plants program has evolved, raising awareness of and providing increased opportunities to manage rare plant populations and habitats that have been found within the decision area.

Based on overall vegetation changes in the planning area related to weed invasion, species composition, and forest structure, certain habitats may be headed in the direction of unsuitability for sustaining rare plant populations.

3.2.8 Wildland Fire Ecology and Management

The planning area is in a region of the inland northwest that has experienced periodic stand-replacing fires. However, there are many resources at risk from this historical fire regime, particularly humans in the wildland-urban interface. The area is attractive and is a desirable place to live and a popular location for outdoor recreation. Additionally, forest health conditions in their current state contribute to fuel hazards.

Fuel accumulations, structure, and fire suppression has changed the vegetation patterns, structure, and composition of forests; therefore, the role that fire plays in these ecosystems has also been altered. The altered forest composition, when coupled with the additional structures and communities in the urban interface, results in changed conditions that need to be addressed in the new RMP.

The success of fire suppression efforts and resource management activities over the last 100 years has influenced the structure and composition of forests and fuel conditions by changing the tree species composition and by increasing the number of trees per acre, the understory and overstory vegetation, and the amount of dead and dying woody vegetation that remains on the site. The function and process of ecological systems has changed. Fire is no longer a major agent of change, and tree species composition and density has led to increasing insect and disease problems. Population and development densities continue to increase within forested environments of the CdA FO. The risk and severity of fires continues to grow. On a large scale, ICBEMP shows that continuing current management would lead to a decline in ecological integrity. Additionally, wildland fires have a high likelihood of adversely affecting human assets (Forest Service and BLM 1997).

Scientific findings from the ICBEMP highlight fire as a major ecosystem process. Fire severity and frequency have changed across the landscape. Before Euro-American settlement, most fires in low- and mid-elevation forests were nonlethal. Forests and rangelands benefited from these frequent surface fires, which thinned vegetation and favored growth of fire-tolerant trees. Lethal or stand-replacing fires played a lesser role on these landscapes. Lethal fire regimes now exceed nonlethal fire regimes in forested areas. Fire exclusion, livestock grazing, timber harvest, and exotic plant introduction have contributed to these changes (Forest Service 1997).

Fuel Conditions

Fuels include live and dead vegetation. In the CdA FO, grass, dead needles and leaves, dead branches (on the ground or on the tree), bark, and standing live or dead trees and shrubs can be fuel for a fire. Historically, fires periodically removed forest floor fuels and dead trees, and even smaller standing live trees. Successful fire suppression has allowed these fuels to build up. As an example, in vegetation types with frequent fire, forest floor fuels (Table 3-14) typically ranged from one to four tons per acre. Currently, these types average 12 tons of forest floor fuels per acre (Arno 2000). [

Deteriorating forests produce fuels that support high-intensity fires. As the number of trees per acre increases, so does fuel loading and extreme fire behavior potential. More small-diameter trees increase fuel loading, suppress live trees, and promote tree mortality from insects and disease.

The change in fuel conditions on the CdA FO can be indicated using forest health condition measurements. Table 3-14 shows the change in fuels related to live and dead trees that could become fuels in a fire, based on forest health extensive inventories conducted in 1974 and 1992.

Table 3-14 Forest Health and Fuel Indicators in 1974 and 1992

Indicator	1974 Inventory	1992 Inventory	Percent Increase
Number of live trees per acre 5 inches DBH* or less	860	1,341	56
Average diameter at breast height of trees greater than 5 inches DBH	10	11	10
Suppressed live trees per acre	32	107	234
Live white pine blister trees per acre	3	55	1,733
Insect infected and diseased trees per acre	1	105	10,400
Mortality Trees/Acre	25	75	200

*DBH = Diameter at breast height, which is a standard unit of measurement used by foresters.

Fire Regimes

Five historical fire regimes (Table 3-15) are used as part of the fire condition class discussion to describe fire frequency (average number of years between fires) and fire severity (effect of the fire on the dominant overstory vegetation [i.e., low, mixed, or stand replacement]).

Table 3-15 Historical Fire Regimes

Fire Regime	Description
I	0 to 35-year frequency, low severity
II	0 to 35-year frequency, stand-replacement severity
III	35 to 100+ year frequency, mixed severity
IV	35 to 100+-year frequency, stand-replacement severity
V	200+ year frequency, stand-replacement severity 100 years

Source: Hardy et al. 2001

Fire Regime Condition Class

Fire Regime Condition Class (FRCC) is a classification system that describes the extent of departure an area or landscape is from the historic condition to the present condition. FRCC is used to classify existing ecosystem conditions. Three fire regime condition classes are used to categorize the deviation from natural conditions, as described in Table 3-16 below (Schmidt et al. 2002).

The primary focus and number one priority for fire suppression and fuels management activities in the planning area is within the Wildland-Urban Interface (WUI) and those communities at high risk from wildland fire. Although the protection of life and property within WUI areas is of highest priority, changes in vegetation conditions such as susceptibility and loss of forested vegetation due to disease and infestation are of serious concern as well. Ingrowth, root rot, and insects have affected Dry Conifer. Conifer encroachment on aspen trees and blister rust in western white pine in the Wet/Cold Conifer type are the predominant forest health issues outside the WUI (see Section 3.2.5, Vegetative Communities).

Table 3-16 Fire Regime Condition Class Descriptions

FRCC	Condition Class Description
1	• Fire regimes that are within historic ranges, and the loss of key ecosystem components of the ecosystem from the occurrence of fire is low. • Areas are considered to be healthy and functioning adequately.
2	• Fire regimes have been moderately altered from their historic range by either increased or decreased fire frequency and are at moderate risk of losing key ecosystem components. • Areas are considered to be unhealthy and their rate of deterioration is expected to increase moderately to rapidly.
3	• Fire regimes have been significantly altered from their historic range, and the loss of key ecosystem components is high. • Areas are considered to be unhealthy and nonfunctioning.

Wildland-Urban Interface (WUI)

Since the MFP was approved in 1981, more homes and other structures have been built near and around national forests. These structures within the wildland-urban interface are vulnerable to fires. People, homes, and structures continue to occupy the wildland-urban interface and hazard fuels continue to accumulate due to fire suppression and lack of controlled burns or other fuels-management measures, creating a high-risk and volatile situation. The WUI currently covers 36,099 acres, of which 16,906 acres (47 percent) is in the Dry Conifer cover type, 13,829 acres (38 percent) are in the Wet/Cold Conifer cover type, and 5,364 acres (15 percent) are in the Wet/Warm Conifer cover type.

Communities-at-Risk

A list of all WUI communities that are at high risk from wildland fire was published in the Federal Register (Volume 66, August 17, 2001). Approximately 100 communities of varying size and development are considered to be at risk within the CdA FO.

Trends

Vegetation cover types and their specific fire condition class and trends are described below (Table 3-17). Descriptions of the various vegetation cover types are included in the vegetation section of this chapter. Historical or natural fire regime classes were estimated for each vegetation cover type. Historical fire regime was estimated using expected natural/historical fire rotation, expected vegetation condition, and expected fuel

Table 3-17 Existing Vegetation BLM Acres and FRCC in the Planning Area

Fire Regime	Cover Type[1]	BLM GAP Acres	FRCC[2]	Reason for Departure
I	Dry conifer	29,450	3	Modification of historic fire regimes, overstocked conditions, accumulations of litter and woody material, and multiple insect infestations and disease pathogens.
II	Mid-elevation shrub	5,384	2	Modification of historic fire regime, heavier than historic fuel loads, decadent plants.
II	Perennial grass	2,451	2	Modification of historic fire regime, invasion of nonnative vegetation.
III	Riparian	1,147	2	Modification of historic fire regime.
III	Aspen/conifer mix	2,002	2	Modification of historic fire regime, decadent vegetation, encroachment by conifers.
IV	Wet/cold conifer	44,672	2	Loss of historic white pine and whitebark pine component, modification of historic fire regime, and disease infection.
V	Wet/warm conifer	8,384	2	Loss of historic white pine component, modification of historic fire regime, disease and insect infestations, and in-growth of Douglas-fir and grand fir.

Source: [1]Derived from Scott et al. 2002
[2]BLM 2004

loads for each vegetation cover type. Current departure for each vegetation cover type, compared to its historical fire regime, was calculated as percent departure from its historical fire regime. While fire condition class determinations were made for each vegetation cover type, site-specific fire regime conditions may vary within a single vegetation cover type.

Table 3-18 below displays indicators of fire in northern Idaho. A more detailed trend analysis for fire management can be found in the 2004 CdA FO fire management plan (BLM 2004). These data are from the USFS IPNF and show all fires in northern Idaho. BLM-specific data for the CdA FO shows fire occurrence only on BLM land since 2001. As that data will not provide an adequate trend analysis for planning, USFS data were used.

Table 3-18 Fire Size History in Northern Idaho

Decade	Acres Burned
1910-1919	1,150,000
1920-1929	599,000
1930-1939	146,000
1940-1949	14,100
1950-1959	4,190
1960-1969	78,400
1970-1979	10,700
1980-1989	4,840
1990-1999	6,810

There is a sharp decline in acres of large fires from 1920 through the 1950s, most likely due to fire suppression. However, in recent decades, the acres of large fires are increasing or are variable, which may be due to the buildup of fuels resulting from successful fire suppression and the increased risk and severity of fires. A large fire is defined as greater than 10 acres.

The indicator forecast for fire management considerations in northern Idaho demonstrates a greater number of large fires. This is a consequence of several factors but primarily a decrease in forest health.

On a large scale, the ICBEMP shows that with continuation of current management, ecological integrity is projected to decline. Additionally, the environment has a high likelihood of adversely affecting human assets through large wildfires (Forest Service 1997).

3.2.9 Cultural Resources

Cultural resources are locations of human activity, occupation, or use. They include expressions of human culture and history in the physical environment, such as prehistoric or historic archaeological sites, buildings, structures, objects, districts, or other places. Cultural resources can be natural features, plants, and animals that are considered to be important to a culture, subculture, or community. Cultural resources also include traditional lifeways and practices.

Prehistoric refers to the time before Euro-Americans established a presence in Idaho in the early nineteenth century. Native American people living in the planning area would have had access to diverse natural resources found in uplands, drainage bottoms, and around lakes. A general three-period chronology has been used to describe the broad patterns of the prehistoric use of this region: the Early Prehistoric Period (Before 8,000-5,000 BC), the Middle Prehistoric Period (5,000 BC to AD 500), and the Late Prehistoric Period (AD 500 to 1750) (Walker 1998).

Little is known of the people who occupied the region during the Early Prehistoric Period because there are few sites representing this period. The Middle Prehistoric Period is associated with shifts in climate and changes in vegetation. During the Late Prehistoric Period there is an increase in frequency of small projectile points, indicating the use of bow and arrow technology.

The first Euro-Americans to enter the planning area in the early 1800s were fur trappers and then missionaries. Contact with nonnative groups resulted in the population and territorial losses, as well as significant disruption of native cultural life.

The mining and timber industries played primary roles in the historic development of the planning area. Gold was discovered in the 1880s, but the development of silver, zinc, and lead were ultimately more important. Mining expanded from small-scale prospecting to large-scale production with towns, transportation systems, and other supporting infrastructure. The extensive rail network and lake transportation systems supported expansion of the logging industry.

Contemporary Native American groups such as the Coeur d'Alene, Kootenai, Confederated Salish and Kootenai, and Kalispel Tribes maintain social and cultural ties to the land and resources of the planning area. Traditional Cultural Properties (TCPs) are places associated with the cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity.

Cultural resources in the CdA FO are managed in accordance with existing laws, regulations, and guidelines. The principal federal law addressing cultural resources is the National Historic Preservation Act (NHPA) of

1966, as amended (16 United States Code [USC] Section 470), and its implementing regulations (36 Code of Federal Regulations [CFR] 800). The NHPA describes the process for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for consulting to avoid, reduce, or minimize adverse effects. The term "historic properties" refers to cultural resources that meet specific criteria for eligibility for listing on the National Register of Historic Places (NRHP). The BLM meets its NHPA responsibilities under a protocol agreement with the Idaho State Historic Preservation Office, as provided for in the National BLM Programmatic Agreement. The process requires a reasonable and good faith effort to consult with Native American groups or those with scientific or other interests in affected resources and who might attach religious and cultural significance to affected resources.

The Emerald Empire Management Framework Plan included decisions concerning survey requirements, resource evaluation, and avoidance of impacts to resources, prohibitions of vehicle access to areas of cultural importance to the Coeur d'Alene Tribe, and specific inventories and studies necessary to manage cultural resources.

Only portions of the lands administered by the CdA FO have been inventoried for cultural resources. There are 92 known cultural resource sites administered by the CdA FO. Most recorded sites are related to mining history and include adits, tramways, cabins, and mill sites. Many of the recorded cultural resources have not been evaluated for their eligibility for listing on the NRHP, but most are thought to be eligible. Sites associated with a massive fire in northern Idaho in 1910 are listed on the NRHP and include the Pulaski Tunnel site. One area along the Rochat Divide is considered to be a TCP for contemporary Native American communities.

The condition and trend of cultural resources in the planning area vary considerably due to the diversity of terrain, geomorphology, access and visibility, and past and current land use patterns. Because recorded sites are manifested by exposed artifacts, features, or structures, they are easily disturbed by wind and water erosion, animal and human intrusion, natural deterioration and decay, and development and maintenance activities. Based on limited site monitoring and site form documentation, the trend of site conditions in the planning area is considered to be downward.

New directives for land use planning in the BLM Land Use Planning Manual H-1601-1 and BLM Manual Section 8110.4 and IB 2002-101 require categorizing known and expected cultural resources according to their nature and relative preservation value. Resource types are allocated to appropriate use categories that include scientific use, conservation for future use, traditional use, public use, experimental use, or discharged from management. These directives also require the identification of priority geographic areas for new field inventory or protective measures. These decisions would be based on a probability for unrecorded significant resources, imminent threats from natural or human-caused deterioration, or potential conflict with other resource uses.

