

***CEDAR CITY FIELD OFFICE
RESOURCE MANAGEMENT PLAN
ANALYSIS OF THE
MANAGEMENT SITUATION***



BLM

UTAH COLOR COUNTRY DISTRICT

JANUARY 2013



Cedar City Resource Management Plan

Analysis of the Management Situation



**Prepared by
United States Department of the Interior
Bureau of Land Management
Cedar City Field Office**

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1.0 INTRODUCTION

The Bureau of Land Management (BLM) Cedar City Field Office (CCFO) is starting a new Resource Management Plan (RMP). The RMP is a document that outlines how the public lands within the CCFO boundaries will be managed for at least the next 20 years. An RMP is a set of long-range decisions that define the use and management of resources administered by the BLM. In general, an RMP should:

- Define the goals for maintaining or improving the conditions of the lands and resources.
- Resolve conflicts or issues between competing uses of the lands and resources.

This Analysis of the Management Situation (AMS) is one of the first steps in creating the new CCFO RMP. It describes how the resources in the CCFO Planning Area are currently being managed and the results of those management decisions. It also identifies what changes could be made to better protect or enhance these resources. This information is then used to formulate the alternatives considered when creating the new RMP.

PURPOSE AND NEED FOR A NEW RESOURCE MANAGEMENT PLAN

The CCFO Planning Area is currently managed under the Pinyon Management Framework Plan (Pinyon MFP), approved in 1983 and the Cedar-Beaver-Garfield-Antimony (CBGA RMP), approved in 1986. These land use plans (LUPs), completed over 20 years ago, are outdated. This planning process will create one RMP that will standardize and update the management of public land resources in the CCFO Planning Area.

The Federal Land Policy and Management Act of 1976 (FLPMA) requires the BLM to “develop, maintain, and, when appropriate, revise land use plans” (43 United States Code [U.S.C.] 1712 (a)). The BLM has deemed it necessary to revise the two existing LUPs for the CCFO and prepare a single RMP.

The BLM resource management planning process, explained at Title 43 of the Code of Federal Regulations (CFR), Part 1600, BLM 1601 Manual, and BLM Land Use Planning Handbook (H-1601-1) falls within the framework of the National Environmental Policy Act (NEPA) of 1969, environmental analysis and decision-making process described in the Council on Environmental Quality (CEQ) NEPA implementing regulations at 40 CFR 1500-1508, the United States Department of the Interior (DOI) NEPA Manual (516 DM 11), and the BLM NEPA Handbook H-1790-1.

PURPOSE OF THE ANALYSIS OF THE MANAGEMENT SITUATION

The purpose of the AMS is to briefly describe how the BLM is currently managing resources in the CCFO Planning Area and the condition of these resources. It also describes the goals for future land conditions and resource uses. This information will be used to determine what changes to current management practices are needed in the new RMP.

GENERAL DESCRIPTION OF PLANNING AREA AND RESOURCES

The CCFO administers almost all public lands in Beaver and Iron counties, and about 5,457 acres of Washington County, in southwestern Utah (Appendix A, Figure 1-1). The area lies in the transition between the Basin and Range and Colorado Plateau physiographic provinces and contains mostly high desert shrub and mountain shrub vegetation communities. Most of the area lies between 5,000 and 9,000 feet above sea level. There are no major waterways in the CCFO boundaries, although there are several creeks and small rivers. Average precipitation is approximately 12 inches per year.

Land use in Beaver and Iron counties has traditionally been based on agriculture and mining. Although these practices continue, other land uses, such as recreation, have increased with substantial population growth. Other resources of increasing interest in the area include: renewable energy resources (geothermal, solar, wind, and biomass); interstate transmission and natural gas lines; wild horses; Utah prairie dogs and other special status wildlife species; and off-highway vehicle (OHV) use.

The Planning Area lies near or is adjacent to the Dixie and Fishlake National Forests and portions of Zion National Park. Much of it is within the viewshed of Cedar Breaks National Monument. Bryce Canyon and the Grand Canyon can be reached by car within a few hours. Consequently, tourism is important to the economy of local communities. Interstate Highway 15 is a major traffic corridor in the eastern quarter of the Planning Area.

The **Planning Area** includes almost all of the land in Beaver and Iron counties. The BLM-administered lands in the Planning Area are addressed in this document as the **Decision Area**. The CCFO manages approximately 2.1 million acres of public land in Iron and Beaver counties, Utah, and approximately 5,457 acres of land in Washington County, near Enterprise and New Harmony, Utah. The CCFO does not manage 3,691 acres of public land in Iron County northeast of Paragonah adjacent to Garfield County (see Appendix A, Figure 1-1). The BLM Kanab Field Office manages this small area. There are areas within the CCFO boundaries that are administered by other federal or state agencies. The BLM does not manage these lands or private lands and they are not part of the BLM planning process. Table 1-1 provides an overview of surface ownership in the Planning Area.

Table 1-1. Surface Ownership in the Planning Area

Jurisdiction	Acres
Bureau of Land Management	2,105,027
Private	977,506
U.S. Forest Service	354,327
State of Utah	306,533
Indian Reservation	2,503
National Park Service	8,851
Total	3,754,747

The BLM also administers 2,585,538 acres of mineral estate in the Planning Area (Table 1-2 and Appendix A, Figure 1-2), 2,101,160 acres of which include both federal surface and federal mineral estate. About 110,193 acres are considered split-estate lands, with the surface estate being held under private ownership and the mineral estate reserved to the Federal Government.

The CCFO also manages the mineral estates on about 374,185 acres of land managed by the State of Utah, Dixie and Fishlake National Forests and the National Park Service.

Table 1-2. Mineral Estate in the Planning Area (Acres)

BLM Mineral Ownership	Federal Surface	Private Surface	State Surface	Forest Service Surface (Acres)	Park Service Surface (Acres)
All Minerals	2,100,515	83,959	9,486	353,546	8784
Oil and Gas Only	0	6,680	2,355	0	0
Coal Only	0	18,651	14	0	0
Oil, Gas, and Coal Only	0	458	0	0	0
Other	645	444			
Total	2,101,160	101,193	11,855	353,546	8784

The CCFO has Memoranda of Understanding (MOUs) with several other BLM offices to more easily administer certain resources. These MOUs allow the CCFO to do the following:

- Administer 108,700 acres of grazing privileges in Millard County
- Administer 12,650 acres of grazing privileges in Garfield County
- Administer 6,912 acres of grazing privileges in Washington County
- Administer 105,690 acres of wildlife habitat in Millard County
- Help administer the Wild Horse Program in sections of the Utah Fillmore Field Office, the Nevada Ely District, and the Pine Valley District of the U.S. Forest Service
- Treat approximately 8,960 acres of weeds in Millard County
- Treat approximately 6,912 acres of weeds in Washington County

Key Findings

Changes between the current LUPs and the new RMP are mostly the result of changes in BLM national and state policy and changes in resources condition or issues. Chapter 6 includes a list of some of the current laws, regulations and policies relevant to this planning effort.

Local BLM personnel have identified the primary changes and trends over the last 30 years in the CCFO Planning Area. While this list is not comprehensive, it gives some indication of what is changing in the regional ecosystem and why the change might be occurring.

Table 1-3. Key Resource Changes and Trends

Change Agent	Resources Affected	Observed Change
Increased and Unregulated Off-Highway Vehicle (OHV) Use	Cultural Resources, Wildlife Habitat, Riparian and Wetlands, Special Status Species, Vegetation, Visual Resources, Watershed, and Soils and Recreation	-A proliferation of trails resulting in soil and vegetation loss and the degradation of cultural resources, wildlife habitat, and vegetation. -More members of the public are enjoying OHV use.

Change Agent	Resources Affected	Observed Change
		-Loss of crucial deer winter range vegetation east of Interstate 15.
Interest in Wild Horses	Wild Horses, Livestock, and Wildlife	-A heightened concern about the impacts of gathers. -A desire for more wild horses on public land conflicting with livestock grazing authorizations. -Increased concern among local ranchers about reduced livestock grazing authorizations.
Population Growth	All Resources	-Conflict over water resources. -Greater recreation use and associated impacts. -Greater demand for acquisition of and access to private land parcels. -Potential impacts to air quality, primarily from municipal centers. -Increased demand for mineral materials.
Interest in Renewable Resources	Air Quality, Wildlife Habitat, Visual Resources, Lands and Realty, Wilderness Characteristics, and Livestock Grazing	-Potential improvement of air quality by non-polluting energy development. -Decrease in land available for wildlife and livestock grazing. -Degradation of visual resources due to large structures. -Loss of sense of naturalness and solitude due to large structures.
Private Land Development in Crucial Deer Winter Range	Vegetation, Wildlife, OHV Use, and Recreation	-Loss of winter range vegetation and fragmentation. -Conflicts with OHV use, recreation, dogs, and snowmobiling.
Increased Use of Parowan Gap	Cultural Resources, Paleontology, Special Status Species, Wildlife, Livestock Grazing, and Oil and Gas	-Potential degradation of prehistoric rock art. -Potential degradation of dinosaur trackways. -Impacts to nesting raptors, greater sage-grouse, and Utah prairie dogs. -Impacts to sheep trailing grounds. -Conflicts with oil and gas exploration.

Change Agent	Resources Affected	Observed Change
Proposed Lands with Wilderness Characteristics	OHV Use, Recreation, and Renewable Resources	<ul style="list-style-type: none"> -Loss of OHV access. -Increased opportunities for naturalness and solitude. -Potential visual conflicts with solar panels, transmission lines, and wind farms.
Special Status Species	Vegetation, Lands and Realty, Minerals, Livestock Grazing, Renewable Resources, and OHV Use	<ul style="list-style-type: none"> -Restrictions on other resources and land uses. -Fragmentation, degradation, and loss of populations.
Wildfire Management	Air Quality, Vegetation, Forestry and Woodland Products, Livestock Grazing, Wild Horses, Special Status Species, and Wildlife Habitat	<ul style="list-style-type: none"> -Vegetation and habitat alteration to improve range conditions. -Temporary impacts to air quality. -Alteration of vegetation communities results in shifts in wildlife species.
Drought/Climate Change	Air Quality, Wildlife Habitat, Vegetation, Watershed and Soils, Water, Wild Horses, Livestock Grazing, and Special Status Species	<ul style="list-style-type: none"> -Changes in livestock grazing to compensate for loss of vegetation. -Decreased air quality due to wind-blown soil. -Soil loss. -Decrease in water quantity. -Loss or degradation of special status plant and wildlife populations and wildlife habitat. -Shifts in populations and habitat areas.

2.0 AREA PROFILE

This chapter describes the resources in the Planning Area and their current and potential uses. The first part of this chapter describes the regional setting for the Planning Area. The second part describes the resources in the Planning Area using five factors:

- Indicators: Factors that describe the resource condition
- Current Condition: Location, extent, and current condition of the resources
- Trends: Degree and direction of change between the present and some point in the past
- Forecast: Predicted changes in the condition of resources given current management
- Key Features: Geographic location, distribution, areas, or types of resource features that should guide management decisions

The third part of this chapter describes how the resources are used and might be used in the future. The fourth part describes special designations, and the last part describes social and economic features of the resources. This information will become the basis for the Affected Environment chapter of the Environmental Impact Statement (EIS) associated with the RMP.

RESOURCES

Most of the CCFO Planning Area is in the Basin and Range physiographic province. This ecoregion contains most of Nevada and western Utah, and some areas in southern Idaho and northern Arizona. The Basin and Range is characterized by generally north-south trending mountain ranges interspersed with mountain valleys (basins). Most of the region is at least 5,000 feet above sea level, with average precipitation rates ranging from 8 inches per year in the valleys to up to 16 inches per year in the mountain peaks (U.S. BLM, 2009). Most water sources are springs with seasonal flow down the west and east sides of the ranges. Most of this water dissipates before reaching the valley floors, which often contain dry, alkaline playa lakes. Native vegetation reflects this scarcity of water, and consists of pinyon and juniper trees, rabbitbrush, sagebrush, and other high-desert plant species. There are some additional vegetative types in the higher mountain areas, including ponderosa pine, aspen, and other mixed conifer and mountain shrub vegetation.

Rapid Ecoregional Assessments

Climate change and other widespread environmental influences are affecting western landscapes. In response, in 2010 the BLM launched seven Rapid Ecoregional Assessments (REAs) to improve the understanding of the existing condition of these landscapes, and how conditions could be altered by ongoing environmental changes and land use demands. The REAs examine ecological values, conditions, and trends within ecoregions, which are large, connected areas that have similar environmental characteristics. The Planning Area is in the Central Basin and Range REA. This data source contains additional information as to the general regional setting of the Planning Area. More information about this process is available at http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas.html.

Air Quality

Indicators

National Ambient Air Quality Standards

To protect human health and welfare, the 1963 Clean Air Act (CAA; Public Law 91-604), as amended in 1977 (Public Law 95-9) and reaffirmed in 1990 amendments, requires that the Environmental Protection Agency (EPA) establish standards for certain pollutants based on the best available science. The National Ambient Air Quality Standards (NAAQS) have thus been established for six air pollutants: particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, and lead.

Visibility and Regional Haze

Visibility is important to visitors who come to enjoy the scenic beauty of public lands in the Planning Area, often from a long distance. Having clear days for such viewing opportunities is especially important for many visitors who are in the area for only a short period.

Current Condition

The existing air quality in the Planning Area is typical of undeveloped regions in the western United States. Specifically, Iron and Beaver counties are designated as attainment or unclassified for all NAAQS. The Utah Division of Air Quality (UDAQ) is responsible for regulating and monitoring air quality in Utah and emphasizes air quality monitoring in more developed areas of the state where non-attainment of established criteria is more problematic. At present, the Utah Air Monitoring Network does not include monitoring stations in Iron or Beaver county.

The most recent UDAQ Statewide Emissions Inventory Report estimates the primary air pollutant in Beaver and Iron counties is volatile organic compounds (VOCs) from biological sources, followed by carbon monoxide (CO), nitrogen oxides (NOx), particulate matter less than 10 microns in diameter (PM10), sulfur oxides (SOx), and particulate matter less than 2.5 microns in diameter (PM2.5) (UDAQ, 2010). Table 2-1 lists the criteria pollutant levels (those compounds for which pollution criteria have been established) in tons per year from the Statewide Emissions Inventory.

Table 2-1. 2008 Criteria Pollutant Inventory (tons per year).

County	Source	CO	NOx	PM10	PM2.5	SOx	VOCs
Beaver	Area Source	552.73	90.94	675.15	161.56	69.81	2,159.02
	Non-road Mobile	406.61	383.03	16.92	15.65	26.70	40.90
	On-road Mobile	6,067.84	1,668.02	620.83	82.00	2.50	379.84
	Point Source	24.98	50.20	41.33	15.08	3.41	3.56
	Biogenics	5,354.67	0.00	0.00	0.00	0.00	29,041.01
	Wildfires	0.00	0.00	0.00	0.00	0.00	0.00
	Total		12,406.83	2,192.19	1,354.23	274.28	102.42
Iron	Area Source	1,632.66	299.39	1,298.98	386.16	207.63	3,097.28
	Non-road Mobile	2,138.56	729.53	41.46	38.82	44.06	243.37
	On-road Mobile	15,387.31	3,056.37	1,519.30	169.96	6.91	962.35
	Point Source	56.84	78.73	46.67	11.43	11.40	134.79

County	Source	CO	NOx	PM10	PM2.5	SOx	VOCs
Iron	Biogenics	6,620.42	0.00	0.00	0.00	0.00	37,759.57
	Wildfires	106.05	3.02	12.83	11.55	0.00	18.12
	Total	25,041.84	4,167.04	2,919.24	617.91	270.00	42,215.48

VOCs are organic compounds that easily become vapors or gasses. Biogenic releases of VOCs are from biological sources such as vegetation and soils. Along with carbon, VOCs can contain elements such as hydrogen, oxygen, fluorine, chlorine, bromine, sulfur, or nitrogen. Many VOCs are hazardous air pollutants. VOCs combined with nitrogen oxides and sunlight react in the atmosphere to form ground-level ozone, or smog. While not a recognized air quality issue in the Planning Area, ground-level ozone is a regional issue affecting Class 1, metropolitan, and energy-producing areas in Utah and surrounding states. Ozone and its precursors (VOCs and NOx) can be transported both into and out of the Planning Area, and therefore is a pollutant of concern.

Burning fuel such as gasoline, coal, natural gas, and wood releases VOCs. VOCs would be expected to increase during periods of high wildfire or prescribed burning activity. VOCs and smog formation are more problematic during periods of, and in valley bottom areas prone to, inversions, and much less problematic during periods of atmospheric instability (i.e., high-velocity ground-level winds and winds aloft).

CO is produced by the incomplete burning of various fuels, including coal, wood, charcoal, oil, kerosene, propane, and natural gas. Products and equipment powered by internal combustion engines such as portable generators, cars, heavy construction equipment, OHVs, airplanes, and trains also produce CO. CO combines with oxygen in the atmosphere to create carbon dioxide (CO₂). NOx is emitted through the use of nitrogen fertilizers and when fuel burns at high temperatures, such as in internal combustion engines. Both on-road and off-road mobile sources are responsible for more than half of all NOx emissions in Iron and Beaver counties.

Natural sources of sulphur dioxide (SO₂) include volcanoes and hot springs. SO₂ is formed by the oxidation of hydrogen sulphide (H₂S), a toxic gas that smells like rotten eggs. Oxidation occurs when H₂S combines with the oxygen in air. While there are no active volcanoes in the Planning Area, locally, H₂S is released at Sulphurdale, Blundell, and Thermo (all in Beaver County), and near Newcastle in Iron County. Man-made sources of SO₂ include fossil fuel processing and burning, with high sulphur fuels generally producing higher levels of SO₂ as a byproduct.

Inhalable particulate matter (PM₁₀ and PM_{2.5}) concentrations are expected to be higher near towns, unpaved roads that experience high volumes of traffic, and areas with depleted vegetative cover. Regional PM₁₀ and PM_{2.5} levels are likely a result of fugitive dust sources. The BLM regularly authorizes projects that, without adequate mitigation measures applied, would have the potential to raise levels of fugitive dust, PM₁₀ and PM_{2.5}. Locations vulnerable to decreasing air quality include the immediate operation areas around surface-disturbing activities such as energy and mineral development, construction of major rights-of-way (ROW) projects, farm tilling, and local population centers affected by residential and light industrial emissions.

Fugitive dust is likely to occur naturally across the Planning Area during high-wind events from dry lake beds and dune areas near Zane, the Little Salt Lake, Wah Wah Valley, and the Beaver River Bottoms. In 2011, 4 years after the fire, portions of the Milford Flat wildfire area are still recovering from post-burn vegetative conditions and might still exceed criteria levels of fugitive

dust in the short term. Areas west of Interstate 15 on the Buckhorn Flat have increased in vegetative cover and decreased proportionately in fugitive dust production over the past 30 years. Given the potential for localized impacts from fugitive dust, and the need for active management of this source category related to BLM-authorized activities, particulate matter (both PM₁₀ and PM_{2.5}) is considered a pollutant of concern.

Any smoke emissions resulting from annual prescribed burning projects or treatments in the Planning Area are managed in compliance with guidelines in the Utah Smoke Management Plan (SMP) and interagency group program (UDAQ, 2004). Active group participants include various federal and state agency land managers, and the UDAQ. The purpose of this program and the SMP is to ensure the implementation of mitigation measures to reduce the impacts on public health and safety and visibility from prescribed fire and wildland fire used for resource benefits. Compliance with the SMP is the primary mechanism for land managers to implement prescribed burns while ensuring compliance with the CAA.

Burn plans written under this program include actions to minimize fire emissions, exposure-reduction procedures, a smoke dispersion evaluation, and an air quality monitoring plan. The program coordinator reviews proposed burns daily and approves or denies burns based on current climatic and air quality conditions.

Class I air quality areas include national parks larger than 6,000 acres and wilderness areas larger than 5,000 acres that existed or were authorized as of August 7, 1977. They receive the highest degree of air quality protection under the CAA. There are three national parks that meet these criteria that have the highest potential to be downwind receptors from BLM-authorized actions the CCFO Planning Area: Great Basin (Nevada) to the northwest; Bryce Canyon to the east, and Zion to the south. In addition, Cedar Breaks National Monument lies to the east and has some limited air quality data available.

Trends

Regional haze has been an issue of growing concern throughout the West. Regional haze causes visual impairment by obscuring the clarity, color, texture, and form of what can be seen. As part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) network, visual air quality in Great Basin, Bryce, and Zion National Parks has been monitored since the early 1990s. The 2009 Annual Performance and Progress Report on Air Quality Goals at National Parks reports measured trends over the past 10 years of data (U.S. National Park Service, 2010). The report indicates that the visibility trend in all three parks is improving on the clearest days. There was no apparent trend reported for Bryce and Zion parks on hazy days, but Great Basin Park showed possible improvement (statistically no significant trend). Cedar Breaks National Monument is in a moderate condition class for visibility and showed no apparent trend rating. Table 2-2 lists the visibility results for the three parks.

Atmospheric deposition of air pollutants can increase the acidity of soils and water resources. Measurements of atmospheric deposition are currently being taken in Class I areas of Bryce Canyon National Park. The 2009 Annual Performance Report on Air Quality Goals at National Parks indicates rates of atmospheric deposition of ammonium, nitrates, and sulfates in precipitation is relatively low in Bryce Canyon National Park, but elevated above natural conditions. Trend analysis shows no trend for ammonium, a possible decrease in nitrates, and a statistically significant decrease in sulfate deposition (see Table 2-2).

Table 2-2. Trend Results for Select National Parks, 1999 – 2008

Park	Visibility				Atmospheric Deposition						Ozone	
	Clear Days		Hazy Days		Ammonium		Nitrate		Sulphate		Annual 4 th highest 8 hour	
	dv/yr	p value	Dv/yr	p value	µeq/liter/yr	p value	µeq/liter/yr	p value	µeq/liter/yr	p value	Ppb/yr	p value
Bryce Canyon	-0.15	<0.01	0.00	0.50	0.51	0.14	-0.64	0.05	-0.51	0.03	NA	NA
Great Basin	-0.22	<0.01	0.03	0.36	NA	NA	NA	NA	NA	NA	0.00	0.50
Zion	-0.16	<0.01	0.00	0.50	NA	NA	NA	NA	NA	NA	NA	NA

Non-shaded p-value indicates statistically significant improvement in air quality.

Lightest shaded p-value indicates possible improvement in air quality (statistically not significant).

Darker shading indicates possible degradation in air quality (statistically not significant).

Darkest shaded p-value indicates no trend reported.

Forecast

The forecast for the Planning Area is for increased population growth in municipal areas. Increased populations inevitably lead to increased use of carbon fuels. As a result of increased use of fuel, the trend will be for the release of increased levels of VOCs, CO and CO₂, ground-level ozone, and SO_x into the atmosphere. With increased vehicular recreation and demand for utility scale ROWs, fugitive dust will likely increase across the Decision Area. Fugitive dust will also increase if climate change yields warmer and drier conditions. If, as some predict, increased precipitation accompanies climate change, the increase in precipitation might help to mitigate temperature increases, resulting in a less radical increase in fugitive dust. It is anticipated that as fuels treatments continue to be performed under controlled conditions across the Decision Area, haze and smoke from catastrophic wildfires will lessen over the Decision Area.

Key Features

The primary key feature related to air quality in the Decision Area is fugitive dust. The Decision Area is prone to high winds from the south and southwest in the spring and summer seasons. Fugitive dust is a naturally occurring phenomenon from dry lake beds and sand dune areas such as those at Zane, Pine, and Wah Wah Valley hardpans, the Beaver River Bottoms, and Quichapa and Little Salt lakes, when dry. The current disturbance area in Wah Wah Valley is well beyond what would be considered natural, largely due to historic livestock grazing and recent drought. Fugitive dust from wildfire areas is also a concern.

The BLM regularly authorizes projects that have the potential to raise levels of fugitive dust, PM₁₀, and PM_{2.5}. Locations vulnerable to decreasing air quality include the immediate operation areas around surface-disturbing activities such as energy and minerals development, construction of major ROW projects, farm tilling, and local population centers affected by residential and light industrial emissions. Avoiding areas with sensitive soils prone to blowing and identifying and implementing best management practices (BMPs) and other mitigation measures are key to minimizing fugitive dust.

Climate Change

Many chemical compounds found in Earth's atmosphere act as "greenhouse gases" or GHGs. These gases allow sunlight to freely enter the atmosphere. When sunlight strikes Earth's surface, some of it is re-radiated back toward space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Many gases exhibit these greenhouse properties. Some of them are of anthropogenic and natural origin (water vapor, CO₂, methane, and nitrous oxide), while others are exclusively human made (certain industrial gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

Indicators

In the CCFO Planning Area, like in most of the United States, GHG emissions come primarily from the combustion of fossil fuels in energy use. Energy use is largely driven by economic growth, with short-term fluctuations in its growth rate created by weather patterns that affect heating and cooling needs, and changes in the fuel used in electricity generation. Energy-related CO₂ emissions resulting from the combustion of petroleum, coal, and natural gas represented 82 percent of the total U.S. anthropogenic GHG emissions in 2006 (U.S. DOE, 2008).

Sources of CO, CO₂, and nitrous oxides are described above. Another GHG, methane, comes from landfills, coal mines, oil and natural gas operations, and agricultural operations. It represents up to 9 percent of total GHG emissions. The capacity of methane to trap heat is 20 times more than that of CO₂.

Current Condition

The CCFO authorizes many different types of actions and activities on public lands that create GHGs, generally through the combustion of fossil fuels in internal combustion engines. These include such things as prescribed fires, authorizations for ROWs that require construction, grazing permit renewals, and oil and gas exploration. Most of the CCFO-authorized actions are relatively minor from a regional, national, or global perspective, but likely have the potential for cumulative effects.

On public lands within the CCFO Planning Area boundaries, there are no substantial GHG sources. There are no large mines and the small mining operations that exist are primarily for hardrock or clays. There are no landfills on public lands, and nitrogen-based fertilizers are not used. The geothermal electric plant at Blundell releases steam, which is primarily water vapor with minor amounts of H₂S. The plant is permitted by the Utah Department of Environmental Quality (UDEQ), is closely monitored, and has been found to be in compliance with emission standards. The geothermal plant at Sulphurdale is the binary type with a closed loop system that does not allow venting into the atmosphere. Some H₂S is released naturally into the atmosphere at Sulphurdale. There are numerous other activities within the CCFO boundaries that do not require a specific authorization, but that produce small levels of GHGs.

In the CCFO Planning Area there are several renewable energy power projects that provide electricity to the grid without burning fossil fuels such as coal or natural gas. These are the geothermal plants at Blundell and Sulphurdale, which have already been discussed briefly regarding emissions. Phase one of the Milford Wind Corridor project is a wind farm that has successfully been generating renewable energy since 2009. In the Decision Area there is a

relatively vast component of pinyon and juniper forests with great potential as renewable energy in the form of biomass. Technology for using these products is emerging. These pinyon and juniper forests, in their current state, store large amounts of carbon and produce large quantities of VOCs (see Air Quality).

Forests and soils have emerged as important factors in climate change. Trees and soils store, or sequester, significant amounts of carbon, thereby helping offset the large amounts of CO₂ emitted by factories, motor vehicles, and other sources. When trees burn down or die, much of that carbon is returned to the atmosphere. It can take decades for forest regrowth to sequester the amount of carbon emitted in a single fire (Wiedinmeyer and Hurteau, 2010). The CCFO Planning Area has substantial acreages of relatively undisturbed soils and pinyon/juniper woodlands in various states of forest health that sequester carbon. In addition, the CCFO Planning Area contains other vegetative types, including timber, mountain shrub, and sagebrush communities, that store carbon (for acreage information see the vegetation section).

Trend

Over the past 200 years, the burning of fossil fuels such as coal and oil and deforestation have caused the concentrations of heat-trapping GHGs to increase significantly in our atmosphere. These gases prevent heat from escaping to space, somewhat like the glass panels of a greenhouse.

GHGs are necessary to life as we know it, because they keep Earth's surface warmer than it otherwise would be. However, as the concentrations of these gases continue to increase in the atmosphere, Earth's temperature is climbing above past levels. According to National Oceanic and Atmospheric Administration (NOAA) and National Aeronautic and Space Administration (NASA) data, Earth's average surface temperature has increased by approximately 1.2 to 1.4 degrees Fahrenheit (°F) in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 2005. Most of the warming in recent decades is very likely the result of human activities (U.S. EPA, 2011). Other aspects of the climate, such as rainfall patterns, snow and ice cover, and sea level, are also changing.

Forecast

If GHGs continue to increase, climate models predict that the average temperature at Earth's surface could increase from 3.2 to 7.2 °F above 1990 levels by the end of this century (U.S. EPA, 2011). Some studies project warming for the West will range from approximately 2 to 5 degrees Celsius (°C) over the next century (Cubashi et al., 2001). Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing the concentration of GHGs will change Earth's climate. However, they are not sure by how much it will change, at what rate it will change, or what the exact effects will be.

Coupled with unknown rates of temperature changes are unknown rates of precipitation change. It is not known whether precipitation will contribute to or detract from such things as plant growth and changes in plant compositions. The forecast for the Southwestern United States is for an increase in precipitation, which could benefit smaller springs and seeps and make more water available for plants and wildlife. Annual precipitation has increased from 6 to 16 percent since the middle of last century. This has been reflected in increases in streamflow across the Great Basin region, especially in winter and spring (Baldwin et al., 2003). A reasonable scenario for western stream flows is change in the existing seasonal proportionality of flows: increased

winter flow, reduced and earlier spring peaks, and reduced summer and fall flows. The change in absolute flows will depend on the actual increase in precipitation relative to the degree of warming and its effects on evapotranspiration (Chambers, 2008).

Key Features

Climate change is an aspect of the Decision Area that is difficult to address on a regional or national level, let alone at a local level such as the Decision Area. Key features of the Decision Area are primarily vegetation. The BLM should make a constant and consistent effort to maintain vegetative communities in good vegetative and soil health. Healthy soils and vegetation, particularly woodlands and forests, are important in storing carbon and preventing its release into the atmosphere. Unhealthy soils and plant communities, with large amounts of vegetation that is either overused and lacking productivity, or conversely, underused and high in oxidized material, cannot store, but instead release, carbon into the atmosphere. A second aspect to maintaining healthy vegetative communities is their inherent resistance to catastrophic wildfires.

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 landscapes. Cultural resources can be natural features or places with plants and animals that are considered important to a culture, subculture, or community.

Indicators

One of the primary features of cultural resources involves the integrity of the cultural property. Another primary feature includes those characteristics that might qualify the property for listing on the *National Register of Historic Places* (NRHP). Specific indicators for the condition of cultural resources include the loss or diminishing of these important cultural features. Such indicators include the extent or intensity of natural weathering, erosion, wildfire, ground disturbance, grazing, recreation use, fire effects, weed intrusion, unauthorized collection, intrusions to setting, and vandalism.

Current Condition

The Utah State Historic Preservation Office (SHPO) database identifies 3,160 cultural resource sites on public lands in the Planning Area. It is estimated that at least 500 sites are yet to be incorporated into the database. These sites range in size from as much as 30 acres to as little as a few square yards. Additional sites are present throughout the Planning Area that are yet to be identified. These include sites that are prehistoric, historic, or multi-component (i.e., having both prehistoric and historic components). The condition of these resources is listed on most of the Intermountain Antiquities Computer System site records (Utah SHPO, 1990). A review of 1,976 of the 3,160 site records indicates that:

- **5.1 percent** of the sites are virtually undisturbed and are in **excellent** condition
- **38.7 percent** are 75 percent undisturbed and in **good** condition
- **35.9 percent** are 50 to 75 percent undisturbed or in **fair** condition

- **9.6 percent** are more than 50 percent disturbed or in **poor** condition
- **0.2 percent** are **inundated**, **0.1 percent** are **destroyed**, and the condition of **9.8 percent** is **unknown**

Site conditions for the remaining 1,184 sites were not listed on the site form or not recorded in the database. Since the mid 1970s, various archeologists have subjectively identified site condition based on evidence for prior surface disturbance at the time of site recording. However, because few archeological sites have been formally tested by subsurface investigations, past surface condition might not necessarily be an indication of the present potential of a site to retain deposits that would inform upon prehistoric or historic use and, thus, potentially be eligible for listing on the NRHP. Updated information and reevaluation might be necessary if impacts to a site are proposed.

A large portion of cultural resource sites have not been recently or formally evaluated for their eligibility for listing on the NRHP. Archeological sites with potential to yield important information are typically considered eligible and are avoided during surface-disturbing activities.

Prehistoric Sites

The record for American Indian occupation of the Great Basin extends back at least 11,500 years. Although the archeological record for the Great Basin and adjacent regions provides evidence of occupation during the early Paleo-Indian period, most prehistoric archeological sites recorded in the Planning Area date from early Holocene to proto-historic times.

Great Basin peoples were highly mobile hunters and gatherers, following a seasonal cycle of movements designed to most efficiently exploit available plant and animal resources. The fusion and fission of small groups during particular seasons in response to resource availability was characteristic of the Southern Paiute. Gathering pinyon nuts, seeds, and root plants and hunting were the main subsistence activities. Animals, especially rabbits, pronghorn, bighorn sheep, and insects, formed a major aspect of subsistence.

Common prehistoric archeological site types in the Planning Area are artifact scatters that mostly contain toolstone debris. In many cases these lithic scatters contain projectile points, ground stone implements, pottery, fire-cracked rock, and subsurface hearths. Depending on the location and artifact assemblage, some of these artifact scatters are classified as “camp sites.” Some of the less common site types are rock art, rock shelters, rock alignments, quarries, wickiups, and pithouses.

Historic Sites

National events have helped to mold the nature of historic resources in the Planning Area. Since the expedition of Fathers Dominguez and Escalante, the Planning Area has been traversed by traders on the Old Spanish Trail, Mormon pioneers, and emigrants traveling to California. Later the area saw the expansion of Mormon settlements, the discovery and settlement of mining districts, the expansion of the railroad from Salt Lake City to Southern California, telegraph lines, and other communication/transportation networks. Cattle ranching and sheep herding has also been a constant presence in the Planning Area. Most of the sites recorded in the Planning Area date from the beginning of the mining boom at Frisco in the 1870s to the 1950s.

Common historic sites in the Planning Area include debris scatters associated with mining, ranching, or the railroad. Other common sites include historic roads listed on General Land Office Plats, canals, old highways, prospect pits, and unassociated trash dumps.

Less common historic sites include historic mining camps, mills/furnaces or buildings, wagon or trail swales, graves, inscriptions, and arbor glyphs. There are also historic localities without any recorded archeological information in the Planning Area. These are usually associated with early explorers such as the Casting of the Lots by the Dominguez and Escalante Expedition and other points associated with the Old Spanish Trail.

Trends

Prehistoric and historic sites are nonrenewable resources affected constantly by natural factors and sometimes by human actions. Sites are susceptible to natural processes such as weathering, erosion, and animal activity and many kinds of human activity (intentional or unintentional). Therefore, most sites tend to deteriorate over time.

The degree to which natural processes and human activities affect a site depends on the site type, the setting, and the nature of the process and/or activity. Natural processes are dynamic and therefore have a constant influence on sites. Sources of change to condition listed on site forms in the Planning Area include livestock or wildlife trampling; recreation use; motorized travel, including OHV use; wind and water erosion; historic mining; vandalism or looting (i.e., unauthorized collection); animal burrowing; and natural erosion, weathering, and decay.

Most cultural resources identified through compliance activities associated with Section 106 of the National Historic Preservation Act (NHPA) are in stable condition because current management measures typically avoid or mitigate potential impacts. In these cases, the trend is toward a desired condition of protection.

Qualitative observations indicate that ground disturbance associated with recreational activity, such as OHV use, and concentrated grazing use in riparian areas, contribute to a downward trend for some cultural resources. Qualitative observations also indicate the trend is downward for archeological sites affected by heavy rainstorms and natural stream or riverbank erosion, and for historic structural remains subject to ongoing weathering and decay.

Forecast

Projected increases in recreational and commercial use could contribute to illegal collection and inadvertent damage to cultural resources. Sites will continue to be susceptible to natural wind and water erosion, looting, and vandalism. Impacts to traditional cultural landscapes could occur during future renewable energy development. Leaving the Decision Area open to cross-country travel would result in additional impacts to archeological sites. An increase in Heritage Tourism is expected at some of the more visible resources such as Parowan Gap, the Old Spanish National Historic Trail, and the southern extension of the California Trail.

A recent BLM ethnography report identified the 1-mile area around the Parowan Gap Narrows as a Traditional Cultural Property or TCP. This report also identified a larger “ethnographic landscape boundary” around the Parowan Gap Narrows. These areas will likely continue to be an important area to local American Indian Tribes such as the Paiute Indian Tribe of Utah and the Hopi Tribe.

Key Features

Prehistoric and historic archeological sites are distributed across the public lands in the Planning Area. Sites are commonly found in environmental locations influenced by the existing terrain and availability of water or resources of interest. For example, there is a high potential to find prehistoric and historic sites near any current or past body of water. Geologic outcrops of obsidian, basalt, and chert contain numerous prehistoric sites. Evidence of past use and occupation is also found on ridges and along the pinyon-juniper woodland and valley floor margins. Historic resources are also distributed in mining districts and near ranching facilities. There are also numerous historic resources associated with transportation and communication. Although there are exceptions, cultural resources are less likely to occur on steep slopes and rocky exposures.

Sites listed on the NRHP on public lands in the Planning Area are: (1) the Parowan Gap Petroglyphs, (2) Wildhorse Canyon Obsidian Quarry, (3) Gold Spring (historic structures), and (4) the Sand Cliff Signatures. Each one of these sites has important, and in some cases unique, attributes that need updated management direction. This could include the designation of the Parowan Gap Petroglyphs and the Wildhorse Canyon Obsidian Quarry as Areas of Critical Environmental Concern (ACECs). The Gold Spring structures and the Sand Cliff Signatures are in need of stabilization and/or restoration. There are additional cultural resources not listed on the NHRP but of NHRP quality on the public lands in the Planning Area.

Other important cultural resource areas and sites on public lands in the Planning Area include:

- Areas surrounding the Parowan Gap petroglyphs
- Toolstone sources at the Mineral Mountains and the Nevada/Utah Border
- Historic trails such as the Old Spanish National Historic Trail, the Dominguez-Escalante Route, and the southern extension of the California Trail
- Prehistoric localities north of Enterprise, at the Beaver River, Beaver Front, Black Mountains, Hamlin Valley, and the Needle Range
- Historic mining at the San Francisco Mountain Range, Star Range, and Stateline

Each of these areas contains important cultural resources. In a few cases the resources might be significant enough that they might benefit from special designation such as ACECs or Special Recreation Management Areas (SRMAs). Additional site recording, monitoring, protection, interpretation, stabilization, and restoration might be warranted at all of these locations.

Fish and Wildlife Habitat

Fish

Indicators

Stream habitat conditions affect the ability of the stream system to sustain fish populations. Dewatering and loss of stream habitat quality has eliminated or led to reduced fish populations in the Planning Area compared to their historic levels. Human factors such as dam construction, improper livestock grazing, irrigation, road use and construction, forest practices, ranching, farming, mining, and recreational activities are all causes of fish habitat degradation.

Stream diversions and dewatering for agriculture and human consumption are the greatest causes of loss of fish habitat and degradation in the Planning Area.

Parameters the BLM, in coordination with the Utah Division of Wildlife Resources (UDWR), can measure to evaluate habitat conditions include channel width, water width, riffle width, pool width and class, depths, stream bottom materials, streambank cover, streambank stability, stream gradient, water temperature, air temperature, turbidity, percent stream shading, discharge, seasonal flow rates, and fish population and production estimates. The BLM also uses Multiple Indicator Monitoring that includes greenline vegetation composition, streambank alteration, streambank stability and cover, residual vegetation measurement (stubble height), woody species regeneration, woody species use, channel width (greenline to greenline), maximum water depth (Thalweg Depth), water width, and substrate composition.

Current Conditions

Table 2-3 lists fish species that might occur in the Planning Area, including native/nonnative status and special designations. This information was obtained from the UDWR Hydrologic Unit Management Plans (Ottenbacher et al., 2003, 2007).

Table 2-3. Fish Species

Common Name	Native/Nonnative Status	Special Designation
Bass, largemouth	Nonnative	
Bass, smallmouth	Nonnative	
Carp, common	Nonnative	
Catfish, channel	Nonnative	
Chub, least (extirpated)	Native	Candidate/Conservation Agreement species
Chub, southern leatherside	Native	Sensitive species
Chub, Utah	Native	
Crappie, black	Nonnative	
Dace, speckled	Native	
Sculpin, mottled	Native	
Shiner, golden	Nonnative	
Shiner, redbside	Nonnative	
Sucker, desert	Native	Sensitive species
Sucker, mountain	Native	
Sucker, Utah	Native	
Sunfish, green	Nonnative	
Trout, brook	Nonnative	
Trout, brown	Nonnative	
Trout, Bonneville cutthroat	Native	Sensitive and Conservation Agreement species
Trout, hybrid cutthroat	Nonnative	
Trout, rainbow	Nonnative	
Whitefish, mountain	Nonnative	
Wiper	Nonnative	

Fisheries habitat includes reservoirs, perennial streams, and intermittent streams, especially those that have good flows in the spring. There are approximately 79 miles of perennial streams, 7,301 miles of intermittent or seasonal streams, and 15 miles of ephemeral streams in the Decision Area.

In general, stream health, water quality, and in-stream fish habitat have been degraded over the years. Rearing and spawning areas have been reduced in size, quality and quantity as rivers have been straightened, large wood removed, pool habitat reduced and/or eliminated, side channels and wetlands removed, beavers removed, and stream bottoms compacted by fine sediment. Many streams do not maintain temperatures suitable for fish for at least a few days a year. The loss of water volume during summer low flows, which is mainly due to water withdrawal for irrigation purposes, has directly affected stream temperature. Increasing air temperatures in summer months can also directly affect stream temperatures, especially in areas that lack riparian vegetation and stream shade. In many areas, almost the entire fish-bearing stream is reduced to no flow or almost no flow during summer months.

The overall condition of the fisheries is linked to the condition of the riparian area and the stream channel. Channel characteristics vary throughout the different watersheds in the Planning Area. Streams and riparian area conditions are dynamic. Natural events, alone or in combination with degraded habitat conditions resulting from improper livestock grazing or other human activities, can impact stream productivity. Many of the streams are susceptible to storm events that can eliminate all vegetation in the floodplain. Many of the tributary creeks and washes that feed into the larger creeks are on steep ground with highly erodible soils and can have high sediment yields, especially during a storm event.

There is concern about elevated mercury levels in rainbow trout from Newcastle Reservoir. This mercury is naturally occurring, although the BLM would need to ensure that any land management actions would not contribute to increased mercury levels in the reservoir.

Trends

The Planning Area's aquatic habitats have gradually declined over the last century due to a combination of human influences, including dam construction, irrigation projects, poorly designed culverts, improper livestock grazing, roads, improper farming/ranching practices, mining, expanding recreational use, and the introduction of nonnative fish species. Such activities have led to a loss of wetland and riparian habitats, reduced water quantity and quality, increased water temperatures, increased loss of in-stream habitat, and fragmented stream reaches, all of which have led to declining native fish populations.

Over the last 10 years, the CCFO has been making a strong effort to inventory all perennial streams on BLM-administered lands and noting their current conditions. With this information, the BLM has attempted to identify the activities responsible for some streams remaining relatively healthy, and those activities responsible for many streams declining in health or remaining in poor condition. Based on such inventories, changes have been made in livestock grazing or other activities, which have led or will lead to improvements in the stream condition. Restoration projects have been proposed or other protective measures added for future management of the streams.

Forecast

The BLM has little influence over the few reservoirs that contain fisheries, because the BLM is a minor land owner within the watershed. Conditions at these reservoirs are anticipated to remain static because they are managed for sport fisheries. Streams in the area either have little potential for increased fisheries or the water rights and diversions are not under BLM control. Restoration or improvement of fisheries, where possible, is mainly tied to sustainable water flows, in-stream habitat (pools and riffles), and riparian vegetation. In areas where the fishery is tied to riparian conditions, the BLM should implement habitat improvement projects. The BLM should coordinate among all landowners (federal, state, and private) to ensure that watershed conditions are adequate to support fish populations and to ensure protection of fisheries habitats. Whenever possible, the BLM will work with the State of Utah and the Federal Energy Regulatory Commission (FERC) on dam relicensing to secure in-stream flows.

Key Features

Several habitat attributes are necessary for healthy fish populations and sustainability, including healthy riparian conditions, channel stability, habitat diversity, sediment load, high-flow frequency, low-flow frequency, oxygen, temperature, and pollutants. The BLM can manage for all of these stream characteristics except high and low flows, which are highly variable and depend on weather, snow accumulation, and water rights.

The survival, growth, and diversity of species in a stream depend on the amounts and types of impacts on that stream system. Fish and other aquatic lifeforms require good water quality for survival. Certain water quality standards are needed to meet basic biological needs for fish, including turbidity, pH (measure of acidity or alkalinity), dissolved oxygen, stream temperature, and pollutants. The BLM should work with the State of Utah to manage public lands to reduce or eliminate, as practical, those negative factors on streams and reservoirs.

Wildlife

Indicators

Wildlife species, including big game, upland game, migratory birds, reptiles, small mammals, predators, bats, raptors, and many others, depend on the condition of their habitat for survival. Important indicators of wildlife habitat health are directly tied to wildlife populations, such as plant composition, distribution, and structure. All wildlife species have their own specific set of forage, water, shelter, and special requirements. Rangeland, desert, riparian and forest plant communities, and a myriad of topographical, soils, and geologic features all contribute to wildlife habitats on public lands.

The BLM should be aware of wildlife population trends and take appropriate actions to conserve or improve habitats, which will sustain species through a population decline. Animal population management responsibility has been reserved by the state. In the Planning Area, this is the UDWR. For federally listed species, population management responsibility is normally delegated to the United States Fish and Wildlife Service (USFWS), but crafted in a collaborative manner involving state agencies, academics, and other recognized technical experts. The USFWS also regulates hunted migratory species such as waterfowl.

Habitat condition and trends and wildlife population trends are important factors the BLM must appropriately consider within the context of multiple use. This wildlife section therefore addresses both topics. The Current Conditions section includes general species account narratives, including wildlife population trends, as provided by the UDWR. The Trends section discusses rangeland and forest habitat trends.

Wildlife Habitat Relationships

Wildlife typically occupies or avoids habitats in predictable ways based on life history requirements of individual species. Pronghorn occupy habitats that provide low visual structure, such as low sagebrush communities or open grassland habitats (e.g., disturbed or early seral stage sagebrush steppe). Pronghorn normally avoid dense shrub canopy cover, whereas species such as greater sage-grouse depend on dense shrub canopy cover for hiding, nesting, thermal shelter, and secure travel. This predictable behavior can be referred to as “wildlife and wildlife habitat relationships” and is often used to analyze impacts from land management practices.

In general, wildlife response to habitat condition is predictable and reasonably well understood for many species. Knowledge of wildlife and wildlife habitat relationships based on relevant habitat indicators will therefore allow land managers to make informed predictions about the impacts of fires, grazing use, development, recreational use, or forest management operations.

In addition to habitat relationships information, the BLM will also appropriately consider other federal, state, or private-sector publications pertaining to wildlife management. For example, the UDWR has a series of management plans with state objectives for mule deer, elk, pronghorn, cougar, black bear, bobcat, beaver, and chukar. Several of the big game species also have locally produced Wildlife Management Unit plans that contain both population and habitat objectives at the herd unit level. In 2015, the UDWR will update its State Wildlife Action Plan (UDWR, 2011b), currently called the Utah Comprehensive Wildlife Conservation Strategy (UCWCS), which focuses efforts on restoring and enhancing sensitive or at-risk wildlife populations and their habitats to prevent the need for additional listings under the Endangered Species Act (ESA). Several publications are available for migratory birds, such as the Utah Partners in Flight Avian Conservation Strategy (Parrish et al., 2002), and information from the USFWS list of Birds of Conservation Concern (USFWS, 2008), and the Migratory Bird Program Strategic Plan (USFWS, 2004a). The BLM and the USFWS signed a Migratory Bird MOU during 2010 that identifies agency responsibilities for implementing Executive Order 13186 (*Responsibilities of Federal Agencies To Protect Migratory Birds*, January 10, 2001) and complying with the Migratory Bird Treaty Act (BLM, 2010a). Similar publications and guidance from other federal and state agencies and nongovernmental organizations are additional literature sources that could help identify future BLM actions that will conserve wildlife populations and their habitats.

Wildlife Habitat Security Issues

Because disturbances and introduced structures can adversely impact wildlife, the BLM is obligated to consider more than just physical and ecological attributes of plant communities. The BLM also considers how it will provide (1) reasonable protection from habitat loss and fragmentation, and potential noise and harassment (intended or unintended) caused by resource uses and activities and (2) reasonable protection from potential adverse impacts caused by structural developments (such as fences, signs, power lines, meteorological towers, communication towers, mines, solar energy developments, wind energy generators, pipeline water tanks, and livestock troughs) associated with multiple-use land management. Structural development and habitat security considerations are not necessarily associated with

measurable plant community indicators. They are, nevertheless, important factors that could diminish the capacity of public land to support wildlife.

The potential adverse impacts of structures, roads, energy developments, and other human activities, and other factors in combination (i.e., cumulative impacts) could result in particularly harmful impacts to wildlife. For example, research in Wyoming indicates that oil or gas development exceeding approximately 1 well pad per square mile, with the associated infrastructure, results in calculable adverse impacts on greater sage-grouse breeding populations (Naugle et al., 2006). It is also probable that other energy-related developments such as power lines or meteorological towers could adversely affect wildlife because of collision hazards, behavioral avoidance reactions to overhead structures, and/or possible increased raptor predation caused by elevated hunting perches.

Indicators vary with wildlife habitat types and species. Many indicators apply to habitats for common wildlife species and special status species, so they will not be repeated in the Special Status Wildlife Species section. Some important indicators the BLM will use are:

- Distribution, abundance, and vigor of trees, shrubs, grasses and forbs (functional and structural plant groups) in upland and riparian habitats
- Percent shrub canopy cover
- Shrub height and maturity
- Relative proportions and spatial distribution of important wildlife habitat types
- Wildlife habitat connectivity, or lack thereof, at fine and mid scales (small landscapes of hundreds of acres to larger landscapes of thousands of acres)
- Woodland plant canopy cover, height, and maturity (important species such as willow, aspen, cottonwood, ponderosa pine, white fir, and pinyon pine)
- Presence or absence of old-growth trees and snags
- Herbaceous and woody plant recruitment
- Invasive/noxious plant presence (cheatgrass, Scotch thistle, and others, and Utah juniper in sagebrush steppe)
- Growth form and reproductive status of desirable mountain shrubs such as bitterbrush, mountain mahogany, and serviceberry
- Location and availability of water
- Landform, slope, and aspect
- Timing, intensity, duration, and location of resource uses and activities
- Rangeland monitoring studies (typically indications of upward or downward trend for important plant species)

Factors Other Than Habitat Quality That Could Limit Wildlife Populations

While quality wildlife habitat will likely sustain wildlife populations over several generations, some factors completely unrelated to physical habitat qualities might influence wildlife populations. For example, wildlife disease, accidents, predation, drought, wildfire, severe weather events, natural population cycles, and other mechanisms working outside the Decision Area could suppress or limit wildlife populations. Population limitations could occur temporarily (e.g., for a few years) or for very long periods (e.g., decades), even where there are healthy habitats present on public lands.

Current Conditions

Habitat Types

The BLM lands in the CCFO Planning Area contain the following general wildlife habitat types. This information is derived from the Southwest Regional Gap Analysis (SWReGap) Project (Lowry et al., 2005).

Table 2-4. Wildlife Habitat Types

Habitat	Acres in Decision Area (SWReGap data)
Agricultural	681
Altered	15,043
Aspen	8
Invasive	20,809
Mixed Conifer	10,910
Non-Vegetated	34,251
Oak/Mountain Shrub	64,565
Pinyon Juniper Woodland	980,253
Ponderosa Pine	1,872
Riparian Wetland	7,603
Sagebrush Steppe	829,188

Because these acres are based on the SWReGap model, they are estimates of the relative amount of habitat. The forestry section uses a different model and has a more accurate estimate of woodland habitat types.

Agricultural

Agricultural land is an aggregation of areas with grasses, legumes, or mixtures planted for livestock grazing or the production of crops. These areas provide important forage for big game and some migratory bird species, and cover for smaller game species.

Altered

This includes areas where the vegetation has been changed. The change might be human caused, such as mining or development, or it might be natural, such as a recent burn. Depending on the disturbance, it might or might not be possible to restore natural habitat to the site. In the case of wildfires, wildlife usually recolonize the site quickly, although the species mix might be different because of vegetation changes.

Aspen

Multi-seral stages of aspen and associated understory provide multiple benefits to many wildlife species. Many raptor species are adapted to aspen forest and the adjacent open brush, meadows, and grasslands that provide a vast array of prey species. The aspen ecosystem is considered to be of crucial importance to economically important large game species (e.g., elk and mule deer). Aspen ecosystems provide cover, calving, and fawning habitat for big game, late summer brood-rearing habitat for greater sage-grouse, and nesting habitat for migratory

birds. Aspen also provides suitable vegetation for breeding and feeding areas for a number of wildlife species.

Invasive

This habitat type includes annual grasses such as cheatgrass and invasive weed areas. These areas often provide poor wildlife habitat due to a lack of species diversity, low palatability of plants, and lack of hiding or nesting cover.

Mixed Conifer

There are mixed conifer habitats in the upper elevations and mesic areas of the Decision Area. Aspen can also be a component of some conifer stands. These habitats contain security areas (i.e., hiding cover) and thermal cover for big game species, and forage and nesting areas for many birds and small mammals, and can provide important linkage corridors for wildlife movement between other seasonal habitats.

Non-vegetated

Non-vegetated areas can be rock outcrops, cliffs, talus slopes, bedrock, sand dunes, playa, lava flows, or open water. Areas with rock outcrops, cliffs, or talus slopes offer perching, nesting, and hiding sites. They can contain crevices or caves. Many species, such as bats, raptors, and bobcats use these areas. Canyon and rock wrens nest in the fractured talus slopes below cliff faces, particularly in areas interspersed with open, patchy vegetation.

Oak/Mountain Shrub

This habitat includes Gambel oak, shrub live oak, mountain big sagebrush, rabbitbrush, bitterbrush, mountain mahogany, serviceberry, snowberry, and a diversity of grass and forb species. These areas are very important for wildlife because they provide both food and cover for many species. Species commonly found in this habitat type are mule deer, elk, dusky grouse, greater sage-grouse, and many species of birds.

Pinyon Pine/Juniper Woodland

Pinyon pine and juniper woodlands are widely dispersed and in many areas have expanded into sagebrush steppe communities. Pinyon pine and juniper woodlands provide wildlife habitat for several species such as big game, small mammals, and birds. Some species, such as pinyon jay, need mature stands during portions of their life cycle. Other species forage in these woodlands for the nuts and berries produced there. The woodlands also provide thermal cover to big game. These woodlands can include openings dominated by shrubs or grasses. Although understory vegetation is reduced beneath mature stands, they can provide great structural diversity. These woodlands support one of the highest proportions of obligate or semi-obligate bird species among forest types in the West (Gillihan, 2006).

Ponderosa Pine

Ponderosa pine forests provide habitats for various wildlife species. Snags in the mature pine forest provide a large number of species with cavity nesting and roosting sites. Deer and elk also use the pine forests for food and shelter (Howard, 2003). These forests are used by many bird and raptor species, and are preferred by Merriam's wild turkey.

Riparian/Wetland

Riparian/wetland habitats are crucial components on the landscape because they provide various life-cycle requirements such as foraging, bird nesting, roosting, and hiding cover, and provide travel corridors for numerous species. Riparian vegetation often provides a corridor for animal migration and travel. A high degree of plant diversity typically occurs along the riparian

corridors, exhibiting variable density and composition of plants that lead to diversity of openness and groundcover. Invasive species such as tamarisk are a management concern because of their prolific seed production and high evapotranspiration rates. Tamarisk can quickly overtake a riparian area upon introduction into that area, due to the tremendous amounts of seeds they produce. This species can then reduce the amount of available surface water and affect the health of riparian systems. Riparian vegetation moderates water temperatures and provides bank structures that reduce erosion and provide overhead vegetative cover for fish. Intact riparian communities also serve to slow overland flow, capture sediments, and provide a filter that enhances water quality. Water quality, especially related to such factors as sediment, temperature, and dissolved oxygen, also greatly affects fisheries habitat.

Sagebrush Steppe

Sagebrush steppe habitat is prevalent throughout the BLM-administered lands in the Planning Area except for the lowest elevations. At mid to lower elevations, sagebrush is the dominant habitat type that provides important winter habitat for several wildlife species (e.g., mule deer, pronghorn, and greater sage-grouse), and localized habitat for sagebrush-obligate species (e.g., pygmy rabbit and Brewer's sparrow). Sagebrush also provides crucially important breeding, nesting, and brood-rearing habitat for these species. Intermingled occurrences of grasslands and several low sages add to the diversity of vegetation and habitat structure. As a result of the regional losses of sagebrush communities and the number of sagebrush obligate wildlife species, maintaining and improving existing sagebrush habitat has become crucial for community structure and diversity and providing crucial habitat.

Salt Desert Shrub

Salt desert shrub includes numerous vegetative communities with a shrub component and a variable understory of grass and forbs. Soils are often saline or alkaline. These sites usually occur at the lowest elevations in the Planning Area. Herbaceous plants are vital to most wildlife species because those plants provide food, cover, and structure. The thermal relief provided by shrub cover helps wildlife to survive the rigors of summer heat and winter cold. It supplies browse, seeds, and cover for birds and small and large mammals. Intermingled areas of desert grasslands add diversity to vegetation and habitat structure in salt desert shrub communities.

Common Vertebrate Wildlife Species and Population Trends

This section describes general species and habitats for relatively common wildlife. Special status wildlife species are described in the Special Status Species section.

The BLM has not speculated about species population trends where the data available are insufficient or inconclusive, which is the case for most species considered. Normally, upward and downward population fluctuations can occur over time for most species. Under current conditions, the BLM is not aware of any highly controversial or significant local population trends associated with most common species. The exception could be mule deer, for which there has been concern about statewide populations this past winter and spring. Where national or regional population concerns have been raised, they are discussed by species or habitat.

Upland Game Bird Species

Upland game species in the Planning Area include Gambel's quail, greater sage-grouse (discussed in the Special Status Species section), dusky grouse, mourning dove, band-tailed pigeon, ring-necked pheasant, Rio Grande and Merriam's wild turkey, and chukar partridge. In addition to upland bird species, the cottontail rabbit is also present. The habitat for these species varies and depends on season of use and availability of food and shelter. Annual

fluctuations for most upland game bird and small mammal populations very closely correlate with annual climatic patterns. Mild winters and early spring precipitation during March, April, and May are associated with increases in upland game populations. Warm, dry weather, especially during June, is generally considered vital for the survival of newly born young of many upland game species. Cool, wet springs, dry summers, and harsh winters can depress upland game bird numbers.

Gambel's quail are limited in the Planning Area. They are mostly tied to the *Quercus turbinella* (shrub live oak or scrub oak) zone that enters southern Iron County near Kanarraville.

Dusky grouse are uncommon, but can be found in suitable habitats. Summer habitat is usually in the sagebrush steppe or mountain shrub habitat zones, usually near meadows or riparian areas, while in winter the birds migrate up slope to the fir zone. Dusky grouse can be found on Bumblebee Mountain, in the mountains and foothills east of Interstate 15, on the Bald Hills, and in the Mineral Range. Old reports of dusky grouse in the Needle Range have not been substantiated.

Ruffed grouse are not found in the planning area.

Mourning doves are widespread and occupy a wide variety of habitats. They are migratory game birds and hunting regulations are set by the UDWR subject to the Migratory Bird Treaty Act (MBTA) of 1918 and regulation by the USFWS. Trend data indicate that mourning dove populations are declining in the western United States (USFWS, 2010). One study suggests that habitat changes on private lands in central Utah contributed to the local decline in population (Ostrand et al., 1998).

Band-tailed pigeon habitat is limited in southern Utah. This species has been documented in Cedar City around the grain elevator. The birds migrate and usually do not stay in the Planning Area in winter. Not a lot is known about specific sites where these shy birds nest, other than in coniferous forests at higher elevations. The birds forage on nuts, fruits, and seeds and can travel long distances to food sources. They might use BLM-administered lands for foraging and roosting. The harvest of band-tailed pigeons has declined, which could be indicative of a population decline (Bernales et al., 2009).

Ring-necked pheasant are mostly associated with agricultural fields and can make limited use of BLM-administered lands adjacent to fields.

Two subspecies of **wild turkey** can be found in the Planning Area: Merriam's and Rio Grande. The Merriam's is the native species, while Rio Grandes were brought into the state to supplement wild populations and provide additional hunting opportunities. The two subspecies use different habitats. The Merriam's is a mountain bird and is often found in the ponderosa pine habitat type during summer. They migrate down slope in winter and can be found on BLM-administered lands east of Interstate 15. Rio Grande turkeys utilize riparian and pinyon pine/juniper woodland habitat and can also be found in adjacent shrub steppe habitats. They are found in most of the mountain ranges in the Decision Area. They generally use an area year round. Wild turkey populations have been increasing in Utah and in the Planning Area.

Chukar populations are scattered throughout the Planning Area, generally in the non-forested lower elevations. Chukar use steep, rocky terrain as a means of escaping predators and are usually found in or close to areas with steep slopes. Chukars prefer a grass and forb understory with some shrubs and scattered trees. They are mostly found in rabbitbrush, sagebrush,

saltbush, and cheatgrass vegetative associations below the juniper tree belt. There are many chukar guzzlers (small man-made water collection and storage devices) throughout their habitat areas. They normally persist as breeding populations given sufficient free water and forage. Some populations are augmented by the UDWR to provide additional hunting opportunities.

Mountain and desert cottontails are found in the Planning Area. They are widely distributed from desert areas to the lower mountain slopes.

Raptors (birds of prey such as hawks, eagles, owls, and falcons)

Relatively common raptors are found in suitable rangeland, riparian, and forest habitats specific to their needs throughout most of the Planning Area. Common breeding species include red-tailed hawk, prairie falcon, American kestrel, Cooper's hawk, sharp-shinned hawk, golden eagle, northern harrier, great horned owl, and long-eared owl. Ferruginous hawks, burrowing owls, northern goshawks, peregrine falcons, and Swainson's hawks also nest in the area. Several hundred bald eagles winter in the Planning Area each year. One pair was recently documented as nesting in the Planning Area. The rough-legged hawk is also a relatively common winter resident. Merlins have been seen during winter. Turkey vultures are common during summer. Other raptors known to occur in the Planning Area include the barn owl, osprey, California condor, and Mexican spotted owl. The raptors considered to be sensitive species or federally listed under the ESA are also discussed in the Special Status Species section.

Golden eagles are protected under the Bald and Golden Eagle Protection Act of 1940 (Eagle Act), including its implementing regulations (i.e., September 11, 2009, Eagle Rule 50 CFR parts 13 and 22). In 2007 the Eagle Act's implementing regulations were supplemented with a definition of the term "disturb" (a form of take), and regulations governing incidental take permits in 2009. On September 11, 2009, the USFWS published "Eagle Permits; Take Necessary to Protect Interest in Particular Localities; Final Rules" (Rule) in the *Federal Register*, creating a regulatory mechanism by which individual and programmatic "take" of bald eagles and golden eagles could be permitted under the Eagle Act for authorized uses and activities on BLM-administered lands. While the mechanism is now in place to issue take permits, the USFWS is limiting take for golden eagles due to population concerns and the present lack of identified measures to reduce take from activities, except in special cases. The USFWS does not anticipate issuing programmatic permits for golden eagles until it establishes Advanced Conservation Practices for an industry, company, or agency.

Special habitat needs for raptors include nest sites, foraging areas, and roosting or resting sites. Buffer zones are usually recommended around raptor nest sites during early spring and summer when raptors are raising their young. The most utilized raptor nesting areas are generally found along riparian areas and cliff faces.

Three key raptor areas were identified in 1989 in the Decision Area (Olendorff et al., 1989): Kanarra Canyon, Rush Lake, and Summit Canyon. Since then, additional important areas have been identified: the entire Parowan Gap Canyon area, Spring Creek Canyon, and the Mineral Mountains. Table 2-5 lists the habitats, special habitat features, and species associated with these areas.

Table 2-5. Raptors and Their Habitats

Key Raptor Area	Habitat	Special Habitat Feature	Species
Kanarra Canyon	Coniferous forest, Riparian/Riverine	Rock outcrops, Cliffs, Stream	Peregrine falcon. (Red-tailed hawk*). Provides suitable Mexican spotted owl habitat. Golden eagle and northern goshawk may nest in canyon.
Rush Lake	Deciduous forest, Shrub steppe	Winter roost, Rock outcrops, Small groups of trees	Golden eagle Bald eagle
Summit Canyon	Coniferous forest, Riparian/Riverine	Winter roost, Small groups of trees, Stream, Cliffs	Bald eagle (Golden eagle, peregrine falcon, red-tailed hawk)*
Parowan Gap Canyon	Shrub steppe	Cliffs, Rock outcrops	Golden eagle, bald eagle, peregrine falcon, prairie falcon, ferruginous hawk, burrowing owl, red-tailed hawk
Spring Creek Canyon	Coniferous forest, Riparian/Riverine	Rock outcrops, Cliffs, Stream	Mexican spotted owl, peregrine falcon
Mineral Mountains	Riparian, deciduous and coniferous forest	Cliffs, rock outcrops, old growth forest	Golden eagle, peregrine falcon, prairie falcon, northern goshawk, ferruginous hawk, red-tailed hawk

* Species documented using area since 1989.

(Note: Accipiters likely nest in the canyons with perennial water; however, inventories have not been conducted.)