In conjunction with the RMP, the BLM has developed a Class I overview of the cultural resources of the lands administered by the Coeur d'Alene Field Office. A Class I overview is a summary of literature, records, and other documents providing an informed basis for understanding the nature of the cultural resources of the region. The BLM is also refining a cultural resource GIS project to organize records for cultural resource sites, inventories, and maps. These are important steps in allocating resources to use categories and in identifying areas where there is resource potential or where there are threats from incompatible uses. The BLM has established six use categories, as follows:

- ***Scientific Use***—Applies to any cultural resource determined to be available for scientific or historical study using currently available research techniques;
- ***Conservation for Future Use***—A cultural resource included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses, that threaten the maintenance of its present condition or setting;
- ***Traditional Use***—Is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well being of the group;
- ***Public Use***—May be applied to a cultural resource found to be appropriate for use as an interpretive exhibit in place or for related educational and recreational uses by members of the general public;
- ***Experimental Use***—May be applied to a cultural resource judged well suited for controlled experimental study, to be conducted by the BLM or others, concerned with the techniques of managing cultural resources that would result in the property's alteration, possibly including loss of integrity and destruction of physical elements; and
- ***Discharged from Management***—Is assigned to cultural resources that have no remaining identifiable use, such as small surface scatters of artifacts or debris.

All cultural resources would be allocated to one or more use categories under all the alternatives addressed in this plan. Cultural resources allocated to the various uses would be subject to management actions outlined in H-1601-1. The NHPA and other cultural resource requirements would still be applicable, but the categorization of resource use provides a proactive planning mechanism for preserving and protecting significant cultural resources and ensuring that they are available for appropriate uses by present and future generations.

The future demand for cultural resources within the planning area is expected to remain minimal, with the exception of some Native American groups and local communities. Native Americans will continue to have an interest in protecting and preserving cultural sites and uses. Local communities have expressed a desire for interpreting historic sites. Vandalism or collecting, including unauthorized digging, surface collection, and use of metal detectors, is minimal. Development and maintenance activities such as mining, mine remediation, recreation, and OHV use may continue to affect some sites. The natural deterioration and decay of wooden and rock structures at historic mining and homesteading sites would continue.

Recorded cultural resources in the planning area are primarily related to mining history. Because these locations often have health, safety, and hazardous material concerns and can become active mine sites again, there are many issues to be considered in managing these resources. The Rochat Divide TCP is an important resource that might not be recognized and is subject to risk from other uses.

3.2.10 Paleontological Resources

Paleontological resources are the physical remains or other physical evidence of past plants and animals generally preserved in soils and sedimentary rock formations. Paleontological resources are important for correlating and dating rock strata and for understanding past environments, environmental change, and the evolution of life.

The geologic units present in the planning area have little or no fossil potential due to composition and great age. The geology is dominated by extremely thick igneous and highly metamorphosed rocks, which do not support fossils, and very early Precambrian formations, which predate most life forms. Some Miocene invertebrate and vertebrate fossil localities are known on private lands near Clarkia in the planning area

(Smiley 1989). There may be limited potential for fossil specimens in the sedimentary belt formations that formed during the Precambrian, although there are none reported (Alt and Hyndman 1989).

Paleontological resources that occur on public lands are managed in accordance with the requirements of several federal laws, primarily FLPMA. Additional requirements for the use, management, and protection of paleontological resources on public lands are addressed in a series of federal regulations and orders, as well as by specific BLM manual guidance. The BLM Handbook H-8270-1 describes a classification system that ranks areas into three classes based on their potential to contain vertebrate fossils or exceptional invertebrate or plant fossils. There is no existing plan guidance for paleontological resources or classification of formations within the CdA FO.

There have been no proactive inventories for paleontological resources, and there are no known vertebrate or invertebrate fossil localities on public lands in the planning area. Because of the low potential and lack of known sites, there have been no management concerns in the past, and the demand and interest from professional paleontologists is low. If any resources are located in the future, then actions would be initiated to properly manage those resources.

3.2.11 Visual Resources

The underlying reason for establishing VRM objectives is to ensure that the visual value or scenic quality of the landscape is retained. Scenic quality is a measure of visual appeal. In the BLM system, an A, B, or C rating is assigned (Table 3-19).

Landscapes are rated within the context of the physiographic province in which they are located. The degree of harmonious visual variety and diversity in a landscape's landform, vegetation, and water features in terms of form, line color, and texture largely determines its rating. Additional rating factors include the influence of adjacent scenery and the scarcity and degree to which cultural modifications detract from or enhance the landscape.

Table 3-19 Scenic Quality Class Ratings in the Planning Area

Class	Degree of Visual Variety	Representative Areas
A	Distinctive (high)	Rochat Divide and Widow Mountain.
B	Common or typical (moderate)	Most of the CdA FO, due to numerous water features, including both large and small lakes.
C	Minimal value or below average (low)	Primarily limited to two small parcels and one larger parcel managed by the BLM in the CdA FO. Rathdrum Prairie is one example of this class, although it contains no BLM land.

A large increase in population and recreation use over the last two decades has increased visual sensitivity. Public sensitivity about visual resources will continue to increase as population densities and recreation opportunities increase. Disturbances on land adjacent to BLM land and the fragmented BLM land ownership pattern will continue to have subsequent effects on BLM visual resources. Also, commodity extraction activities such as mining and timber harvesting are continually changing the quality of visual resources.

The planning area is generally considered to be scenic under the VRM system. While much of the area is typical (Class B scenery), the presence of large and small lakes is somewhat unique to the northern Rocky Mountain physiographic province. The area is typical of the Northern Rocky Mountain Physiographic Province, with steep slopes and narrow stream valleys. It also contains significant water features, such as Lake Coeur d'Alene and Lake Pend Oreille, and various rivers, such as the St. Joe, Spokane, and Coeur d'Alene. Areas with water features are visually important and should be used to guide management decisions. Two high elevation mountain areas are distinctive, exhibiting Class A scenery, including the Rochat Divide and Widow Mountain areas. Only one scenery quality rating unit is rated as Class C scenery; this unit contains no BLM land.

Visual resource management classes adopted in the Emerald Empire MFP for the decision area differ from inventoried classes in several locations. To minimize visual resource management constraints on timber harvesting and forest management activities, some inventoried Class II areas were designated Class III and some inventoried Class III areas were designated Class IV (Table 3-20). This has not resulted in an overall degradation of scenic quality but has resulted in expressed user dissatisfaction on some specific projects. Interstate 90 and US Highway 95 warrant a Class II rating.

Table 3-20 Visual Resource Management Classes and Objectives in the Planning Area

VRM Class	Objective	BLM Acres
I	Preserve the existing character of the landscape. This class provides for natural ecological changes and limited management activity. It is used for special areas where management situations require preservation of a natural environment unaltered by humans, such as wilderness and wilderness study areas.	21,719
II	Retain the existing character of the landscape. The level of change should be low, and management activities may be seen but should not attract attention.	14,312
III	Partially retain the existing character of the landscape. The level of change should be moderate, and management activities may attract attention but should not dominate the view of the casual observer.	33,259
IV	Provide for management activities that require major modification of the existing character of the landscape. Activities may dominate the view and be a major focus of viewer attention.	27,480

WSAs are automatically designated VRM Class I. There are three WSAs in the planning area. Please refer to the Special Designations section (Section 3.4) for a description of these areas.

The following two Scenic Byways are found within the planning area:

- Lake Coeur d'Alene Scenic Byway; and
- White Pine Scenic Byway.

In addition to these Scenic Byways, the State of Idaho has recently designated the St. Joe River Road as a Scenic Byway.

In many instances, the BLM manages only fragments of landscapes and has a minor influence on the maintenance of scenic quality in these areas. Often the land management practices of others have a greater influence. BLM land management actions have generally been small scale, usually involving vegetation modifications from forest management activities and landform modifications from road construction. Minor structure modifications involving utility work on rights-of-way also commonly occur.

3.3 RESOURCE USES

This section contains a description of the existing human uses of resources in the planning area and follows the order of topics addressed in Chapter 2. These topics are:

- Forestry and Woodland Products
- Livestock Grazing
- Minerals
- Recreation
- Renewable Energy
- Transportation and Travel
- Lands and Realty

3.3.1 Forestry and Woodland Products

The planning area initially identified 133,261 acres as suitable for timber management and used this acreage to calculate the annual sale quantity (see Table 3-21, below). In 1991, a land exchange reduced the BLM-managed commercial forest lands by about 13,900 acres. Subsequent land exchanges have reduced the public land base to 96,243 acres, of which 85,574 acres are considered to be forested vegetation.

Probable Sale Quantity

The PSQ is the amount of timber that could be removed from BLM-managed lands where commercial forest uses are considered appropriate. Calculations are based on species, growth, mortality, land base, and sustainability. The PSQ also takes into account the existing forest health, desired stocking levels (stand density), and desired species composition as well as the other factors listed. The PSQ does not include volume removed for other purposes from other areas, such as recreation sites where hazard trees are removed. When calculating the PSQ, only the three major forested vegetation cover types were used: Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer. The Aspen/Aspen Conifer Mix was not considered because any management activities in this cover type would produce only a very small amount of forest products consisting mostly of merchantable conifers that may be removed inside Aspen Groves in order to maintain these groves. The Riparian/Wetland cover type was considered to be withdrawn. In contrast to annual sale quantities (ASQs), which offer a mandatory annual sale quantity each year, PSQ is not a mandatory annual sale quantity. Actual forest products that may be offered each year depend on the type of vegetation treatments being applied and the number of acres being treated.

Under the Emerald Empire MFP, 6.5 million board feet (MMBF) were to be offered for sale annually. This was based on a commercial forest land base of 133,261 acres. However, the ASQ was abandoned in 1993, following the legislated land exchange with Potlatch that transferred approximately 18,720 acres of BLM land. Since 1993, the CdA FO has offered between 2 MMBF and 4 MMBF annually, nearly all of which was sold under the Forest Health and Recovery Fund (FHRF), which uses proceeds to restore, maintain, and enhance forest health. Currently, the PSQ would be approximately 3.7 MMBF annually, which would be harvested from approximately 7 percent of the CdA FO area (7,000 acres). These forest products would come from the Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer cover types. Approximately 56 MMBF would be harvested over 15 years. This represents 12 percent of the anticipated growth over these three cover types (82,456 acres) during this period, or 17 percent of the anticipated growth from the non-withdrawn acres (54,565 acres). Under the FHRF, in addition to harvesting dead and dying trees, efforts are made to remove excess trees to return these forests more closely to their historic stocking levels and species mix. With the enactment of the Healthy Forest Restoration Act of 2004 (Title 1, Section 102[f]), harvesting operations

include reducing forest fuels to reduce the effects and ravages of wildfire and sustaining important components of the forest ecosystem (e.g., retaining large and old-growth trees). This act also provides for protecting domestic and municipal watersheds.

Demand for Forest Products

The saw log market continues to be good, but periodic downturns in this market cannot be predicted accurately. Saw logs produced from timber sales have been a major source of income for the private sector. In recent years, the alternative forest product markets (e.g., hew wood, hog fuel, etc.) are providing more and more income to the federal government and mills designed to use this material are being built.

The small log market has made significant gains with the past five years. Based on the April 2005 Small Log Conference held in Coeur d'Alene, wood products from small logs or hew wood (logs between 4" and 9" in diameter) make superior studs (2x4s). This is resulting in another significant income source for the private sector and has caused fierce competition for small logs. Furthermore, the alternative forest products market (biomass for co-generation power plants) is beginning to grow. While biomass material is used mostly by sawmills to generate their power needs, depending on hauling costs, biomass material is proving to be another source of income for the private sector.

Much of the increased stocking that has occurred between 1974 and 1992, as shown in the above table, is from ingrowth from shade-tolerant species (mostly Douglas-fir and grand fir). Much of this ingrowth is in the smaller diameter classes. As noted, the demand for hew wood is increasing, and much of the ingrowth can supply this market. The same applies to biomass products to run cogeneration power plants. Currently most cogeneration plants cannot compete very well with hydroelectric power. However, more and more sawmills are using cogeneration plants to run their operations and selling the surplus power. Local operators are finding ways to more efficiently produce power from cogeneration plants and are expected to use much of the biomass that is left behind after logging operations. According to articles in the Smallwood News (Rawlins 2004), the market for alternative forest products is expected to increase.

Saw logs are generally broken into three categories; large, regular, and small wood. Generally large saw logs are considered to have scaling diameters larger than 24 inches and are sold on a per MBF basis (scaling diameter is the diameter of a log at its small end). In about 1998 sawmills started to retool their mills to use smaller saw logs. Because almost all of the saw logs sold by the planning area have scaling diameters less than 24 inches, no records are available to determine the exact time when sawmills started to discriminate against larger saw logs.

Regular saw logs generally have scaling diameters ranging from 9 to 24 inches. This is the most common saw log sold in northern Idaho.

Demand for regular saw logs will remain high. However, the ability of federal lands to provide saw logs with 16 inch DBH or greater will decrease over the next several years because Title 1, Section 102(f) of HFRA directs the BLM and USFS to favor retention of larger trees in many public forests. Because of the emphasis on removing ingrowth and favoring retention of large trees, the supply of forest products coming from public lands will be mostly from the 4" to 16" diameter classes as well as recovery of biomass products from vegetation less than 4" in diameter.

3.3.2 Livestock Grazing

The BLM authorizes livestock grazing on public lands under the authority of the Taylor Grazing Act of June 28, 1934, as amended, and the FLPMA of 1976, as amended by the Public Rangelands Improvement Act of 1978, for multiple use and sustained yield. Under 43 Code of Federal Regulations (CFR) 4100, qualified

applicants may obtain a Section 15 Grazing Lease for an allotment. A Section 15 Grazing Lease specifies: 1) allotment name and number; 2) class of livestock; 3) number of livestock; 4) season-of-use; and 5) other specific terms and conditions. Each Grazing Lease is authorized for ten years. The livestock forage allocation on an allotment is expressed in animal unit months (AUMs). One AUM is defined as the quantity of forage required by one mature cow and her calf, or the equivalent in sheep or horses, for one month. The Northern Idaho Grazing Management EIS proposed forage allocations in terms of AUMs for livestock and wildlife for each grazing allotment.

There are nine allotments in the planning area available for livestock grazing, (see Table 3-21). Four of the nine allotments are currently leased and consist of 1,281 acres and 269 AUMs. The remaining five allotments are not leased and consist of 2,786 acres and 144 AUMs. Allotments are shown on Map #13 in Volume III.

Table 3-21 Existing Livestock Use in the Planning Area

Allotment	Acres	Type of Livestock	Season of Use	AUMs	Leasing Status
Terror Gulch 36000	92	Cattle	6/15-10/1	8	Vacant
Twin Peaks 36002	199	Cattle	6/1-10/31	148	Leased
Gold Mountain West 36003	353	Cattle	6/1-10/31	44	Vacant
Gold Mountain East 36007	315	Cattle	6/1-10/31	22	Vacant
Long Mountain 36009	779	Cattle	6/15-9/15	101	Leased
Trout Creek 36012	231	Cattle	5/1-10/15	30	Leased
Drummond Peak 36013	188	Cattle Horse	5/1-9/15	27	Vacant
Latour Creek 36019	1,838	Cattle	7/1-10/31	76	Vacant
Ninemile Creek 36020	9	Horse	6/1-10/30	5	Leased

Grazing allotments in the planning area are timbered and are not typical "rangelands." These allotments are referred to as having transitory range. Transitory range is limited to the forage that is provided through timber harvest and/or other land treatments. When the timbered lands within the grazing allotments are harvested and/or burned, forage becomes available for wildlife and livestock for approximately 15 years.

The vegetation section identifies complete BLM vegetation acreages for the entire planning area.

3.3.3 Minerals

The activity level for the BLM mineral management responsibility is highly variable throughout the planning area and has historically fluctuated, depending on the viability of various sectors of the mining industry. The Wallace area (Shoshone County) has mineral deposits of national importance. Two large silver mines (Lucky Friday and the Galena) continue to operate here, and a large portion of the working population is employed in

some sort of mining activity. The CdA FO continues to address the mineral issues on public lands and is involved in ongoing administration related to leasable, locatable, and salable materials in the planning area. A generalized picture of the mineral potential within the CdA FO is shown on Map #14 in Volume III.

Eleven locatable minerals operations for such commodities as lode gold, gold placer, and silver, covering approximately nine acres, occur in the planning area, ranging in status from expired/reclamation to pending or authorized. The planning area has one notable gold mining district, the Murray Mining District. BLM lands around this district are extensive. Five of the eleven locatable minerals activities, approved or pending approval, are in this area.

A number of silver, lead, and zinc deposits are located throughout the planning area. The most significant district in the planning area and in the entire state is the Coeur d'Alene Mining District, which represents one of the premier mining districts in the world. Silver, lead, and zinc have historically been the major commodities developed within the planning area, but their importance has declined significantly over the past two decades as mines in the Coeur d'Alene Mining District (Silver Valley) have closed down. Mining and prospecting continues in the Silver Valley on a reduced scale.

Of the five active cases involving the sale of mineral materials from BLM land within the CdA FO, one is for sand and gravel and four are for decorative stone. The amount of surface disturbance anticipated from these five cases is less than 15 acres. Between 1987 and 2003, ten contracts covering about 52 acres were issued; these have been reclaimed, and the cases have been closed.

Presently, state, county, and private sites meet the demand for mineral materials. Currently there are no operating pits on BLM land within the planning area, but there is an approved plan of operation for a future pit (Free Use Permit, serial #034132) with the Post Falls Highway District, located just north of Post Falls. Aggregate resources are present throughout the planning area and are subject to increasing consumptive demand as a result of urban building and development. Similarly, dimension and decorative stone occurrences have been subjected to increasing demand for architectural and landscaping applications.

A large area containing scattered high-kaolin clay deposits extends from Coeur d'Alene in the north to Grangeville in the south, primarily underlain by highly weathered Thatuna granite and Columbia River basalt flows. Most of the clay deposits are in Latah County. The planning area also includes significant gold production from the Murray Mining District and abrasive garnets from the Emerald Creek Mining District. Also, the Emerald Creek Mining District in the south-central portion of the planning area continues to see significant production of abrasive garnets. However, BLM administered land is very limited in these areas and no operations related to these commodities are occurring, or are anticipated to occur, on BLM land.

Silver is the primary commodity currently produced in the Silver Valley, which has enabled the Coeur d'Alene Mining District to become the largest silver district in the world, with over 1 billion ounces recorded. The future of the silver, zinc, and lead segment of the mining industry depends on the price of silver and environmental and political factors. No new mines are anticipated in the Coeur d'Alene Mining District, but reopening existing mines for exploration or development is a distinct possibility in the future. Similarly, gold continues to be produced from the Murray Mining District. Historical activity for this commodity indicates that exploration and development of new and existing properties in the planning area can be expected to follow the trend of commodity price.

Within the planning area, nearly the entire Rathdrum Prairie is underlain by river and glacial deposits, which are a ready supply for the construction industry around the population centers of Coeur d'Alene and Spokane.

Access to many of the alluvial sources along the major rivers is limited by state and federal restrictions, such as the Wild and Scenic River designations, which tend to isolate some sections of the highway system from nearby low-cost aggregate sources. Political and social trends that tend to restrict the availability of sand, gravel, and crushed stone in Idaho are becoming more prevalent in some areas, particularly around urban centers.

In northern Idaho there is a growing demand by the construction and landscaping industries around Coeur d'Alene and Spokane for attractive ornamental dimension stone, which can be found throughout the planning area. Further development of this resource can be anticipated. It is not possible to predict where this material will be found because of the wide variety of potential geological environments.

Development of other mineral resources is expected to be low throughout the planning area.

3.3.4 Recreation

Although BLM-administered land is scattered throughout the planning area, many tracts have extraordinary recreation values and receive high levels of use. Waterfront sites are especially valuable. Water-based recreation activities within the planning area include boating (motorized and nonmotorized), fishing, tubing, and canoeing. Other recreation activities include hiking, mountain biking, scenic viewing, wildlife viewing, and motorized vehicle use (see Section 3.3.6, Transportation and Travel). Cross-country and downhill skiing also take place in the planning area in winter.

Where applicable, the BLM coordinates recreation management with the USFS. BLM- and USFS-managed lands are often adjacent, which presents an opportunity to ensure that recreation management objectives between the federal agencies are consistent. The USFS employs a Recreation Opportunity Spectrum (ROS) inventory system similar to that of the BLM and is in the process of finishing a recreation opportunity class inventory for USFS lands. Both the BLM and the USFS conduct these inventories on a broad scale within their respective planning areas.

The CdA FO recreation program has responsibility for the following:

- Eighteen developed recreation sites with varied levels of development;
- Two research natural areas (RNA)/Areas of Critical Environmental Concern (ACECs), covering 3,075 acres (see Section 3.4, Special Designations);
- Three wilderness study areas (WSAs) (See Section 3.4, Special Designations);
- The Mineral Ridge National Recreation Trail (See Section 3.4, Special Designations);
- Marble Creek National Recreational Trails (NRTs);
- Watchable Wildlife Viewing Areas; and
- Dispersed recreation throughout the approximately 96,732 acres of public land administered by the BLM.

Recreation Opportunity Spectrum

Recreation values and plans for recreation uses are referred to as recreation opportunity spectrum (ROS) classes. All BLM land has been categorized within one of the ROS classes identified in Table 3-22.

The ROS inventory shows most of the planning area in roaded natural settings. Large areas of semiprimitive settings are in the two WSAs.

Table 3-22 Recreation Opportunity Spectrum

ROS Class	Description of Class	Acres[1]
Primitive	Areas characterized by essentially unmodified, relatively large natural environments, where there is opportunity for isolation from human sights and sounds.	0
Semiprimitive motorized and nonmotorized	Areas characterized by a predominately moderate to large, unmodified natural environment, where some areas offer opportunity for isolation from human sights and sounds, while others are open to motorized use.	47,601
Roaded natural	Areas characterized by a generally natural environment, with moderate evidence of human sights and sounds. There is about equal opportunity for affiliation with other user groups and for isolation.	43,790
Rural	Areas characterized by a substantially modified natural environment, where human sights and sounds are readily evident.	5,379

Special Recreation Management Areas

Current decision documents, including the MFP and BLM Manual 8320, provide general guidance for recreation resources. However, much of the BLM land currently in the planning area managed for recreation has been acquired since the 1981 MFP was written. Recreation management areas were inventoried as part of the MFP, but area designations were not carried forward as planning decisions, so areas important to recreation planning were not identified.

Subsequent recreation planning guidance directed that areas be categorized as special recreation management areas (SRMAs), which are areas that require explicit recreation management or extensive recreation management areas (ERMAs), which are areas where significant recreation opportunities and problems are limited and explicit recreation management is not required. Three areas that have been administratively recognized are the Coeur d'Alene Lake SRMA (Kootenai County), the Lower Coeur d'Alene River SRMA (Kootenai County), and the Gamlin Lake SRMA (Bonner County). A management plan is in place for Coeur d'Alene Lake and Gamlin Lake. No other SRMAs have been designated.

In recent years, recreation issues have evolved or are emerging in other areas where SRMA designation should be considered. Rochat Divide, Lookout Mountain, and Silver Valley are all areas considered excellent candidates for SRMA designation. In addition to the SRMAs, the recently acquired Blue Creek Bay portion of the Wallace Forest Conservation Area is under study for its potential recreational use.

Recreation Visitor Use and Trends

Over the last 25 years, population has grown tremendously within the planning area, and population is anticipated to continue to increase steadily. The planning area has emerged and is promoted as a travel and tourism destination. Estimated annual visits are approximately 230,000 (Kincaid 2005). Opportunities for outdoor recreation within public lands will continue to increase (refer to Section 3.5 for a discussion of the economic aspects of recreation in the CdA FO).

In addition to BLM-administered lands, three National Forests (Coeur d'Alene, Kaniksu, and St. Joe) manage land within the planning area. This combination of recreation opportunity creates a major recreation and tourism destination, drawing local visitors and tourists regionally and nationally. The CdA FO collects fees at

several different recreation sites, including boat ramps and campgrounds. The CdA FO also administers special use permits to outfitters and guides. Special use permits typically generate much less revenue for the CdA FO when compared to revenue generated from boat ramps and campgrounds.

Intense recreation management occurs mainly in the three SRMAs. The Coeur d'Alene Lake SRMA contains nine separate recreation sites and includes highly developed boat ramps, primitive boat docks, scenic overlooks, picnic areas, picnic shelters, trails, camp sites, and boat-in only sites. The Gamlin Lake SRMA provides recreation opportunities emphasizing day-use areas, nonmotorized trail activities, and fishing. The Lower Coeur d'Alene River SRMA concentrates on river-based recreation opportunities. Table 3-23 displays the recreation site visitor use on BLM-managed land in 2004.

Table 3-23 Recreation Visitor Use— Planning Area (2004)

Management Area/Site	Approximate Number of Visits
Beauty Bay	15,000
Blackwell Island	17,000
Blue Creek Bay	2,400
Conga Bay	2,150
Crater Lake Peak	250
Crater Lake Saddle	550
Gamlin Lake	4,600
Huckleberry Campground	4,800
Killarney Lake Picnic Site	1,000
Mica Bay Boater Park	11,500
Mineral Ridge	75,000
Orphan Point Saddle Camp	600
Popcorn Island	1,000
Ross Point	2,300
Sheep Springs Campsite	2,200
Tingley Springs Campsite	1,000
Windy Bay Boater Park	2,300
Total	**148,750**

Source: Kincaid 2005
Note: All values are rounded.

3.3.5 Renewable Energy

Renewable energy includes solar power, wind, biomass, and geothermal resources. As demand has increased for clean and viable energy to power the nation, consideration of renewable energy sources available on public lands has come to the forefront of land management planning.

In cooperation with the National Renewable Energy Laboratory, the BLM assessed renewable energy resources on public lands in the western United States (BLM and DOE 2003). The BLM reviewed the potential for concentrated solar power (CSP), photovoltaic (PV), wind, biomass, and geothermal energy on US Department of the Interior, Bureau of Indian Affairs, and Forest Service lands in the West. Hydropower was not addressed.

The planning area lacks commercial concentrated solar power and photovoltaic energy potential (BLM and DOE 2003). There is no geothermal resource within the planning area (Tetra Tech 2005). There is a warm-water well near Spirit Lake in Kootenai County and a warm spring in the northeast part of the Coeur d'Alene

Mining District, near Kellogg. According to the Idaho State Office of the BLM, as of November 15, 2004, there are no geothermal leases or claims on federal lands within the planning area.

In its National Renewable Energy Laboratory Study, the BLM evaluated the long-term sustainability to support biomass plants using the monthly Normalized Difference Vegetation Index (NDVI) computed from National Aeronautics and Space Administration's Advanced Very High Resolution Radiometer Land Pathfinder satellite program. For an area to have biomass development potential, it had to meet the following criteria: an NDVI of 0.4 for at least four months between April and September, a slope of less than 12 percent, proximity of a maximum of 50 miles to a town with at least 100 people, and BLM- and USFS-compatible land use. About 14.5 percent of BLM lands scattered throughout the planning area meet these criteria (BLM and DOE 2003).