Migratory Birds

Migratory birds are species that breed in North America and winter in Central and South America. For many species, breeding habitat and the string of sanctuaries along their migratory routes are rapidly disappearing due to development, fragmentation, and other factors.

The USFWS publishes the periodic report *Birds of Conservation Concern* (USFWS, 2008), a report that identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest need for conservation initiatives by Bird Conservation Region.

Partners in Flight (PIF) was launched in 1990 in response to growing concerns about declines in the populations of many land bird species, and to emphasize the conservation of birds not covered by existing conservation initiatives. The initial focus was on neotropical migrants, but has spread to include most land birds and other species requiring terrestrial habitats. The central premise of PIF has been that public and private resources in both hemispheres must be combined, coordinated, and increased to be successful in conserving bird populations. The Utah PIF group produced the *Utah Avian Conservation Strategy* in 2002 to identify priority species in need of conservation action (Parrish et al., 2002). The plan provides detailed accounts of priority bird species and habitats and recommends appropriate conservation actions required to effectively manage Utah's avian species. The plan also provides an ecological summary of Utah and features general descriptions of more than 230 Utah bird species. There are three PIF riparian bird monitoring sites in the Planning area: two on USFS-administered

land and one on UDWR-administered property. These sites have been monitored annually since the early 1990s. A statewide summary report published by the UDWR in 2007 indicated a population decline of 5 percent per year of total riparian birds during the study period 1992-2005 (Parrish et al., 2007)

The Utah State Steering Committee of the Intermountain West Joint Venture (IWJV) identified Bird Habitat Conservation Areas (BHCAs). These BHCAs were identified to represent areas on the landscape where the IWJV would focus its conservation efforts during the period 2005-2010, based on the combination of priority bird species, priority habitats, threats, and partnership opportunity. There are three BHCAs wholly or partially in the Planning Area, as listed in Table 2-6 (IWJV, 2011).

Table 2-6. Bird Habitat Conservation Areas

BHCA Name	BHCA Acres	Percent Acres within the Decision Area
Bald Hills	246,058	82
Hamlin Valley	298,363	78
Panguitch Valley	208,942	15

Migratory birds are important components of biological diversity and indicators of environmental conditions at local, regional, and global scales. Their conservation and management will help sustain ecological integrity, control insects, pollination of wild and cultivated flora, and natural seed dispersal. Migratory bird conservation will help to meet the growing public demand for conservation education and outdoor recreation, such as wildlife viewing and hunting opportunities. Migratory birds also are important economically and activities focused on birds provide financial benefits to local communities and businesses. The MOU states that it is important to (1) focus on bird populations, as opposed to individuals or the species, in their entirety, (2) focus on habitat restoration and enhancement where actions can benefit specific ecosystems and migratory birds that depend on them, and (3) recognize that actions that might provide long-term benefits to migratory bird populations as a whole might also have adverse impacts on individual birds.

Table 2-7 identifies migratory and non-migratory species that could occur in the Planning Area. PIF or the USFWS has identified these species as needing special conservation actions. Table 2-7 also identifies species primary and secondary breeding habitat and winter habitat.

Table 2-7. Avian Species

Avian Species	Utah BLM Sensitive Species	Birds of Conservation Concern- Bird Conservation Region 9 (Great Basin) 2008	Birds of Conservation Concern- Bird Conservation Region 16 (Southern Rockies/Colorado Plateau) 2008	Utah Partner's in Flight-Priority Species	Habitat Types (PIF)		
					Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
American avocet				X	Wetland	Playa	Migrant
American bittern			X		Shallow Wetland	Shallow Wetland	Migrant
American white pelican	X			X	Islands	Wetland	Migrant
Bald eagle	X	X	X		Lowland Riparian	Agriculture	Lowland Riparian
Bendire's thrasher			X		Low Desert Scrub	Low Desert Scrub	Migrant
Black-chinned sparrow		X			Low Desert Scrub	High desert scrub	Migrant
Black rosy finch		X	X	X	Alpine	Alpine	Grassland
Black-necked stilt				X	Wetland	Playa	Migrant
Black-throated gray warbler				X	Pinyon-Juniper	Mountain Shrub	Migrant
Brewer's sparrow		X	X	X	Shrub steppe	High Desert Scrub	Migrant
Broad-tailed hummingbird				X	Lowland Riparian	Mountain Riparian	Migrant
Burrowing owl	X		X		High Desert Scrub	Grassland	Migrant
Cassin's finch			X		Aspen	Sub-alpine Conifer	Lowland Riparian
Eared grebe		X			Wetlands	Water	Water
Ferruginous hawk	X	X	X	X	Pinyon-Juniper	Shrub steppe	Grassland
Flammulated owl		X	X		Ponderosa Pine	Sub-Alpine Conifer	Migrant
Gambel's quail				X	Low Desert Scrub	Lowland Riparian	Low Desert Scrub
Golden eagle		X	X		Cliff	High Desert Scrub	High Desert

Avian Species	Utah BLM Sensitive Species	Birds of Conservation Concern- Bird Conservation Region 9 (Great Basin) 2008	Birds of Conservation Concern- Bird Conservation Region 16 (Southern Rockies/Colorado Plateau) 2008	Utah Partner's in Flight-Priority Species	Habitat Types (PIF)		
					Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
							Scrub
Gray vireo			X	X	Pinyon-Juniper	Shrub steppe	Migrant
Greater sage-grouse	X	X		X	Shrub steppe	Shrub steppe	Shrub-steppe
Green-tailed towhee		X			Mountain Shrub	High Desert Scrub	Migrant
Juniper titmouse			X		Pinyon-Juniper	Pinyon-Juniper	Pinyon-Juniper
Lewis's woodpecker	X	X	X	X	Ponderosa Pine	Lowland Riparian	Northern Oak
Loggerhead shrike		X			High Desert Scrub	Pinyon-Juniper	High Desert Scrub
Long-billed curlew	X	X	X	X	Grassland	Agriculture	Migrant
Marbled godwit		X			Wetland	Grassland	Migrant
Mountain plover	X		X	X	High Desert Scrub	High Desert Scrub	Migrant
Northern Goshawk	X				Lodgepole Pine	Aspen	Lowland Riparian
Peregrine falcon		X	X		Cliff	Lowland Riparian	Wetland
Pinyon jay		X	X		Pinyon-Juniper	Ponderosa Pine	Pinyon-Juniper
Prairie falcon			X		Cliff	High Desert Scrub	Agriculture
Sage sparrow		X		X	Shrub steppe	High Desert Scrub	Low Desert Scrub
Sage thrasher		X			Shrub steppe	High Desert Scrub	Migrant
Sanderling					Shoreline	Shoreline	Migrant
Short-eared owl	X				Wetland	Grassland	Agriculture
Snowy plover		X	X		Playa	Playa	Migrant
Solitary sandpiper					Migrant	Migrant	Migrant
Swainson's					Agriculture	Aspen	Migrant

Avian Species	Utah BLM Sensitive Species	Birds of Conservation Concern-Bird Conservation Region 9 (Great Basin) 2008	Birds of Conservation Concern-Bird Conservation Region 16 (Southern Rockies/Colorado Plateau) 2008	Utah Partner's in Flight-Priority Species	Habitat Types (PIF)		
					Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
hawk							
Three-toed woodpecker	X			X	Sub-Alpine Conifer	Lodgepole Pine	Sub-Alpine Conifer
Veery			X		Lowland Riparian	Lowland Riparian	Migrant
Virginia's warbler		X		X	Northern Oak	Pinyon-Juniper	Migrant
Whimbrel					Migrant	Migrant	Migrant
Williamson's sapsucker		X			Sub-Alpine Conifer	Aspen	Migrant
Willow flycatcher		X	X		Lowland Riparian	Mountain Riparian	Migrant
Wilson's phalarope					Wetland	Water	Migrant
Yellow-billed cuckoo	X	X	X	X	Lowland Riparian	Agriculture	Migrant

1. Primary Breeding Habitat: Nesting habitat used during the breeding season in Utah.
2. Secondary Breeding Habitat: Nesting/foraging habitat used during breeding season in Utah (habitat specialists may have identical primary and secondary habitats).
3. Winter Habitat: Primary winter habitat in Utah.

Big Game Animals (mule deer, pronghorn, and Rocky Mountain elk)

The BLM works closely with the UDWR to manage habitat for fish and wildlife (including big game, upland game, waterfowl, migratory birds, small mammals, and amphibians and reptiles) to achieve and maintain suitable habitat for desired population levels and distribution on BLM-administered lands. The UDWR is responsible for managing wildlife population levels, while the BLM is responsible for managing wildlife and fisheries habitat in a condition that will support desired levels of species. The BLM works cooperatively with the UDWR to maintain and reestablish populations of native species within the CCFO Planning Area boundary through habitat management and restoration. Fish and wildlife habitat is generally managed according to the guiding principles outlined by BLM Fish and Wildlife 2000 (U.S. BLM, 1998), The Riparian-Wetlands Initiative for the 1990s (U.S. BLM, 1991a), Waterfowl Habitat Management On Public Lands: A Strategy For The Future (U.S. BLM, 1989a), National Sage-grouse Habitat Conservation Strategy (U.S. BLM, 2004a) and Utah's Raptor Best Management Practices (U.S. BLM, 2006a), Watchable Wildlife, recreational fisheries programs and other species and habitat-specific direction. The BLM implements this general guidance through specific management actions associated with species in the project area.

There are portions of five UDWR wildlife management units in the Planning Area (see Table 2-8). These units are used for wildlife planning and management.

Table 2-8. Wildlife Management Units

Wildlife Management Unit Name	Size (acres)	Percent in Planning Area	Acres of BLM	Percent in Decision Area
Beaver	828,357	22	465,182	22
Panguitch Lake	332,758	9	71,303	3
Pine Valley	682,000	18	242,193	12
Southwest Desert	1,794,399	48	1,309,385	62
Zion	117,179	3	16,910	1

Mule Deer are widespread throughout the Planning Area and occur in a variety of habitats. They are the most abundant big game animal in Utah and are of high interest to both sportsmen and non-consumptive users. The UDWR has designated several crucial winter ranges in the Planning Area. Most of these are in the eastern or southern portions of the Planning Area where herds migrate to lower elevations from the higher mountains (See Appendix A, Figure 2-1). Steep topographic relief and deep snowfall in surrounding mountain areas normally forces mule deer and other big game into highly restricted areas. Mule deer historically migrated from the high mountains such as the Tushars and Cedar Mountain to the valleys. Wintering mule deer moved westward across these lower elevations. For example, prior to Interstate 15, mule deer that summered east of Beaver could be found wintering as far west as the Minersville area. Interstate 15 now restricts mule deer to a very narrow strip of winter range east of the highway along the western foothills. In places, BLM-administered lands are only 1 mile wide and are bordered on both sides by private lands. This restricted winter range can limit the deer population on the entire herd unit. Because of learned behavioral use patterns, passed on from one generation to the next, deer migrate for the winter into the same areas every year, regardless of forage availability or condition. Mule deer have a high degree of fidelity to specific winter ranges where high population densities concentrate on relatively small areas. These generally are areas lacking in snow depth, which allow easier movement, with pinyon pine or juniper and sagebrush vegetative types. These vegetative types provide deer with forage, escape, and thermal cover. Because of the relatively small winter range area, high population densities, and the natural stress of winter survival, mule deer are vulnerable to stress caused by human activity in winter range areas. Mule deer are displaced an average of 600 feet from areas of human activity (Hiatt and Baker, 1981).

Mule deer feed on forbs, grasses, and shrubs throughout spring and summer, and primarily shrubs during fall and winter. Shrubs such as Wyoming big sagebrush, true mountain mahogany, fourwing saltbush, and antelope bitterbrush are important winter forage species. Mule deer fawn during spring on their migration back to their summer range.

Four types of habitat-use areas have been mapped in the Planning Area for mule deer, as described in Table 2-9.

Table 2-9. Mule Deer Habitat in the Cedar City Field Office Planning Area

Wildlife Management Unit	Season	Value	Acres in Planning Area	Acres of BLM
Beaver	Summer	Substantial	169,235	58,131
	Winter	Crucial	440,902	320,499
Panguitch Lake	Summer	Substantial	178,312	8,406
	Summer	Crucial	6735	0
	Winter	Crucial	127,699	60,707
Pine Valley	Winter	Substantial	674	493
	Summer	Crucial	7,701	4,464
	Summer	Substantial	10,834	3,862
Southwest Desert	Winter	Crucial	47,416	29,190
	Winter	Substantial	133,186	67,385
	Summer	Crucial	29,283	22,169
Zion	Summer	Substantial	730,679	609,783
	Winter	Crucial	84,818	76,302
	Winter	Substantial	94,867	75,833
Zion	Summer	Substantial	82,814	3,357
	Summer	Crucial	406	0
	Winter	Crucial	14,291	6,985
	Winter	Substantial	14,113	6,551

The UDWR defines crucial value habitat as areas on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial habitat will lead to significant declines in carrying capacity and/or numbers of the subject wildlife species. Substantial value habitat is that used by a wildlife species but is not crucial for population survival. Degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the subject wildlife species.

The mule deer population in Utah has been in a state of decline for more than 30 years. Many factors contribute to this decline, but the loss and degradation of habitat have likely had the most significant impact on mule deer numbers. Other factors such as predation and disease are intensified when habitat quality is reduced. If deer herds are to recover in Utah, extensive habitat work will need to be done to rehabilitate crucial mule deer ranges and compensate for a climatic trend toward hotter and drier conditions (UDWR, 2008a). The UDWR has several ongoing efforts for mule deer: restoring crucial habitat, increasing predator control, reducing highway mortality, stopping serial poachers, limiting the spread of disease, performing valuable research, and monitoring deer herds and winter range conditions (UDWR, 2011b).

Table 2-10 lists the population trends by unit (UDWR, 2008a).

Table 2-10. Mule Deer Population Estimates

Wildlife Management Unit	Population Objective	2006	2007	2008	2009	2010
Beaver	11,000	9,000	10,200	8,000	11,000	10,900
Panguitch Lake	8,500	8,925	8,700	10,000	10,500	8,100
Pine Valley	12,800	12,500	13,400	13,400	13,400	12,600
Southwest Desert	3,200	1,400	1,450	1,600	1,600	1,400
Zion	9,000	7,000	7,350	9,500	9,600	9,900

Pronghorn are widely distributed throughout most of the valleys in the Planning Area. Only crucial value yearlong habitat has been mapped in the Planning Area throughout Beaver and Iron counties (See Appendix A, Figure 2-2).

Pronghorn prefer very open vegetative types such as salt desert shrub, sagebrush steppe, and other treeless types. Typically, pronghorn avoid slopes greater than 20 percent (Ockenfels et al., 1994). Pronghorn fawning occurs throughout the range of this species. The pronghorn diet consists of a variety of forbs, shrubs, and grasses. Forbs are of particular importance during spring and summer, whereas shrubs are more important during winter.

The UDWR has only mapped one type of pronghorn habitat in the CCFO Planning Area, yearlong crucial. See Appendix A, Figure 2-2 and Table 2-11.

Table 2-11. Yearlong Crucial Pronghorn Habitat

Wildlife Management Unit	Acres Within Planning Unit	Acres of BLM
Beaver	198,260	106,685
Pine Valley	237,141	66,945
Southwest Desert	1,187,731	822,515

According to the Utah Pronghorn Statewide Management Plan (UDWR, 2009a), pronghorn are an important part of Utah's wildlife heritage. As occupants of the state's more xeric habitats, they are very dependent on limited resources, especially water. The UDWR has spent considerable time and resources to reintroduce pronghorn to most of the suitable habitat in the state. Management needs are addressed as necessary on individual herd units to maintain viable and well-distributed pronghorn populations for the benefit of all Utah residents. As a unique and impressive part of the state's desert and shrubland fauna, pronghorn are important to the state's wildlife heritage and should be managed for their intrinsic, scientific, educational, and recreational values.

Issues and concerns identified in the Utah Pronghorn Statewide Management Plan are habitat degradation or loss, water development, fences, livestock, disease, predation, human interaction, energy development impacts, transplants/reintroductions, and hunting.

Table 2-12 shows pronghorn population trends by unit (UDWR, 2009a)

Table 2-12. Pronghorn Population Trends

Wildlife Management Unit	Population Estimate	5-Year Trend	10-Year /trend
Beaver	200	Up	Up
Pine Valley	325	Up	Up
Southwest Desert	1,675	Up	Up

Rocky Mountain Elk are yearlong residents, with the largest concentrations occurring in the northwestern portion of the Planning Area on the Indian Peak and Wah Wah mountains and in Hamlin and Pine valleys. Elk also occur in the San Francisco Mountains and southward to White Mountain and the Shauntie Hills. On the eastern portion of the Planning Area, elk are found throughout the Mineral Mountains and east of Interstate 15. A few elk from the Pine Valley unit might occasionally appear in the New Harmony area or on Bumblebee Mountain. Elk are quite capable of wandering and can colonize new areas. Elk have traversed the Bald Hills area, although a resident population has not established. It is not unreasonable to assume that elk might someday be found throughout the Planning Area, except for in the lowest desert areas.

Elk are migratory, moving seasonally between summer and winter ranges. They generally summer at higher elevation ranges in aspen and conifers where their diet consists primarily of grasses and forbs. Elk calve during late spring and early summer in aspen-mountain browse intermixed vegetative types. Elk winter at mid to lower elevation ranges, occupying the sagebrush steppe, oak/mountain shrub, and pinyon pine/juniper habitat types where they can congregate in herds of 50 to 200 or more. Human activity in elk winter range adds additional stress to the natural stress of winter survival.

Elk in the Southwest Desert unit tend to move seasonally between the major valleys (Hamlin, Pine, and Wah Wah) and the mountain ranges (Indian Peak, Wah Wah, and the Wilson Creek range in Nevada). Herds might winter in the Pine Valley or Miller Mountain area and then disperse widely the remainder of the year. The number of elk wintering on BLM-administered lands east of Interstate 15 tends to vary annually based on weather conditions and forage availability.

The UDWR has mapped four types of habitat use areas in the Planning Area for elk. See Appendix A, Figure 2-3 and Table 2-13.

Table 2-13. Elk Habitat in the Cedar City Field Office Planning Area

Wildlife Management Unit	Season	Value	Acres in Planning Area	Acres of BLM
Beaver	Summer	Substantial	122,524	4,076
	Winter	Substantial	105,103	57,583
	Yearlong	Substantial	77,743	62,699
Panguitch Lake	Summer	Substantial	156,507	13,748
	Winter	Substantial	62,418	29,696
	Summer	Crucial	39,371	0
Southwest Desert	Yearlong	Substantial	690,026	573,713
Zion	Summer	Substantial	82,875	2,974
	Winter	Substantial	21,930	12,461.

Elk have become one of the most sought-after big game animals in Utah. They are also a high interest watchable wildlife species. Units that produce large bulls are especially attractive not only to hunters, but to wildlife watchers.

Issues and concerns identified in the Utah Statewide Elk Management Plan (UDWR, 2010) are habitat, population size, hunting issues, poaching, predator management, disease, access management, depredation, private land, winter feeding, and competition.

Elk are well established throughout Utah. From 1975 to 1990, the elk population in Utah grew rapidly from an estimated 18,000 elk to 58,000 elk (average annual growth rate equals 1.08). This rapid increase was largely due to low population levels and the abundance of available habitat (i.e., the population was well below carrying capacity). Since that time, population growth has slowed considerably through the use of antlerless harvest strategies designed to maintain populations at established population objectives, and to reduce populations in areas with poor range conditions due to drought. On most management units across Utah, the elk population is at or near the population objective. Therefore, until unit population objectives are increased, the statewide elk population will likely remain at its current level (UDWR, 2010).

Table 2-14 lists the elk population estimates and objectives by unit (UDWR, 2010)

Table 2-14. Elk Population Estimates

Wildlife Management Unit	Population objective	2006	2007	2008	2009	2010
Beaver	1,050	875	850	800	850	1,100
Panguitch Lake	1,100	872	950	1,000	800	775
Pine Valley	50	50	50	50	50	50
Southwest Desert	975	1,206	1,120	1,150	1,150	975
Zion	300	300	500	500	480	275

Desert bighorn sheep do not currently occur on BLM-administered lands in the Planning Area. However, historical habitat is present in the Wah Wah Mountains, San Francisco Mountains, and the Tushar Mountains. The reintroduction of bighorn in the Planning Area is not currently identified in the Utah Bighorn Sheep Statewide Management Plan (UDWR, 2008b). However, the UDWR has asked the BLM to consider the translocation of bighorn to the Mineral Mountains. Whether bighorn are native to the Mineral Mountains is currently unknown. However, because they were found on the Tushar Mountains to the east and other ranges to the west, they were likely found there if there was any available habitat. Because bighorn were estimated to be more numerous than elk or mule deer prior to European settlement, were found on either side of the Mineral Mountains, and the Mineral Mountains have many of the same physical characteristics of other areas where bighorn are found, it would be difficult to state with certainty that they did not occupy the range at some time in the past.

Optimal bighorn sheep habitat is visually open and contains steep and generally rocky slopes. Two adaptations of bighorn sheep substantially define their basic habitat requirements: (1) their agility on precipitous rocky slopes, which is their primary means of evading predators, and (2) their keen eyesight, which detects predators. Relatively short legs and a stocky build allow agility on rocks but preclude the fleetness necessary to outrun predators in less rocky terrain. Consequently, bighorn sheep select open habitats that allow detection of predators at sufficient distances to allow them to reach safety if approached.

Bighorn sheep are extremely vulnerable to a variety of viral and bacterial diseases carried by livestock, principally domestic sheep. In some reported cases, bighorn sheep exposure to these diseases has resulted in the decimation of entire populations. These diseases are transmitted in numerous ways, including nose-to-nose contact, and wet soils associated with areas of concentrated use such as stock watering ponds.

Management of bighorn sheep is guided by the following documents: Utah BLM Statewide Desert Bighorn Sheep Management Plan (U.S. BLM, 1986b), Revised Guidelines for Domestic Sheep and Goat Management in Native Wild Sheep Habitats (U.S. BLM, 1998), Utah Bighorn Sheep Statewide Management Plan (UDWR, 2008b), and corresponding UDWR Herd Management Plans.

Rocky Mountain Goats are also found in the Planning Area on the top of the Tushar Mountains. However, there is no mountain goat habitat on BLM-administered lands and this species is not further addressed in this document.

Range Trend Data

The UDWR, with assistance from the BLM and USFWS, performs long-term range trend monitoring studies focused on big game winter ranges. The ability to detect changes in vegetative composition (range trend) on big game winter ranges is an important part of Utah's big game management program. The health and vigor of big game populations are closely correlated to the quality and quantity of forage in key areas. The program is set up to monitor, evaluate, and report range trends at designated key areas throughout the state, and inform agencies and private landowners of significant changes in plant community composition in these areas.

A summary from the UDWR, by herd unit, is presented below. The big game range trend studies were last completed in 2008 and will be repeated in 2013 and every 5-years thereafter.

Range Trend Program personnel created the desirable components index (DCI) for deer as a tool to address condition and/or value of winter ranges for mule deer. This index is meant to be a companion to, not a replacement for, the site-specific range trend assessments found in the annual Utah Big Game Range Trend Studies report (Gunnell et al., 2010). This index was designed to score mule deer winter range based on several important vegetative components (i.e., preferred browse cover, shrub decadence, shrub young recruitment, cover of perennial grasses, cover of perennial forbs, cover of annual grasses, and cover of noxious weeds). Although the index can be useful for assessing habitat for other species (e.g., greater sage-grouse and elk), the rating system was devised to specifically address mule deer winter range requirements.

The index is used primarily to determine if a particular site has the vegetative components necessary to be good winter range for mule deer. It can also be used to identify areas where habitat restoration projects might be needed and help land managers determine possible rehabilitation options. Because it does not account for factors such as soil stability, hydrologic function, and other environmental factors, it should not be used to assess a site's function and/or condition as typically used by the federal land management agencies.

Desirable mule deer winter range provides 12 to 20 percent of preferred browse cover, 20 percent or less shrub decadency, and 10 percent or more of young shrub population. The herbaceous understory contains 8 to 15 percent perennial grasses cover, 5 percent perennial forb cover, and less than 5 percent annual grass cover. Based on these criteria, communities are scored on a 100-point scale.

Beaver: Only studies in the Planning Area are discussed. Eight studies are scored on the low potential scale of the DCI: Bone Hollow, Beaver Table, Muley Point, "B" Hill, Big Cedar Cove, Minersville Reservoir, South Creek, and Above Fremont Wash. The average DCI scores declined from 1998 to 2008. Declines in browse cover resulted in this decline in scores. The remaining studies are within the mid-level potential scale: Sheep Rock, Rocks Reseeding, and Doubleup Hollow. The average DCI scores for these studies have also declined. The factors that caused the decline in score between 1998 and 2003 were increased decadence in preferred browse and fewer young plants being recruited into the population. The score declined in 2008 due to the fire that eliminated browse at Doubleup Hollow.

Panguitch Lake: Four studies in this unit were considered to be in the low potential scale for the DCI: Swayback Knoll, Cottonwood, Paragonah, and South Summit Wildlife Management Areas. The average DCI of the low potential scale sites has remained fair over the sampled years. Four study sites were considered to be in the mid-level potential scale for the DCI: Bear Valley, Buckskin Valley, Grass Valley, and Elliker Basin. The average DCI of the mid-level potential scale sites showed up and down fluctuations, likely due to precipitation patterns

Pine Valley: Four studies were considered to be in the low potential scale for the DCI: Southwest of New Castle, Telegraph Draw, Northwest of Enterprise, and Bullion Canyon. The average DCI rating for the low potential sites in the unit declined from 1998 to 2008. Three studies in the Planning Area were considered to be in the mid-level potential scale for the DCI: Quichapa Canyon, Woolsey Reseed, and North Hills. The average DCI rating for all nine mid-level potential sites was very poor to poor in 1998, decreasing to very poor in 2003 and 2008, respectively. When the mid-level potential sites that burned (none in the Planning Area) were excluded, the average DCI rating was 50 in 1998, 35 in 2003, and 39 in 2008. The trend for the average DCI of the mid-potential scale site improved slightly between the 2003 and 2008 sample years when sites that burned were excluded. One site was considered to be in the high

potential scale for the DCI: Upper Broad Hollow (slightly south of the Iron/Washington county line, this site would be applicable to Bumblebee Mountain). The DCI for this site was good (68 to 70) for all the sample years.

Southwest Desert: Approximately 80 percent of this unit is administered by the BLM and all of the studies are relevant to the Planning Area. All of the studies in this unit are considered within the mid-level potential scale for the DCI, except Wah Wah Pass, which is considered high potential. The average DCI rating for mid-level potential studies was fair in 1998 and 1999, very poor to poor in 2003, and poor in 2008. The main reasons for the low DCI scores on these studies were low preferred browse and perennial herbaceous cover. The DCI ratings for Wah Wah Pass were fair to good in 1998, poor to fair in 2003, and poor in 2008. This decline in habitat quality was attributed to decreasing preferred browse cover and young recruitment, and low perennial grass cover.

Zion: One study is in the Planning Area: the North Hills site, in a chained and seeded pinyon pine, Utah juniper, and mountain big sagebrush community. All six studies in the Zion unit were considered to be in the mid-level potential scale for the DCI. The average DCI rating declined for the unit in 2003, but increased again in 2008. The likely reason for the decline in habitat quality in 2003 was drought. There were general decreases in density of browse and cover of all plant species for that year.

Black Bear

Black bear is the only species of bear inhabiting Utah. Black bears are native to and fairly common in Utah. There are year-round substantial and crucial value habitats on the eastern side of the Planning Area. Black bears in Beaver and Iron counties occur primarily in large forested areas. According to the Utah Black Bear Advisory Committee (2011), in a survey of bear observations recorded by resource managers in Utah, 80 percent of bear survey observations occur between 7,000 feet and 10,000 feet elevation. Approximately 12 percent occur between 4,600 feet and 6,988 feet elevation, and 8 percent occur between 10,000 feet and 12,000 feet elevation. Black bears are omnivorous and eat a wide variety of foods throughout the year. The spatial arrangement, abundance, and dependability of seasonally important food sources might explain much of the variation in black bear density, fecundity, home range size, and seasonal habitat use.

As a result of an increase in bear hunting, a statewide limited entry permit system was implemented in 1990 that requires hunters to draw permits and hunt within a specific unit (Utah Black Bear Advisory Committee, 2011).

Issues and concerns identified in the Utah Black Bear Management Plan V. 2.0 2011-2023 (Utah Black Bear Advisory Committee, 2011) are outreach and education, habitat management, nuisance management, livestock and agricultural depredation, recreation, population management, and research.

Cougar

Cougar, or mountain lions, are found statewide in Utah, occupying habitat types ranging from rugged desert areas to above timberline. The species is fairly common throughout Utah, but individuals are rarely seen because of their secretive nature. Seasonally, their movements follow their main prey, mule deer. Cougar will also feed on rabbits, elk, wild horses, or other animals, but approximately 80 percent of their diet consists of deer. Cougars are active year-round, during day and night, although most activity occurs at dawn and dusk. They are hunted on a limited and closely monitored basis in Utah.

Issues and concerns identified in the Utah Cougar Management Plan V. 2.0 2009-2021 (Utah Cougar Advisory Group, 2009) are outreach and education, population and harvest management, predator management, livestock depredation, and research.

Furbearers

There are several furbearer species in the Planning Area managed according to Utah Furbearers Regulations. Furbearers as defined by the UDWR include bobcats, raccoons, badgers, weasels, and beavers. Bobcats are fairly common in Utah, but are rarely seen because of their secretive nature.

Other Wildlife Species

There is a lack of information about small mammals such as rodents and bats, and amphibians and reptiles in the Planning Area. Databases maintained by the Utah Natural Heritage Program document general occurrences and potential for many of these groups of wildlife, but there have been no site-specific inventories for most of the Planning Area. However, as inventories are performed, new occurrences and range extensions are being discovered. This is currently occurring with inventories through acoustic monitoring in association with wind energy testing and development on some sites.

Invertebrates: Little is known about individual invertebrate species. Some of the common groups of invertebrates are arthropods, mollusks, earthworms, protozoa, and nematodes. Adequate soil structure and chemistry is essential for soil invertebrates to survive. Factors that have caused some invertebrate declines include the use of pesticides; loss of litter and dead plant material and a decline in forbs attributable to grazing; range treatments; fire suppression; and disturbance of springs, wetlands, talus slopes, caves, and other special habitats. Grazing can reduce grass, seed production, forbs, and dead plant material available to invertebrate herbivores and pollinators. Livestock use has caused localized soil compaction, especially in wet areas, which has affected soil-dwelling species such as earthworms, nematodes, snails, and slugs. The impact on invertebrates from these disturbances is largely unknown. The greatest change to invertebrate habitat in rangelands is the conversion of grasslands and shrublands to other uses.

Invertebrates perform key ecological functions in the environment by decomposing wood and litter material that return nutrients to the energy cycle, and serving as food for other groups of animals. Other key ecological functions of invertebrates include turning over soil and increasing its productivity, pollinating flowers, and dispersing seed. The habitat requirements for invertebrates are generally at a scale so fine that it is difficult to predict how management activities will modify them.

Of the known species, many were introduced accidentally or intentionally. The small size and mobility of invertebrates make them easy to introduce by vehicles, cargo, animals, wind, and other means. Exotic invertebrate species pose an increasing threat to native invertebrates through competition, displacement, and interbreeding, and by posing a threat to the plants and wildlife that they might attack. Species of the greatest concern are aquatic invasives such as quagga and zebra mussels.

Trends

Wildlife population trends, where known, are discussed above with the descriptions of the species. Big game range trends are also discussed above following the discussion on individual

big game species. Big game winter ranges in the Planning Area generally have either a static or downward trend.

The following information is from the Utah Greater Sage-grouse Management Plan (UDWR, 2009b). Climate change could have an influence on long-term conservation. Climate change scenarios for the sagebrush region predict increasing trends in temperatures, increased atmospheric CO₂, and increased frequency of severe weather events, which could result in a decline in sagebrush communities. Changing environmental conditions might also favor invasive species (e.g., cheatgrass) expansions and result in increased fire sizes and frequencies. In addition, an estimated 12 percent of the current distribution of sagebrush is predicted to be replaced, primarily by expansion of woody vegetation (e.g., pinyon pine and juniper) for each 1 °C increase in temperature (Miller et al., 2011). Climate change might already be affecting Utah greater sage-grouse populations and could have a greater influence on long-term conservation strategies, particularly in the Planning Area, which lies at the southern boundary of the greater sage-grouse range. The combined interactions of invasive plant species, uncharacteristic fire events, and climate change will likely continue to change sagebrush communities and create challenges for future conservation and management.

Greater sage-grouse habitat quality and quantity has declined throughout Utah and coincides with declines in greater sage-grouse numbers. The reasons for habitat loss vary from site to site, but include wildfire, urban expansion, development, agricultural conversion, herbicide treatments, rangeland seeding, noxious weeds/invasive species expansion, conifer encroachment, drought, and improper livestock grazing management. Connelly et al. (2004) provide considerable information on characteristics of greater sage-grouse habitats and the threats and risks facing these habitats. This information on greater sage-grouse habitat indicates a likely general long-term downward trend in shrub-steppe habitat conditions.