BLM has observed that the hew wood market has increased and there has been a significant increase in demand for alternative forest products, including hog fuel, which provides burnable biomass products to run cogeneration power plants. Currently most cogeneration plants are not competitive with hydroelectric power, but an increasing number of sawmills are using cogeneration plants to run their operations and are selling the surplus power. Local operators are finding ways to more efficiently produce power from cogeneration plants, and it is anticipated that local cogeneration plants will use much of the biomass that is left behind after logging operations. According to articles in the Smallwood News, which tracks small-diameter timber utilization and markets, the market for alternative forest products is expected to increase. During recent on-site visits at potential project areas, personnel from local industries requested that BLM offer more sales of alternative forest products (BLM 2004a).

Wind power classes range from 1 (lowest) to 7 (highest). BLM-managed lands in approximately 13 percent of the planning area are Class 3 and higher, and the former Emerald Empire Planning Unit (now the Coeur d'Alene Field Office) is in the top 25 BLM planning units in the US having the highest wind energy potential (Class 5 and higher). About four percent of BLM lands in the planning area had the highest wind energy potential (BLM and DOE 2003). The Draft Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (BLM 2004b) categorizes BLM-administered lands into areas having low, medium, or high potential for wind energy development from 2005 through 2025, on the basis of their wind power classification. Wind resources in Class 3 and higher could be developed economically with current technology over the next 20 years. Class 3 resources have medium potential; resources in Classes 4 and higher have high potential. The draft programmatic environmental impact statement identifies scattered public land parcels in the planning area with medium or high wind resource potential that might be developed economically with current technology; these are concentrated between the towns of St. Maries and Osburn in Benewah and Shoshone Counties and between Priest River and Samuels in Bonner County. Map #24 in Volume III shows the BLM lands within the planning area with Class 3 or higher wind power potential. To date there has been no interest in developing wind energy within the planning area.

Various national and state incentives are in place in Idaho that encourage the development of renewable energy resources; however, the 2003 BLM and DOE report ranks Idaho as neutral with respect to incentives for the development of renewable power (BLM and DOE 2003). In May 2001, the President adopted a National Energy Policy with recommendations for evaluating current conditions surrounding access and using public lands to "increase renewable energy production, such as biomass, wind, geothermal, and solar." Also recommended are federal incentives, including corporate depreciation, through which businesses can recover investments in solar, wind, and geothermal property.

State incentives include an income tax deduction of 40 percent of the cost of a solar, wind, or geothermal device used for heating or electricity generation, renewable energy project grants, production incentives to purchase renewable energy credits associated with the energy generated by renewable energy systems installed by customers, and various tax incentives and loan programs aimed at encouraging renewable energy production.

Given these incentives to agencies, businesses, and consumers, along with anticipated population increases (see Table 2-2 of the Coeur d'Alene RMP Socioeconomic Report) and an increasing demand for biomass, renewable energy development, particularly wind and biomass, is expected to increase over the planning period, and management actions are necessary to provide for future renewable energy growth while protecting sensitive resource values.

3.3.6 Transportation and Travel

Public travel and transportation needs within the planning area are met by state, county, and forest public road systems. BLM roads are administrative routes maintained for resource management activities. Where open to public uses they do provide some important recreation access to specific BLM land areas. There has been a tremendous increase in demand for motorized recreation. Four times more OHVs were registered in Kootenai County in 2003 than were registered for the entire state in 1981 (IDPR 2004). Advances in motorized recreational equipment have also increased OHV users' accessibility to areas that were previously remote and often inaccessible.

BLM Roads and Trails

The comprehensive inventory of the road and trail networks indicated that there are approximately 376.8 miles of roads and trails throughout the planning area. Table 3-24 shows the breakdown of miles of roads within the CdA FO by road type. Approximately 84 percent of roads and trails are within the open or limited vehicle designation. Sixteen percent are closed routes.

Unimproved roads constitute approximately 60 percent of the road and trail length within the decision area. Trails make up 31 percent of the travel routes in the decision area.

Table 3-24 Miles of Roads and Trails within the Planning Area

	Vehicle Designation		
Type	**Open or Limited**	**Closed**	**Total Miles**
Highway	5.1	2.1	**7.2**
Light-duty road	20.9	4.5	**25.4**
Unimproved road	207.9	19.1	**227.0**
Trails	80.1	35.7	**115.8**
Total Miles	***315.4***	***16.4***	***376.8***
Percent of Total Miles	**84%**	**16%**	

OHV Use

Because of the scattered BLM land pattern, the CdA FO has a limited land base and transportation system with which to provide OHV opportunities. The USFS manages most of the federal lands within the planning area, and much of the Forest System land is contiguous. Consequently, the opportunity for OHV use is largely on Forest System lands. Opportunities exist for the BLM to connect trail and roads into the existing and planned Forest System motorized road and trail system.

All public lands are required to be designated as open, limited, or closed to OHVs, as established by 43 CFR 8342.1 (Table 3-25). Under the existing MFP, the CdA FO manages 63,041 acres as open, 32,567 acres as limited, and 162 acres as closed to OHV use (Table 3-26).

Areas open to OHV use were originally designated as open because current OHV management issues did not exist at the time of the Emerald Empire MFP decision. Land managers considered most of these open lands to be inaccessible because of physical or legal barriers. The previous reasons for designating areas as open are no longer valid under the current policy guidance.

Table 3-25 BLM Travel Designations and Descriptions

Designation	Description
Open	The BLM designates areas as open for intensive OHV use where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.
Limited	The BLM designates areas as limited where it must restrict OHV use in order to meet specific resource management objectives. These limitations may include restricting the number or types of vehicles, limiting the time or season of use, allowing permitted or licensed use only, limiting use to existing roads and trails, and limiting use to designated roads and trails. The BLM may place other limitations, as necessary, to protect resources, particularly in areas that motorized OHV enthusiasts use intensely or where they participate in competitive events.
Closed	The BLM designates areas as closed if closure to all vehicular use is necessary to protect resources, to ensure visitor safety, or to reduce use conflicts.

Table 3-26 Current Travel Designations on BLM Lands in the Planning Area

OHV Designation	Size (acres)	Percent of Planning Area
Closed to vehicle use	162	0.2%
Limited vehicle use	33,567	33.8%
Undesignated or open to vehicle use	63,041	66%

Areas that are limited to OHV use are concentrated in the Hunter-Trapper, Rock Creek, and Reeds Gulch areas. OHV use is also limited to designated roads and trails within WSAs and municipal watersheds. Restrictions on OHV use can relate to the type of vehicle permitted or the season of use. These restrictions are often the result of wildlife resource concerns. Currently, any newly acquired lands are limited to designated roads by executive order.

A small percentage of lands are closed to OHV use. All ACEC/RNAs are closed, largely to protect valued plant habitat. The Rochat Roadless Area is closed to protect cultural values. Two sites, Smelterville Flats and Osburn Cemetery, are closed to protect vegetation and special features.

3.3.7 Lands and Realty

Land Use Authorizations

Land use authorizations include various authorizations and agreements to use BLM-administered land, such as right-of-way (ROW) grants, road use agreements, and associated temporary use permits under several different authorities; leases, permits, and easements, under Sec. 302 of the FLPMA; and Recreation and Public

Purposes (R&PP) Act leases. For the purposes of this planning effort, R&PP transfers, unlike R&PP leases, are considered land tenure adjustments and are discussed below. Currently, the CdA FO analyzes requests for land use authorizations and applies mitigation measures on a case-by-case basis.

The CdA FO administers 224 ROWs, encumbering 1,329 acres of public land (BLM 2005). These existing grants are for a myriad of different facilities and are held by private individuals and groups, as well as by various business and government entities (Table 3-27). Roads, power transmission and distribution lines, and telephone lines are the most common facilities to be granted for ROWs and account for well over half of the total number of grants. Examples of additional types of ROW facilities authorized within the planning area include water pipelines, communication sites, ditches, railroads, material sites, and fiber optic lines. The CdA FO processes approximately 30 to 40 ROW actions annually, including those for new facilities (e.g., roads, power lines, telephone lines, communication sites, water facilities) and those for amending, assigning, renewing, or relinquishing existing ROW grants.

The BLM has not formally designated any ROW corridors within the planning area, although attempts are made to group compatible facilities where possible. The CdA FO currently has no ROW exclusion or avoidance areas in existing land use plans, although specially designated areas, such as Areas of Critical Environmental Concern, Research Natural Areas, and Wilderness Study Areas (see Section 3.4, Special Designations) do restrict such development. A 2003 update to the 1992 ROW corridor study by the Western Utility Group indicates that there are five potential corridors (Volume III, Map #45) (Western Utility Group 2003).

Table 3-27 Existing Types of Right-of-Way Authorizations

Type	Number of Authorizations	Length in Miles	Acreage
Road	115	158	751
Railroad	7	2	52
Powerline	37	47	360
Telephone	10	16	44
Water Facilities	38	2	45
Other	13	n/a	16
Oil and Gas (energy)	4	12	63
Total	**224**	**237**	**1,329**

Ten communication site rights-of-way, occupying three different communication site locations, are authorized within the CdA FO (Table 3-28). Potential new users are encouraged to locate within existing communication facilities. The St. Joe Baldy site contains all but two of the CdA FO communication site rights-of-way. While St. Joe Baldy had a communication site plan completed in 1993, there are no site plans for either of the other two communication site facilities because of their single-occupant status.

Table 3-28 Communication Sites and Locations

Communication Site	Legal Description (Boise Meridian, Idaho)
St. Joe Baldy (8 occupants)	SW¼NW¼, sec. 1, T.46N., R.1W.
Revenue Gulch (1 occupant)	NW¼SE¼, sec. 22, T.48N., R.4E..
Murray (1 occupant)	Lot 19, sec. 5, T.49N., R.5E.

The CdA FO administers five Sec. 302 FLPMA temporary land use permits involving about five acres of BLM lands. These permits are issued for a term of up to three years and are for the temporary use of public lands. Most of these permits are used to authorize permittees to temporarily occupy or use structures constructed on public land until the BLM can arrange for removal of the structures or conveyance to the occupant. There are no leases or easements under Sec. 302 of FLPMA or airport leases in the planning area.

Only one R&PP lease exists within the area administered by the CdA FO. This 32-acre lease is held by the Idaho State Department of Parks and Recreation for the Cataldo Mission, a historic landmark and the oldest building in Idaho. R&PP transfers are discussed below under Land Tenure Adjustment.

Assertions of the right to build roads relating to R.S. 2477 are very controversial in many offices of the BLM. This statute allows roads to be constructed across public lands that are not reserved for other public purposes. However, R.S. 2477 has not been an issue within the planning area.

Public lands in the planning area provide opportunities for wind energy. A 2003 study by the BLM and US Department of Energy found several locations of medium-to-high wind energy potential, generally located on higher elevations (BLM and DOE 2003). These locations include Huckleberry Mountain, Gold Mountain, Widow Mountain, and St. Joe Baldy Mountain (Forssell 2005) (see Section 3.3.5, Renewable Energy). At this time, private companies have expressed no interest in developing these potential sites.

Overall, the trend in the issuance of land use authorizations is relatively constant. Currently, energy-related ROWs are given priority, but the CdA FO processes few of these types of ROWs. The 2003 update to the Western Utility Group study on ROW corridors proposed five corridors in the planning area but assigned medium to low priority to their designation. Based on observation, applications for road ROW grants in the planning area are related to timber values. When timber values are high there is an increase in requests to cross public lands and harvest timber on nearby private land, and when timber values are low there are fewer ROW applications because most landowners prefer to not harvest trees in a poor market.

Land Tenure Adjustment

Land tenure (or land ownership) adjustment refers to those actions that result in the disposal of BLM lands or the acquisition of nonfederal lands or interests.

The planning area was previously recognized as the Emerald Empire Planning Unit in the Emerald Empire Management Framework Plan (MFP), which the BLM approved in 1981 (BLM 1981). Management is based on the MFP and other related decision documents. Current planning guidance with respect to land ownership is provided by the Land Tenure Adjustment Plan (BLM 1989), an amendment to the MFP. This direction establishes land exchange as the predominant method of land ownership adjustment. It also establishes management areas, which are areas that BLM will retain or acquire land in, and adjustment areas, which are generally available for disposal. Management areas typically include the better-blocked BLM lands that meet the retention criteria but also may include areas in which there are high public values suitable for management

by BLM (such as Coeur d'Alene Lake SRMA). The goal in management areas generally is to retain or enhance public land holdings within these zones. Lands outside these management areas, in the adjustment areas, are generally available for the full range of land ownership adjustment opportunities, including retention, exchange, sale, or transfer. Land ownership adjustment proposals in the planning area are analyzed in project-specific reviews.

The primary means of land ownership adjustment within the planning area has been through exchange. Twelve exchanges affecting federal or nonfederal lands within the planning area have been completed since 1981. The CdA FO has been using exchanges extensively to improve public land ownership patterns by generally disposing of small isolated tracts of public land with limited resource values and acquiring nonfederal land with higher public resource values adjacent to larger blocks of public land. Lands in the planning area have also been used in exchanges mandated by Congress.

During this same period, the CdA FO has completed eleven land purchases in support of activities in management areas and has acquired one parcel through donation.

The R&PP Act authorizes the transfer of public lands in addition to leases when it serves the public interest. The CdA FO completed three R&PP transfers since the approval of the Emerald Empire MFP. One transfer was to Kootenai County for expansion of a local park, one transfer was to the city of Post Falls for park expansion, and one transfer was to Shoshone Golf and Tennis Association for expansion of its golf course. No lands have been conveyed for agricultural entries under the Desert Land Act or Carey Act, nor have any lands been conveyed for airport grants, Indian allotments, or railroad grants.

The CdA FO has provided most of the in-lieu selection lands for the State of Idaho. The federal government owes these lands to the state from statehood. Since 1990, the state has received 91,519 acres of land from the federal government that were formerly public lands administered by the BLM in the planning area.

There have been 19 land sales since 1981 but only three since 1990. The purpose of most of the sales has been to resolve long-standing occupancy trespass situations in the CdA FO.

Table 3-29 lists land ownership adjustment actions for the planning area since the completion of the Emerald Empire MFP in 1981. Acreage figures are approximate.

Table 3-29 Types of Land Adjustment Actions Since 1990 (Not Legislated)

Type of Action	Number	Acres Acquired	Acres Disposed
Land exchange	12	3,150	5,710
Purchase	11	683	0
Donation	1	43	0
R&PP	3	0	64
Sale	3	0	2
Total	30	3,876	5,776

Local governments and special interest groups have placed a high priority on the BLM's Coeur d'Alene Lake land acquisitions. Based on public input received during formulation of the District's Land Tenure Adjustment Plan, BLM's acquisition priorities around Coeur d'Alene Lake involve protection of wildlife/riparian habitat and recreational access. Kootenai County in particular is interested in maintaining and expanding recreation opportunities around the lake. Parties interested in land exchanges have viewed the

BLM's scattered timberland in the planning area with great interest, and this timberland will probably continue to be the basis of land exchanges in the future. However, the rapidly escalating price of real estate in and around the BLM's priority acquisition areas may limit the amount of land tenure adjustment possible. The BLM and the Department of the Interior have increased their scrutiny of local BLM land exchange proposals. This review has greatly extended the processing time of exchanges, and the increased amount of time needed to complete an exchange has made land exchanges less interesting to private parties.

Access

For the purposes of this section, access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands. The lands and realty program primarily assists in the acquisition of easements to provide for legal access where other programs have identified a need.

Access to public lands administered by the CdA FO is an issue of concern to both agency personnel and the public. The existing fragmented ownership pattern of BLM lands intermingled with private, state, and other federal lands complicates the access situation. While the CdA FO has made and continues to make progress in terms of improving access to public lands, there are still areas within the planning area that lack legal access. The 1981 Emerald Empire MFP provides planning guidance with respect to access. In accordance with guidance in this document, the CdA FO has been focusing its access acquisition efforts on the following:

- Larger blocks of public lands that are designated for retention in BLM ownership;
- Areas with important resource values;
- Areas where public demand for access is high; and
- Areas with substantial BLM investments.

Generally speaking, access is acquired from willing adjacent landowners on a case-by-case basis and as needs or opportunities arise.

The CdA FO uses the acquisition of road and trail easements as the primary means of obtaining legal access to public lands where it does not currently exist. There are three types of easements: exclusive easements, where the BLM acquires full public rights to the road in perpetuity and exclusively manages all other uses; nonexclusive easements, where the BLM acquires only the right to use the road in perpetuity but does not control other uses; and temporary easements, where the BLM acquires the right to use the road for only a fixed period. The CdA FO administers 30 exclusive easements, 36 nonexclusive easements, and 5 temporary easements, for a total of 71 easements. Since the completion of the Emerald Empire MFP in 1981, the CdA FO has been acquiring access-related easements at the average rate of six per year. Most of these easements are in support of the CdA FO's timber management program. When possible, emphasis for easement acquisition is on those roads or trails identified through a route analysis process.

Although used much less frequently than easement acquisition, the CdA FO uses land exchanges on occasion to acquire needed access to public lands. Access is typically just one of many benefits of these exchanges. The consolidation of BLM land ownership patterns by exchange has generally improved the access situation in the planning area. When disposing of BLM parcels containing roads or trails necessary for access to other public lands, the CdA FO protects these access routes by reserving them in the conveyance documents.

Because access needs within the planning area are relatively constant, there are no high priority areas for obtaining access. Timber sales have provided the majority of reasons for access, and recreational access of public lands has been a high priority.

Withdrawals

As used in the lands and realty program, a withdrawal is an act, designation, or public land order that requires public land to be withdrawn from the operation of the public land laws. The practical effect of a withdrawal is to close a parcel of land to mineral entry and mineral leasing.

The CdA FO uses three types of withdrawals. The first is a watershed protection withdrawal where public land in municipal watersheds is closed to mineral entry to prevent possible damage to public water supplies. These types of withdrawals are also used along rivers and lakes where there is either an energy-producing dam or the possibility of constructing an energy-producing dam. Public lands are also withdrawn to prevent development that would be inconsistent with water storage on the land (flooding). The two watershed protection withdrawals administered by the CdA FO are Sand Creek for the city of Sandpoint, and Rochat Creek for the town of St. Maries. The total acreage for these withdrawals is 4,703 acres.

The second withdrawal type is a power site withdrawal. Information regarding current power site withdrawals is incomplete, but current information indicates that the CdA FO administers three such withdrawals, involving a total of 1,437 acres.

The third type of withdrawal is miscellaneous. These withdrawals are for a variety of purposes but are usually to protect a BLM recreation site or other facility that would be adversely affected by mineral entry. The CdA FO administers two such withdrawals, involving a total of 253 acres.

The need for new withdrawals of public land within the planning area has been decreasing. Most BLM land with resources that need to be protected by withdrawals already has such protection in place. Consequently, there are no high priority areas for withdrawing lands.

Unauthorized Land Use

With the BLM's scattered land pattern, encroachments on public land occur. Trespass under the lands and realty program can be split into three separate categories:

- Unauthorized use;
- Unauthorized occupancy; and
- Unauthorized development.

Unauthorized use refers to activities that do not appreciably alter the physical character of the public land or vegetative resources. Some examples of unauthorized use include the abandonment of property or trash, enclosures, and use of existing roads and trails for purposes that require a ROW grant. Unauthorized occupancy refers to activities that result in full-time or part-time human occupancy or use. An example is the construction, placement, occupancy, or assertion of ownership of a facility or structure (e.g., cabin, house, natural shelter, or trailer). Unauthorized development means an activity that physically alters the character of the public lands or vegetative resources. Examples include cultivation of public lands and road or trail construction/realignment.

The scattered public land pattern in the planning area contributes to trespass problems, particularly where patented mining claims make it difficult to determine federal/private property lines. The CdA FO attempts to abate trespassing by prevention, detection, and resolution. In the lands and realty program, priority for resolving trespass in the planning area is accorded to those newly discovered ongoing uses, developments, or occupancies where resource damage is occurring and needs to be halted to prevent further environmental degradation. Lesser priority is accorded those historic trespass cases where little or no resource damage is

occurring. Realty trespass cases in this latter category are resolved as time permits. There have been 88 realty trespass cases resolved since 1990.

Trespass problems are anticipated to remain at current levels within the planning area. With the BLM's scattered land pattern, encroachments on public land will likely continue to occur. Currently, there are no high priority areas for resolving unauthorized uses.

3.4 SPECIAL DESIGNATIONS

This section is a description of the existing condition of special designation areas in the planning area. Special designations include ACECs, which may be RNAs or Outstanding Natural Areas (ONAs), WSAs, Wilderness Areas, National Recreation Trails, Backcountry Byways, Wild and Scenic Rivers, Historic and Scenic Trails, and Watchable Wildlife Viewing Areas. Table 3-30 describes each of these types of special designations and defines each type of special designations found in the planning area. National Wild and Scenic Rivers (or river sections) are discussed in Section 3.4.1.

Table 3-30 Special Designations Descriptions

Designation	Description
Area of Critical Environmental Concern	In an ACEC, 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 (BLM 2005a). Acreage in CdA FO: 2,981. • Hideaway Islands (76 acres in Boundary County) • Lund Creek (2,905 acres in Shoshone County)
Research Natural Area	An RNA is an ACEC where natural processes are allowed to predominate and which is preserved for the primary purposes of research and education. Acreage in CdA FO: 2,981. • Hideaway Islands (76 acres in Boundary County) • Lund Creek (2,905 acres in Shoshone County)
Outstanding Natural Area	An ONA is an area with high scenic values that has been little altered by human impact. There are no ONAs in the planning area.
Wilderness Study Areas*	A WSA is an area designated by a federal land management agency as having wilderness characteristics, thus making it worthy of consideration by Congress for wilderness designation. • Selkirk Crest (720 acres in Bonner County) • Crystal Lake (9,027 acres in Shoshone County) • Grandmother Mountain (12,140 acres in Shoshone County).
National Wilderness Area	A National Wilderness Area is designated by Congress and defined by the Wilderness Act of 1964 as a place "where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." There are no National Wilderness Areas in the planning area.
Watchable Wildlife Viewing	The Watchable Wildlife Areas program is a cooperative effort to foster the

Table 3-30 Special Designations Descriptions

Designation	Description
Areas	conservation of wildlife and wildlife habitats by (1) providing enhanced opportunities for the public to enjoy wildlife, (2) promoting education about wildlife and habitat needs, (3) contributing to local economies, and (4) enhancing active public support for resource conservation. These areas include: ▪ Wolf Lodge Bay (Lake Coeur d'Alene) ▪ Cougar Bay (Lake Coeur d'Alene) ▪ Gamlin Lake (Bonner County)
National Recreation Trails, National Scenic Trails, and National Historic Trails	The National Trail System Act of 1968 (Public Law 90-543) authorized creation of a national trail system composed of National Recreation Trails, National Scenic Trails, and National Historic Trails. There are no Scenic Trails in the planning area, but the area does include the following National Recreation Trails: ▪ Mineral Ridge (Lake Coeur d'Alene) ▪ Marble Creek Trail (Grandmother Mountain WSA)
Back Country Byways	The Back Country Byways is a system of low-standard roads and trails that pass through public lands with high scenic or public interest value. There are no Back Country Byways in the planning area.

* Acres shown do not match the Wilderness EIS due to improved mapping and land exchanges.

Locations and Current Conditions

ACEC/RNA

Hideaway Islands (76 acres) and Lund Creek (2,905 acres) comprise the two ACEC/RNAs in the planning area. Hideaway Islands ACEC/RNA consists of two islands along the Kootenai River approximately six air miles east of Bonners Ferry. The east island has greater topographic relief and supports midsuccessional cottonwood stands with a significant amount of red-osier dogwood in the understory. The Idaho Conservation Data Center, part of the Idaho Department of Fish and Game, ranks the black cottonwood/red-osier dogwood community type as "S1" in Idaho. An S1 rank is assigned to plant species or communities that are critically imperiled statewide (typically 5 or fewer occurrences or less than five percent of native range currently occupied by high quality examples of type) or especially vulnerable to extirpation from the state. The west island is younger (geomorphically) and of lower relief, supporting early successional cottonwoods and willow stands, with the exception of a band of 20- to 30-year-old cottonwoods on the south side of the island. Sand and cobble bars on both islands are vegetated by pioneer species, such as coyote willow *(Salix exigua),* and three species of cottonwood: black cottonwood, narrowleaf cottonwood *(Populus angustifolia),* and eastern cottonwood *(P. deltoides).* Eastern cottonwood is an eastern US disjunct that is uncommon in Idaho.

At Hideaway Islands, flooding historically determined the islands' vegetative cover, but since the completion of the Libby Dam in 1972, flooding has been controlled. This change in hydrologic conditions has influenced

the vegetation communities on the islands by promoting advancement toward a climax condition rather than maintaining the earlier stages of ecological succession associated with free-flowing systems. Canada thistle *(Cirsium arvense)* has gained a foothold on the upstream island, outcompeting native shrubs and herbs under some of the cottonwood trees. Some evidence of livestock trespass has been observed on the east island, apparently occurring during periods of low flow.

Lund Creek ACEC/RNA totals 2,905 acres and is approximately 15 air miles east of Clarkia, in the southeast corner of the Grandmother Mountain WSA. Lund Creek contains stands of mature mountain hemlock and communities dominated by subalpine fir and whitebark pine. The area also includes a number of aquatic features, such as Pinchot Marsh, Little Lost Lake, and a bog, marsh, streams, and waterfalls in the Lund Creek drainage.

Existing areas of special concern or important value that are unprotected, and where special designations should be considered, are identified in the Coeur d'Alene Resource Management Plan Areas of Critical Environmental Concern Nomination Evaluation Report (Appendix G) (BLM 2005g). The BLM found that 21 areas nominated for ACEC status met the relevance and importance criteria detailed in the report.

WSA/Wilderness

In the 1986 final environmental impact statement on wilderness study areas in north Idaho, the BLM made several recommendations regarding WSAs in the planning area. Those recommendations were to not designate the Crystal Lake WSA as wilderness, to designate the Selkirk Crest WSA for custodial timber management after seeing the results of USFS designation decisions for the adjoining lands, and to designate the Grandmother Mountain WSA as nonwilderness. There are no existing designated Wilderness Areas in the planning area. The WSAs are managed according to the BLM's Interim Management Policy, BLM Handbook 8500-1.

The Selkirk Crest WSA (Unit 61-1) contains 720 acres and is adjacent to the USFS Selkirk Crest roadless area #1-125, which contains approximately 97,960 acres. It lies near the Canadian border southwest of Porthill. It contains about 166 acres of marginally productive timberland, while areas of bare rock and brush cover are found in the upper reaches. The WSA is steep and heavily vegetated with a wide variety of species. Elevation ranges from near 1,800 feet to almost 4,500 feet at the USFS boundary. While most WSAs were required to meet a minimum 5,000-acre criterion, exceptions were made for areas that were contiguous to other USFS areas.

The 9,027-acre Crystal Lake WSA (Unit 61-10) is south of Cataldo and contains the headwaters of Latour Creek. Its namesake, Crystal Lake, is a five-acre glacial cirque lake that lies within the WSA and contains about 4,900 acres of commercial timberland. The WSA contains a landscape of varied character. Bare talus peaks descend sharply to Latour Creek, some 3,000 feet below Reeds Baldy, the highest peak in the unit. The slopes in the upper drainages are predominantly vegetated with a thin to moderately stocked mixed coniferous stand. The basin below Crystal Lake contains the site of a past fire and now supports a dense brush cover.