While the above information is specific to greater sage-grouse, it applies to the shrub steppe habitat type and therefore might indicate a downward trend for many other species linked to this habitat type, such as pygmy rabbit, sage sparrow, and sage thrasher.

A summary report from a 14-year UDWR study (Parrish et al., 2007), with partial funding from the BLM, concluded that riparian bird populations have undergone statewide declines of approximately 5 percent per year during the period 1992-2005. Abundance and annual survival were the most sensitive indicators. The report stated that the results of the monitoring data confirm that riparian habitats are the Utah habitat "in greatest conservation need." Additional results suggest that the patterns of annual variation and regional synchrony seen in riparian-dependent species groupings, density, and other parameters might be driven by landscape-scale effects on habitat (White et al., 2009).

Forecast

In the reasonably foreseeable future, current wildlife habitat trends might or might not change substantially in relation to mining activity, livestock grazing, recreational use, energy development, and other human uses. It is very difficult to predict how mining activity might change in response to commodity price changes. Similarly, the impacts of OHV activity might not be easy to predict, and could conceivably decline over time as energy costs continue to escalate. Conversely, OHV enthusiasts might more intensively use nearby public land areas such as Bumblebee Mountain and the Parowan and Beaver Fronts simply because they are close to Cedar City and Beaver. Under the more intensive use scenario, OHV activities could increase physical habitat losses and diminish wildlife habitat security.

Depending on the types of mitigation measures that might emerge for wind, solar, and other energy development, impacts to wildlife might or might not increase substantially. Placement of wind energy or solar development sites and the resulting loss and/or fragmentation of shrub-steppe habitat could adversely affect a number of sage-steppe-dependent species.

Healthy forest management initiatives will probably continue to make progress toward forest habitat conditions favorable to certain wildlife. One concern would be to ensure that BMPs for bird species associated with pinyon pine and juniper are implemented.

The combined expected adverse impacts of wildfires, land uses, and project developments in sagebrush steppe habitats could continue, but the extent and pace of decline is unknown. If the BLM implements BMPs in wildlife habitat stewardship within sagebrush steppe rangeland, the declines might be less than what could be expected. Global warming and increased atmospheric CO₂ (i.e., climate change), which tends to favor invasive annual species such as cheatgrass, could result in more uncontrollable fire-related impacts to wildlife habitat, regardless of BLM actions.

Key Features

Table 2-15 lists physical features or wildlife use areas with importance to common and special status wildlife species.

Table 2-15. Key Wildlife Habitat Features

Features and Use Areas	Values Provided
1. Important Landforms	
Canyons with perennial water such as Kanarra, Spring Creek, Parowan, and Cedar	Raptor nesting and wintering, including eagles, falcons, and Mexican spotted owls. Nesting habitat for forest, rangeland, and riparian wildlife.
Rock outcrops, cliffs, talus, and ledges	Habitat for nesting raptors, swallows, and swifts, reptiles, and eagle roosting.
Caves, crevices, mine shafts, and adits	Bat life history needs. Falcon nest sites in cracks, crevices and on ledges.
Flat to gently sloping landforms within 12 miles of greater sage-grouse leks	Greater sage-grouse nesting habitat (provided suitable shrub, grass, and forb cover is present).
2. Important Use Areas	
Concentrated use areas (could apply to winter, spring, summer, or fall use)	Various geographic locations that support high numbers of mule deer, elk, pronghorn, greater sage-grouse, raptors, or other important species. Includes wintering areas for raptors or waterfowl.
Greater sage-grouse leks	1 to 5 acre centers of annual breeding activity; low open habitat structure allowing greater sage-grouse good visibility.
3. Soil Types	
Deep soil inclusions	Dense shrub cover patches often valuable for pygmy rabbit, big game, and songbird nesting
Soils suitable for burrowing	Utah prairie dog habitat.

Features and Use Areas	Values Provided
4. Important Plant Community Composition and Structure	
Shrubland habitats (greater than or equal to 5 percent shrub canopy cover)	<p>Big sagebrush canopy cover between 10 and 30 percent and tall enough to be above snow cover; supports greater sage-grouse winter use.</p> <p>Big sagebrush canopy cover 15 to 25 percent is associated with successful greater sage-grouse nesting and early brood-rearing, land-bird nesting activity, and big game cover.</p> <p>Big sagebrush canopy cover greater than or equal to 25 percent is associated with pygmy rabbit and sagebrush steppe wildlife occupation.</p> <p>Mule deer crucial winter habitat and elk winter habitat.</p> <p>Raptor foraging areas.</p>
Grass/forb dominated habitats (less than 10 percent shrub canopy cover)	Pronghorn spring-summer-fall, elk winter, long-billed curlew nesting, Utah prairie dog, burrowing owl, and kit fox habitat. Raptor foraging areas.
Mixed mountain shrubs such as mountain mahogany, bitterbrush, serviceberry, and sumac	Mid- to late-seral stage habitat; provides quality cover and food (including fruits) for game and non-game wildlife. Mule deer fawning and summer habitat. Elk habitat.
Old-growth conifers	Bird nesting, bat roosting, and habitat for woodpeckers and raptors.
Pinyon pine and juniper woodlands	Thermal cover patches for mule deer and elk winter range, song-bird nesting and feeding, ferruginous hawk nesting, and accipiter nesting in some areas. Berries and nuts are important food sources for big game, wild turkeys, and non-game wildlife. Pinyon jays require large mature stands of pinyon pine/juniper for nesting.
Snags	Bird and bat occupation, roosting, nesting, and feeding.
Dead and down woody material	Bird foraging, mammalian denning activity, perching, hiding, and thermal cover. Can be very important for reptiles, cottontails, and jackrabbits.
Springs, seeps, and streams	Free drinking water and succulent green forage year-round. Fish, frog, and toad habitat.
Natural or man-made open water habitat	Migratory bird resting and feeding, free drinking water, osprey foraging. Very important to bats.
Riparian habitat associated with natural or man-made water habitats	Waterbird, shorebird, songbird, and raptor nesting, big game shelter and forage, and reproduction habitat for amphibians. Provides forage and cover to most wildlife species. Frog and toad habitat. Essential for southwestern willow flycatcher habitat.
Cottonwood and aspen	Raptor and songbird nesting, migratory bird stopover habitat during migrations, big game hiding cover and food. Bald eagle winter day and night roosts and

Features and Use Areas	Values Provided
	nesting sites.
Ponderosa pine	Provides habitat for northern goshawk, Lewis's woodpecker, and many other species.
Oak woodlands (Gambel or live oak)	Important habitat for many species, including big game, upland game birds, migratory birds, and small mammals. Provides nesting, thermal, and hiding cover. Mast crop is important forage.
Sand dunes within salt desert shrub, and sagebrush areas with sandy soils	Habitat for the dark kangaroo mouse.

Paleontology

Paleontology is a biological and geological scientific discipline involving the study of fossil materials. Paleontological resources, or fossils, include the body remains, traces, or imprints of plants or animals that have been preserved in Earth's crust. Fossils can be bones and teeth, shells, leaf impressions, footprints, or burrows. The fossil record is our only evidence of the more than 3.5 billion years life has existed on Earth.

Indicators

The primary resource indicator for paleontological resources involves characteristics that make the fossil locality or feature important for scientific use. Among paleontologists, fossils are generally considered to be scientifically significant if they are unique, unusual, or rare; diagnostically or stratigraphically important; or add to the existing body of knowledge in a specific area of the science. The BLM considers all vertebrate fossils to be scientifically significant. Invertebrate and plant fossils can be determined to be significant on a case-by-case basis.

Current Condition

The CCFO Planning Area contains few known fossil resources of interest to the general public. The principle focus has been to evaluate site-specific formation geology for all new surface-disturbing proposals using the BLM Potential Fossil Yield Classification System and recommending the appropriate level of project-specific site evaluation and mitigation measures.

Mitigation measures are tailored to the proposed action based on the amount of bedrock disturbance, and can vary from project to project. Mitigation can include literature review and museum record searches, ground survey prior to surface disturbance, monitoring during work, and inspection prior to backfilling and reclamation. Paleontological mitigation efforts often require monitoring and inspection during construction activities because fossils are sometimes discovered as bedrock is disturbed.

In the Planning Area, fossil-bearing sedimentary rocks range in age from Pennsylvanian to Quaternary. Fossils preserved in these deposits include invertebrate, vertebrate, plant, and trace fossils. Mesozoic-age rocks are most abundant, and the only Cenozoic rocks are Quaternary in age. Cenozoic rocks older than Quaternary age that might have been present have been removed by erosion. Vertebrate fossils from the Planning Area include the body

remains of fish, amphibians, reptiles (including dinosaurs), and mammals, and tracks and traces of terrestrial animals. Table 2-16 lists typical fossils found in the local geologic formations.

Table 2-16. Fossil Types and Formations

Geologic Formation	Age	Fossil Source	Fossil Type
Cutler Group	Permian	Fish and Amphibian	Remains, Trackways
Chinle	Triassic	Fish and Reptiles (including dinosaurs)	Remains, Trackways
Chinle and Moenkopi	Triassic	Vertebrate	Trackways
San Rafael and Glen Canyon	Jurassic	Vertebrate	Trackways
Carmel	Jurassic	Invertebrates	
Morrison and Cedar Mountain	Early Cretaceous	Dinosaurs	Remains
Iron Springs		Dinosaurs	Trackways
Unnamed	Quaternary Units		

Trends

Fossil viewing and collecting is not a common recreational activity in the Planning Area. There are no designated fossil collection localities and no major scientific fossils have been found. Increased interest in the dinosaur trackway in Parowan Gap is expected, and this locality should be protected.

Forecast

Unless a popular fossil locality is discovered, fossil viewing and collecting is expected to remain intermittent and infrequent. Projected increases in OHV recreational use could increase the risk of damage and unauthorized collection in areas where paleontological resources are present. Management actions to identify and protect sensitive areas or to mitigate impacts to paleontological resources would reduce the nature and degree of these impacts.

Key Features

With the possible exception of the Parowan Canyon trackway site, fossil theft and/or vandalism is not currently regarded as an important issue in the Planning Area, primarily due to apparent low density of commercial-value fossil resources in relation to other areas.

Riparian and Wetlands Resources

Riparian and wetland areas are sensitive vegetative or physical ecosystems that develop in association with surface or subsurface water. Riparian and wetland ecological systems comprise less than 1 percent of the 22 million acres of BLM-administered public lands in Utah, but are among the most important, productive, and diverse ecosystems on the landscape. Riparian areas supply water for both culinary and agricultural uses; forage and browse for wildlife, wild horses, and livestock; and recreational opportunities. They also serve as the foundation for biodiversity in the Planning Area. Riparian areas provide habitat for migratory birds, raptors, and fish (Chamber and Miller, 2004).

Riparian areas include, but are not limited to, areas adjacent to waterways, springs, wet meadows, sloughs, marshes, floodplains, lakes, and reservoirs. Riparian areas are recognized as “a form of wetland transition” between saturated wetlands and upland areas. The CCFO administers 142.8 miles of lotic riparian resources and 243.3 acres of lentic riparian resources.

Instruction Memorandum (IM) UT-2005-91 (U.S. BLM, 2005a) provides protection to sensitive riparian-wetland resources on public lands in Utah. This IM requires that no new surface-disturbing activity will be allowed in riparian areas unless it can be shown that (1) there is no practical alternative, or (2) all long-term impacts can be fully mitigated, or (3) the activity will benefit and enhance the riparian area. This policy should adequately protect or improve riparian-wetland conditions areas during future surface-disturbing activities.

Indicators

Proper functioning condition (PFC) is a qualitative method for assessing the condition of riparian-wetland areas. The term is used to describe both the assessment process, and a defined, on-the-ground condition of a riparian-wetland area. The on-the-ground condition termed PFC refers to how well the physical processes are functioning (U.S. BLM and U.S. Department of Agriculture, 1998). PFC is a state of resiliency that allows an area to produce desired values. Riparian-wetland areas that are not functioning properly cannot sustain these values. PFC is a qualitative assessment performed by an interdisciplinary team.

Functioning condition is rated by category to reflect ecosystem health. These are defined as follows:

PFC – When adequate vegetation, landform, or large woody debris is present to dissipate energy associated with high waterflow; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics; and support greater biodiversity.

Functioning at Risk – Riparian-wetland areas that are in functioning condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

Nonfunctional – Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and therefore are not reducing erosion, improving water quality, and the like.

Unknown – Riparian-wetland areas that have not been inventoried or about which there is insufficient information to make any form of determination.

The *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (U.S. BLM, 1997) (Rangeland Health Standards and Guidelines) established guidelines for managing riparian-wetland resources. Standard 2 states: “Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate, and landform.” PFC is one tool for determining whether livestock grazing management on an allotment is in compliance with this standard.

Riparian-wetland areas are monitored using quantitative short-term and long-term indicators. The methodology for measuring indicators is primarily based on *Monitoring Stream Channels and Riparian Vegetation – Multiple Indicators*, or Multiple Indicators Monitoring (MIM) (Burton et al., 2008). This monitoring protocol addresses 10 procedures that can be used to monitor streams and associated riparian vegetation. Seven procedures provide indicators for long-term

trend. These indicators include greenline composition, woody species regeneration, streambank stability, channel and water width, water depth, and substrate composition. Permanent photo points are also used to determine trend. Three indicators help determine whether short-term guidelines are meeting allowable use criteria. Short-term indicators include woody species use, stubble height, and streambank alteration.

Current Condition

Riparian-wetland streamflows in the Decision Area are typical of those found in the Great Basin ecoregion. Streams in the Decision Area are in a closed basin, meaning none of the water eventually flows into an ocean; streams drain into ephemeral playas or washes on valley floors or disappear in the stream channel. Major rivers and streams in the Decision Area are associated with snow runoff from adjacent land in the Dixie and Fishlake National Forests, generally on the east side of the Decision Area. Most streams east of Interstate 15 are diverted and dewatered for municipal and agricultural uses as soon as they leave public lands. There are also numerous smaller streams that drain from USFS-administered lands and BLM-administered lands in the southern and western portions of the Decision Area.

Streams are either fed by groundwater, by precipitation in the form of rain or snow, or a combination of both. Springs are fed by groundwater that reaches the surface naturally, which can then form streams if water output from the spring is adequate. Streams are also fed by seasonal precipitation during summer monsoons that can bring localized and often intense thunderstorms from mid July through mid September.

PFC assessments have been performed in the Decision Area since 1995, but most assessments have been completed since 2004 in conjunction with Rangeland Health Assessments and livestock grazing permit renewal Environmental Assessments. Table 2-17 summarizes findings.

Table 2-17. Proper Functioning Condition Assessment Summary

Functional Rating	Trend	Miles Evaluated	Percent of Miles Evaluated	Acres Evaluated	Percent of Acres Evaluated
Nonfunctioning	N/A	15.2	10.6	15.3	6.3
Functioning At Risk	Downward	16.2	11.3	34.6	14.2
	Static or Not Apparent	23.9	16.7	88.2	36.2
	Upward	10.9	7.6	10.4	4.3
Proper Functioning Condition	N/A	58.9	41.2	42.7	17.6
Unknown	N/A	17.7	12.4	52.1	24.4
Totals		142.8	100	243.3	100

Appendix D provides PFC ratings by grazing allotment.

Causal factors for riparian-wetland areas not at PFC vary across the Decision Area. These factors are both within and outside management control. In most cases, no single factor is responsible for riparian conditions less than PFC. The following is a list of more common causal factors (in no particular order of importance): wild horse, wildlife, and livestock grazing; dewatering; drought; road encroachment; incised channel; excessive erosion/ sedimentation because of poor upland conditions (i.e., pinyon/juniper encroachment); and invasive species.

MIM data is currently being collected on several streams selected for long-term monitoring. To date, multi-year monitoring using these methods has not been performed, so conclusions on long-term trends cannot be deduced from the data.

Trends

As of March 2011, the Rangeland Health Standards and Guidelines have been evaluated and livestock grazing decisions have been issued to livestock permittees who have privileges on 135 of the 159 grazing allotments that have been actively grazed by livestock since 2004. If a grazing allotment was not meeting Standard 2 of the Standards and Guidelines and current livestock grazing management was a causal factor for not meeting the standard, changes were made to grazing management on the allotment. These changes can include, but are not limited to reducing livestock numbers; changes to season of use (i.e., reduce summer or hot-season grazing); improving livestock distribution through herding practices, salting, fencing, water developments; implementing short-term guidelines; construction of riparian exclosures. Monitoring and assessments performed on some riparian areas have shown positive trends in these areas (e.g., on Bear Creek). Future monitoring and assessments will help determine if changes in livestock grazing management will improve riparian areas.

Other management actions and projects have been implemented to improve riparian conditions, including planting willows to reintroduce a woody species component. Planting willows should aid in riparian vegetative recovery and fishery habitat improvement.

Other projects include maintaining existing riparian exclosures and their associated offsite water developments. These have been an important component in improving riparian conditions by excluding use by livestock and wild horses. Currently, the BLM maintains 61 riparian exclosures in the Decision Area. Because exclosures are more expensive than other management actions and need to be maintained periodically, they are generally used when other management options have not been or will not be effective.

The continued expansion of pinyon pine and juniper trees in the Planning Area can impact riparian areas. This expansion into or near riparian-wetland areas can cause excessive sedimentation and erosion into riparian areas and out-compete riparian vegetation. Invasive riparian species, like Russian olive and tamarisk, will also out-compete native riparian vegetation such as cottonwood and willow species, and can decrease recreation and fishery values. Projects have been implemented to remove pinyon pine and juniper trees and invasive species. These projects are expected to improve riparian-wetland conditions. Effectiveness monitoring of these types of projects is ongoing.

Forecast

Riparian areas will likely improve overall due to improvement in livestock grazing management. Livestock grazing management has been changed on allotments that were not meeting

Standard 2 of the Rangeland Health Standards and Guidelines and current livestock grazing was identified as a causal factor. Other large ungulates, such as elk and wild horses, might continue to adversely impact riparian-wetland areas in spite of changes to livestock grazing management. Livestock can be managed to be in certain areas for a specified amount of time; wild horses and elk are drawn to riparian-wetland areas for forage and water and can access them during any season except winter when they become inaccessible due to snow. Use becomes especially concentrated when upland forage sources are limited.

Success of future management actions and projects undertaken to improve riparian-wetland areas are highly dependent on annual funding. These actions include the following:

- Maintaining existing riparian exclosures and constructing new exclosures when other management options are not practical.
- Removing pinyon pine and juniper trees from riparian and adjacent areas.

Invasive species will continue to threaten riparian-wetland area functionality. Invasive species like Russian olive and tamarisk can out-compete native riparian vegetation, such as cottonwood, and negatively impact fishery and recreational values.

Existing roads close to riparian areas can continue to adversely impact streams unless they are moved or improved. Often, road ROWs and maintenance is outside BLM control.

Riparian areas will continue to attract recreationists, especially those close to urban areas. Examples of that are Kanarra Creek and Spring Creek, just outside Kanarraville, Utah. Riparian areas are also popular places for dispersed recreation, including camping, hunting, and OHV use. Through qualitative assessments, recreation in riparian-wetland areas has not been found to result in adverse impacts on public lands in the Decision Area, but could in the future.

Interest in pumping from groundwater aquifers will continue as water demand in population centers in southwest Utah and southeast Nevada continues to increase. Groundwater pumping can result in pumping more water than is recharged to the aquifer on an annual basis. Springs and streams fed by underground aquifers will be in jeopardy of disappearing if this happens. A more detailed discussion of this issue is provided in the Water Resources section of this chapter.

Key Features

Key features for riparian-wetland resources include prioritizing riparian-wetlands, especially those not at PFC or are not moving toward PFC. Riparian-wetland areas will be prioritized based on several factors, including, but not limited to species (both aquatic and terrestrial) affected, size, condition, public interest, intensity and timing of threats, and funding availability.

Monitoring, both qualitative and quantitative, riparian-wetland areas and identifying causal factors for why riparian-wetland areas are not meeting or moving toward PFC will be important in implementing management actions and projects to reverse trends. Monitoring will also evaluate the effectiveness of management changes and actions.

Special designations, such as ACECs and Wild and Scenic River (WSR) suitability, can be used to protect important features of riparian-wetland areas in the Decision Area.

Special Status Species

Plant Species

Implementing the existing LUPs has resulted in special management for several special status plant species. Since completion of the existing plans, several plant species have been identified or designated as special status. Existing LUP decisions do not address these species. Additionally, research and monitoring have increased information concerning the distribution and habitat requirements of various species. The new RMP would incorporate this information for both listed and non-listed special status plant species.

Indicators

The indicators for special status plants include population demographics, species range-wide distribution, habitat quality and distribution, fecundity, pollinator status, presence of invasive species, threats and impacts to the species, existence of recovery or conservation strategies or other formalized conservation planning tools, climate change, and changes in fire frequency and intensity.

The objectives of the BLM Special Status Plant Species Program are to (1) conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species and (2) to initiate proactive conservation measures that reduce or eliminate threats to BLM-designated sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

Special status plants are routinely surveyed for as part of project clearances. Mitigation measures are implemented when special status plants are present in areas of planned management activities. Locations of special status plants are recorded on survey forms and via Geographic Information System (GIS).

Current Condition

There are no documented occurrences of any federally listed threatened or endangered plant species in the Decision Area. There are three candidate plant species – Frisco buckwheat (*Eriogonum soledium*), Ostler pepperplant (*Lepidium ostleri*), and Frisco clover (*Trifolium friscanum*). These three species are endemic to the Great Basin in Beaver and Millard counties, Utah. These candidate plant species are primarily known to occur in the San Francisco Mountains. Frisco buckwheat occurs on Ordovician limestone substrate in association with sagebrush and pinyon pine/juniper woodland communities. This plant species occurs at elevations from 6,600 to 7,300 feet. Ostler pepperplant also grows on Ordovician limestone substrates in pinyon pine/juniper woodland communities. It occurs at 5,800 to 6,800 feet elevation. Frisco buckwheat and Ostler pepperplant are known from four distinct overlapping populations. Frisco clover is a narrow endemic known from five populations in the San Francisco Mountains, Beaver Lake Mountains, Wah Wah Mountains, and Tunnel Springs Mountains. The species occurs on volcanic gravels, Ordovician limestone, and dolomite outcrops and occurs at elevations from 6,900 feet to 7,300 feet.

In addition to the three USFWS candidate plant species, there are 12 sensitive vascular plant species documented in the Decision Area. Cedar Breaks goldenbush is not known to occur on

BLM-administered lands in the Planning Area. Table 2-18 lists special status plant species with the potential to occur in the Planning Area.

Table 2-18. Special Status Plant Species

Common Name	Scientific Name	Habitat	Elevation (feet)	Soils/Geology
Cedar Breaks goldenbush	<i>Happlopapus zionis</i> ¹	Spruce-fir and ponderosa pine	8,000-10,000	Claron limestone (Cedar Breaks Formation)
Franklin's penstemon	<i>Penstemon franklinii</i>	Three-awn, needle-and-thread grass, matchweed, and black sagebrush	5,400-5,900	
Frisco buckwheat	<i>Eriogonum soredium</i>	Sagebrush and juniper	6,600-7,300	White limestone outcrops
Frisco clover	<i>Trifolium friscanum</i>	Pinyon pine and juniper	6,900-7,300	Volcanic gravels and limestone
Jones globemallow	<i>Sphaeralcea caespitosa</i> var. <i>vaespitosa</i>	Mixed desert shrub (shadscale, matchweed, rabbitbrush, and winterfat) and grassland (Indian ricegrass and galleta)	4,500-6,400	Sevy Dolomite Formation and on calcareous gravels
Mound cryptanth	<i>Cryptantha compacta</i>	Salt desert shrub and mixed desert shrub	6,200-7,400	Sevey Dolomite and gravelly loam
Nevada willowherb	<i>Epilobium nevadense</i>	Pinyon pine and juniper and oak/mountain mahogany	5,100-8,800	Talus slopes and rocky limestone or quartzite outcrops
Ostler ivesia	<i>Ivesia shockleyii</i> var. <i>ostleri</i>	Pinyon pine and juniper and ponderosa pine	6,400-7,900	Crevices of quartzite or whitish outcrops
Ostler pepperplant	<i>Lepidium ostleri</i>	Pinyon pine and juniper	5,800-6,800	Crevices in limestone outcrops
Pink egg milkvetch	<i>Astragalus oophorus</i> var. <i>lonchocalyx</i>	Pinyon pine and juniper woodlands, sagebrush, and	4,462-7,152	Calcareous with gravels and fragments, coarse

¹ *Happlopapus zionis* is not known to occur on BLM-administered lands in the Planning Area; however, there is limited information for the occurrence of this species.

Common Name	Scientific Name	Habitat	Elevation (feet)	Soils/Geology
		mixed desert shrub habitat.		sandy gravel, and volcanics.
Pinyon penstemon	<i>Penstemon pinorum</i>	Pinyon pine and juniper, mountain mahogany, Ephedra (<i>Ephedra</i> spp.), oak, sagebrush, and less commonly in greasewood	5,600-6,700	Claron Limestone or its' gravels
Welsh milkvetch	<i>Astragalus welshii</i>	Sagebrush, pinyon-pine and juniper, and sagebrush-aspen communities	7,000-9,200	Igneous gravels
Wirestem buckwheat	<i>Eriogonum pharnaceoides</i> var. <i>cervinum</i>	Pinyon pine and juniper, oakbrush, and ponderosa pine	6,000-8,700	
Kaye's wild buckwheat	<i>Eriogonum artificis</i>	Mixed grass, shadscale, sagebrush, and juniper	5,900-6,200	Sandy to somewhat gravelly volcanic slopes
	<i>Eriogonum spathulatum</i> var. <i>kayeae</i> ²	Shadscale, sagebrush, and scattered juniper	5,400-6,600	Limestone and dolomite outcrops and gravels
Franklin's penstemon	<i>Penstemon franklinii</i>	Three-awn, needle-and-thread grass, matchweed, and black sagebrush	5,400-5,900	

Trend/Forecast

Quantitative and population trend data is limited for most special status plants in the Decision Area. Special status plants in the pinyon pine, juniper, and sagebrush habitats could be at risk from wildfire, habitat conversion, invasive species, recreation, mining, wood cutting, OHV use, drought, pathogens, climate change, and livestock grazing.

Key Features

The greatest concentration of special status vascular plants in the Decision Area has been documented in the San Francisco Mountains, Wah Wah Mountains, Horse Hollow, and Antelope Range. Some of the unique geologic features in these areas make conditions ideal for

² There are taxonomic discrepancies for *Eriogonum artificis* and *Eriogonum spathulatum* var. *kayeae*. In Utah Flora 4th edition, Dr. Welsh describes *E. artificis* as a synonym of *E. spathulatum* var. *kayeae* (Welsh et al, 1993); however, in Flora of North America Volume 5, Dr. Reveal discusses *E. artificis* and lists *E. spathulatum* var. *kayeae* as a synonym of *E. spathulatum* (Freeman and Reveal, 2005). For purposes of planning in the CCFO Planning Area and to maintain consistency with the Sensitive Plant List finalized by the State Director, the two are separated out.

rare plants. The Frisco Endemics are restricted to soils derived from volcanic gravels, Ordovician limestone, and dolomite outcrops. Additional important habitats for special status plants in the Decision Area include ponderosa pine, salt desert shrub, and black sagebrush/perennial grasslands. Important geologic formations include Sevey dolomite and calcareous gravels, quartzite crevices or outcrops, and Claron limestone or its gravels.

Wildlife Species

Indicators

BLM-designated special status species are (1) species listed or proposed for listing under the ESA and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, and that are designated as BLM sensitive by the State Director. All federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as BLM sensitive species.

The objectives of the BLM Special Status Species Management Policy are:

- To conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species.
- To initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

Federally listed species can have critical habitat identified as crucial to species viability. For listed species that have not had critical habitat designations identified, the BLM cooperates with the USFWS to determine and manage habitats of importance. The mission of the USFWS is to work with other federal, state, and local agencies to conserve, protect, and enhance fish, wildlife, and plant species and their habitats. Protective measures for migratory birds are provided in accordance with the MBTA and the Eagle Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act of 1934.

It is in the interest of the BLM to implement conservation actions for sensitive, non-listed species before listing is warranted. It is also in the interest of the public for the BLM to implement conservation actions that improve the status of such species so that their BLM sensitive recognition is no longer warranted. In so doing, the BLM will have greater flexibility in managing the public lands to accomplish native species conservation objectives and other legal mandates. BLM Manual 6840 provides policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands.

The BLM State Director designates BLM sensitive species using the criteria described below. Species designated as BLM sensitive must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

- There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or

- The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

The BLM must address BLM sensitive species and their habitats in LUPs and associated NEPA documents. When appropriate, LUPs should be sufficiently detailed to identify and resolve significant land use conflicts with BLM sensitive species without deferring conflict resolution to implementation-level planning. Implementation-level planning should consider all site-specific methods and procedures needed to bring species and their habitats to the condition under which management under the BLM sensitive species policies would no longer be necessary.

The discussion of fish in the Fish and Wildlife section describes habitat indicators relevant to management of both common and special status wildlife species. They are not repeated here. Also, the same wildlife and wildlife habitat relationships from that section apply to special status wildlife and fish species.

Current Conditions

Thirty-five special status aquatic and terrestrial wildlife (i.e., fish, mollusks, amphibians, reptiles, birds, and mammals) species are suspected or known to occur in the Planning Area. This includes State of Utah species of concern. These species are identified on the Utah Sensitive Species List (U.S. BLM, 2011c). Utah sensitive species are wildlife species that are federally listed, or are proposed or candidates for federal listing, or for which a conservation agreement is in place. The additional species on the Utah Sensitive Species List, called “wildlife species of concern,” are species for which there is credible scientific evidence to substantiate a threat to continued population viability. Utah anticipates that wildlife species of concern designations will identify species for which conservation actions are needed, and that timely and appropriate conservation actions implemented on their behalf will preclude the need to list these species under the provisions of the ESA. Table 2-19 is a complete list of these special status species and their current status according to state and federal agencies.