The Grandmother Mountain WSA (Unit 61-15) is adjacent to the USFS Grandmother Mountain roadless area. Since the original inventory of the WSA conducted in 1980, improved methods of acreage measurement (such as GIS) have changed the figures originally proposed. Current accurate acreage figures for Grandmother Mountain include 12,140 acres of BLM land. The adjoining USFS Grandmother Mountain roadless area contains an additional 22,347 acres of land, including 1,184 acres of private land.

The terrain of Grandmother Mountain WSA varies from heavily forested drainages to bare peaks. There are numerous small drainages and several high mountain lakes throughout. Elevation ranges from 6,800 feet on

Widow Mountain to 4,600 feet in the Lund Creek drainage. The Grandmother Mountain WSA comprises 12,579 acres.

The continued designation of the Selkirk Crest WSA will be determined by the USFS. The other two WSAs await Congressional action.

Watchable Wildlife Viewing Areas
The Wolf Lodge Bay wildlife viewing area is adjacent to Mineral Ridge. Various eagle perching areas are adjacent to the lake. The Cougar Bay wildlife viewing area is on the northwest shore of Coeur d'Alene Lake. Swans, eagles, osprey, heron, songbirds, geese, and numerous other waterfowl and migratory birds can be viewed in this area. The Gamlin Lake wildlife viewing area is just southeast of Sandpoint, Idaho. Waterfowl are visible around the lake. Migratory waterfowl are visible around the Lower Coeur d'Alene River wildlife viewing area.

National Trails
The Mineral Ridge NRT is a nonmotorized 3.3-mile self-guided nature trail used by local school districts for environmental education. It ascends and then follows a ridge separating Beauty and Wolf Lodge Bays on Coeur d'Alene Lake, affording numerous scenic views. The Marble Creek National Recreation Trails, portions of which are managed by BLM, include portions or all of five separate trails. Those trails under BLM ownership include Delaney Creek National Recreation Trail, which is composed of natural dirt and rock and is used for backpacking, hiking, and hunting (BLM 2005c), and Lookout Mountain National Recreation Trail, which is composed of natural dirt and rock and is used for backpacking, hiking, scenic viewing, and hunting (BLM 2005d). Lookout Mountain has an intermingled ownership and is jointly administered by the BLM and the USFS. Lookout Mountain Trail follows a high mountain ridge alternating between forested saddles and open, rocky mountaintops.

The trails are part of a 45-mile network that provides access to and through the Grandmother Mountain WSA. Portions or all of five separate trails were designated, including the following:

- Lookout Mountain Trail, 7 miles (5.5 miles under BLM ownership);
- Delaney Creek Trail, 4.25 miles (2.5 miles under BLM ownership);
- Marble Divide Trail, 1.25 miles;
- Gold Center Marble Creek Trail, 2.5 miles; and
- Marble Creek Trail, 11 miles.

Back County Byways
There are no BLM back country byways in the planning area.

3.4.1 Wild and Scenic Rivers

No designated Wild and Scenic Rivers are currently managed by the BLM within the planning area. A 66.3-mile segment of the St. Joe River (Shoshone County) entirely within the St. Joe National Forest is the only WSR designation in the planning area. The designated segment is administered by the USFS. The BLM completed a wild and scenic river suitability study as part of the RMP process. The purpose of the suitability study was to determine if eligible segments met the suitability criteria for inclusion in the national Wild and Scenic Rivers System (NWSRS). A report on this study can be found in Appendix J. Table 3-31 contains criteria for classifying wild and scenic rivers.

Table 3-31 Classification of Wild and Scenic Rivers	
Class	**Criteria**
Wild	Rivers or sections of rivers that are free of impoundments, generally inaccessible, except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.
Scenic	Rivers having the same characteristics as "wild" but accessible in places by roads. These rivers are usually more developed than wild rivers and less developed than recreational rivers.
Recreational	Rivers or sections of rivers that remain largely natural in appearance but are readily accessible by road or railroad, may have some development along the shoreline, and may have had some impoundment or diversion in the past.

Eligible segments are described in Table 3-32, below.

Table 3-32 Eligible River Segments Studied for Wild and Scenic River Suitability	
Segment Name	**Location**
Kootenai River	14-mile segment from the Idaho and Montana border to the downstream end of the Hideaway Islands RNA/ACEC. Classification: Recreational.
Little North Fork Clearwater River	3.61-mile segment from Fish Lake downstream to the BLM and USFS boundary immediately downstream of the confluence with Lost Lake Creek. Classification: Wild (upstream portion), Recreational (downstream portion).
Lost Lake Creek	3.43-mile segment, including entire stream from Lost Lake downstream to the confluence with the Little North Fork Clearwater River. Classification: Wild (upstream portion), Scenic (downstream portion).
Little Lost Lake Creek	3.09-mile segment, including entire stream from Little Lost Lake downstream to the confluence with the Little North Fork Clearwater River. Classification: Wild.
Lund Creek	3.88-mile segment, including entire stream from source downstream to the confluence with the Little North Fork Clearwater River. Classification: Wild.

3.5 SOCIAL AND ECONOMIC CONDITIONS

3.5.1 Tribal Interests

Several Native American tribes have interests in, and historical ties to, the planning area, including the Coeur d'Alene Tribe, the Kalispel Tribe, the Confederated Salish and Kootenai Tribe, and the Kootenai Tribe.

Coeur d'Alene Tribe

The Coeur d'Alene Reservation is in Benewah and Kootenai Counties in northern Idaho, and includes the Coeur d'Alene and St. Joe Rivers, as well as Lake Coeur d'Alene (Coeur d'Alene Tribe 2004). Principal settlements on the reservation include Benewah, DeSmet, Plummer, Tensed, and Worley. The Tribe collectively owns approximately 69,000 acres of land, much of which is interspersed with individually allotted lands and non-Indian lands. Most of the land (247,540 acres) within the Coeur d'Alene Reservation is privately owned. Tribal headquarters are in Plummer (Economic Development Center 2004).

The reservation lies partially within National Forest land in a region where the timber industry has been traditionally prominent. At present, a limited amount of timber harvesting continues on tribal lands. Although a considerable number of tribal members find employment in this industry, many are also employed by non-tribal enterprises. Pacific Crown Timber Products is the largest private employer of tribal members within this domain (Economic Development Center 2004).

Kootenai Tribe

The Kootenai Tribe of Idaho is one of the seven member bands of the Kootenai Nation. The tribe's reservation is a few miles west of Bonners Ferry in Boundary County on the Kootenai River. Most reservation land lies on the wide valley floor of the river (US EPA 2004b). The reservation has 250 acres in federal trust, with approximately 2,000 additional acres allotted to individual tribal members. Tribal headquarters are three miles west of Bonner's Ferry.

Kalispel Tribe

The Kalispel Indian Reservation is approximately 55 miles north of Spokane in Pend Oreille County. The 4,600-acre reservation is located along approximately ten miles of the Pend Oreille River. The acreage is a narrow strip along the east bank of the river near Usk, Washington. The Tribe also has 240 acres of reservation land on the west bank of the river, north of Cusick, Washington. Tribal population is approximately 280.

Confederated Salish and Kootenai Tribe

The 1,244,000-acre Flathead Reservation, located in western Montana, is the home of the Confederated Salish and Kootenai Tribe. The tribe consists of a confederation of the Salish and Pend Oreille tribes along with the Kootenai Tribe and is headquartered in Pablo, Montana.

Traditional Uses

Because the BLM manages portions of the ceded lands that are within the traditional use areas of the tribes, it has a trust responsibility to provide the conditions necessary for Indian tribal members to satisfy their treaty rights. Members of the tribes exercise their hunting, fishing, and gathering rights on federal lands outside the boundaries of the reservation. Currently, Native American tribes do not depend on commodity resources from lands managed by the CdA FO for their economic livelihood, but they do use resources on BLM public lands for subsistence and cultural purposes. Tribal treaty rights pursued on public lands within the planning area include fishing for resident game fish, hunting large and small game, and gathering various natural resources for both subsistence and medicinal purposes. Currently, there is little specific information available on the exact species sought or locations used by Native Americans exercising their treaty rights within planning area boundaries.

Trends in the planning area since the signing of treaties and agreements have changed the availability of natural and cultural resources that were historically used by the tribes in exercising their treaty rights. Mineral extraction, timber harvest, farming, ranching, construction, introduction of exotic species, declines in water quality, and vehicle use have led to a general decline in fish, game, and plant species. The loss of resources and visual intrusions on locations can have a detrimental effect on Native American socio-cultural activities associated with plant, fish, or animal procurement. More recent trends include a greater awareness among managers of treaty rights issues and commitment to collaborating with the tribes.

3.5.2 Public Safety

Public Safety

Public safety includes the management actions of the Abandoned Mine Lands (AML) and Hazardous Materials Management (HMM) programs. The BLM's AML programs have been very active in addressing hazardous materials and mining-related programs in the Coeur d'Alene District (Table 3-33). AML management deals largely with identifying past mining sites, checking for potential problems, and addressing water quality issues at the sites. Hazardous materials represent a significant risk to public safety, human health, and the environment, and as such are important issues that warrant the attention of the BLM management when hazardous materials or wastes are present on its lands. Hazardous materials management also involves the prevention of illegal hazardous materials actions on public lands; the proper use, authorization, permitting, and regulation of hazardous materials on public lands; and the timely, efficient, and safe response to hazardous materials incidences on public lands.

Table 3-33 Activities and Associated Hazardous Materials Management

Potential Hazard	Examples
Hazardous materials associated with historic and active mine operations	• Mine water drainage • Heavy metals, such as tailings, mill sites, and rock dumps • Explosives, such as dynamite, ammonium nitrate, caps, and boosters • Chemicals associated with processing ore or used in laboratories, such as cyanide • Asbestos
Illegal dumping	• Unauthorized waste dumps • Barrels or other containers with hazardous substances dumped on public land
Illegal activities	• Drug labs • Wire burn sites
Spillage of hazardous materials	• Dumped waste spills and residual materials • Materials spilled from overturned trucks or train cars • Weed spray equipment spills
Oil and gas activities	• Hydrogen sulfide gas • Oil spills • Drilling mud waste
Facilities on public land either federal or private (under a right-of-way)	• Leaky-storage tanks • Asbestos
Military operation	• Aircraft wreckage • Unexploded ordinance

Most of the hazard issues that occur under the jurisdiction of the CdA FO are associated with past mining activities and AMLs. Many actions to clean up mining contamination source and depositional areas, including riparian and wetland habitats, have been conducted in the Coeur d'Alene Basin since 1989. Various entities,

including federal and state agencies, the Coeur d'Alene Tribe, mining companies, and Union Pacific Railroad, have been involved in these efforts (US EPA 2002). Watershed and stream restoration actions related to mining impacts are expected to continue near the present level or to decrease as cleanup of the priority sites is largely completed. Many of the BLM hazardous material incident responses address–materials illegally disposed of on public lands, which often include drug wastes from illegal methamphetamine labs. Known locations of abandoned mines, hazardous materials, and impaired streams are shown on Maps #69 and #70 in Volume III.

The Coeur d'Alene River Basin is part of the Bunker Hill Mining and Metallurgical Complex Superfund Site listed on the National Priorities List (NPL) in 1983 (US EPA 1992, 2004), and there are extensive areas of public lands included within this Superfund facility. Coordination and cleanup efforts include activities related to the expanded Bunker Hill/Coeur d'Alene Basin Superfund Site and other sites within the Coeur d'Alene basin, including certain tributaries such as Canyon Creek and Pine Creek. On average, the BLM undertakes three to nine site cleanup actions per year at former metals mining sites.

There are currently 128 AML sites that have been inventoried and entered into the BLM's Abandoned Mines Module database for the planning area. The vast majority of these sites (123) are in Shoshone County. The remaining five entered sites are in Kootenai and Bonner Counties. Despite having few AMLs, Kootenai County is affected by the upstream mining impacts in Shoshone County via the Coeur d'Alene River Basin drainage system. It is estimated that the planning area may contain as many as 100 additional sites that have not been inventoried.

Not all of the inventoried AML sites include conditions that are hazardous to humans or the environment, but many do. More than 70 mine openings have been posted with a BLM restriction/closure order due to the physical hazards that old mines can present. Other physical hazards that may be encountered at AML sites include basic trip and fall hazards from debris, possible tailings or highwall movement, unmarked or partially obscured mine shafts, dilapidated mine buildings and equipment, exposure to harmful chemicals and contaminated soils, presence of unused explosives, and open mine passages that have oxygen-depleted or toxic environments. The potential for injuries and deaths from these hazards continues to grow with the western population growth and recreational use of public lands. Therefore, sites easily accessed by the public are given first priority for implementing mitigation or closure measures.

When hazardous conditions are present at AML sites, the affected environment may include both on-site and off-site impacts. Mine tailings on AML sites may affect or preclude the growth of vegetation on-site and give rise to fugitive dust with hazardous heavy metal constituents when disturbed. Some AML sites have water quality issues from heavy metals laden water flowing out of the mines or leaching from the tailings or waste rock. These materials contribute undesirable heavy metal constituents, such as cadmium, lead, and zinc, to nearby tributaries, including the ones impacting the Coeur d'Alene River Basin. These heavy metal constituents adversely affect most aquatic species and also may adversely affect avian and mammalian species near such drainages via direct and in direct routes of intake. Cleanup actions have been taken at many AML and HMM sites to stabilize the surfaces of tailings piles, to treat contaminated mine discharge, and to clean up contaminated floodplains and mine waste.

Efforts have been made to stabilize tailings piles through removing tailings piles and deposits from the floodplains and through soil capping and seeding to promote vegetative cover. Minewater-discharge has been treated with bioreactors that sequester heavy metal constituents. Contaminated floodplains have been cleaned up primarily by excavating heavy metal contaminated sediments and mine tailings from floodplains and

moving the material to a repository site. The BLM's ongoing efforts to remediate mine waste sites and contaminated lands within its jurisdiction will result in increased environmental health and human safety.

Another major focus of the HMM program is response to the illicit dumping of hazardous and solid waste materials on BLM-administered land. Illicit dumping may occur anywhere, but generally it is concentrated around recreation areas and alongside roadways. Much of the illicit dumping activity within the planning area is intentional, small quantity waste dumping, with three to ten incidents per year. These dumping incidents often do not fit the specific category of hazardous waste dumping, but the dumped materials are normally screened for hazardous components before they are removed and appropriately disposed of. The types of materials include but are not limited to petroleum products, household wastes, paints, and biocides. The illegal dumping of solid waste makes up the bulk of the illicit dumping activity.

In recent years, the BLM increasingly responded to dumped methamphetamine lab wastes, or related drug wastes, on its administered lands, with two to four such incidents per year. Methamphetamine drug lab wastes frequently contain highly toxic chemicals, flammable materials, and potentially explosive materials. Drug paraphernalia may also be included in these wastes and present a skin puncture and disease-transmission hazard. Methamphetamine drug lab wastes present a direct health and safety hazard to individuals who may inadvertently come across them; these wastes also present a hazard to wildlife.

Hazardous materials may legitimately be brought onto BLM administered public land during weed control or resource development activities. The types of hazardous materials used for weed and insect control include herbicides and pesticides. The general types of hazardous materials that may be present during natural resource development include petroleum products (fuels and lubricants), solvents, surfactants, paints, explosives, batteries, acids, biocides, gases, antifreeze, and mineral products (mine waste, cement, and drilling materials). Another source of hazardous materials activity is from actions that involve rights-of-way, leases, and permits. Examples of these types of actions are pipelines (oil and gas), telecommunication sites, and transportation facilities.

3.5.3 Social and Economic Conditions

This section describes recent socioeconomic trends and the interdependence of socioeconomic factors with the management of the planning area. The planning area encompasses portions of Boundary, Bonner, Kootenai, Shoshone, and Benewah Counties. Because much of the tourism base for the planning area comes from the Spokane County, Washington demographic, economic data for that county are included as well. The economies of these counties are affected by public land uses within the planning area. Similarly, the demographics, social structure, and values within these counties influence the demand for recreation and other opportunities provided by the public lands. For these reasons, demographic, economic, and social data are presented for these five project area counties. Additional regional information also is provided, where applicable. The most recent data available at the time of the analysis are supplied for each topic.

Socioeconomic resources include population, housing, employment, income and earnings, and safety risks to children and schools. Population is the number of residents in the area and the recent change in population growth. Housing includes numbers of units, ownership, and vacancy rate. Employment data take into account labor sectors, labor force, and statistics on unemployment. Income information is provided as an annual total by county and as per capita income, and earnings by sector group provides a measure of the relative distribution of income among broad industry groups. Potential disproportionate risks to children are identified, in accordance with Executive Order 13045 (Executive Order 13045, 62 FR 19885), and school enrollment, an important consideration in assessing the effects of potential growth, is described for each of

the planning area counties. Each of these socioeconomic characteristics is discussed below, followed by a summary of the relationship between lands within the planning area and the local socioeconomic setting.

Population

Idaho's population has risen 28.5 percent in the last decade, while the population of the planning area has grown an average of 12.8 percent (Idaho Commerce and Labor 2004). Between 1990 and 2000, approximately 48,700 people moved into Idaho from other states, while another 15,300 people immigrated from foreign countries, resulting in an increase of nearly 64,000 newcomers (Western Interstate Commission for Higher Education 2003). Directly adjacent and west of the planning area are Spokane County and the city of Spokane, Washington. Many recreational visitors to the planning area come from the Spokane area.

Table 3-34 displays population trends from 1990 to 2000 and percent change over the 10-year period in the five counties analyzed. The two largest county populations, in Kootenai and Bonner Counties, totaled 108,685 and 36,835, in 2000, and represent increases of 55.7 percent and 38.4 percent from their 1990 populations. The growth in both of these counties over the 10-year period exceeded the state average of 28.5 percent. Over this decade, the largest percentage change in population (a 55.7 percent increase) occurred in Kootenai County, in which the cities of Coeur d'Alene and Post Falls are located. The lowest percentage change occurred in Shoshone County (a 1.1 percent decrease), in which the cities of Wallace and Kellogg are located. This lack of expansion can be attributed to the setback of the Bunker and Sunshine Mines, as well as the slow momentum in developing tourism to replace the lost mining and logging jobs over the last decade (Idaho Panhandle National Forests 2005). This economic setback has resulted in a net loss of younger families, which has been offset by in-migration of retirees and workers commuting to the Coeur d'Alene area (Idaho Commerce and Labor 2004). Projected population changes are shown in Table 3-35.

Table 3-34 County Population Estimates and Components of Change 1990-2000

County	1990	2000	1990-2000 Change	1990-2000 Percent Change	Median Age (2000)
Benewah	7,937	9,171	1,234	15.5%	39.2
Bonner	26,622	36,835	10,213	38.4%	40.8
Boundary	8,332	9,871	1,539	18.5%	38.3
Kootenai	69,795	108,685	38,890	55.7%	36.1
Shoshone	13,931	13,771	-168	-1.1%	41.8
Planning Area	126,617	178,333	51,708	40.8%	39.2
Idaho	1,273,855	1,273,593	368,417	28.5%	33.2

Source: US Census Bureau 2004; Real Estate Center 2003 (utilizing US Census Bureau data)
Note: Decade years represent April 1 Census data, not mid-year estimates.

Table 3-35 County Population Projections

County	2000	2005	2010	2015	2020	2000-2020 Change	2000-2020 Percent Change
Benewah	9,171	9,043	9,647	10,304	11,061	1,890	20.6%
Bonner	36,835	40,133	43,528	47,167	51,027	14,192	38.5%
Boundary	9,871	10,755	11,665	12,640	13,674	3,803	38.5%
Kootenai	108,685	118,417	128,433	139,169	150,561	41,876	38.5%
Shoshone	13,771	14,554	15,297	16,046	16,788	3,017	21.9%
Spokane	417,939	441,068	466,417	496,981	529,958	112,019	26.8%
Planning Area	178,333	192,902	208,570	225,326	243,111	64,778	36.3%
Idaho	1,273,855	1,386,4893	1,497,548	1,609,314	1,722,954	449,099	35.3%

Source: US EPA 2004a

Housing

Table 3-36 shows housing occupancy type and vacancy for the five counties of the planning area in 1990 and 2000. In the decade between those two years, most counties, with the exception of Benewah and Shoshone, experienced an increase of above 26 percent in total number of housing units. Kootenai County had the largest increase (45.8 percent) in the number of housing units, while the number of housing units in Benewah County decreased by 4.2 percent. The growth in the number of housing units in Bonner, Boundary, Kootenai, and Shoshone Counties occurred as a result of population growth. All counties individually, and as an average, experienced a lower percentage increase in the number of housing units than did the state, which experienced an increase of 27.7 percent.

In 2000, Shoshone and Bonner Counties had the highest vacancy rate (4.2 percent and 2.4 percent), and Benewah and Boundary Counties had the lowest vacancy rate (both 1.8 percent). In general, the average vacancy rate for the planning area in 2000 was 2.5 percent, with vacancy rates declining in Benewah County between 1990 and 2000, and increasing or remaining the same in the other planning area counties. State vacancy rates also increased or continued to be stable over the decade.

Table 3-36 County Housing Estimates 1990-2000

	1990			2000			
County	Housing Units	Vacancy Rate	Persons per Household	Housing Units	Vacancy Rate	Persons per Household	Housing Units Percent Change
Benewah	3,731	2.7%	2.63	4,238	1.8%	2.52	-4.2%
Bonner	15,152	2.4%	2.58	19,646	2.4%	2.49	29.7%
Boundary	3,242	1.5%	2.78	4,095	1.8%	2.61	26.3%
Kootenai	31,964	1.7%	2.57	46,607	2.2%	2.60	45.8%
Shoshone	6,923	2.0%	2.42	7,057	4.2%	2.30	1.9%
Planning Area	61,012	2.1%	2.60	81,643	2.5%	2.50	19.9%
Idaho	413,327	2.0%	2.73	527,824	2.2%	2.69	27.7%

Source: Idaho Department of Finance 2002; US Census Bureau 2004

Employment and Economy

Table 3-37 shows employment data for all planning area counties in 2000. The two most populous counties, Kootenai and Bonner, had unemployment rates of 7.8 and 7.3 percent, while, on average, the planning area counties had an unemployment rate of approximately 10.2 percent, higher than the state average of 5.8 percent. Benewah, Shoshone, and Boundary Counties, which had the highest unemployment rates in the planning area in 2000, demonstrate seasonal employment patterns due to the effects of employment in fields related to the agriculture and timber industry (Idaho Commerce and Consulting 2004).

Table 3-37 County Employment Statistics (2000)

County	Employed	Unemployed	Unemployment Rate
Benewah	3,472	562	13.9%
Bonner	15,890	1,244	7.3 %
Boundary	3,875	431	10.0%
Kootenai	50,162	4,217	7.8%
Shoshone	5,377	718	11.8%
Planning Area	78,776	7,172	10.2%
Idaho	599,453	36,784	5.8 %

Source: US Census 2004; Idaho Commerce and Labor 2004

As shown in Table 3-38, between 1990 and 2000, the sector with the greatest percentage increase in employment (for all counties in the planning area) was the services sector (99.3 percent). After services, the highest percentage of employment growth in the five-county area occurred in the construction (98.1 percent) and transportation/utilities (94.3 percent) sectors.

Over the 10-year period, employment in the other industry sectors, finance/insurance/real estate (53.4 percent), public administration (33.9 percent), and trade (22.2 percent), showed a moderate increase. The agriculture/forestry/fishing and hunting/mining sectors showed a decline in employment over the 10-year period of 15.7 percent and 0.81 percent, respectively, which may be attributed to changes in the timber harvesting and lumber production industry throughout Idaho. Timber harvesting and lumber production have always been important components of northern Idaho's economy. Thirty-one mills closed throughout Idaho in the early 1990s and accounted for a loss of 1,731 jobs state-wide (Idaho Commerce and Labor 2004).

Within the planning area, Benewah County, whose economy remains heavily dependent on forest products, has only 45 jobs in manufacturing outside of the forest products industry. When the forest products industries downsized between 1998 and 2002 and the Rayonier Mill in Plummer closed, the county became vulnerable to high unemployment. However, a new mill using small-dimension logs was opened by Plummer Forest Products in 2002, creating 70 jobs. Boundary County experienced successful forest products operations in the early and mid-1990s, but this trend slowed during the latter part of the 1990s, and the county experienced an economic blow when two of the county's largest mills closed, leaving 140 people unemployed. Since then, employment in other industries has offset this job loss. Bonner County, too, benefits from the employment of 900 people in the wood products manufacturing industry, as well as from employment in the agriculture industry, which increased when Anheuser-Busch developed Mountain Farms, a large hops, ornamental tree, and Christmas tree farm, in 1981 (Idaho Commerce and Labor 2004).

Table 3-38 County Employment by Industry Sector and Average Sector Growth

Sector (Total Percent Change)	Benewah County	Bonner County	Boundary County	Kootenai County	Shoshone County	Total Planning Area
Mining* (N/A)						
1990	24	41	4	219	1,568	1,856
2000	(D)	95	(D)	210	754	N/A
% change		131		-4	-52	
Agriculture/Forestry/Fishing and Hunting/Mining (-15.7%)						
1990 (including mining*)	298	651	472	1,385	1,678	4,484
2000	344	872	431	1,333	866	3,779
Construction (98.1%)						
1990	136	765	166	2,613	326	4,006
2000	188	1,525	282	5,525	414	7,934
Manufacturing (-0.81%)						
1990	883	2,339	574	5,313	336	9,445
2000	530	2,186	558	5,772	323	9,369
Transportation/Utilities (94.3%)						
1990	200	537	162	1,727	226	2,852
2000	206	1,219	277	3,497	343	5,542
Trade (22.2%)						
1990	518	2,263	526	6,908	1,054	11,269
2000	511	2,737	569	9,166	790	13,773
Finance/Insurance/ Real Estate (53.4%)						
1990	69	505	106	1,631	165	2,476
2000	149	580	122	2,782	166	3,799
Services (99.3%)						
1990	804	2,945	868	9,624	1,505	15,746
2000	1,295	6,231	1,452	20,094	2,304	31,376
Public Administration (33.9%)						
1990	136	456	171	1,334	306	2,403
2000	248	554	184	1,993	238	3,217

Source: BEA 2004; US Census Bureau 2004; Idaho Commerce and Labor 2004
Note: (D) indicates fewer than 10 jobs or disclosed but confidential information.
*Mining was accounted for as a separate sector in the 1990 census; in the 2000 census, mining was accounted for in combination with the agriculture, forestry, and fishing sectors.

In addition, mining, also a historically important industry within the planning area, underwent significant changes. During the past decade and through to the present, the mining industry in the planning area has trended toward a decrease in the number of operations. However, the silver mining industry in Shoshone County has maintained a significant presence within the local economy due to high silver prices. Following the closure of the Sunshine Mine and the layoff of 150 people from the Lucky Friday Mine in 2001, there has been a substantial decline in mining industry employment. Employment in the mining industry in the planning area declined from 4,200 people in 1981 to its present employment of 380 people. Currently, the Lucky Friday Mine employs 140 people, and the Galena Mine employs 160 people (Idaho Commerce and Labor 2004).