Table 2-19. Special Status Wildlife Species

Common Name	Scientific Name	Habitat Association	Management Designation(s)	Occurrence Status in Planning Area	Occurrence Status in Decision Area
FISH					
Bonneville Cutthroat Trout	<i>Oncorhynchus clarkii utah</i>	Cool water streams	BLM Sensitive, Conservation Agreement Species, Utah Species of Concern	Occupied and historical habitat present	Birch Creek in Beaver County, Little Creek in Iron County, plus historic habitat
Desert Sucker	<i>Catostomus clarkii</i>	Streams	BLM Sensitive, Utah Species of Concern	May occur within the Escalante Desert Hydrologic Unit 16030006	Unknown
Least Chub	<i>lotichthys phlegethontis</i>	Rivers, streams, springs, ponds, marshes, and	Federal Candidate, BLM Sensitive, Conservation	Extirpated, Historical habitat	Extirpated, Historical habitat

Common Name	Scientific Name	Habitat Association	Management Designation(s)	Occurrence Status in Planning Area	Occurrence Status in Decision Area
		swamps	Agreement		
Southern Leatherside Chub	<i>Lepidomeda aliciae</i>	Pools and low-velocity runs of creeks and small- to medium-sized rivers	BLM Sensitive, Utah Species of Concern, Conservation Agreement Species	Sevier River drainage, extirpated from Beaver River drainage	Bear Creek
Virgin River Chub	<i>Gila seminuda</i>	Virgin River	Federal Endangered	The species is not present in this county. One or more hydrologic unit (8-digit hydrologic unit code [HUC]) in this county is occupied by the species in an adjacent county. Any water depletion from an occupied hydrologic unit may adversely affect this species.	Not present
Woundfin	<i>Plagopterus argentissimus</i>	Virgin River	Federal Endangered	The species is not present in this county. One or more hydrologic unit (8-digit HUC) in this county is occupied by the species in an adjacent county. Any water depletion from an occupied hydrologic unit may adversely affect this species.	Not present
MOLLUSKS					
Brian Head Mountain-snail	<i>Oreohelix parawanensis</i>	High elevations near tree line	Utah Species of Concern	One location in Iron County	Not present
Hamlin Valley Pyrg	<i>Pyrgulopsis hamlinensis</i>	The outflow of a small spring complex	Utah Species of Concern Federal Petitioned	One location in Beaver County	Not present
AMPHIBIANS					
Arizona Toad	<i>Bufo microscaphus</i>	A variety of water habitats.	BLM Sensitive, Utah Species of Concern	Eastern Iron County	1997 record; inventories not complete

Common Name	Scientific Name	Habitat Association	Management Designation(s)	Occurrence Status in Planning Area	Occurrence Status in Decision Area
Western Toad	<i>Bufo boreas</i>	A variety of water habitats and associated uplands.	BLM Sensitive, Utah Species of Concern	One record from private lands along Beaver River	None known; inventories not complete
BIRDS					
American White Pelican	<i>Pelecanus erythrorhynchos</i>	Reservoirs and lakes used as migration stopovers	BLM Sensitive, Utah Species of Concern	Migrant	Migrant, stopovers on local reservoirs
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Agricultural, Mixed conifer, Sagebrush steppe, Riparian	BLM Sensitive, Utah Species of Concern	Winter populations; one breeding pair in Iron County	Wintering populations
Black Swift	<i>Cypseloides niger</i>	Waterfalls that occur from 6,000 to 11,500 feet in elevation	BLM Sensitive, Utah Species of Concern	Rare migrants	Rare migrants
Burrowing Owl	<i>Athene cunicularia</i>	Salt desert shrub or shrub steppe habitat with open grasslands	BLM Sensitive, Utah Species of Concern	Documented in Iron and Beaver Counties Breeding and Nesting	Documented in Iron and Beaver Counties
California Condor	<i>Gymnogyps californianus</i>	Mountainous country especially rocky and brushy areas with cliffs, forage over large areas	Non-essential, experimental population east of Interstate 15; federally listed endangered west of Interstate 15	Historical habitat, currently use area for foraging	Use area for foraging
Ferruginous Hawk	<i>Buteo regalis</i>	Salt desert shrub, sagebrush steppe, pinyon pine/juniper woodlands	BLM Sensitive, Utah Species of Concern	Documented in Iron and Beaver Counties Breeding, Nesting, Wintering	Documented in Iron and Beaver Counties
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Sagebrush steppe	Federal Candidate, BLM Sensitive	Documented in Iron and Beaver Counties Breeding, Nesting, Wintering	Documented in Iron and Beaver Counties
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Ponderosa pine, open riparian areas	BLM Sensitive, Utah Species of Concern	Historical records from Iron County	None known
Long-Billed Curlew	<i>Numenius americanus</i>	Salt desert shrub, sagebrush steppe	BLM Sensitive, Utah Species of Concern	Documented in Iron and Beaver Counties	Documented in Iron and Beaver Counties

Common Name	Scientific Name	Habitat Association	Management Designation(s)	Occurrence Status in Planning Area	Occurrence Status in Decision Area
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Riparian, cliffs, Mixed conifer	Federal Threatened	Documented in eastern Iron County	Eastern Iron County
Northern Goshawk	<i>Accipiter gentiles</i>	Ponderosa pine, Pinyon pine/juniper woodlands, mixed conifer?	BLM Sensitive, Conservation Agreement	Documented in Iron and Beaver Counties Breeding, Nesting, Wintering	Documented in Iron and Beaver Counties
Short-Eared Owl	<i>Asio flammeus</i>	Grasslands within sagebrush steppe	BLM Sensitive, Utah Species of Concern	Documented Beaver County	Documented in Beaver County; observed in Iron County
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Riparian	Federal Endangered	Documented in Iron County	Documented in Iron County
Three-Toed Woodpecker	<i>Picooides tridactylus</i>	Mixed conifer	BLM Sensitive, Utah Species of Concern	Documented in Iron County, Unknown in Beaver County	Unknown
Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	Riparian	Federal Candidate, BLM Sensitive	Iron County	Iron County
MAMMALS					
Allen's Big-eared Bat	<i>Idionycteris phyllotis</i>	Riparian, desert shrub, sagebrush steppe, pinyon pine/juniper woodlands, mountain brush	BLM Sensitive, Utah Species of Concern	Iron County	Documented on Bumblebee Mountain
Brown (Grizzly) Bear	<i>Ursus arctos</i>	Mountain forests	Federal Threatened	Extirpated	Extirpated
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	Desert to montane	BLM Sensitive, Utah Species of Concern	Beaver County	Beaver County
Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>	Sandy soils within salt desert shrub, sagebrush steppe	BLM Sensitive, Utah Species of Concern	Documented in Iron and Beaver Counties	Documented in Iron and Beaver Counties
Fringed Myotis	<i>Myotis thysanodes</i>	Desert shrub, sagebrush steppe, pinyon pine and juniper woodlands, mixed conifer	BLM Sensitive, Utah Species of Concern	Documented in Beaver County	Documented in Beaver County
Kit Fox	<i>Vulpes macrotis</i>	Salt desert shrub, sagebrush	BLM Sensitive, Utah Species of Concern	Iron and Beaver Counties	Iron and Beaver Counties

Common Name	Scientific Name	Habitat Association	Management Designation(s)	Occurrence Status in Planning Area	Occurrence Status in Decision Area
		steppe			
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Sagebrush steppe	BLM Sensitive, Utah Species of Concern	Iron and Beaver Counties	Iron and Beaver Counties
Spotted Bat	<i>Euderma maculatum</i>	Desert shrub, sagebrush steppe, montane	BLM Sensitive, Utah Species of Concern	Iron and Beaver Counties	Iron and Beaver Counties
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Sagebrush steppe, pinyon pine and juniper woodland, mountain shrub and mixed conifer	BLM Sensitive, Utah Species of Concern	Iron and Beaver Counties	Iron and Beaver Counties
Utah Prairie Dog	<i>Cynomys parvidens</i>	Open areas and grasslands within salt desert shrub, sagebrush steppe	Federal Threatened	Iron and Beaver Counties	Iron and Beaver Counties
Western Red Bat	<i>Lasiurus blossevillii</i>	Desert shrub	BLM Sensitive, Utah Species of Concern	Documented in Beaver and Iron Counties	Documented in Beaver and Iron Counties

Management Designations: USFWS - endangered, threatened, candidate (a petitioned species is also shown for future information, although it currently has no federal status); BLM sensitive; UDWR wildlife species of concern, or conservation agreement species.

Additionally, the UDWR, in its Utah Comprehensive Wildlife Conservation Strategy, adopted a three-tiered system that defines and prioritizes Utah's native animal species according to conservation need. Tier I includes federally listed species and species for which a Conservation Agreement has been completed and implemented. Tier II species include those on the Utah Species of Concern List under sole state authority. Tier III includes species that are of conservation concern because they are linked to an at-risk habitat, have suffered marked population declines, or there is little information available regarding the ecology or status of the species. The tiered ranking system provides a perspective for wildlife managers to prioritize conservation activities. A parallel process to identify the most valuable habitat types for sensitive species statewide was developed through dialog between the Partner Advisory Group and the UDWR. As a result, the UCWCS describes the 10 most at risk habitat types (out of 24) in Utah, specifying their relative priority based on the degree of threat each habitat type faces and the presence of prioritized species.

Species and Habitat

This section provides an overview of special status fish and wildlife species, including information about their populations and habitat requirements. For organizational purposes, fish, mollusk, amphibian, reptile, bird, and mammal narratives are grouped together under separate headings. The Fish and Wildlife Section, above, discusses habitat trends for common wildlife

that also apply to special status wildlife species. Threat information is taken from the Utah UCWCS (Sutter et al., 2005).

Special Status Fish

Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*) occur in approximately 4.4 miles of stream on BLM-administered lands. Birch Creek, east of Beaver, accounts for almost all of this and is managed to support Bonneville cutthroat trout. Cutthroat trout were recently identified in Little Creek through cooperative spot-shocking station efforts with Dixie National Forest. Fin-clips have been submitted to Brigham Young University for verification and the second round of testing came back as 100% Bonneville cutthroat trout. The UDWR stocking efforts in the 1980s of Yellowstone cutthroat trout was apparently unsuccessfully. The 1990s stocking of Manning Meadows brood stock of Bonneville cutthroat trout is now believed to have been successful. Historically, they might have occupied approximately 43 miles of stream on BLM-administered lands in the Planning Area. Bonneville cutthroat trout can be found in a number of habitat types from high mountain streams and lakes to low-elevation grassland streams, all with a healthy riparian zone providing structure, cover, shade, and bank stability. Bonneville cutthroat trout consumes primarily insects and small fish in the case of larger individuals. Threats include habitat loss, hybridization with other trout, competition from nonnative species, over-harvest, lack of quantitative population sampling, and disease.

The **Desert Sucker** (*Catostomus clarkia*) is native to parts of the Colorado River system of the southwestern United States and northern Mexico. In Utah, the species occurs only in the Virgin River system in the southwestern corner of the state. In addition to its limited distribution, primary threats to the species in Utah include dewatering of the Virgin River system for development and agriculture, pollution, and the introductions of exotic turtles and fishes (Sutter et al., 2005). Desert suckers are listed in the Escalante Desert Drainage Management Plan Hydrologic Unit 16030006 (Ottenbacher and Hepworth, 2003b) as potentially occurring in that area. More information is needed about whether the species occurs in the Planning Area.

The **Least Chub** (*Lotichthys phlegethontis*) is endemic to the Bonneville Basin. Historically, this species was widely distributed in streams, marshes, springs, and freshwater ponds at the lower elevations of the basin. Most, if not all, stream populations have been lost, and most of the few extant populations occur in alkaline marshes with associated springs (Bosworth, 2003). This species is considered extirpated from Iron and Beaver counties.

The **Southern Leatherside Chub** (*Lepidomeda aliciae*) is endemic to the southeastern margins of the Bonneville Basin in Utah. The species occurs in Utah Lake and Sevier River drainages. Leatherside chub occur in pools and low-velocity runs of creeks and small- to medium-sized rivers. Substrate requirements are coarse fines with lower percentages of sand-silt and gravel. Leatherside chub can live up to 5 years, can grow to 6 inches long, and spawn in summer. Threats to this species include loss of habitat diversity from erosion, channelization, and riparian vegetation loss; predation from nonnative fish; stream dewatering; and stream barriers causing population fragmentation (UDWR, 2007). Southern leatherside chub occur in Bear Creek in Iron County. Threats include nonnative species, lack of quantitative population sampling, and dewatering.

The **Virgin River Chub** (*Gila seminuda*) is endemic to the Virgin River system. This species is often found in pools and other deep, slow sections of the river, preferring areas with vegetation and boulders. Threats to populations include alterations of flow and dewatering of the Virgin River system, degradation of water quality (e.g., pollution from agricultural runoff and sewage),

and competition with nonnative fish (Bosworth, 2003). Virgin River chub do not occur in the Planning Area; however, the USFWS is concerned that water depletion from an occupied hydrologic unit could adversely affect this species. The upper watershed of the occupied hydrologic unit does occur in Iron County.

The **Woundfin** (*Plagopterus argentissimus*) occurs in Utah only in the Virgin River system in Washington County. The USFWS is concerned that water depletion from an occupied hydrologic unit could adversely affect this species. The upper watershed of the occupied hydrologic unit does occur in Iron County.

Special Status Mollusks

The **Brian Head Mountainsnail** (*Oreohelix parawanensis*) is a Utah wildlife species of concern. They occur in the Planning Area on Brian Head Peak. At present, there is no habitat for this species on BLM-administered lands, and this species will not be further addressed in this document.

The **Hamlin Valley Pyrg** (*Pyrgulopsis hamlinensis*) is a Utah wildlife species of concern. They occur in the Planning Area only in one small spring complex in western Beaver County on private lands. At present, there is no habitat for this species on BLM-administered lands, and this species will not be further addressed in this document.

Special Status Amphibian

The **Arizona toad** (*Bufo microscaphus*) could occur in Iron County. This species inhabits streams, washes, irrigated croplands, reservoirs, and uplands adjacent to water. The Arizona toad lays eggs on the bottoms of shallow, slow-moving streams. The diet of adults consists mainly of insects and snails, whereas larvae (tadpoles) consume plant matter and organic debris (UDWR, 2005). Toads migrate between nonbreeding terrestrial habitats and breeding pools. Threats include dewatering, loss of riparian habitat, and hybridization with Woodhouse's toad.

The **Northern Leopard frog** (*Rana pipiens*) could occur in Iron and Beaver counties. Current distribution is not well known. This species lives in the vicinity of springs, slow streams, marshes, bogs, ponds, canals, floodplains, reservoirs, and lakes; usually they are in or near permanent water with rooted aquatic vegetation. In summer, they commonly inhabit wet meadows and fields. The frogs take cover under water, in damp niches, or in caves when inactive. Wintering sites are usually under water, though some frogs possibly overwinter underground. Threats include water development and disease. This species currently has no status with USFWS, the BLM or the UDWR; however, because it has been petitioned for ESA listing, information on the species is provided.

The **Western toad** (*Bufo boreas*) could occur in Iron and Beaver counties. Current distribution is not well known. This species occurs in a wide variety of habitats ranging from desert springs to mountain wetlands. They range into various upland habitats around ponds, lakes, reservoirs, and slow-moving rivers and streams, and sometimes move a few kilometers through uplands. Threats include human disturbances, disease, and predation/competition with bullfrogs.

Special Status Birds

The **American White Pelican** (*Pelecanus erythrorhynchos*) migrates through Iron and Beaver counties. Pelicans are known to use Quichapa Lake, Newcastle Reservoir, and Minersville Reservoir. Species-level threats occur at the breeding/nesting colony location.

The **bald eagle** (*Haliaeetus leucocephalus*), the national symbol of the United States, was first protected under the Eagle Act and later listed as an endangered species in most of the lower 48 states in 1966 and again in 1973. In 1995 the USFWS reclassified the bald eagle under the ESA from endangered to threatened in the lower 48 states (50 *Federal Register* 36000, July 15, 1995). The bald eagle was delisted in 2007. Bald eagles remain protected under the Eagle Act and the MBTA. They are also a BLM Utah sensitive species.

The bald eagle is found throughout Utah, more often during winter than summer. Habitat in the Planning Area consists of communal winter roosting habitat and foraging habitat. Feeding areas, diurnal perches, and night roosts are fundamental elements of bald eagle winter range. While fish and waterfowl are sources of food for bald eagles in many areas, they feed primarily on rabbits and carrion on BLM-administered lands. There is wintering habitat in Beaver and Iron counties. Cedar and Parowan valleys support 100 to 200 wintering eagles each year. The only known night roost site on BLM-administered land is in Summit Canyon east of Summit in Iron County. Other small unknown roost sites could occur on BLM-administered lands. There is one bald eagle nest site on private land in Iron County. Threats include habitat loss and human disturbance.

The **Black swift** (*Cypseloides niger*) is rare in Utah and require waterfalls for nesting. There is no known nesting habitat in the Planning Area, although the species might migrate through the area. This species is not further addressed in this document.

The **Burrowing owl** (*Athene cunicularia*) prefers open areas in salt desert shrub or shrub steppe habitat. They nest and roost in burrows dug by mammals, or on rare occasions, by the owl. There is breeding habitat in Beaver and Iron counties. Habitat consists of well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground. Burrowing owls breed in pastures, hay fields, fallow fields, road and railroad ROWs, and in a number of urban and rangeland habitats. They mainly eat terrestrial invertebrates, but also consume a variety of small vertebrates, including small mammals, birds, frogs, toads, lizards, and snakes (UDWR, 2011a). Threats include habitat loss and a lack of information on populations, productivity, and genetics.

The **California condor** (*Gymnogyps californianus*) was listed as endangered on March 11, 1967 and noted at that time to only occur in California. On October 16, 1996, the USFWS announced plans to reintroduce California condors into northern Arizona and southern Utah and designate these birds as nonessential experimental populations as provided by Section 10j of the ESA. In addition, 61 *Federal Register* 54044 (October 16, 1996) directs the establishment of a nonessential experimental population of California condors in northern Arizona. The purpose of the reintroduction was to achieve a primary recovery goal to establish a second noncaptive population, spatially separated from the noncaptive population in southern California. In the Planning Area, the boundary of the nonessential experimental population is east of Interstate 15 and south of Interstate 70. Condors that fly west of Interstate 15 would be considered endangered.

There is no known California condor nesting or roosting site on BLM-administered lands in Iron or Beaver counties. There are currently 74 condors in the Vermillion Cliffs, Arizona population (The Peregrine Fund, 2010). Although the birds often winter in Arizona, most of these condors travel to Utah for the summer. The birds commonly visit Utah between April and November, but the numbers usually peak from June through August (UDWR, 2011a). A favorite summer location is next to Zion National Park on the Kolob Terrace adjacent to the Planning Area. Condors from this area have been radio tracked in Iron and Beaver counties (UDWR, 2009).

California condors are among the largest flying birds in the world. Adults weigh as much as 22 pounds. They are black except for prominent white underwing linings and edges of the upper secondary coverts. Condors are opportunistic scavengers, feeding only on carcasses. Since European settlement of California, condor populations have steadily declined. Poisoning, shooting, egg and specimen collecting, collisions with man-made structures, and loss of habitat contributed to the decline of the species. By 1987, the last wild condor was captured and taken to the San Diego Wild Animal Park. Beginning with the first successful breeding of California condors in 1988, the population (in 1996) was 121, including 104 in the captive flock, and 17 in the wild. Nonessential experimental status of this condor population places the following requirements on federal agencies: (1) that agencies use their authorities to conserve the condors and (2) for the purposes of Section 7 consultation, they are treated as if they are proposed for listing. Therefore, the BLM will informally confer with the USFWS on actions likely to jeopardize the continued existence of the condor (61 *Federal Register* 54044, October 26, 1996).

Usual habitat is mountainous country at low and moderate elevations, especially rocky and brushy areas with cliffs available for nest sites, with foraging habitat encompassing grasslands, oak savannas, mountain plateaus, ridges, and canyons (AOU, 1983). Condors often roost in snags or tall open-branched trees near important foraging grounds (Matthews and Moseley, 1990)

Threats include lead poisoning, limited distribution and genetics, and inadequate protection of habitat.

The **ferruginous hawk** (*Buteo regalis*) uses salt desert shrub and shrub steppe habitats and, in many parts of Utah, nest on the ecotone between these habitats and pinyon pine/juniper woodlands. They occur throughout Iron and Beaver counties. Productivity in ferruginous hawks is directly correlated with the available prey base, such as jack rabbits. Due to the cyclic nature of jack rabbit populations, ferruginous hawks can experience similar population booms and crashes. Threats include human disturbances that causes nest abandonment and loss of production, lack of information on population status and productivity, habitat loss, and energy development.

Greater sage-grouse (*Centrocercus urophasianus*) populations are documented in Beaver and Iron Counties. Greater sage-grouse inhabit sagebrush steppe habitat in valleys, foothills, and mountain areas. The greater sage-grouse is an herbivore and insectivore, and is associated with both tall and short sagebrush types. Sagebrush, understory of grasses and forbs, and associated wet meadow areas are essential for optimum habitat. There are many excellent references on greater sage-grouse habitat guidelines as well as Utah and BLM management guidance. That information is not repeated here. Greater sage-grouse use the same breeding grounds or "leks" for several consecutive breeding seasons (UDWR, 2007). The BLM and the UDWR perform surveys to find new leks and monitor existing leks. Approximately 25 leks are monitored annually. There are also several historic leks in the Planning Area.

Threats include disease, limited distribution, predation by species such as red fox and common raven, and loss of habitat from energy development, improper grazing, invasive plants, disrupted fire regimes, lack of information regarding seasonal habitat distribution, loss of herbaceous understory, and juniper expansion.

Lewis's woodpecker (*Melanerpes lewis*). There are two historic records from Iron County. Lewis's woodpecker is an uncommon permanent resident in Utah, and is much less common today than historically (UDWR, 2007). Lewis' woodpecker is a habitat specialist with primary breeding habitat in ponderosa pine and open riparian areas. Winter habitat includes open woodlands and lowland riparian areas. Lewis's woodpecker is a cavity nester that nests in dead or dying trees, often using previously excavated holes. The diet of the Lewis's woodpecker is primarily composed of insect prey during the breeding season and nuts and berries during fall and winter (UDWR, 2007). Threats include habitat loss due to fire suppression, overgrazing, competition from European starlings, and a lack of information.

The **long-billed Curlew** (*Numenius americanus*) are present in Beaver and Iron counties. The Great Basin comprises a significant portion of their overall range and has been described as an area of great importance in maintaining breeding populations of long-billed curlews. Long-billed curlews nest on the ground in dry grasslands where there is sufficient cover and abundant prey. The species is vulnerable to predation and human disturbance (UDWR, 2007). Threats include human disturbance from housing development and domestic pets, limited distribution, red fox predation, energy development (wind and solar), and habitat loss and fragmentation.

The **Mexican spotted owl** (*Strix occidentalis lucida*) was listed as a threatened species on April 15, 1993 (USFWS, 1993). The range of the Mexican spotted owl extends from the southern Rocky Mountains in Colorado and the Colorado Plateau in central and southern Utah, southward through Arizona and New Mexico, and into northern Mexico. Mexican spotted owls primarily forage at night, and their diet consists of a variety of mammals, birds, reptiles and insects, with mammals making up the bulk of the diet throughout the owls' range. Wood rats, voles, and gophers are the primary mammal food base. Habitat in the Planning Area usually has water present (often providing cooler temperatures and higher humidity than the surrounding areas), clumps or stringers of mixed-conifer, pine-oak, pinyon pine/juniper, and/or riparian vegetation, and canyon walls containing crevices, ledges, or caves (USFWS, 2007). A recovery plan was completed for the Mexican spotted owl in 1995 (USFWS, 1995) and a revised recovery plan is currently in draft form. Threats to Mexican spotted owls in the Colorado Plateau Recovery Unit include recreation, overgrazing, road development in canyons, catastrophic fire, timber harvest in upland forests, and oil, gas, and mining development (USFWS, 2007). Designated critical habitat was established for this species in 2001 and revised in 2004 (USFWS, 2004). There are 5,066 acres of designated critical habitat on BLM-administered lands in the southeastern portion of the area adjacent to Zion National Park. Mexican spotted owls have been seen outside this area as far north as Parowan Canyon. Not all of these acres in the critical habitat area contain the primary constituent elements of habitat as described in the recovery plan. The critical habitat designation clarified that areas within the boundaries of critical habitat are only considered critical when they contain or have the potential to contain habitat characteristics essential to the conservation of the species. For canyon habitats, the primary constituent elements include one or more of the following attributes: (1) cooler and often more humid conditions than the surrounding area, (2) clumps or stringers of trees and/or canyon walls containing crevices, ledges, or caves, (3) high percentage of ground litter and woody debris, and (4) riparian or woody vegetation. The primary constituent elements related to forest structure include: (1) a range of tree species, (2) shade canopy created by the

tree branches covering 40 percent or more of the ground, and (3) large dead trees with a trunk diameter of at least 12 inches (69 *Federal Register* 53181, August 31, 2004).

Threats include loss and fragmentation of mixed conifer, riparian, and ponderosa pine habitats, human disturbance, recreation, invasive species (bull thistle and tamarisk), and a lack of monitoring in suitable habitat.

The **Northern goshawk** (*Accipiter gentiles*) is present in Beaver and Iron counties. Nesting generally occurs in mid- to high-elevation (6,000 to 10,000 feet) sites in mature aspen or coniferous forest. Goshawks use these forest types even when there is substantial insect-related mortality in the overstory. In southern Utah, Engelmann spruce and subalpine fir cover types are used frequently for nesting. Goshawks only moderately use ponderosa pine for nesting in Utah (Utah National Forests et al., 1998). Major prey includes rabbits, hares, squirrels, and birds. Goshawks have been known to use pinyon pine/juniper woodlands during winter. Threats include habitat loss and connectivity and limited knowledge of populations and productivity.

The **Short-eared owl** (*Asio flammeus*) is distributed widely throughout Utah, although less than historic occurrences (UDWR, 2007). The habitats in Utah where this species is known to nest are marshes and wet hummocks, agricultural croplands (non-woody), and arid grasslands; other habitats utilized during the breeding season are cold desert shrub (including saltbrush and greasewood) and sagebrush-rabbitbrush. All of these habitats might be utilized during winter. The species can breed opportunistically and sporadically in response to rodent density (Bosworth, 2003). Short-eared owl sightings are widely distributed throughout the CCFO Planning Area, although in very low numbers. Threats include habitat loss, human disturbance, and nest predation by skunks, dogs, and cats.

The **Southwestern willow flycatcher** (*Empidonax traillii extimus*) is a subspecies of the willow flycatcher. The USFWS listed this species as endangered under the ESA in 1995 (60 *Federal Register* 10693, February 27, 1995). A recovery plan has been produced to guide recovery efforts (USFWS, 2002). Subsequent to the recovery plan, the USFWS in Utah has released a "Utah Range Line" for the species that includes southern Iron County (USFWS, 2003 and 2010). The range of this subspecies is uncertain because subspecies are remarkably difficult to identify, particularly in field conditions. The presence of migrants of various subspecies during the early breeding season complicates the interpretation of range (Bosworth, 2003).

Nesting sites are in dense riparian vegetation along rivers, streams, or other wetlands and near surface water or saturated soils (Sogge et al., 1993). Preferred nesting habitat consists of dense willows, 10 to 22 feet in height, often with an overstory of cottonwood or other native broadleaf trees, with a very dense foliage structure in the lower 6 feet (Sogge et al., 1997). In areas lacking dense stands of willow habitat, Southwestern willow flycatchers use dense stands of exotic salt cedar (*Tamarix* spp) or Russian olive (*Elaeagnus angustifolia*), 12 to 30 feet in height, or mixed stands of salt cedar, Russian olive, willow, and cottonwoods. Riparian patches used by breeding willow flycatchers vary in size from 1.23 acres to several hundred acres, while patch shapes vary from broad to linear. Southwestern willow flycatchers have not been documented nesting in linear riparian habitats less than 30 feet in width (Sogge et al., 1997). They are insectivores that forage on the wing above and within riparian vegetation. The breeding season is from late May to early August. Egg laying occurs from late May to late June, and fledging occurs from late June to early August.

Population declines have been evident (USFWS, 2002) and are the result of habitat loss and degradation. Important habitat was lost as a result of the inundation of Glen Canyon (Behle and Higgins, 1959). High rates of brood parasitism by brown-headed cowbirds (Lowther, 1993) are related to habitat disturbance from livestock. Parasitism rates typically increase when vegetation density decreases and the riparian corridors are narrowed, both of which are associated with riparian habitat degradation. Invasive plant species have also contributed to habitat degradation by competing with native riparian vegetation.

Surveys were performed in potential southwestern willow flycatcher habitat in Iron and Beaver counties between 1995 and 1998. During that time, no southwestern willow flycatchers were detected; however, a single non-vocal willow flycatcher was observed at Duncan Creek and was not observed on subsequent site visits. Only six of the sites surveyed for southwestern willow flycatcher at that time were documented as having suitable habitat, including three sites within the range distribution line and three sites north of the range distribution line. Surveys completed in 2010 in association site clearances for project authorizations led to detections at Pinto Creek near Newcastle Reservoir. Nesting was documented at this site in 2010.

Threats include infrastructure development (transmission lines), invasive species (tamarisk), and lack of monitoring in suitable habitat.

The **Three-Toed woodpecker** (*Picoides tridactylus*) is a permanent resident of coniferous forests above 8,000 feet elevation. The species is fairly easy to observe in the Uinta Mountains and in areas of the Cedar Breaks National Monument. This species can be very common in areas associated with spruce bark beetle (UDWR, 2007). Population trends are difficult to track due to their eruptive nature. Threats include habitat loss and a lack of information.

The **Western yellow-billed cuckoo** (*Coccyzus americanus occidentalis*) historically occurred west of the Continental Divide from southern British Columbia to northern Mexico, but its range is now greatly restricted to scattered blocks of riparian habitat from central California and southern Idaho south to Mexico (USFWS, 2001). In Utah, cuckoos were formerly uncommon to rare summer residents (June to August) along river bottoms statewide, but their range has been reduced to a few scattered sites, mainly along the Green and Colorado rivers (USFWS, 2001). Yellow-billed cuckoos utilize large (more than 25 acres) tracts of riparian habitat dominated by mature cottonwoods with a dense understory of willows, which meet the nesting and foraging requirements of this species (Gaines and Laymon, 1984). Yellow-billed cuckoo riparian breeding habitats have been lost to agricultural and urban development, water diversions, dams, river channelization, floods, fire, livestock grazing, off-road vehicles and other recreational uses, and replacement of native riparian habitats with nonnative plants, particularly salt cedar (USFWS, 2001b). The Western yellow-billed cuckoo was listed as a candidate species on July 25, 2001 (USFWS, 2001b).

There are a few sight records of yellow-billed cuckoo from Cedar City in Iron County between mid June and late August, but no nesting records. There are no known records from Beaver County. Most riparian habitat on BLM-administered lands in the CCFO Planning Area lack the required cottonwood overstory and willow understory and are therefore not suitable cuckoo habitat. Six riparian areas in the Planning Area with a combination of a cottonwood overstory and a willow understory were inventoried in 1997 and 1998 for potentially suitable cuckoo habitat (BLM unpublished data). No cuckoos were located at any of these sites during the surveys. All of those sites had narrower riparian widths, smaller acreage, and shorter canopy heights than are normally used by cuckoos.

Special Status Mammals

Allen's big-eared bat (*Idionycteris phyllotis*) is rarely encountered and was not discovered in Utah until 1969. It reaches the northern limit of its range in southern Utah (Oliver 2000). The species has been reported from a variety of habitats and elevational ranges. Its wintering habits in Utah are unknown. Allen's big-eared bats were recorded over Bumblebee Mountain in Iron County during wildlife surveys for the proposed Harmony Mountain Wind Power Generating Facility (SWCA 2009).

The **brown (grizzly) bear** (*Ursus arctos*) is extirpated from Utah. Although they appear on the Utah Sensitive Species list, they are not further addressed in this document.

The **big free-tailed bat** (*Nyctinomops macrotis*) occurs mostly in southern Utah, and is considered relatively rare in Utah. They have been documented in Beaver and Iron counties (CH2MHill, 2007; SWCA, 2009). Big free-tailed bats inhabit rugged, rocky terrain and roost in rock crevices, and occasionally in caves, buildings, and tree holes. The wing morphology of big free-tailed bat necessitates a vertical drop for it to achieve flight, requiring very specific location sites for roosts (UDWR, 2007). Threats include environmental contamination, harvest, energy development (wind), and limited distribution.

The **dark kangaroo mouse** (*Microdipodops megacephalus*) has been documented in Beaver and Iron counties. The Iron County population might be the southernmost known population of the species. The dark kangaroo mouse is restricted to the Great Basin, and the distribution of this species is largely discontinuous, being determined by the presence of appropriate habitat. The fragmented distribution of the dark kangaroo mouse in Utah comprises isolated populations that are vulnerable to demographic, environmental, and genetic stochasticity (UDWR, 2007). It is associated with sage, shadscale, and fine, gravelly soil and also occurs in areas of sand dunes. Threats include the fact that a substantial amount of the overall range occurs in Utah and perhaps in Iron County, large-scale habitat changes, and a lack of information. At present, there is research in Iron County on this species. OHV use is evident throughout the sand dune habitat near Beryl, and much of the understory vegetation is degraded.

The **Fringed myotis** (*Myotis thysanodes*) has been documented in Beaver County (UDWR, 2011c; Grandison, 2006). Fringed myotis use caves, mine tunnels, and buildings for day and night roosts; they roost in tightly packed clusters. They are sensitive to human disturbances, especially when in maternity colonies. Important habitat areas for this species are lowland riparian areas and water courses (UDWR, 2007). However, they have been documented using a moderately wide range of habitats (lowland riparian, desert shrub, juniper and sagebrush, sagebrush and rabbitbrush, pinyon pine and juniper and sagebrush, pinyon pine and juniper woodland, mountain meadow, ponderosa pine forest, and montane forest and woodland [Douglas-fir and aspen]) (Oliver, 2000). Threats include human disturbance at roosting sites and maternity colonies, destruction of riparian zones, and a lack of information.

The **kit fox** (*Vulpes macrotis*) occurs in the most arid portions of Utah. The western half of the state, corresponding to the deep soils of the Pleistocene Lake Bonneville, and the western foothills of the Rocky Mountains south from the Cisco Desert to the Four Corners, delineate the two discontinuous populations of kit fox in Utah (UDWR, 2007). In these areas, kit fox populations occupy habitats that provide favorable combinations of low predator numbers, sufficient prey, and soils suitable for denning. They occur in Iron and Beaver counties. Threats include indiscriminate trapping, bioaccumulation of rodenticides, and the expansion of coyotes and other competitors into their habitat, likely as a result of artificial water sources.

The **pygmy rabbit** (*Brachylagus idahoensis*) has been documented in Iron and Beaver counties. They could be present in suitable Wyoming, basin, and mountain big sagebrush habitats. Pygmy rabbits are sagebrush obligates, meaning their life history depends on forage and cover provided by big sagebrush shrubs. They tend to prefer dense sagebrush canopy cover at or in excess of 25 percent. Soil type is also a factor in habitat suitability. This species typically burrows in deep and loose soils (UDWR, 2007). Habitat disturbance resulting from wildfire, prescribed fire, brush mowing, ROWs, and other surface-disturbing activities can reduce available pygmy rabbit habitat. Threats to the pygmy rabbit include increased fire frequency, agriculture, human encroachment, overgrazing, and sagebrush removal projects (UDWR, 2007).

The **spotted bat** (*Euderma maculatum*) is considered rare in Utah, although it has been reported Beaver and Iron counties (Grandison, 2006; UDWR, 2011c). The spotted bat can occupy many habitats, but is most frequently found in dry, rough, desert terrain with roosts in rock crevices and under loose rocks or boulders (UDWR, 2007). Threats include the use of pesticides to control Mormon crickets and grasshoppers that can adversely affect prey base, recreational rock climbing, and injury or increased predation during monitoring.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*) occurs throughout Utah and has been documented in Beaver and Iron counties. These bats can be found in caves, abandoned mines, and occasionally buildings. They are generally limited to elevations below 9,000 feet. Threats to Townsend's big-eared bat are mainly loss of habitat through human disturbance and mine closure (UDWR, 2007). Other threats can include renewable energy development for wind resources.