In 2000, the five counties in the planning area followed a similar employment pattern within most industry sectors (BEA 2004). Overall, Boundary, Benewah, and Shoshone Counties had the greatest employment in natural resource-related industries, with 11 percent, 8 percent, and 8 percent, respectively; and Bonner and Kootenai Counties had the lowest natural resource-related employment, with 2 percent and 1 percent, respectively (Idaho Commerce and Labor 2004).

Income and Earnings

As shown in Table 3-39, in 2000, per capita personal incomes for the planning area counties remained below the state average of $17,841, with an average increase of 56.6 percent since 1990. Overall, Kootenai County had the highest per capita income ($18,420), and Boundary County had the lowest ($14,636) in 2000 (BEA 2004).

Bonner County experienced the most significant growth in per capita income: a 64.0 percent increase from $10,527 in 1990 to $17,263 in 2000. Kootenai County experienced the lowest percentage growth between 1990 and 2000 (49.5 percent). In 2000, the average per capita income growth level in the planning area counties (56.6 percent) was well above the state level (12.5 percent).

Table 3-39 Per Capita Incomes

County	1990	2000	Percent Change
Benewah	$9,921	$15,285	54.1%
Bonner	$10,527	$17,263	64.0%
Boundary	$9,054	$14,636	61.7%
Kootenai	$12,330	$18,430	49.5%
Shoshone	$10,373	$15,934	53.6%
Planning Area	$10,441	$16,310	56.6%
Idaho	**$15,858**	**$17,841**	**12.5%**

Note: Figures calculated without taking into account the inflation rate.
Source: BEA 2004; US Census Bureau 2004

In 2000, nonfarm industries had the highest earnings in all counties. Between 1990 and 2000 Kootenai, Bonner, and Boundary Counties experienced the largest increases in nonfarm earnings (57.6 percent, 50.5 percent, and 47.5 percent, respectively). Between 1990 and 2000, farm earnings decreased significantly in Kootenai and Benewah Counties, by 91.1 and 37.5 percent. Shoshone County had the largest increase (58.1 percent), although total farm earnings remained negative (BEA 2004). Overall, this trend indicates a decrease in farm and agriculture-related earnings within the last decade, which has led to the growth of employment services and amenity-based industries within the planning area.

Protection of Children and Schools

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045, 62 FR 19885) states that each federal agency shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that the child is likely to come into contact with or to ingest.

Hazardous materials associated with historic and active mine operations in Shoshone County have been transported to and deposited along the Lower Coeur d'Alene River and its associated lakes, floodplain, and wetlands. An extensive amount of the contamination occurs on BLM public lands within the Coeur d'Alene basin and is part of the expanded Bunker Hill Mining and Metallurgical Complex Superfund Site. Hazardous waste materials represent a signficant risk to public safety and human health, particulary children. The BLM's current Abandoned Mine Lands (AML) program interfaces with the BLM's Hazardous Materials Management Program to clean up, remediate, and monitor such hazardous waste on public land.

Approximately 27.1 percent of the population of Kootenai County and 25.5 percent of Bonner County is under 18 years of age. Similar percentages of children reside in the other counties in the planning area: 22.9 percent in Shoshone County, 26.9 percent in Benewah County, and 29.2 percent in Boundary County (US Census Bureau 2004).

Thirteen school districts serve all counties in the planning area. The 84 schools within these school districts had a total enrollment in the 2002-2003 school year of 29,889 students. Of the five counties, Kootenai and Bonner Counties had the highest K-12 student enrollment, with 18,765 and 5,662 students. Boundary and Benewah Counties had the smallest K-12 student enrollment, with 1,648 and 1,655 students. Kootenai County has the greatest number of schools, most of which are in Coeur d'Alene, with twenty-one elementary schools, five junior high schools (grades 8 and 9), two junior-senior high schools, four high schools (grades 10 through twelve), and six alternative/other schools (e.g., charter schools [kindergarten through sixth grade], detention centers, and alternative education schools) (National Center for Education Statistics 2004).

Economic Influence of BLM-Managed Lands

Local economies realize direct and indirect benefits from a variety of activities on public lands, including recreation and the processing and harvesting of natural resources (i.e., timber, minerals, and forage). The agricultural, hunting, forestry, and fishing sectors (which are industries that use BLM-managed lands) have shown increases in employment due to an increase in activity (US Forest Service 2003). In addition, the federal government redirects revenues collected from public lands back to the states in which they were collected.

The BLM collects revenues from recreational and commercial activities that take place on the nearly 12 million acres of BLM-managed lands in Idaho. These revenues are collected from facility fees (e.g., campgrounds), BLM recreation permits (i.e., special, competitive, organized group activity, and event use permits), timber sales, mining leases and mineral revenues, and grazing fees. Table 3-40 presents collections received from specific activities on Idaho BLM-managed lands in 2002.

Table 3-40 Total Federal Collections from Idaho BLM-Managed Land and Minerals (2002)

Activity	Collection
Recreation and use fees	$433,676
Grazing fees	$1,367,092
Timber receipts, public domain	$612,510
Mining claim holding fees and service charges	$791,900
Mineral royalties, rents, and bonuses	$7,874,520
Miscellaneous receipts	$513,004

Source: BLM 2004b

More than $15 million dollars in annual revenues are returned to the American people (BLM 2004b) and are reinvested in the state's public lands. In 2002, the BLM invested close to $50 million in Idaho public lands (BLM 2004b). Investments are made in the management of land and resources, land acquisition, range improvements, construction and access, central hazardous materials fund, and wildfire preparedness and operations. The ways that recreational and commerical sectors of public lands influence local economies are discussed below.

Recreation Sector

Growth and expansion in Idaho's tourism and recreation industry have been a significant factor in Idaho's economy. Tourism is the state's third largest industry, and in 1998 tourists and visitors spent an estimated $1.7 billion, accounting for approximately $134 million in local, state, and federal tax revenues (Business Enterprise for Sustainable Travel [BEST] 2001) and six percent of the state's $29 billion in gross revenues for 1998 (Idaho Game Fishery 2001). These revenues, in turn, created more jobs and income for Idaho citizens (Idaho Commerce and Labor 2004).

Within the state, tourism-related jobs accounted for 28.4 percent of total tourism-related employment. In 2001, recreation and tourism employed approximately 7,752 workers in the planning area. Of total visitors, the percent of nonresident visitors traveling to Idaho was estimated to be 13 percent in the summer, 11 percent in the fall, 8 percent in the winter, and 13 percent in the spring (Idaho Game Fishery 2001).

Recreation-related visits to Idaho are estimated to continue to increase at an annual rate of one to four percent. Population growth, as well as an increase in the number of visitors per year to Idaho, has created a rising demand for recreation opportunities. In 2002, the Outdoor Industry Association's State of Affairs ranked Idaho as the number one state in the nation for recreation, with 86.8 percent of residents participating in outdoor activities (Outdoor Industry Association 2002). Recreation and visits to natural and cultural areas accounted for 48 percent of tourist revenues (Idaho Game Fishery 2001).

Visitors attached the highest importance rating to the experience of obtaining environmental awareness and managing for environmental benefits. In addition, remote and more primitive recreation opportunities were favored by the greatest percentage of visitors (University of Idaho 2000). The most common and most desired activities on BLM lands were fishing, hiking, camping, photography, wildlife/bird observation, picnicking, hunting, and off-highway vehicle use. BLM recreation areas are most highly valued for viewing scenery, experiencing nature, escaping crowds and stress, being physically active, experiencing quiet and solitude, providing a sense of discovery, and being with friends (Idaho Commerce and Labor 2004).

Forestry Sector

Although 41 percent of Idaho is forested, only a fraction of that area is administered by the BLM CdA FO and used for timber harvest. Forestry within the planning area is more prevalent on US Forest Service lands within the planning area and includes the surrounding Coeur d'Alene National Forest, Kaniksu National Forest, and St. Joe National Forest. Approximately 88 percent of all public lands managed by the CdA FO are forested lands. Approximately 58 percent of the public lands (or 66 percent of the forested lands) managed by the CdA FO are available for forest woodland treatments.

BLM Forest/Fuels Stewardship Program

Stewardship is a contracting tool that authorizes the BLM and the US Forest Service to exchange goods for services (Section 323 of Public Law 108-7 [Title 16 United States Code Section 2104, as revised]). This is accomplished by entering into stewardship projects (by contract or agreement) with private persons or public or private entities to perform services that achieve public land management goals that meet local and rural community needs. Stewardship contracting involves caring for the land through broad-based community public and community involvement.

Mining Sector

The Coeur d'Alene Mining District is one of the premier mining districts in the world, based on metal production and value of the product. The district stretches over 22 miles in length from Mullan on the east to Smelterville on the west along the south fork of Coeur d'Alene River. Silver is the primary commodity produced in the Silver Valley, which has enabled the Coeur d'Alene Mining District to become the largest

silver district in the world, with over one billion ounces recorded. Large contiguous blocks of BLM land covering several thousand acres surround the major operating mines and are intermingled with the extensive patented land at the mine sites. The most important gold district in the planning area is the Murray Mining District in east-central Shoshone County, which covers over 500 square miles.

Livestock Grazing/Rangeland Management

The CdA FO has allocated a total of 426 Animal Unit Months (AUMs), each of which consists of a cow or a cow and a calf; nine allotments are actively grazed by approximately four livestock operators in the planning area. In addition, there are five vacant allotments, with 157 AUMs that are currently not being leased. The grazing allotments vary in size from less than 9 acres up to 18,838 acres. Within the planning area, 404 AUMs are allocated for cattle, 22 for horses, and none for sheep.

3.5.4 Environmental Justice

This section addresses specific topics related to environmental justice, as required by NEPA. Specifically, a discussion of issues related to environmental justice is presented in accordance with Executive Order 12898, and issues related to protection of children from environmental health risks are presented in accordance with Executive Order 13045.

On February 11, 1994, President Clinton issued Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. This order requires that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations" (Executive Order 12898, 59 FR 7629 [Section 1-201]). The following studies have been conducted to comply with the order:

- Gathered economic, racial, and demographic information generated to identify areas of low-income and high minority populations in and around the project area; and
- Assessed the alternatives for disproportionate impacts resulting from on-site activities associated with the proposed action.

The planning area includes Benewah, Bonner, Boundary, Kootenai, and Shoshone Counties. Racial and ethnic data from 2000 for these counties and for the state have been compiled and are presented in Table 3-41. In 2000, the Native American/Alaska Aleut population formed the dominant ethnic group within the planning area, and the African American population composed the smallest. Benewah (8.9 percent) and Boundary Counties (2.0 percent) had the largest Native American/Alaska Aleut populations, and Bonner County had the lowest (0.9 percent). Benewah County's percentage of Native American population was slightly above that of the state's (7.9 percent).

Table 3-42 provides income statistics for counties of the planning area and Idaho. With the exception of Kootenai County, all counties have a lower per capita income and median household income than the state. Idaho's statewide poverty rate (13.8 percent) exceeds the poverty rates of only one of the five planning area counties, Kootenai County (10.5 percent). Poverty rates in the other planning area counties ranged from 14.1 percent to 16.4 percent.

Table 3-41 Total Percentage of Population by Race/Ethnicity (2000)

County	White	Black, African American	Native American/ Alaska Aleut	Asian, Pacific Islander	Some Other Race	Latino, Hispanic, Any Race
State of Idaho	91.0%	0.4%	1.4%	1.0%	6.3%	7.9%
Benewah	88.7%	0.1%	8.9%	0.4%	0.3%	1.5%
Bonner	96.6%	0.1%	0.9%	0.3%	0.4%	1.6%
Boundary	95.2%	0.2%	2.0%	0.7%	0.9%	3.4%
Kootenai	95.8%	0.2%	1.2%	0.6%	0.6%	2.3%
Shoshone	95.8%	0.1%	1.5%	0.3%	0.5%	1.9%
Planning Area Average Total	94.4%	0.1%	2.9%	0.5%	0.5%	2.1%

Note: Percentages for a given year do not add up to 100 because "hispanic" is an ethnicity category that includes all races and because people can select more than one race.

Source: US Census Bureau 2004

Table 3-42 County Income (2000) and Poverty Level (1990-2000)

County	Median Household Income	Per Capita Income	Percentage of Population Living in Poverty (2000)	Percentage of Population Living in Poverty (1990)
Benewah	$31,571	$15,285	14.1%	16.3%
Bonner	$32,803	$17,263	15.5%	15.6%
Boundary	$31,250	$14,636	15.7%	14.0%
Kootenai	$37,754	$18,430	10.5%	12.1%
Shoshone	$28,535	$15,934	16.4%	16.2%
Idaho	$36,282	$17,841	13.8%	16.3%

Source: US Census Bureau 2004

The US Census Bureau uses a set of income thresholds that vary by family size and composition to determine which families are living in poverty. If a family's total income is less than its threshold, then that family, and every individual in it, is living in poverty. The poverty thresholds do not vary geographically, but they are updated annually for inflation using the Consumer Price Index. For example, in 2000 the average estimated poverty threshold for an individual in the US was an annual income of $8,787, and for a four-person household it was $17,601. US Census Bureau estimates indicate that approximately 10.5 to 16.4 percent of county populations in the planning area were below the poverty line in 2000. The percentages in Shoshone (16.4 percent), Boundary (15.7 percent), Bonner (15.5 percent), and Benewah (14.1 percent) Counties exceeded the state average of 13.8 percent (US Census Bureau 2004). While Benewah, Bonner, and Kootenai Counties displayed lower poverty rate values in 2000 than in 1990, Boundary and Shoshone Counties actually experienced a 1.7 and 0.2 percent increase in the number of individuals below the poverty level from 1990 levels (US Census Bureau 2004).