The **Utah prairie dog** (*Cynomys parvidens*) is found only in southwestern and central Utah. It was listed as an endangered species under the ESA, as amended on June 4, 1973. On May 29, 1984, the Utah prairie dog was reclassified as a threatened species (49 *Federal Register* 22330). Utah prairie dogs prefer swale-type formations where moist herbaceous vegetation is available even during drought periods (Collier, 1975). Grasses and forbs are preferred food items during all seasons, and prairie dogs appear to select particular forage species rather than choosing foods based on availability (Crocker-Bedford and Spillett, 1981). Vegetation quality and quantity are important in helping Utah prairie dogs survive hibernation, lactation, and other high-nutrient-demand times (Environmental Defense, 2007). Plant species richness is correlated with increased weight gain, higher juvenile to adult ratios, and higher animal densities (Crocker-Bedford and Spillett, 1981; Ritchie and Cheng, 2001). Utah prairie dogs will avoid areas where brushy species dominate, and will eventually decline or disappear in areas invaded by brush (Collier, 1975; Player and Urness, 1983). Open habitats are important for foraging, visual surveillance to escape predators, and intraspecific interactions (Player and Urness, 1983). Well-drained, deep soils (at least 3.3 feet deep) are needed for burrowing. Burrows protect the Utah prairie dog from predators and provide insulation from environmental extremes. Soil color can aid in disguising prairie dogs from surface predators and therefore could be an added survival factor (Turner, 1979; Collier, 1975).

Three Utah prairie dog recovery units have been established. One of these areas, the West Desert Recovery unit, is in the Planning Area. Utah prairie dogs occur in Iron and Beaver counties. In 2005, 21 Utah prairie dog complexes were reported either entirely or partially on BLM-administered lands in the Planning Area (BLM, 2006b).

Issues facing the species are varied and complex. These issues include plague, urban expansion, grazing, cultivated agriculture, changes in vegetative community, invasive plants,

OHV and recreation uses, climate change, energy resource exploration and development, fire management, poaching, and predation. Strategically, these issues can be reduced to two overriding concerns: loss of habitat and plague. The recovery strategy for the Utah prairie dog focuses on the need to address colony loss and disease through a program that encompasses threats abatement, population management, research, and monitoring. It emphasizes conserving extant colonies, many of which occur on non-federal lands; establishing additional colonies on federal and non-federal lands via habitat improvement or translocations; controlling the transmission of plague; and monitoring habitat conditions (USFWS, 2010).

A recovery plan was completed for the species in 1991 (USFWS, 1991). A Utah Prairie Dog Interim Conservation Strategy was completed in 1997 (IM UT 2002-040). A revised recovery plan was released in March 2012 (USFWS 2012).

Translocation of prairie dogs is part of the management and recovery strategy. It is anticipated that translocations will continue to be a part of the future management of the Utah prairie dog. No critical habitat has been designated for the Utah prairie dog.

The **Western red bat** (*Lasiurus blossevillii*) has been documented in Beaver and Iron counties (CH2M Hill, 2007; SWCA, 2009). It is the rarest of the bat species known to occur in Utah (Oliver, 2000). Western red bats roost in the foliage of cottonwood trees and depend on broad leaf shrubs and trees in lowland riparian zones below 5,700 feet elevation. Loss of riparian habitat is the main threat to the Western red bat (UDWR, 2007). Other threats include renewable energy development (wind).

Trends

The Fish and Wildlife Section discussed habitat trends for common wildlife species that also apply to special status wildlife species. In general, the trend for special status species involves a decline in populations and/or habitat degradation that results in their special status. The Current Conditions section of the Fish and Wildlife discussion describes individual species and their habitat, including information on past and current threats.

Forecast

Table 2-20 summarizes the forecast for special status species populations and habitat.

Table 2-20. Forecast for Special Status Wildlife Populations and Habitat.

Animal Species	Habitat(s)	Forecast
Bonneville cutthroat trout	Cool water streams	Existing management direction would maintain or improve existing habitat conditions and populations.
Least chub	Streams and lakes	Extirpated from Planning Area with no known plans for reintroduction.
Southern leatherside chub	Low-velocity streams	Existing management direction would maintain or improve existing habitat conditions and populations
Virgin River chub, Woundfin	Virgin River	No habitat change is expected because only a small portion of the upper watershed is present in the Planning Area; no habitat for the species is present.

Animal Species	Habitat(s)	Forecast
Arizona toad, northern leopard frog, western toad	A variety of water habitats	Existing management direction relative to riparian areas would maintain or improve existing habitat conditions and populations.
American white pelican	Reservoirs	Little or no relevant habitat change is expected because limited habitat is present on BLM-administered lands in the Planning Area and because the BLM does not control water levels.
Bald eagle	Agricultural, riparian, sagebrush steppe	Little change to winter roosting locations on BLM-administered lands is anticipated due to existing management direction for riparian and mixed conifer areas. Improving sagebrush steppe habitat might improve populations of winter prey species such as rabbits, although improved conditions would stabilize the amount of mule deer carrion available as forage.
Burrowing owl, ferruginous hawk, kit fox, long-billed curlew, short-eared owl	Sagebrush steppe	Maintaining a complement of healthy sagebrush and grasslands will likely sustain these species
California condor	Throughout area	Currently, condors only forage on BLM-administered lands. Interagency coordination and current management would continue to maintain habitat for this species.
Greater sage-grouse, pygmy rabbit	Sagebrush steppe	Existing habitat fragmentation and the cumulative adverse effects of catastrophic wildfire, juniper expansion, invasive annual plant expansion, and existing resource uses will likely continue and will present obstacles to improvement. Recreational activities and energy development could lower habitat quality. Clear and concise conservation measures are needed to stabilize or improve populations.
Lewis's woodpecker	Ponderosa pine	Little or no relevant habitat change is expected because limited and scattered habitat is present on BLM-administered lands.
Mexican spotted owl	Non-vegetated, riparian, mixed conifer	Little impact to regional populations would be expected from management actions on BLM-administered lands due to limited habitat and the fact that very few actions are planned for the owl's habitat. Existing management direction for riparian habitat would maintain or improve habitat conditions. Management activities in mixed conifer could impact the species. Prime habitats in the Decision Area are located within Wilderness Study Areas and offer many protections. Conservation measures are needed to maintain populations on BLM-administered lands, especially in relation to recreation, realty, and forestry activities.
Northern goshawk	Woodlands	Although the species has been documented using BLM-administered lands, little information is available on population numbers. Maintaining healthy woodlands would be anticipated to maintain populations.
Southwestern willow	Riparian	Little information is available on current populations. Maintaining or improving riparian conditions should maintain populations.

Animal Species	Habitat(s)	Forecast
flycatcher		Conservation measures are needed to maintain populations and habitat on BLM-administered lands, especially in relation to infrastructure development such as transmission lines.
Three-toed woodpecker	Mixed conifer	Little is known about this species on BLM-administered lands. Maintaining healthy mixed conifer stands should maintain habitat, although the three-toed woodpecker is associated with spruce bark beetles.
Bats (Allen's big-eared, big free-tailed, fringed myotis, spotted, Townsend's big-eared, Western red)	Desert to montane, all habitat types	Maintaining or improving healthy riparian and woodland habitat would be expected to maintain or improve populations. Open water sources must also be maintained to provide foraging habitat and water. Local impacts could occur from energy development; however, conservation measures and adaptive management are anticipated to ensure that local populations are maintained. A larger concern could be impacts on populations at a regional scale from local wind energy development. Preliminary monitoring could suggest impacts on migrating species, which could impact breeding and juvenile populations elsewhere. Further evidence is needed.
Dark kangaroo mouse	Sagebrush steppe	The species is currently being studied in the Planning Area. Once current populations and threats are described, measures could be taken to maintain habitat. OHV use is evident.
Utah prairie dog	Sagebrush steppe	Active management is needed to replace the role of natural fire in maintaining open areas and early to mid-seral stage habitat. An active and continuing management program would maintain and improve populations.

Key Features

Key features listed in the Fish and Wildlife section also apply to special status wildlife species on BLM-administered lands.

Vegetation

Non-Invasive and Native Vegetation

Vegetation provides aesthetic appeal as well as forage for wildlife, wild horses, and livestock. Vegetation provides economic benefits to livestock grazing. In addition, vegetation provides such benefits as cover, browse, and nesting habitat for a variety of wildlife species. Vegetation has direct impacts to ecological processes, including water cycling (the capture, storage, and redistribution of precipitation), energy flow (conversion of sunlight to plant matter), and nutrient cycle (the cycle of nutrients such as nitrogen and phosphorus through the physical and biotic components of the environment). Ecological processes that are functioning within a normal range of variation will support specific vegetation.

Vegetation provides for soil-site stability by limiting redistribution and loss of soil resources (including nutrients and organic matter) by wind and water. Vegetation also allows a site to capture, store, and release water from rainfall, run-on, and snowmelt. Furthermore, the capacity of a site to support characteristic functional and structural communities in the context of normal variability, to resist loss of function and structure due to disturbance, and to recover following disturbance is a direct correlation to the vegetation present at a site.

Most of the Decision Area is dominated by perennial grasses and shrubs. Juniper and pinyon pine are expanding into areas with grass and shrub cover, which is leading to less ground cover. Soil-site stability, hydrologic function, and integrity of the biotic community are all being impaired by the expansion of juniper and pinyon pine.

Noxious and Invasive plant species are present in the Decision Area. Noxious and invasive plants mainly occur along natural waterways, roads, recreation destinations, rangeland, pipelines, ROWs, and livestock/wild horse and wildlife paths and congregation areas. Noxious weeds can invade any vegetative habitat present in the Planning Area. Noxious weeds are pioneering species, which allows them to be the first species established after ground disturbance. Ground-disturbing activities that can create conditions that make vegetative communities susceptible to the establishment of noxious weeds include wildfire, roads, ROWs, OHV use, and livestock grazing. Once noxious weeds are established in a disturbed area, they are effective at obtaining the required nutrients, water, and sunlight necessary for growth and survival, thereby preventing the establishment of desirable vegetation. Once noxious weeds are established, they are effective at invading previously undisturbed areas.

Indicators

The primary indicator of vegetative condition is a similarity index that compares current plant composition to the Natural Resources Conservation Service (NRCS) Historic Climax Plant Community Descriptions (NRCS, 2011). Vegetative condition is related to the plant associations present and how close the area resembles the Potential Natural Community (PNC). Rangeland Health Standards and Guidelines contain additional indicators.

Current Condition

Vegetative communities and associations are groups of plant populations that coexist in space and time. Distinct vegetative communities are influenced by characteristics such as soil depth, texture, and salinity; climate variables, particularly temperature, total and seasonal distribution of precipitation, and wind; and topographic features, the most important of which are elevation, aspect, and slope. The following discussions of plant communities in the Decision Area show the diverse and complex nature of the vegetative resources in the area.

The BLM divides the landscape into ecological sites for the purposes of inventory, evaluation, and management. “An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation” (U.S. BLM, 2001). Each ecological site has characteristic soils, hydrology, and a kind and amount of vegetation adapted to specific fire regimes and herbivory. Within each site, the soils, hydrology, and vegetation communities are interrelated, each affecting the development of the other.

Vegetative communities can be represented by plant cover types that reflect the dominant species present in the area, such as the plant cover types documented by SWReGaP data. The SWReGaP is an update of the Gap Analysis Program’s mapping and assessment of biodiversity for a five-state region encompassing Arizona, Colorado, Nevada, New Mexico, and Utah (Lowry et al., 2005). The 43 SWReGaP land cover types were combined to form 9 vegetation types (Table 2-21) to better reflect BLM management of vegetation communities and associations. Table 2-21 lists acres and percent of vegetative communities and associations in the Decision Area.

Appendix B describes each of these communities. Because of the dispersed nature, relatively small size, and limited amount of riparian/wetland vegetative communities in the Decision Area, SWReGAP landscape-level remote sensing is not an accurate method for their inventory or condition assessment. SWReGAP readings related to riparian/wetland communities are included in the various adjacent vegetation categories, which are described in the categories' narratives. Site-specific riparian/wetland inventories and assessments have been performed throughout the Decision Area. Results of these inventories and assessments are discussed in the Riparian and Wetland Resources section.

Table 2-21. SWReGAP Vegetative Communities

Vegetative Communities or Associations	Acres	Percent of Decision Area
Sparsely Vegetated/Barren Classes	23,091	1.1
<ul style="list-style-type: none"> • Colorado Plateau Mixed Bedrock Canyon and Tableland • Inter-Mountain Basins Active and Stabilized Dune • Inter-Mountain Basins Cliff and Canyon • Inter-Mountain Basins Volcanic Rock and Cinder Land • Rocky Mountain Cliff, Canyon and Massive Bedrock 		
Deciduous Forest Classes	685	0.03
<ul style="list-style-type: none"> • Rocky Mountain Aspen Forest and Woodland 		
Evergreen Forest Classes	996,563	47
<ul style="list-style-type: none"> • Colorado Plateau Pinyon-Juniper Woodlands • Great Basin Pinyon-Juniper Woodland • Inter-Mountain Basins Subalpine Limber-Bristlecone Pine Woodland • Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland • Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland • Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland 		
Mixed Forest Classes	1,253	0.06
<ul style="list-style-type: none"> • Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland 		
Shrub/Scrub Classes	841,681	40
<ul style="list-style-type: none"> • Colorado Plateau Mixed Low Sagebrush Shrubland • Great Basin Semi-Desert Chaparral • Great Basin Xeric Mixed Sagebrush Shrubland • Inter-Mountain Basins Big Sagebrush Shrubland • Inter-Mountain Basins Mixed Salt Desert Scrub • Inter-Mountain Basins Mountain -Mahogany Woodland and Shrubland • Mogollon Chaparral • Rocky Mountain Gambel Oak-Mixed --Montane Shrubland 		

Vegetative Communities or Associations	Acres	Percent of Decision Area
Grassland/Herbaceous Classes <ul style="list-style-type: none"> • Inter-Mountain Basins Big Sagebrush Steppe • Inter-Mountain Basins Montane Sagebrush Steppe • Inter-Mountain Basins Semi-Desert Grassland • Inter-Mountain Basins Semi-Desert Shrub-Steppe • Southern Rocky Mountain Montane-Subalpine Grassland 	182,418	8.7
Woody Wetlands Classes <ul style="list-style-type: none"> • Great Basin Foothill and Lower Montane Riparian Woodland and Shrubs • Inter-Mountain Basins Greasewood Flat • Rocky Mountain Lower Montane Riparian Woodland and Shrubland • Rocky Mountain Subalpine-Mountain Riparian Shrubland • Rocky Mountain Subalpine-Montane Riparian Woodland 	21,843	1
Emergent Wetland Classes <ul style="list-style-type: none"> • Rocky Mountain Alpine-Montane Wet Meadow 	96	0.0045
Altered or Disturbed Classes <ul style="list-style-type: none"> • Invasive Annual and Biennial Forbland • Invasive Annual Grassland • Invasive Perennial Grassland • Recently Burned • Recently Chained Pinyon-Juniper Areas • Recently Mined or Quarried 	34,031	1.6
Other Classes <ul style="list-style-type: none"> • Developed, Medium – High Intensity • Developed, Open Space – Low Intensity • Open Water 	3,310	0.16
TOTAL	2,104,971	

There are approximately 413,000 acres of public lands in the Decision Area that have been vegetatively manipulated since the 1950s. Most of the treatments occurred following wildfire through emergency stabilization and rehabilitation efforts. A considerable portion of the older vegetation treatment projects have lost the effectiveness of being fully productive seedings with a diverse and productive perennial grass and forb component that can provide forage and cover to a diverse number of animals. The seedings that have lost their effectiveness are being invaded by species such as pinyon-juniper and sagebrush. The composition and production of these vegetation projects is very important because they provide forage and cover to wildlife, livestock, and wild horses.

As discussed in the Livestock Grazing section, changes to current livestock grazing have occurred on most allotments since 2004. These changes to livestock grazing that were authorized through the permit renewal decision process included adjustments to season of use,

livestock numbers, kind of livestock, and Animal Unit Months (AUMs). In addition, grazing management systems were implemented throughout the allotments to eliminate repeated livestock use during critical growing periods. This was accomplished by implementing deferred grazing systems and rest rotation grazing. These changes are expected to lead to improvements to the vegetative communities throughout the Planning Area.

Trends

Sagebrush and Grasslands

The primary quantitative method of determining vegetative trend is through range trend plots. Trend is aptly defined as “the direction of change in ecological status or resource value rating observed over time” (SRM, 1999). Long-term trend data are collected and evaluated to detect changes occurring on public lands and occurs at key areas. Key areas are relatively small portions of the ecological sites and are selected because of their location, use, or grazing value as a monitoring point for assessing overall trend of the vegetation in a grazing allotment. Assessments are generally accomplished by comparing current data sets for each indicator to a standard, whether that is from another source (Desired Plant Community [DPC] or Ecological Description) or from data collected using the same methods from the same plots in key areas of ecological sites over time. It takes a minimum of 2 years of data to be able to statistically determine the direction and degree of the change of each trend indicator and the causal factors for the change. These trend plots are periodically read as part of the rangeland monitoring program in accordance with the allotment categorization (M, I, or C). See Appendix I, Criteria Used for Categorizing Livestock Grazing Allotments. There are approximately 500 Key Management Areas in the Decision Area, and baseline trend data has been collected at most of these areas since 2005. It is difficult to determine vegetation trends because only baseline trend monitoring data are available.

Rangeland Health Assessment

As discussed in the Livestock Grazing section, through the development of grazing regulations in 1995, the BLM was directed to develop state or regional standards and guidelines for rangeland health. The objectives of these regulations are to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to PFC; and to provide for the sustainability of the western livestock industry and communities that depend on productive, healthy rangelands. Appendix C lists the standards for rangeland health, which include the following:

- Standard 1 – Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.
- Standard 2 – Riparian and wetland areas are in PFC. Stream channel morphology and functions are appropriate to soil type, climate, and landform.
- Standard 3 – Desired species, including native, threatened, endangered, and special status species are maintained at a level appropriate for the site and species involved.
- Standard 4 – Water Quality: Surface water and groundwater quality, influenced by agency actions, complies with state water quality standards.

Grazing permits are issued for a 10-year period, at which time they undergo a renewal process to comply with BLM regulations and policy. Active preference or the maximum number of AUMs available for livestock use, given appropriate climatic conditions, is identified by the grazing permit during the permit renewal process. During the permit renewal process allotments, are

evaluated to determine if the Rangeland Health Standards Guidelines are being met and whether grazing management complies with the Guidelines for Livestock Management. Livestock grazing is managed in accordance with Rangeland Health Standards and Guidelines. By regulation, if the standards are not being met, and livestock grazing is determined to be a significant contributing factor, appropriate actions must be taken to ensure significant progress toward meeting the standards within the timeframes specified in the regulations. As of March 2011, the Rangeland Health Standards and Guidelines have been evaluated, and livestock grazing decisions have been issued to livestock permittees who have privileges within 135 of the 159 grazing allotments that have been actively grazed by livestock since 2004. Twenty-four grazing allotments in the Planning Area have not been assessed; however, assessments are scheduled to be completed by September 30, 2012. See the Livestock Grazing section for more information. If it was determined through the collection of monitoring data that current livestock use was a causal factor for not attaining the Rangeland Health Standards and Guidelines, changes to livestock grazing management were made through the permit renewal process to ensure that progress toward the attainment of the standards and guidelines would occur. These changes to livestock grazing that were authorized through the permit renewal decision process included adjustments to season of use, livestock numbers, kind of livestock, and AUMs. In addition, grazing management systems were implemented throughout the allotments to eliminate repeated livestock use during critical growing periods. This was accomplished by implementing deferred grazing systems and rest rotation grazing. Refer to Appendix D to see which allotments were meeting or not meeting the Fundamentals of Rangeland Health, Standards for Healthy Rangelands, and the Guidelines for Grazing Management (U.S BLM, 1997) and whether action was taken to ensure that progress toward the attainment of the standards and guidelines was taken. Monitoring data, including nested frequency, point cover, line intercept, key area utilization, use pattern mapping, actual use, and precipitation data, was utilized to assess attainment of the standards and guidelines. Table 2-22 summarizes assessment results (see Appendix D for full details).

Table 2-22. Allotments Assessed for Attainment of Standards and Guidelines

Standards and Guidelines for Rangeland Health	Number of Allotments
Allotment Meeting Standards	36
Not Meeting, But Action Taken	88
Not Meeting, No Action Taken	0
Not Meeting and Not Livestock Related	11
No Assessment	24

Forecast

Native Communities

The lack of disturbances that remove a portion of the sagebrush component in sagebrush communities and native grassland community types will continue to cause a static or slight downward ecological trend. It is expected that through the implementation of proper grazing management, including the elimination of continuous livestock use during the critical growing period, that the herbaceous understory will improve. To further improve the diversity of grasses, forbs, and shrubs would require methods such as the use of prescribed fire, wildfire, brush beating, and herbicide treatments on sites that have no to a trace of nonnative annual grasses and/or invasive weeds.

Annual Grasslands

Annual grasslands are isolated in the Decision Area and typically located in areas that were burned by wildfire. Areas that are dominated by nonnative annual grasses will maintain a low similarity to PNC and a static trend. These areas have typically achieved an ecological threshold. To initiate an upward trend would require authorizing high-intensity livestock grazing during early spring (before the native grass boot growth stage), and/or fall high-intensity livestock grazing (after the native grass seed shatter growth stage), or reseeding the site with native grasses. If areas are reseeded, it would be beneficial to apply herbicides (Plateau®) to provide for annual grass/forb control prior to seeding efforts. Although restoring annual grasslands is costly and requires substantial economic investment, it can be very beneficial to improve habitat and limit future wildfire intensity.

Nonnative Seeded Grasslands/Shrublands

Nonnative seeded grasslands/shrublands will continue to follow a trend that involves an increase in the amount of sagebrush and a reduction in crested wheatgrass cover (Frischknecht, 1963). Many of the existing seedings in the Planning Area would continue to lose the perennial understory component due to the excessive pinyon and juniper encroachment and natural establishment of dense sagebrush stands. The completion of vegetative enhancement treatments, including mechanical (e.g., rotobeaater, lop and scatter, Dixie harrow, chaining [smooth or ely], land imprinter/roller chopper, rotary mower, and disc), manual (lop and scatter), seeding (e.g., aerial, broadcast, drill, and dribbler) prescribed fire, and herbicide treatment would promote ecological restoration and implement land management actions that would ultimately produce a “healthy” landscape or ecosystem.

Juniper Woodlands

In the absence of fire or mechanical treatment projects, juniper will continue to expand. Many juniper stands are reaching a state where juniper dominance is beginning to alter understory conditions. As the juniper canopy closes in, grass and shrub cover declines, with adverse consequences to wildlife habitat and forage production (Miller and Tausch, 2001). Increases in bare ground and impaired hydrological function are additional consequences of increasing juniper dominance (Pierson et al., 2007).

Riparian Areas/Wetlands

Refer to the Riparian and Wetland Resources section.

Key Features

Shrubland and Grassland

Early seral communities that are dominated by nonnative annual grasses and forbs are in a relatively stable state. These areas have crossed an ecological threshold and are likely not to return to native communities without a considerable investment. These areas are isolated in the Decision Area and generally occur in relation to wildfires. Wildfires are typically revegetated through Emergency Stabilization and Rehabilitation efforts. Although most of these efforts have been determined to be successful following the collection of monitoring data, there are isolated locations that have been unsuccessful and are dominated by annual grasses and forbs.

Management will focus on areas at risk with considerable quantities of desirable native vegetation and where trends can be monitored. However, it is important to ensure that all areas in the Decision Area continue to be monitored effectively and efficiently to ensure sustainable management of the public land. Short-term and long-term monitoring tools will continue to be utilized to assess the condition of the vegetative community. The key area concept will be

utilized extensively to monitor the management of public lands to ensure vegetative community maintenance/improvement.

Forestlands

Existing ponderosa pine and other important forestlands should receive priority consideration for protection from wildfire, specifically, from conditions that could lead to stand-replacing wildfire. In addition, aspen, cottonwood, and other hardwood communities in the Decision Area should receive priority consideration for protection from further decline. Active management should be used to restore these communities to their former range, including the eradication of encroaching conifers (i.e., juniper) and using prescribed fire or fencing to initiate suckering.

Invasive Plants and Noxious Weeds

Indicators

Invasive species include plants able to establish on a site where they were not present in the original plant community. Invasive species aggressively out-compete native species within a community and often alter the physical and biotic components enough to affect the entire ecological community. Invasive species are of particular concern following ground disturbances. Promotion of ecosystem health is essential to accomplish the BLM mandate of multiple use of the public lands.

The BLM defines a noxious weed as “a plant that interferes with management objectives for a given area of land at a given point in time.” Noxious weeds are defined in the Rangeland Health Standards and Guidelines (U.S. BLM, 1997) as nonnative plants that are especially undesirable because they have no forage value and are sometimes toxic or are capable of invading plant communities and displacing native species. The BLM recognizes noxious weed invasions as one of the greatest threats to the health of rangelands nationwide.

Most invasive and noxious weeds known to occur in Utah were originally introduced to North America from Europe and Asia. Most invasive plant introductions have been unintentional. Once established, these plants spread rapidly by natural (e.g., wind, water, and wildlife) and artificial (e.g., roads, equipment, and the movement of contaminated feed and seed) means. Invasive plants typically invade disturbed soils and stressed plant communities. Once established, invasive plants can invade healthy vegetative communities and significantly alter established ecosystems. Noxious and invasive plants mainly occur along roads, recreational destinations, pipelines, ROWs, and livestock/wildlife/wild horse paths and congregation areas.

Invasive and noxious weeds typically have reproductive, morphological, and physiological attributes that allow them to effectively compete with native vegetation. Most invasive species have several of the following characteristics:

- Perennial in nature, reproducing by rhizomes, roots, and/or vegetative parts
- Continuous seed production throughout the growing season
- Production of high numbers of seed, up to 500,000 per year
- Unique ways of dispersing and spreading their seed
- Ability of seeds to remain dormant in the soil for extended periods
- Ability to grow under adverse conditions
- Adaptable to a wide variety of soil and climatic conditions
- Compete well for soil moisture and nutrients
- Possess genetic adaptability

Noxious weed management is a high priority for the Decision Area. A considerable budget allocation is made each year to support this program. The BLM closely coordinates and cooperates with other federal, state, and county agencies and adjoining private landowners; this is an important part of the BLM integrated management approach. In addition, there are Cooperative Weed Management Areas (CWMAs) established with Beaver County and Iron County; this has been very beneficial to the noxious weed control efforts.

Current Conditions

Due to the diversity of vegetative types and conditions in the Decision Area, there are a wide variety of invasive plant species and noxious weeds. Many of these species are the biggest threat on range sites that are in poorer condition due to annual grasses and forbs already present. Table 2-23 identifies the types of noxious weeds and associated acreages present in the Decision Area.

Table 2-23. Types and Acres of Noxious Weeds

Noxious Weed Species	Scientific Name	Beaver County Acreage	Iron County Acreage	Washington County Acreage	Total Acreage by Species
Black Henbane	<i>Hyoscyamus niger (L.)</i>	12	----	----	12
Perennial Pepperweed	<i>Lepidium latifolium</i>	----	10	----	10
Bull Thistle	<i>Cirsium vulgare</i>	61	9	----	70
Knapweed	<i>Centaurea repens L.</i>	5	16	----	21
Milkweed	<i>Asclepias syriaca</i>	0.15	----	----	0.15
Musk Thistle	<i>Carduus nutans L.</i>	1	25	----	26
Scotch Thistle	<i>Onopordium acanthium L.</i>	9,980	2,834	490	13,304
White Top	<i>Cardaria spp.</i>	536	6	----	542
Total Acreage		10,595	2,900	490	13,985

Refer to Appendix E, which lists the weeds that are officially designated and published as noxious for the State of Utah (UTDAF, 2011), in accordance with the authority vested in the Commissioner of Agriculture and Food under Section 4-17-3, Utah Noxious Weed Act (UTDAF, 2007).

Weed eradication methods, such as herbicide spraying, must be consistent with the Final EIS and Record of Decision (Utah) Vegetation Treatment on BLM Lands in Thirteen Western States (U.S. BLM; 1991b) and the Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (U.S. BLM, 2007). The use of certified weed-free hay is one guideline implemented from Utah BLM Standards and Guidelines for Healthy Rangelands to control the spread of noxious weeds (U.S. BLM, 1997). For revegetation purposes, the use and perpetuation of native species is a priority, except in areas where nonintrusive, nonnative species are more ecologically or economically feasible. In addition, the BLM requires the use of weed-free seed in reclamation and rehabilitation projects.

Trends

Noxious weeds have increased in prevalence in some areas and decreased in other locations across the Planning Area. New techniques such as Early Detection Rapid Response, Integrated Weed Management, and cooperation with the Beaver and Iron county CWMA's have been effective in helping to eliminate new infestations and reducing existing ones, especially when combined with improving the condition of rangelands. Introductions of new noxious weed species combined with ground disturbance (roads, recreational destinations, rangeland, pipelines, ROWs, and livestock/wildlife/wild horse paths and congregation areas) indicate a need for treatments and control into the foreseeable future.

Forecast

Based on drought, wildland fires, increased recreational and commercial activities, and associated responses by invasive nonnative plant species, the diversity and cover of native vegetation is threatened in portions of the Decision Area. Management actions to rehabilitate burned areas and areas of disturbance are expected to continue to ensure that threats to the native vegetative communities are minimized. In addition, the intensive noxious weed program will continue to treat noxious weeds in the Decision Area, which is expected to control and limit the spread of noxious weeds.

Key Features

Noxious weeds are able to invade any habitat in the Planning Area. This makes noxious weeds especially hard to locate and monitor. As previously discussed, noxious weeds are excellent pioneering species, which allows them to be the first species established after ground disturbances. Common ground-disturbing activities that create habitats susceptible to noxious weed establishment across the Planning Area include fire, roads, ROWs, OHV use, and grazing. Once established in a disturbed area, noxious weeds are more effective at obtaining the required nutrients, water, and sunlight necessary for growth and survival, which prevents the establishment of desirable plants. Once firmly established in disturbed habitats and depending on the species, noxious weeds can be effective at invading previously undisturbed habitats.

Management will focus on areas that already have noxious weeds present and new areas of disturbance (e.g., wildfires and ROWs). In addition, the CCFO will continue supporting and working with established CWMA groups in Beaver and Iron counties to provide for the control/elimination of noxious weeds.

Forestry and Woodland Cover Types

Current Level

The SWReGAP gives a broad overview of vegetation by vegetative association. Estimates of current cover by forest vegetative type can also be obtained through the USFS Forest Inventory and Analysis (FIA) group that gives a somewhat different perspective of the same resource. In addition to giving a current estimate of acres by woody vegetative type, the FIA also gives estimates of the stocking level. Stocking levels can help identify where management actions might be needed. Table 2-24 summarizes FIA data.

Table 2-24. Wooded Vegetative Types (acres)

	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked
Pinyon-Juniper	976,700	80,000	417,800	283,000	195,900
Ponderosa Pine	10,300	0	0	4,500	5,800
Mixed Conifer	6,400	0	3,400	0	3,000
Aspen	6,000	0	0	6,000	0
Gambel Oak	30,500	6,300	12,400	6,000	5,800
Mountain Mahogany	53,300	0	24,000	23,000	6,300
Total	1,083,200	86,300	457,600	322,500	216,800

Miles, 2011

Trends/Forecast

Pinyon-Juniper

The pinyon-juniper cover type is made up of mixed stands of pinyon and juniper and pure stands of juniper. Three species of pinyon occur in the Planning Area: Great Basin pinyon pine (*Pinus monophylla*), Colorado Plateau pinyon pine (*Pinus edulis*), and a hybrid of the first two – fallax pinyon pine (*Pinus monophylla* var. *fallax*). *P. monophylla* is often referred to as single-leaf pinyon pine and its range coincides roughly with the Great Basin ecological province. *P. edulis* is often referred to as Colorado or common pinyon pine and its range coincides roughly with the Colorado Plateau province. Two species of juniper are found in the area. The most common is Utah juniper (*Juniperus osteosperma*) and of more limited distribution is Rocky Mountain juniper (*Juniperus scopulorum*), found in riparian areas and at cooler elevations generally above 7,000 feet.

Pinyon-juniper stands can be classified as ephemeral or persistent on a landscape. Persistent stands are those that occupy a given site for a long period and typically have little fire disturbance or very infrequent fire disturbance (fire return intervals in excess of 300 years). Ephemeral stands are those that share a landscape on a periodic basis with other vegetation types, such as sagebrush. The dynamic of area dominance has typically been controlled by the periodicity of fire on the site. Given that fire frequency on many of these sites has been altered (reduced) since pioneer times, more acres are now dominated by pinyon and juniper than were historically, and the trees on these sites are often older than would have been expected in a pre-settlement stand.

These changes in vegetative cover affect wildlife habitat and affect how fires burn across the landscape. Where fires in the sagebrush-steppe were once fueled primarily by herbaceous vegetation, many are now fueled by taller woody vegetation with higher fuel loads. The result is fires can be more intense and more damaging to the soils in the area.

In the absence of fire or mechanical treatment projects, ephemeral pinyon and juniper will continue to opportunistically expand and increase in density. As tree density increases and tree canopies close, fewer resources are available for understory species. In this situation, understory species (grasses, forbs, and shrubs) will be reduced and wildlife habitat and forage production will be adversely affected (Miller and Tausch, 2001). Under juniper-dominated

canopies, increases in bare ground and impaired hydrological function are additional consequences of increasing juniper dominance (Pierson et al., 2007).

Due to increased fuel loadings and increased continuity of tree canopies, wildfires can burn more intensely through ephemeral stands, causing both damage to the soil A-horizon and increased erosion when post-fire rains or snow run-off occurs. Increased fire intensities and fire spread in ephemeral stands also poses a threat to adjacent vegetative types by increasing the likelihood of fire spread into the adjacent type. This can include threats to persistent pinyon and juniper, ponderosa pine, and other conifer stands.

Ponderosa Pine

Pinus ponderosa is found scattered through most of the mountain ranges on the Planning Area. It is a minor component in many stands of mixed conifer, in pinyon-juniper, aspen, and mountain mahogany. In a few areas it forms stands where it is the dominant cover type. Ponderosa pine is an important habitat type, providing high-quality wildlife habitat and visual diversity, often in areas that are otherwise dominated by low-growing woody vegetative types.

The Wah Wah Mountains contain the world's oldest genetics for ponderosa pine. The world's oldest individual living ponderosa pine (confirmed to be nearly 1,000 years old) was found recently in the Wah Wah Mountains just to the north of the Cedar City/Fillmore Field Offices administrative boundary.

As with other vegetative types, the fire regime of the ponderosa pine has been altered since pioneer times, less frequent fires allow increases in understory vegetation. This is often pinyon, juniper, or mountain mahogany, all of which provide fuel "ladders" that allow damaging fires to move into the crowns of the taller ponderosa pine, whereas once fires remained largely in the understory of larger trees, causing little damage to the pine.

In the absence of fire or mechanical treatment projects, ephemeral pinyon and juniper will continue to opportunistically expand and increase in density. As tree density increases and tree canopies close, fewer resources are available for understory species. In this situation, understory species (grasses, forbs, and shrubs) will be reduced and wildlife habitat and forage production will be adversely affected (Miller and Tausch, 2001). Under juniper-dominated canopies, increases in bare ground and impaired hydrological function are additional consequences of increasing juniper dominance (Pierson et al., 2007).

Wildfires have reduced acreages of ponderosa pine for several decades in many parts of the Planning Area. Centuries-old trees that once withstood multiple ground-based fires have been lost to canopy fires. These trees are not a replaceable resource within the foreseeable future. Under current management, ponderosa pine will continue to be lost in the Planning Area. Many of our ponderosa stands are located in relatively scenic areas that have been either classified as Wilderness Study Areas (WSAs) (interpreted as off limits to management activities) or are in citizen's proposed wilderness areas (where managers might have reservations about allowing management activities due to the difficulty of getting approved NEPA documentation completed). Given the current stand conditions with substantial understory vegetation (providing fuel for fire ladders), simply applying fire to these stands will not result in the achievement of a desired, sustainable condition. On the contrary, introducing fire before mechanically removing some of the ladder fuels would likely result in increased loss of ponderosa pine.

Mixed Conifer

Mixed conifer stands can be composed of one or more of several species: Douglas-fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), ponderosa pine, limber pine (*Pinus flexilis*), Great Basin bristlecone pine (*Pinus longaeva*), and aspen (*Populus tremuloides*). Occasionally, and primarily on the eastern side of the Planning Area at higher elevations, subalpine fir (*Abies lasiocarpa*), Engelmann spruce (*Picea engelmannii*), and blue spruce (*Picea pungens*) can make up a small percentage of a mixed conifer stand. Where aspen is a stand component, it typically indicates the site was once dominated or mostly dominated by aspen, and it likely indicates that fire has not played the same role in the ecosystem that it once did. Many parts of the Planning Area have seen an increase in drought-related bark beetle activity that has resulted in mortality of white fir and Douglas-fir.

As mixed conifer stands age, and dead woody material (standing and down) increases, the CCFO could see an increase in high-intensity wildfires. Some of the mixed conifer stands have an aspen component that could regenerate following a fire event. As with ponderosa pine, many of the mixed conifer stands are in areas that have some form of wilderness designation, making managers reluctant to approve use of mechanical management tools. At the same time, many of the mixed conifer stands are on steep, inaccessible slopes where active management will be limited. There needs to be greater emphasis on identifying which of these stands are at risk and of those, which stands can receive some form of management action to bring them into a more sustainable condition.

Aspen

There are no large expanses of aspen in the Planning Area. The largest stands are on the eastern side at higher elevations near Brian Head. Other stands can be found scattered in many of the mountain ranges to the west, but always in riparian areas or on the more mesic sites. Stands tend to be small, and sometimes clones can be composed of just a few individuals. Aspen has become subordinate to conifer in some stands, which are now classified as mixed conifer stands. On these sites, it is typically white fir, one of the most shade-tolerant conifers, that has become the dominant species. On the drier aspen sites, junipers and pinyons might have become a prominent understory component of aspen stands. The increase in coniferous species within aspen- and once-aspen-dominated stands is an indicator that fire has not played its former role in the ecosystem. While aspen produces abundant seed, the seed contains no endosperm and therefore the seedlings cannot survive even short periods of drought during their first year of establishment. In the Planning Area, aspen reproduces by root suckering.

The limited aspen resources in the Planning Area provide excellent diversity both for wildlife and for visual resources. Aspen has been declining for some time in many portions of the Planning Area, and without management change, it will continue to decline.

Gambel Oak

Quercus gambelii is a large shrub/small tree in the Planning Area. In other parts of its range it can reach moderate tree size. It reproduces by seed and by root sprouts after disturbance and is very adapted to rapid post-fire recovery, sometimes putting on three feet of new leader growth on sprouts the year following a wildfire. There are some extensive stands of Gambel oak in the northeast portion of the Planning Area.

This cover type does not appear to be at particular risk. However, this species is very flammable and large expanses can promote wide-spreading wildfires that could pose some risk to adjacent vegetative types and to watersheds. Active management could break up fuel

continuity in large stands to provide a better mosaic of vegetative types while providing locations where a potential wildfire control line could successfully be established.

Mountain Mahogany

Curl-leaf mountain mahogany (*Cercocarpus ledifolius*) is common in many parts of the Planning Area, sometimes forming dense, nearly monoculture stands. It is a tall shrub species and reproduces by seed. It does not sprout, but it does reproduce well and often abundantly after disturbance if there is a good seed source nearby.

This cover type does not appear to be at particular risk. However, this species is very flammable and large expanses can promote wide-spreading wildfires that could pose some risk to adjacent vegetative types and to watersheds. Active management could break up fuel continuity in large stands to provide a better mosaic of vegetative types while providing locations where a potential wildfire control line could successfully be established.

Key Features

Existing ponderosa pine and other important forestlands should receive priority consideration for protection from wildfire, specifically from conditions that could lead to a stand-replacing wildfire. In addition, aspen, Fremont cottonwood (*Populus fremontii*), and other hardwood communities that occur in the Decision Area should receive priority consideration for protection from further decline. Active management should be used to restore these communities to their former range, including the eradication of encroaching conifers and using prescribed fire or fencing to initiate suckering.

Visual Resources

Indicators

The BLM Visual Resource Management (VRM) system has two stages. The first consists of completing a Visual Resource Inventory (VRI). These VRI classes are then balanced with other uses and given a VRM class during the land use planning process. The process (described in detail in BLM Handbook H-8410-1) involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points.

VRM Classes: The area's visual resources are rated based on a combination of scenic quality, viewer sensitivity, and distance zones. These classes are assigned solely on these factors.

VRM Classes: VRI classes are then balanced with other resources and resource uses in the land use planning process. These then result in establishment of VRM classes with defined objectives, as follows:

- **Class I Objective:** To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II Objective:** To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- **Class III Objective:** To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

- **Class IV Objective:** To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

The analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments will meet the management objectives established for the area, or whether design adjustments will be required. The BLM uses a visual contrast rating process (described in BLM Handbook H-84311) for this analysis, which involves comparing the project features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The analysis can then be used as a guide for resolving visual impacts. Once every attempt is made to reduce visual impacts, BLM managers can decide whether to accept or deny project proposals. Managers also have the option of attaching additional mitigation stipulations to bring a proposal into compliance.

Scenic Quality: The underlying reason for establishing VRM objectives is to ensure retention of the visual value or scenic quality of the landscape. Scenic quality is a measure of visual appeal. In the BLM system, a Class A, B, or C rating is assigned. 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. The scenic quality classes are:

- Class A: Distinctive, high degree of visual variety
- Class B: Common or typical, moderate degree of visual variety
- Class C: Minimal value or below average, low degree of visual variety

Current Conditions

The existing LUPs did not designate any areas as VRM Class I. Appendix A, Figure 2-4 shows Class II through Class IV areas.

A new VRM inventory was performed for the Planning Area in 2010 (Otak, Inc, 2010). This inventory resulted in substantial differences between the new VRI inventory class acres and the VRM classes designated in the existing LUPs. New VRM management classifications will be made in the new RMP. Table 2-25 shows the VRM acreages and classifications under the existing LUPs. New scenic quality ratings were assigned based on the updated 2010 inventory, as summarized in Table 2-26.

Table 2-25. Visual Resource Management Class Acres

Class	Land Use Plan Acres
Class I	0
Class II	67,233
Class III	118,140
Class IV	1,919,599

Table 2-26. Visual Resource Inventory Scenic Quality Ratings

Scenic Quality Ratings (Otak, Inc., 2010)	Number of Areas	Acres
Not Rated	7	131.63
A	35	231,020.40
B	68	1,115,791.58
C	126	758,028.26

Public perception of and concern for visual resources is critical in land use planning. The visual character of the public land in the Planning Area is valuable to a spectrum of recreation users and sightseeing travelers. Receptors sensitive to visual resources on public lands include people recreating and areas of human settlement. Recreation on public lands includes, but is not limited to, picnicking, wildlife watching, camping, biking, hiking, OHV use, hunting, and photography. Table 2-27 summarizes sensitivity ratings for the Planning Area. The primary areas of human settlement in the Planning Area are along Interstate 15 and state highways and include Cedar City, Parowan, Summit, New Harmony, Beaver, Minersville, and Milford. There are also numerous smaller towns throughout the Planning Area. In addition to these communities, people who recreate on the public land in the Planning Area represent other receptors sensitive to the quality of visual resources.

Table 2-27. 2010 Visual Resource Sensitivity Ratings for the Planning Area

Inventory Classes	Number of Areas	Acres
High	95	580,789
Moderate	77	629,540
Low	144	894,511
Not Rated	7	131

Trends

While much of the public land in the Planning Area still consists of areas with relatively undisturbed characteristics, decades of grazing, fire suppression, road building, mineral extraction, uncontrolled motorized use, and the creation of infrastructure such as roads and utilities have left an imprint on the land and on the overall scenic quality. However, sparse population areas and large tracts of BLM-administered lands have resulted in relatively stable trends in scenic quality.

The BLM analyzes all proposed projects on the public lands in the Planning Area for their impacts to VRM classifications and includes, where possible, mitigation measures to design structures that blend in with the natural background to minimize disturbances to the visual landscape. This form of visual management has been and continues to be effective. Following the visual guidelines for each VRM class maintains or enhances the visual resources on public land in the Planning Area.

Forecast

Anticipated future recreation and commercial growth will coincide with the need to address potential impacts to visual resources. Recreational use (motorized and nonmotorized) and commercial activities could result in disturbances that create increased visual contrasts in the landscapes, especially foreground scenes, throughout the Planning Area. The numbers of new roads, trails, and routes will increase over time and motorized recreational use could eventually impact locations of high scenic quality. The scenic quality of areas desired by recreationists (e.g., popular campsites, easy access areas, and areas near water) could degrade as use and method of access to these areas increases.

The future construction of long-term commercial developments and facilities, such as powerlines, communications sites, mines, solar development facilities, and wind farms could reduce the scenic quality of the fore-, middle-, and background landscapes.

Assuming increasing commercial development and recreation use, there will be greater long-term visual impacts in the Planning Area. As developers and recreationists place more and more demands on public lands, the BLM needs to develop management actions to protect sensitive visual resource values into the future.

Key Features

The condition of visual resources is more noticeable in certain parts of the Planning Area, including areas of high public use and high visibility areas, such as those along interstate and state highways, reservoirs, or highly desired recreation areas. Other key features of the visual landscape that receive greater public attention include unique landforms, historic trails, pristine areas, and large solid blocks of public lands.

The Mineral Mountains, Mountain Home Range, Spring Creek Canyon, Kanarra Creek Canyon, and Hurricane Front are several of the Planning Area's key visual elements, and offer multiple public access points. Two areas are within the Spring Creek WSA and have few developments. The others have moderate amounts of roads and small-scale developments, but due to their visual variety, maintain a high scenic quality.

Soils

Soils are created through the interaction of climate, parent material (rock type), topography, and microorganisms in the soil. Through time, the interaction of these variables develops specific soil types. Formation of soils is a slow process, particularly where moisture levels are low. Disruption of soils can lead to long-term changes in soil productivity and changes in ecological conditions for the site.

Soils across the Decision Area are varied and descriptions of soils can be complex without at least a fundamental understanding of geology and terminology specific to soil science. Soils descriptions and other data for the Decision Area are provided in the Soil Survey of Iron-Washington Area, Utah, Parts of Iron, Kane, and Washington Counties (NRCS, 1996), Soil Survey of Beaver-Cove Fort Area, Utah, Parts of Beaver and Millard Counties (NRCS, 1976), Soil-Vegetation Inventory Mapping and Site Write-up Analysis (U.S. BLM, 1980s) and Soil Study for Pinyon Planning Unit and Environmental Impact Statement, Cedar City, Utah (U.S. BLM, 1981). Sensitive soils, which are soils with greater than average erosion potential or have low

reclamation potential, were mapped in Beaver and Iron counties in 2012 (U.S. BLM, 2012).. Minimal published data is available at this time for areas of Beaver County west of Milford Valley, although the BLM and the NRCS have entered into a Cooperative Agreement for completion of the soil survey. An ecological site inventory was completed across the entire Decision Area in the early 1980s, and additional information is available in Rangeland Health Evaluations. Wetland soils are addressed in the Riparian and Wetlands Resources section of this document and are primarily discussed in relation to PFC surveys throughout the Decision Area.

FLMPA has specific language related to maintaining the productivity of the land, including soil quality and long-term soil productivity. The Taylor Grazing Act and The Public Rangelands Improvement Act also address the productivity aspect of soils as it relates to public rangelands and forage. Title 43 CFR 4180.1 and 4180.2, BLM Handbook H-4180-1, and Utah BLM statewide directives and IMs provide direction for implementing the Utah BLM Rangeland Health Standards Guidelines. The BLM uses soil indicators in Rangeland Health Assessments to assess soil conditions at a point in time to help determine if further monitoring or corrective actions are necessary.

Indicators

The most recent indicators of soil health and productivity in the Decision Area are Rangeland Health data collected mostly between 2006 and 2010. Current conditions (see below) are described based on the area in which Standard 1 is met or not met.

Standard 1 is that upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform. Indicators for Standard 1 are:

- Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.
- The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.
- The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the DPC, where identified in an LUP or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

The Utah BLM Grazing Guidelines also addresses soil health indicators, as follows.

- Guideline 1a states that grazing management practices will be implemented that maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and promote ecological functions.
- Guideline 1b states that grazing management practices will promote attainment of PFC riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soils conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow. (Wetlands and riparian soils are further addressed in the Riparian and Wetlands Resources section of this document.)

Sensitive soils are those with characteristics that make them extremely susceptible to impacts or those that might be more difficult to restore or reclaim after disturbance. Those characteristics can include high wind or water erosion hazard, steep slopes, moderate to high

salinity, low nutrient levels, low water-holding capacity, or high water tables, such as wetlands, riparian areas, and soils that support phreatophytic vegetation. Information used to identify sensitive soils includes NRCS published soils surveys, ecological site descriptions, local monitoring records, and research studies.

The presence or absence of prime or unique farmlands and soils of statewide importance is an indicator the BLM is mandated to analyze. The BLM's task is to determine if decisions or actions would affect these soils and if decisions or actions would result in an irreversible and/or irretrievable commitment of resources. This analysis would primarily be in reference to decisions that address land tenure (e.g. land disposals and land leasing) and, on a more site-specific level, grants of any major ROWs.

There are numerous other indicators, both qualitative and quantitative, that can be used to assess soil health. One of these includes the Soil Surface Factor (SSF) assessment method. In the early 1980s, the Decision Area had full coverage of SSF data collected. Although it is somewhat dated, it is occasionally revisited and updated on a site-specific basis when there is a need, but has limited utility during this planning effort due to its age. Other measureable indicators for which data are available but not typically used, include, but are not limited to, soil crusts, mycorrhizae, soil compaction, and anthropods and other microorganisms.

Current Conditions

Between 2006 and 2010, there was a major effort to collect rangeland health data in the Decision Area. To summarize, 159 allotments were examined; 140 were found to be meeting Standard 1 for upland soils and 19 were found to not be meeting Standard 1. An acreage compilation of allotments not meeting the standard has not been completed and would be relatively meaningless because allotments not meeting the standard were labeled as such generally due to one or more localized areas not meeting the standard; it was not that the entire allotment failed to meet the standard. There was no attempt during the rangeland health evaluation process to map or otherwise try to quantify the size of the area not meeting the standard. The rangeland health monitoring data on file at the CCFO provide specific information on localized problem areas.

There are two allotments – Wah Wah Lawson and Smithson – that have substantial areas that are not meeting Standard 1. The primary issue is active wind erosion. The Wah Wah Valley site (Wah Wah Lawson Allotment) and the Beaver Bottoms site (Smithson Allotment) form in varied parent materials ranging from volcanic tuffs, ash, and lava flows to ancient Lake Bonneville and other fluvial/alluvial deposits and uplifted marine sediments. Because of the arid climate and parent materials, many soils in the area have significant buildup of carbonates; some have developed hardpans. The lacustrine sediments left by Lake Bonneville and smaller lakes have been partially covered by alluvium from surrounding mountains. In many areas, these lacustrine deposits give way to soils that are highly concentrated in salts, particularly sodium, and are predominantly silty or fine sand texture. These soils are highly susceptible to wind erosion when vegetation and biological crust cover is disturbed. Natural dunes have formed around some of these older lake beds and current playas. Both areas are in need of natural or artificial stabilization to prevent fugitive dust from contributing to air quality non-attainment in downwind areas such as the Wasatch Front.

A third allotment, Fremont, has a pasture (Pasture 1) on the Buckhorn Flat that has been closed to grazing since the early 1970s due to fugitive dust blowing across what was then old State Route 91 (now Interstate 15) and impairing drivers' vision. Although vegetative conditions have

improved over time, the pasture remains dominated by annual weeds and likely should remain closed to grazing. Silty, alkaline soils comprise most of the pasture.

A comprehensive review of sensitive soils has not been completed for the Decision Area, but needs to be. Having location and other data pertaining to sensitive soils would better enable the BLM to determine if planning-level or site-specific decisions would affect sensitive soils.

Trends

The standard for upland soils is to maintain or improve soil productivity so that soils exhibit permeability and infiltration rates and produce healthy diverse stands of vegetation consistent with site potentials. The CCFO has performed Rangeland Health Assessments on 159 allotments and found localized problems with meeting that standard on 19 allotments, or approximately 12 percent of the allotments checked. Soils in the Decision Area are generally in fair to good health.

The CCFO has utilized the rangeland health data, including soils data, to perform NEPA analysis on 95 percent of the Decision Area's land mass in an effort to renew grazing permit renewals. This process for renewing grazing permits has led to a complete analysis of how livestock and other animals have affected soil health. The result of the grazing permit renewal process has been the implementation or planned implementation of a variety of management actions, including grazing rotations, short-duration grazing, season of use, grazing exclosures, and grazing utilization standards (limits). As these actions have time to affect vegetation and soils, soil health is expected to improve as a result of increased vegetative cover prior to livestock turnout and increased amounts of residual vegetation remaining after livestock are removed. These actions will ultimately add organic matter to the soil profile, aiding fertility, permeability, and infiltration rates. These trends are expected to occur over much of the Decision Area.

There are several causal factors that have been associated with less than desirable soil health across the Decision Area. In addition to current and historic livestock grazing, wild horses and wildlife (which have previously been discussed to some degree), drought, invasive species, pinyon and juniper encroachment, roads, OHV use, and fires have been identified as contributing to poor soil health. As any of these increase, either singularly or in combination, downward trends can be expected.

As previously discussed, the Wah Wah Valley and the Beaver Bottoms are problem areas with active wind erosion. These areas do not seem to be healing due to continuing disturbance factors (e.g. high winds, grazing, and vehicle use) and the trend is downward. The size of the disturbance area in the Wah Wah Valley seems to be increasing. These areas need additional study and could require exclusion of certain uses and artificial rehabilitation to reverse the trends.

The third problem area identified, Pasture 1 of the Fremont Allotment, has a stable trend. Conditions have been essentially the same since the early 1980s.

Forecast

Assuming no substantial change in climate across the Decision Area over the life of the new RMP, rangeland health, including soils Standard 1, is expected to improve with changes in grazing management. The current management direction is that the Rangeland Health Standards and Guidelines are to be adopted as Comprehensive Land Health Standards. That

being the case, soil health is generally expected to be maintained or to improve where the BLM is considering or permitting actions. These would include actions and decisions such as energy or ROW development, fire rehabilitation, fuels management projects, invasive weed treatments, and land and vegetative treatments

An increase in non-permitted or uncontrollable activities such as fires, drought, forest disease, widespread encroachment by pinyon, juniper, or invasive weeds, and OHV use will likely have adverse effects on soil health. These activities generally lead to increased erosion from both wind and water.

Climate change could have a long-term impact on soil health. The forecast for the Southwest United States, including the Great Basin and Range Province is for an increase in precipitation. Depending on how the precipitation arrives (gentle rains versus intense flashy events) could either benefit or adversely affect soils. Gradual precipitation would be expected to speed soil development through increased plant growth and percolation functions, while flashy storms would increase runoff and erosion due to water. Annual precipitation has increased from 6 to 16 percent since the middle of last century. This has been reflected in increases in streamflow across the Great Basin region, especially in winter and spring (Baldwin et al., 2003).

Projected warming for the West ranges from approximately 2 to 5 °C (35 to 41 °F) over the next century (Cubashi et al., 2001). Warmer temperatures at the soil surface and below would likely offset any benefits of increased precipitation. In the worst-case scenario, warmer temperatures accompanied by decreased precipitation and high winds would detract greatly from overall soil health.

Key Features

Key features include the following:

- Prime unique farmlands and soils of statewide importance.
- Wah Wah Valley, the Beaver Bottoms, and Buckhorn Flat. There are public health and safety issues associated with fugitive dust, highways, and motorists in all three cases.
- Smaller areas of wind erosion concern include sensitive soils in the areas of Zane and on the Milford Flat Fire Rehabilitation area, particularly the areas south of the Milford Wind Corridor wind farm.
- Localized water erosion problems, which will ultimately have to be addressed site specifically. There are endangered species implications regarding the Utah prairie dog and deterioration of preferred swale habitats.
- Topsoil mining. There have been requests in the past to “mine” productive areas of topsoils in the Decision Area. It is recommended topsoil mining not be authorized across the Decision Area. It is recognized there are some areas where outwash soils might be allowed to be excavated and removed, similar to sand and gravel, but these are generally not considered to be topsoils.

Water Resources

A watershed is an area of land that drains downslope to the lowest elevation. A HUC is a hierarchical, numeric code that uniquely identifies watersheds and is used to organize hydrologic data. The smaller the number the larger the watershed. For example, HUC 2 watersheds are larger in area than HUC 3 watersheds, the latter generally containing several HUC 4 watersheds. In Utah, the HUC 4, or “fourth order” watersheds are commonly referred to

as sub-basins. Table 2-28 shows the relationships of the HUC numbering system and level of watersheds in the Decision Area. Appendix A, Figure 2-5 illustrates the location of the HUC 4 sub-basins in the Decision Area. The HUC 4 areas are the units used for the discussion of water resources in this section.

Table 2-28. Hydrological Unit Code 4 Watersheds in the Decision Area

Hydrologic Unit Code	Watershed	BLM Acres
16020301	Hamlin – Snake Valleys, UT - NV	190,682
16030009	Sevier Lake	155,867
16020302	Pine Valley	304,117
16030007	Beaver Bottoms and Upper Beaver	523,307
15010013	Meadow Valley Wash, UT - NV	685
16030006	Escalante Desert	912,737
16030001	Upper Sevier	8,907
15010008	Upper Virgin	8,672
	Total	2,104,974

Approximately 99.5 percent of the Decision Area is within the Great Basin Province. The remaining half percent drains into the Colorado River via the Virgin River. Most Great Basin precipitation falls in the form of snow. Precipitation that does not evaporate or is not taken for human use will sink into the soil profile. Where precipitation is abundant, precipitation can sink into groundwater aquifers or will drain into geographic sinks. Geographic sinks are commonly known as dry lakes or hardpans and are subject to rapid rates of evaporation during dry summer months. Examples of geographic sinks in the Decision Area are the Wah Wah Hardpan, Little Salt Lake, and Quichapa Lake. The Pine Valley Hardpan and Sevier Lake lie just outside the Decision Area boundaries. Major rivers and streams are discussed in the Riparian and Wetlands Resources section of this AMS.

Indicators

There are three general indicators used for discussing the condition of water resources in the Decision Area: (1) the quantity of water available for beneficial uses, (2) water quality, which describes its suitability for beneficial uses, and (3) overall stability of the stream and riparian system.

Water Quantity

Water quantity has been a topic of dispute to one degree or another, primarily due to scarcity, since European settlement in the Decision Area. Until recently, water quantity issues in the Planning Area involved private parties and lands, primarily in relation to over-pumping groundwater to agricultural fields in the Enterprise, Cedar City, and Milford areas. In the late 1990s and early 2000s, Circle Four Farms acquired large quantities of agricultural water rights and put them to use in hog production, leading to discussions of impacts to groundwater quantity and quality. Currently, there are 98,950 acre-feet per year (afy) being considered for groundwater withdrawals from Snake Valley, Nevada, and Pine and Wah Wah valleys in Utah (see Table 2-29) from proposals by the Southern Nevada Water Authority (SNWA), Central Iron County Water Conservancy District (CICWCD), and Beaver County. Approximately 63,950 afy would come directly from the Decision Area if the applications were approved as submitted.

Water quantity is discussed in general terms for most of the Decision Area where there are not issues, but in more detail for the three sub-basins included in Table 2-28 that are in the Decision Area. The BLM has little control over water withdrawals in the region because much of the authority rests with the State Engineers in accordance with Utah and Nevada water laws. The BLM has numerous water rights across the Decision Area and uses the public process, as prescribed by state water laws to protect its use of those water rights.

Table 2-29. Proposed Underground Water Withdrawals

Applicant	Proposed Withdrawals by Hydrologic Unit (acre-feet per year)			Status of Application
	Hamlin-Snake Valleys, UT and NV	Pine Valley, UT	Sevier Lake, UT (Wah Wah Valley)	
SNWA	35,000	-	-	35,000 is the amount proposed in the draft interstate agreement*
CICWCD	10,000	15,000	12,000	State Engineer decision pending for Pine and Wah Wah valleys. Hamlin-Snake Valley applications are pending approval of draft interstate agreement.
Beaver County	6,400	13,900	6,650	Protest hearing pending for Pine and Wah Wah valleys. Hamlin-Snake Valley applications are pending approval of draft interstate agreement.
Totals	51,400	28,900	18,650	

Personal communication with Penny Woods, BLM project lead for SNWA pumping and distribution project.

In addition to the groundwater proposals listed in Table 2-29, in the Decision Area there are proposals for projects that are potentially high water users, such as solar energy farms and potassium mining and milling operations.

Water Quality

Water quality information for the Decision Area is largely available through the Division of Water Quality Monitoring Program. Two waters in the Decision Area – the Beaver River (including Minersville Reservoir) and its tributaries from Minersville City to its headwaters and Pinto Creek and its tributaries from New Castle Reservoir to its headwaters – appear on the State of Utah 303(d) list of impaired waters. Total Maximum Daily Load (TMDL) reports have been prepared for these two waters and those reports include water quality data.

Water quality data are also available for Little, Coal, Parowan, Summit, Braffits, and Right Hand creeks, which are listed as “High Quality Waters, Category 2”. There are other water quality data for streams and springs of lesser classification throughout the Decision Area, although that data can be intermittent. Sampling of these other streams and springs has been primarily issue driven, and data collection has been much less consistent than for those waters included in the state’s water quality monitoring program. Table 2-30 lists the Decision Area’s 303(d) and high-quality waters and their classifications

Waters of Utah are grouped into classes to protect them from controllable pollution (Utah Division of Water Quality, 2010). The beneficial uses designated for each class present in the Decision Area are described as follows:

- **Class 2B** is protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include wading, hunting, and fishing.
- **Class 3A** is protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chains.
- **Class 3D** is protected for water fowl, shore birds, and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chains.
- **Class 4** is protected for agricultural uses, including irrigation of crops and stock watering.

Table 2-30. Water Quality Classifications of Important Waters

Waterbody	Class			
	2B	3A	3D	4
Beaver River	2B	3A		4
Little Creek	2B	3A		4
Pinto Creek	2B	3A		4
Coal Creek	2B	3A		4
Parowan Creek	2B	3A		4
Summit Creek	2B	3A		4
Braffits Creek	2B	3A		4
Right Hand Creek	2B	3A		4
Minersville Reservoir	2B	3A	3D	4
New Castle Reservoir	2B	3A		4

All other waters in the Decision Area not specifically classified are presumptively classified as 2B and 3D.

Overall Stability of Stream and Riparian Systems

PFC is the primary qualitative method for assessing the condition of riparian and wetland areas in the Decision Area. The PFC method is discussed in detail in the Riparian and Wetlands Resources section of this document. Where water quality data are lacking, PFC data are in assessments, such as those for grazing permit renewal, as an indicator of water quantity and quality.

Current Condition

Groundwater

In general, groundwater in the Planning Area resides primarily in two main aquifers, Quaternary – Tertiary basin fill and, at greater depths, in Paleozoic carbonate rocks. Storage and transport of groundwater occurs in intergranular pore space in the basin-fill aquifer and in solution-widened joints, faults, and bedding planes in the carbonate bedrock aquifer (Kirby and Hurlow, 2005).

The ability of these aquifers to provide for current and increasing demands for water from public lands in the Planning Area is suspect. Unpublished reports by the Utah Division of Water Rights indicate that groundwater pumping rates are exceeding recharge rates in the Enterprise/Beryl, Milford, and Cedar valleys (personal communication with State Engineer's Southern Regional Office, 2011). The Utah Geologic Survey indicates that groundwater mining of the Cedar Valley aquifer is occurring and that underground water levels have declined at a rate of 3 to 4 feet per year since 2000, resulting in surface fissures (UGS, 2010).

Kirby and Hurlow concluded that SNWA-proposed wells in White Pine County, Nevada, in the Hamlin-Snake Valley sub-basin will likely adversely affect groundwater conditions in Utah. Further, they conclude that the proposed pumping could change or reverse groundwater flow patterns for much of the east-central Great Basin in Utah and Nevada. The effects could eventually propagate eastward and impact discharge at important regional springs in Wah Wah Valley (in the Decision Area) and Tule Valley (Kirby and Hurlow, 2005).

In the Pine Valley sub-basin, groundwater recharge from precipitation averages approximately 21,000 afy. Discharges are approximately 21,000 afy, resulting in a natural balance between recharge and discharge. Discharge is estimated at 650 afy by springs, 940 afy by seepage to streams, 5,500 afy by evapotranspiration, less than 5 afy by pumping from wells, and 14,000 afy (including approximately 3,000 afy of subsurface flows to the Wah Wah Valley sub-basin) that is assumed to be discharged by subsurface outflow (Stephens, 1976). CICWCD and Beaver County applications for withdrawals of 28,900 afy from Pine Valley appear to be excessive in light of the Stephens (1976) findings; this is part of the reason the BLM and others have protested the applications.

In Wah Wah Valley (Sevier sub-basin), groundwater recharge from precipitation and subsurface inflow is estimated at 10,000 afy. Approximately 7,000 afy (or 2.5 percent of the total precipitation) recharges the groundwater reservoir. An estimated 3,000 afy inflows from Pine Valley. Discharge is estimated at 800 afy by springs and 600 afy by evaporation at Wah Wah Spring. Recharge to and discharge from the groundwater system are assumed to be equal over a long period because there are no known changes of storage in the system. Therefore, the difference between the totals for recharge and discharge represents subsurface outflow from the drainage basin (Stephens, 1974). CICWCD and Beaver County applications for withdrawals of 18,650 afy from Wah Wah Valley appear to be excessive in light of the Stephens (1974) findings; this is part of the reason the BLM and others have protested the applications.

Surface Water

A stream is a general term for a body of flowing water. In hydrology, the term is generally applied to water flowing in a natural channel as distinct from a canal. Streams in natural channels are classified as being perennial, intermittent or seasonal, or ephemeral (see Glossary). Important rivers and streams in the Planning Area are associated with runoff from the adjacent Fishlake and Dixie National Forests. Although there are several rivers and streams, the actual mileage across public lands is relatively low (see the Riparian and Wetlands Resource section for acres and miles). The important rivers and streams, from north to south, are Indian Creek, the Beaver River, South Creek, Red Creek, Little Creek, Parowan Creek, Summit Creek, Coal Creek, and Kanarra Creek. There are also numerous smaller streams that drain from Forest System lands and from BLM-administered lands in mountain ranges on the west side of the Planning Area. Most human use of the water from these rivers and streams is for agricultural purposes. Other beneficial uses are instream (recreation and fish habitat), culinary, and a small amount of hydroelectric power generation at Parowan City.

There are numerous small springs widely scattered across the Planning Area and generally located on valley margins or mountain blocks. The valley and valley margin springs are closely associated with groundwater supplies, while the mountain block springs are generally from isolated (or perched) water supplies. Springs are generally categorized as being lotic (flowing) or lentic (in which water remains in place). Small streams can be associated with lotic springs. These small springs and seeps are extremely important for their riparian values, as wildlife habitat, and as drinking water for domestic livestock, wildlife, and wild horses. Many of these springs have associated developments. The developments generally consist of a spring development where water is captured and piped to outlying drinkers or troughs. When needed, the spring developments are generally protected from livestock and wild horse trampling by construction of exclosures, which are either of post and pole or post and wire construction. A substantial portion of domestic livestock grazing in the Planning Area is made possible by small spring developments.

Streams and springs are highly influenced by the amount of precipitation received in this very arid Planning Area, and conditions can vary considerably. PFC is the primary means of determining the current hydrologic condition of surface waters. For a full discussion of PFC, see the Riparian and Wetlands Resources section of this AMS.

Public lands serve as municipal watersheds for all communities in the Planning Area. These watersheds are particularly sensitive and of high public interest to the towns closest to the public lands, including Beaver, Paragonah, Parowan, Summit, Cedar City, and Kanarrville, because actions on these watersheds are likely to affect such factors as water quality, erosion rates, and the potential for geologic slumping. Towns such as Milford, Minersville, Modena, and Enterprise are less likely to be directly affected by actions on public lands because either the public land mass is small or the town is farther from the public lands.

Water Rights

In Utah, water is public property. The State Engineer is appointed by the Governor with consent of the Senate to make and enforce rules on behalf of the public concerning water rights. Management of BLM claimed water rights is subject to water laws as defined by the Utah Legislature. The State of Utah recognizes traditional beneficial uses such as irrigation, domestic, stock watering, industrial, and mining, but also recognizes the public benefit of maintaining sufficient flows for fish, wildlife, and recreation. Rights for fish and wildlife are typically granted only to state game management agencies. Riparian values in and of themselves are not considered a beneficial use in Utah.

In the Decision Area, the BLM owns water rights for all known underground water wells, livestock reservoirs, springs, and streams on public lands. Occasionally an issue will arise concerning water during which it is discovered that a public land water source has no BLM water right associated with it. When this occurs, if the area is open to appropriation, the BLM will file a diligence claim. Where an application is more likely to occur in a closed basin, the change-in-place-of-use application process is used to spread an existing right to the unclaimed water source. The BLM actively monitors public notices required by Utah law for new appropriations or any changes that could affect the public lands. If an application could cause adverse impacts, the BLM participates in the public process that allows for protests, hearings, and appeals to protect its water rights.

The State Engineer has divided the state and the Planning Area into what are referred to as drainage basins or water right areas, similar to, but not the same as the HUC 4 watersheds

previously discussed (UDW, 2011). Table 2-31 identifies whether the Planning Area's major drainage basins are open to applications for water rights:

Table 2-31. Status of Major Water Rights Drainage Basins

HUC 4 Name	Utah Drainage Basin Name (Number)	Status
Hamlin-Snake Valley	Hamlin Valley (19)	Open for small applications
Sevier Lake	Wah Wah Valley (69)	Open for small applications
Pine Valley	Pine Valley (14)	Open for small applications
Beaver Bottoms and Upper Beaver	Beaver Valley (77)	Closed
Beaver Bottoms and Upper Beaver	Escalante/Milford Area (71)	Open north of Milford, otherwise closed
Escalante Desert	Escalante/Beryl Area (71)	Closed
Escalante Desert	Escalante/Enterprise Area (71)	Closed
Escalante Desert	Escalante Valley (71)	Open for small applications
Escalante Desert	Cedar Valley (73)	Closed
Escalante Desert	Parowan Valley (75)	Closed

Water Quality

As previously discussed in the Indicators section above, the Decision Area contains two water bodies listed on the UDEQ list of impaired waters – the Beaver River Watershed and New Castle Reservoir. TMDL reports have been prepared for each of these. The TMDL is the amount of loading capacity of all pollutants allowed to be carried by the stream during the course of a day and not exceed state water quality standards. The UDEQ Division of Water Quality (UDWQ) typically develops TMDLs and submits them to the EPA to act on and approve. TMDLs include implementation plans, which are generally implemented among various federal, state, and local governments and private cooperators.

Beaver River Watershed

The TMDL for the Beaver River Watershed Project is in the published Beaver River Watershed Coordinated Resource Management Plan and Restoration Action Strategy (BSCD, 2001). The TMDL for the Beaver River was approved in 2000, with the defined target of 0.05 micrograms per liter (mg/L) concentration for total phosphorus in the stream. The 303(d) impaired use is Class 3A, which provides protection for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chains. Water clarity and algal production and their impact on recreation are also concerns. Pollutants of concern are total phosphorus and dissolved oxygen. Other parameters of concern are excessive blue green algae, riparian habitat alteration, and excessive temperature. Sources of impairment (for all lands in the watershed) are concluded to originate from agricultural activities, urban runoff, summer home development, and recreational activities. The Beaver River and Minersville Reservoir meet standards for Class 2B (secondary contact recreation), 3D (e.g., waterfowl and shore birds) and 4 (agricultural uses, including irrigation and stock watering).

The Beaver River Watershed Steering Committee adopted implementation goals for the watershed. While many of the goals are not germane to public lands in the Decision Area, two goals are: (1) restore and protect riparian corridors by streambank stabilization and habitat improvement and (2) increase vegetative cover and diversity and enhance soil stability for rangelands.

To date, a number of cooperative projects have been completed on private and federal lands. The focus of projects using funds from Section 319 of the Clean Water Act was primarily for control of animal wastes from feedlots and dairies on private lands. However, the following projects, which should help to meet the two stated goals for public lands, have been completed in the watershed:

- Birch Creek and South Creek restoration projects
- Grazing permit renewal (including scheduled rotational grazing) on more than 95 percent of the public land area
- South Beaver vegetation enhancement project
- Nevershine Stewardship vegetation project
- Greenville Bench vegetation enhancement projects
- Milford Flat Emergency Fire Stabilization and Rehabilitation (Cherry Creek and Cunningham Wash drainages)

New Castle Reservoir

The UDWQ completed a TDML report for New Castle Reservoir and the EPA approved the report on August 22, 2008 (UDWQ, 2008). Newcastle Reservoir exceeds state standards for low dissolved oxygen and high total phosphorous. It should be noted that dissolved oxygen is not a pollutant, *per se*, but rather is an indicator of fishery health. High levels of other pollutants, such as total phosphorous, contribute to poor dissolved oxygen.

The beneficial use of cold water fisheries (3A) is partially impaired. The reservoir met criteria for secondary contact recreation (2B) and agricultural water supply (4). Pinto Creek and Little Pinto Creek are the principle drainages feeding the reservoir. The headwaters of the two drainages are primarily on the Dixie National Forest, and both course through private lands.

There are numerous potential nonpoint sources of pollution within the New Castle Reservoir watershed. Substantial sources of nutrient loading include:

- Cattle in riparian areas and stream channels
- Forest land management
- Rangeland management
- Agricultural land management sources
- Stormwater runoff from rural subdivision
- Onsite wastewater systems (septic systems)
- Internal reservoir sources
- Miscellaneous sources (e.g., roads and stream erosion)
- Atmospheric sources
- Natural background sources

To date, the following projects have been completed on public lands within the watershed:

- Grazing permit renewal (including planned rotational grazing) on all grazing allotments
- New Castle Hazardous Fuels Reduction Project

Trends

Water Quantity

Over the last century or more, the trend has been for ever-increasing water use in the western United States. Reservoirs such as Minersville and New Castle store water that would ordinarily run off in spring to make it available for use during dry summer months. Many streams, such as Coal Creek and Summit Creek, are not confined in reservoirs, and demand for water from these during spring and summer months is high enough that it is all diverted. Numerous small springs across the Decision Area express themselves as “wet weather seeps” that tend to dry up seasonally as summer progresses. These will often reappear in late summer and fall as monsoonal precipitation occurs. In agricultural areas, such as Parowan Valley, numerous artesian, or “flowing” wells, have gone dry over the years as groundwater pumping increased. Likewise, springs such as Rush Lake Spring and Needle Point Spring (which is just outside the Decision Area) have gone dry as groundwater pumping increased.

The standard for riparian management is to maintain or improve surface waters and associated riparian vegetation to PFC. The CCFO process for renewing grazing permits has led to a complete analysis of riparian areas in the Decision Area and addresses animal impacts to riparian systems. The result of the grazing permit renewal process has been the implementation or planned implementation of a variety of management actions, including planned grazing rotations, short-duration grazing, season of use, and grazing exclosures. As riparian systems improve, water quantity is expected to improve as a result of such factors as increased vegetative cover and deepening of stream channels. These trends are expected to occur over much of the Decision Area.

Many irrigation wells have had to be deepened or redrilled in agricultural valleys such as Cedar, Parowan, Beryl/New Castle, and Milford because recharge of the aquifer in these valleys or sub-basins is not keeping up with discharge. Most of the BLM underground water wells in the Decision Area are distanced from agricultural uses such that agricultural pumping has not yet affected them to a great degree. As pumping continues and as additional demands are placed on the aquifers, the extent of the effects remains to be seen. Based on the impacts to private wells in and close to agricultural pumping areas, it is likely that the trend for BLM water rights will be a deepening of the water table.

Water Quality

303(d) Waters - Beaver River

The Beaver River Watershed Project Final Report of non-point source pollution (BSCD, 2009), discloses that since the TMDL report was completed, there is no year in which the percentage of water samples exceeding the total phosphorous pollution indicator value is below 25 percent and that total phosphorous remains a problem. The report further indicates that while there has been a decline in the average annual concentration levels of total phosphorous, the concentration has never been less than the pollution indicator of 0.05 mg/L. Therefore, total phosphorous concentrations have been static, in spite of numerous projects implemented in the watershed. Positive trends for other indicators, such as riparian greenline and channel morphology, were observed.

303(d) Waters - New Castle Reservoir

Water quality data collection in the New Castle Reservoir continues. However, since the TMDL was approved only in 2008, no reports have been prepared that would address trends in water quality (UDWQ, 2008).

Except for the two TMDL areas, water quality data is generally lacking across the Planning Area. Baseline data has been collected sporadically on non-TMDL reaches, so that trends could be determined if the resources were available to collect followup data. There is an ongoing effort to improve riparian areas throughout the Decision Area. The Utah BLM 2005 Riparian Policy (U.S. BLM, 2005a) provides guidance that riparian areas will be improved at every opportunity and provides protective measures such as buffering riparian systems from development. It is expected that as grazing management systems are implemented, wild horses are managed more effectively, and riparian exclosures are constructed and maintained, many riparian areas across the Planning Area would move toward PFC. As riparian areas improve, streambanks become more vegetated and stream channels tend to widen and deepen. On the smaller streams and springs common to the Decision Area, increased vegetation and narrower channels help provide cooler water temperatures due to shading and decreased surface exposure to sunlight. As more riparian acres and miles improve, other basic water quality parameters, such as total dissolved solids, sediments, and certain bacteria, such as *E. coli* are expected to decrease.

Forecast

Water Quantity

The demand for water will continue. Supplies will remain relatively stable, assuming there is no substantial climate change over the life of the new RMP. As human populations in the Decision Area change, groundwater will become an increasingly important commodity. State Engineers in Nevada and Utah will play an increasingly important role in ensuring groundwater resources are not overcommitted.

Regarding climate change, the forecast is for an increase in precipitation, which could benefit smaller springs and seeps that tend to be more seasonally affected by added moisture. Annual precipitation has increased from 6 to 16 percent since the middle of last century. This has been reflected in increases in streamflow across the Great Basin region, especially in winter and spring (Baldwin et al., 2003).

Projected warming for the West ranges from about 2 to 5 °C (35 to 41 °F) over the next century (Cubashi et al., 2001). A reasonable scenario for western stream flows is change in the current seasonal proportionality of flows: increased winter flow, reduced and earlier spring peaks, and reduced summer and fall flows. The change in absolute flows will depend on the actual increase in precipitation in relation to the degree of warming and its effects on evapotranspiration (Chambers, 2008).

Water Quality

Water quality on the two 303(d) waters is expected to improve gradually over time as there is more emphasis on upstream management and stormwater runoff. Total phosphorous concentrations in the Beaver River are thought to have been kept static partly due to low flows in the river system during drought years. If low flows continue, concentrations of total phosphorous will likely remain high. Conversely, if flows increase, concentrations of total phosphorous will become less.

Otherwise, water quality throughout the Decision Area will continue to be affected by roads, livestock, wild horses, and development. Implementation of the BLM Utah riparian policy; Rangeland Health Standards and Guidelines, stream protection buffers, and site-specific project mitigations should lead to improvement in riparian habitats and water quality.

Key Features

There are several key features related to water in the Decision Area. The first is the concept of watersheds, with the HUC 4 and subdivisions thereof being important from the standpoint of water rights and water quantity. Water quality is also an important key feature of water in the Decision Area.

The BLM needs to continue to diligently protect groundwater and surface water from proposals by other users that could affect those waters. Monitoring surface water and groundwater, perhaps in partnership with other interested agencies and the public, will be essential in the future to ensure overallocations of water do not affect BLM valid existing water rights. At present, the Pine, Wah Wah, and Hamlin-Snake valleys are of greatest concern.

Water quality is particularly important in relation to 303(d) listed waters, currently Minersville Reservoir/Beaver River and New Castle Reservoir. No actions should be undertaken on public lands within these watersheds that would further impact the ability of the watershed to produce clean water. The remainder of the Decision Area should likewise not be affected by BLM actions. Issue-driven water quality monitoring (chemical or biological) should be performed as necessary in partnership with the UDWQ.

Wild Horses

The health, nutrition, and general well being of wild horse herds are closely monitored by multiple public organizations for a variety of purposes and reasons. These groups present unique opportunities for cooperative and collaborative partnerships, and for controversy. Such groups in Utah have provided monitoring assistance, publicity for the program via training demonstrations and wild horse and burro shows, development and maintenance of wild horse projects, orphan foal adoptions, volunteers to assist in compliance checks, and the offer of pasture for surplus or unadoptable animals. Recently, there has also been controversy about the management and management practices of the wild horses and burros throughout Utah and the Nation.

Indicators

Wild horse indicators are primarily in the form of numbers of animals and amount of forage utilized. Horses are one of the least selective grazers in western North America. As the population of wild horses in an area increases, the horses will wander outside their management areas. Population inventories and utilization outside the management areas normally indicate that populations are over the Appropriate Management Levels (AML). In some cases, the movement of wild horses outside their Wild Horse Herd Management Area (HMA) allows for interchange of horses and genetic mix. In other cases, the horses impact resources outside any HMA.

Fewer plant species can remain ungrazed in areas occupied by wild horses compared to areas occupied by cattle and other ungulates. Because of this non-selectivity and use of a lower quality diet, horses must consume 20 to 65 percent more forage than cattle per unit of body weight. In addition, horses physically are able to remove vegetation closer to the ground, sometimes with adverse effects. Wild horses can access areas with steep slopes and rough terrain, competing with wildlife for forage in areas that cattle cannot access.

Current Condition

Wild horse population inventories were performed in the Planning Area from 1971 to 1974, due to the passage of the Wild Free-Roaming Horse and Burro Act (Public Law 92-195) in 1971. These inventories found 220 adult wild horses in 10 areas; these areas were designated as Herd Areas (HA). Through the land use planning process, areas in the HAs were designated for active management of wild horses. These areas, called HMAs, could not be larger than the HA unless justification was given. Some of the HMA boundaries are manmade (fences) or natural (e.g., cliffs and canyons), but most were just lines on a map that do not match any restrictive boundary for the wild horses and allow unrestricted regular movement outside the HMAs. The Sulphur and Frisco HMAs extend north into Millard County, within the Fillmore Field Office boundary, but the CCFO manages the areas. The North Hills HMA extends slightly into Washington County, but the CCFO manages the area.

Public adoptions and euthanasia have been the two legal methods of dealing with surplus gathered animals since the horse and burro adoption program began in 1973. Qualified private individuals with the means to properly care for the animals adopt wild horses and burros. The wild horses or burros remain the property of the United States during the adoption period. After 1 year of proper care of the animal, the animal can be titled to the private individual and become the property of that individual. In 2005, the Wild Free-Roaming Horses and Burros Act was amended under Public Law 108-447 (Fiscal Year 2005 Omnibus Appropriation Act) providing for the sale of some of these animals. Congress directed that any excess animal more than 10 years of age, or that has been offered unsuccessfully for adoption at least three times, could be sold. Euthanasia is no longer used for population control and is not likely to be resumed.

Herd population management is critical in balancing herd numbers with forage resources. Wild horses have been shown to be capable of 18 to 25 percent increases in numbers annually. This can result in a doubling of the wild horse population approximately every 3 years. The regular increase in population impacts the condition of the range in the HMAs, which in turn leads to greater competition for resources between wild horses and cattle or wildlife, specifically elk. Populations are currently maintained within AMLs through wild horse gathers and removals when it is determined that there is an excess population of wild horses in an area. These gathers are performed as necessary, with a regular frequency of one every 3 to 4 years. Extenuating circumstances such as drought, high reproduction rates, and poor range condition can alter the frequency of the gathers. The determination of an excess population of wild horses occurs primarily based on visual counts or helicopter population inventories. Coupled with vegetation monitoring and Rangeland Health Standards and Guidelines (see Appendix C) the establishment of the appropriate management level and inventory data would trigger the request for a gather. Because most foals are born during spring, there are no gather operations from March to June.

The maintenance of wild horses within appropriate management levels strives to achieve a thriving natural ecological balance while maintaining a multiple-use relationship and achieving Rangeland Health Standards and Guidelines. During wild horse maintenance or gathers, data are collected regarding herd health and characteristics. These data include genetic blood tests, collection of phenotypic characteristics, body condition, age, recruitment rates, and other herd-specific information. During field monitoring, public notification, or gather operations, sick and lame horses are euthanized for humane purposes.

Monitoring of wild horses includes, but is not limited to, population demographics (age structure/sex ratio), herd characteristics (e.g., color/size/type), reproduction and survival rates,

herd health (e.g., parasite loading and physical condition), herd history and genetic profile (blood and hair sampling), condition class (Henneke System), and immunocontraception data, if applicable.

The current estimated wild horse population in the Planning Area is approximately 769 horses in 10 HMAs. Some herds currently exceed the level at which available forage and water that can support the herd long term. Herd recruitment numbers, or population increase, greatly exceeds the numbers of horses being adopted or sold.

The 10 HMAs encompass approximately 605,000 acres of BLM-administered lands in the Planning Area, or approximately 29 percent of the entire Planning Area. The smallest of the HMAs is 32,000 acres; the largest is nearly 230,000 acres. The 10 HMAs occur within 40 livestock grazing allotments (see Appendix D). There are no wild horse ranges designated in the Planning Area. The current established AMLs range from 309 to 598 animals. Table 2-32 lists the acreages and AML for each HMA. These current AMLs have been established through a series of actions over the past 28 years.

Table 2-32. Cedar City Field Office Wild Horse Herd Areas

Herd Area Name	Herd Management Area			Acres Transferred from BLM	Horse Low AML	Horse High AML	Year AML Was Established	Estimated Horse Population
	Herd Code	BLM Acres	Other Acres					
Bible Spring (1)	UT0440	53,369	4,521	0	30	60	2005	60
Blawn Wash	UT0441	35,744	27,043	20,861	0	0	2005	54
Chloride Canyon	UT0442	42,651	21,133	0	15	30	1986	47
Choke Cherry	UT0443	38,995	8,532	0	0	30	2006	30
Four Mile (1)	UT0444	50,841	7,869	0	30	60	2005	36
Frisco	UT0445	46,643	11,360	0	12	60	1983	140
Mount Elinore	UT0446	34,047	4,128	0	15	25	2006	15
North Hills	UT0447	40,753	9,178	0	22	33	1983	33
Sulphur (2)	UT0448	230,182	35,469	0	165	250	1987	267
Tilly Creek (1)	UT0449	32,010	3,953	0	20	50	2005	48
TOTAL		605,235	133,186	20,861	309	598	1983	730

1. HAs managed in Bible Springs Complex include Bible Springs, Four Mile, and Tilly Creek.

2. Sulphur AML is 135 to 180 adult horses (those more than 2 years of age)

The Pinyon MFP includes the decisions to manage nine wild horse HMAs. Seven of the HMAs – Blawn Wash, Bible Springs, Four Mile, Tilly Creek, Chokecherry, Frisco, and Mt. Elinore – are to be managed at or below 1982 inventory levels, but not less than 1971 levels. Two other HMAs – Sulphur and North Hills – are specifically addressed in the Pinyon MFP. The CBGA RMP addresses the Chloride Canyon HMAP.

Blawn Wash

In 2001, a land exchange between the BLM and the State of Utah School and Institutional Trust Lands Administration (SITLA) placed the most critical wild horse habitat of the Blawn Wash HMA into SITLA administration. SITLA lands now comprise 43 percent of the Blawn Wash HMA, which produces an estimated 70 percent of the forage in the HMA. The forage allocations in this area are now controlled by the SITLA. For this reason, it was determined that the Blawn Wash HMA would be managed as an HA and an effort would be made to remove horses from this area.

Bible Springs, Four Mile, and Tilly Creek

In April of 2005, the AMLs on the Blawn Wash, Bible Springs, Four Mile, and Tilly Creek HMAs were adjusted to maintain an ecological balance based on changes in vegetative conditions and land tenure (U.S. BLM, 2004b). The Environmental Assessment (EA) also stated that when a new LUP was created, the three latter HMAs could be combined into one HMA, and the Blawn Wash HMA changed to an HA. All wild horses would be removed from the Blawn Wash HMA and would not be managed for within that area. The Bible Springs, Four Mile, and Tilly Creek HMAs would be managed as the Bible Springs Complex until completion of the new LUP.

North Hills

The AML for the North Hills HMA and the USFS Wild Horse Territory together was established as a population range of 40 to 60 wild horses in the Pinyon MFP and the Dixie National Forest Land and Resource Management Plan. The Herd Management Plan (HMP) associated with this HMA estimated that the wild horses use the BLM lands approximately 55 percent of the time and the USFS lands approximately 45 percent of the time. Field personnel from the USFS and the BLM have observed this estimate to be accurate. The estimated population and AMLs are separated at these percentages for reporting purposes. Based on the approximate time the wild horses spend on the BLM and the USFS lands, the AML for BLM-administered lands would be 22 to 33 head and the AML for USFS-administered lands would be 18 to 27 head. The AML upper limit is the maximum number of animals that can graze based on detailed analysis of the available water, forage, and other multiple uses. The HMP established site-specific management and monitoring objectives for the herd and its habitat.

Sulphur

The Pinyon MFP established the population level for horses in the Sulphur HMA as not less than 135 and not more than 180 head. In April of 1987, the Warm Springs RMP (Fillmore Field Office RMP) incorporated these same numbers. Approximately 76 percent of the horses in this HMA are in the CCFO (Sulphur South Herd) area and 24 percent are in the Fillmore Field Office area (Sulphur North Herd). The Sulphur Wild Horse Herd Management Area Plan further defined the AML as a population “which does not fall below 135 head or exceed 180 head of adult horses defined as those over two years of age.” If wild horses of all ages are included in the AML number, the AML is 165 to 250 head.

After the 1995 gather of the Sulphur HMA, blood samples were taken from 118 horses from the northern part of the Sulphur HMA as a baseline data set to measure genetic drift. The report from these samples indicates that the Sulphur herd has a clear Spanish component in its ancestry. Genetic variation within the herd is high enough that there is no immediate genetic concern for this herd.

In 2006, blood samples were taken from 68 horses and compared to the samples taken in 1995. Overall similarity of the Sulphur herds to domestic breeds was about average for feral herds. Highest mean genetic similarity of both Sulphur herds was with Light Racing and Riding breeds,

followed by the Oriental and Arabian breeds for Sulphur South and North American Gaited breeds for Sulphur North. Previous work using blood-typing markers clearly placed the Sulphur herd in with the Spanish breeds group. It is not clear if the horses tested in 2006 represent the same group as those tested in 1997.

Genetic variability of this herd is relatively high and appears to have been stable over a period of approximately 10 years. The values related to allelic diversity are near the average, while heterozygosity is high, which could represent a demographic effect such as a rapid change in population size or population mixing. Genetic similarity results suggest a herd with mixed ancestry but not showing close relationship to any particular group.

Current variability levels are high enough that no action is needed at this point; however, there is a fairly high percentage of variation at risk of loss, so it is important that the population size be maintained at a level required to maintain genetic diversity. This generally requires a population size of 120 or more animals to minimize the rate of variability loss. This depends somewhat on whether there is a possibility of mixing with other populations exists.

In 2008, hair samples from 93 horses (53 from the north and 40 from the south) were taken to be compared to the 1995 and 2006 samples. The BLM has not yet received the report.

In December of 2010, a Gather Treat and Release was conducted on the Sulphur HMA. The gather was performed in an attempt to slow population growth by treating captured mares with fertility control vaccine Porcine Zona Pellucida (PZP-22 or PZP). Ninety head of wild horses were gathered and 30 head were removed. The other 60 head were released back into the HMA with the 38 mares being treated with PZP. This is a management practice being used more and is planned for use on horses in other HMAs in the future.

Chokecherry and Frisco

Neither of these HMAs have had an adjustment in AML since the Pinyon MFP was issued. Neither has a completed HMAP nor are there any particular issues associated with these HMAs.

Chloride

The tenth HMA in the CCFO Planning Area is Chloride, which is addressed in the CBGA RMP. Management actions include keeping the number of horses between 15 and 30 head, monitoring horses, monitoring habitat, and preparing an HMAP. The HMAP is scheduled for completion in fiscal year 2011.

Thirty-four wild horses were removed from the Chloride HMA the summer of 1991. This was the first and only removal on record since passage of the Wild Free Roaming Horse and Burro Act of 1971. Following this capture, it was found that a number of the animals were nearly or completely blind and had well-developed cataracts. Several dwarf horses also were captured; none were blind. A number of local ideas and opinions were formulated about why these wild horses were blind. One verbal comment received indicated that a domestic grey stud was turned loose into the Chloride HMA. The comment stated that the stud eventually went blind, therefore, the stud introduced the suspected genetic blindness trait. In an effort to get a more scientific explanation for this problem, 12 blood samples were taken from horses captured in HMA in 1991 and sent to the University of Kentucky, Equine Blood Typing Research Laboratory, for analysis and study. The conclusion from Dr. Gus Cothran, as a result of this analysis, supported the hypothesis that the blindness and dwarfism are the result of inbreeding.

In 1995, private veterinarians consulted by the BLM suggested that a recessive gene, which needs to be present in both parents, could be the underlying problem in the Chloride HMA. This is apparently brought forward by the inbreeding of closely related wild horses. By removing one of the breeding components of the population, the inbreeding problem would be eliminated.

From 1995 to 1998, the BLM attempted to capture and evaluate all wild horses in the Chloride HMA, approximately 70 to 100 animals. Not all the animals were captured and some wild horses from other HMAs were brought into the Chloride HMA to maintain a base management-level population of approximately 30 horses as outlined in the CBGA RMP. Animals introduced into the area came from other HMAs that have similar habitat. By using this approach, it was anticipated that the quality and future adoptability of wild horses in the HMA would improve. Since 1998, the only horses gathered from the HMA were removed from private property. The private land owners requested in writing that the BLM remove the wild horses from their property. This has kept the population in the HMA within 30 head of the upper AML on the HMA.

The Chloride HMA currently does not have any permanent water sources on BLM-administered lands. All permanent water sources are on private and state land within and adjacent to the HMA. This is why wild horses must be regularly gathered off private lands in and near the HMA.

Trends

Population trends continue to move upward because annual reproduction and recruitment considerably outnumber adoptions. Population reductions are limited by the fact that herd recruitment exceeds the legal methods and mechanisms for disposal. Off the range, there are 41,500 other wild horses and burros that are fed and cared for at short-term corrals and long-term pastures. As of February 22, 2011, there were approximately 13,900 in corrals and 27,600 in midwestern pastures. The cost to care for these horses is increasing. With the present high numbers on the range, the potential for adverse impacts is extremely high.

In the fall of 2004, Congress amended the Wild Free Roaming Horse and Burro Act of 1971, which directs the BLM to sell "without limitation" animals that are either more than 10 years old or have been passed over for adoption at least three times. Approximately 8,400 wild horses and burros immediately became eligible for sale. Since 2005, the BLM has sold more than 4,500 horses and burros. The current number of wild horses eligible for sale under this authority is more than it was in 2004, with sales declining each year.

In response to herd population increases, the CCFO has attempted in some areas to slow natural reproduction by inoculating mares with an immunocontraceptive (PZP-22 or PZP) that lasts 22 months. Research continues for the development and testing of an effective multi-year vaccine that could lower herd recruitment rates to a more desirable level. The research recently transitioned to an implementation level that will increase use of PZP from 500 mares in fiscal year 2009 to 2,000 mares in fiscal year 2012.

Constraints and threats to wild horse and burro management include, but are not limited to, the following:

- Competition between energy development and wild horses
- Competition between elk and horses
- Competitive use between livestock (cattle and sheep) and wild horses
- Over population

- Habitat loss
- Illegal chasing, capturing, and harassment of wild horses and burros.
- Range improvements (fences) that restrict the free-roaming nature of wild horses

Forecast

If current management direction continues, wild horse use will regularly occur outside the HAs. Wild horses wander outside the HA boundaries because the boundaries do not match a physical boundary.

The Bible, Four Mile, and Tilly Creek HMAP will continue to be managed as separate HMAs, only connected as a complex when similar management actions are taken. The long-term objective for management of horse numbers would remain at or below 1982 inventory levels, but not less than 1971 levels, in the Frisco, Chokecherry, and Mt. Elinore HMAs until HMAPs are completed for each of these HMAs. The other HMAs in the Pinyon MFP area have had their AMLs adjusted through HMPs and/or other decisions and NEPA actions.

Cooperative management of the North Hills Herd will continue with the Dixie National Forest in accordance with the existing management plan. Horses in this unit will be maintained between 40 and 60 head as specified in the plan.

The Chloride Canyon HMA population numbers continue to be managed between 15 and 30 head, pending completion of an HMAP.

All management of wild horses would continue to require that wild horses are gathered every 1 to 4 years to be removed and/or to be treated with fertility control. Review of handling management practices for wild horses would continue to change as the practices are reviewed and better methods are developed.

Inventory and monitoring studies to more precisely determine the following characteristics of the wild horses and their habitat would continue: (1) accurate population numbers, (2) age and sex ratios, (3) social structure, (4) general physical conformation and condition of animals, (5) colt production, (6) general distribution of animals and seasonal concentrations, (7) all water sources, (8) forage utilization and range trend, and (9) updated herd unit boundaries (LUP amendments).

HMAPs that establish long-term objectives and management actions for the HMAs would continue to be prepared and updated. Priorities for completion and updates to the HMAPs would be determined annually by budgets, workloads, current issues, and other priorities. Policies and regulations would be changed on agency and national levels. The CCFO would follow these policies and regulations in the management of wild horses.

Key Features

- Adjust HA boundaries to natural or manmade boundaries. HAs are limited to areas of the public lands identified as being habitat used by wild horses and burros at the time of the passage of the Wild Horse and Burro Act, as amended (16 U.S.C. 1331-1340). HA boundaries may only be changed when it is determined that the HA boundary does not correctly portray where wild horses and burros were found in 1971

- The three HMAs (Bible, Four Mile, and Tilly Creek) may be combined into one single HMA, and the Blawn Wash HMA changed to a HA. HMAs are established only in HAs, within which wild horses and/or burros can be managed over the long term.
- For HMAs, identify the following:
 - Initial and estimated herd size that could be managed while still preserving and maintaining a thriving natural ecological balance and multiple-use relationships for that area.
 - Guidelines and criteria for adjusting herd size.
 - Where appropriate, the LUP can include decisions removing horses from all or part of an HA. Examples include intermingled and unfenced lands within HAs where private landowners do not want to make them available for wild horse or burro use, or essential habitat components are not available for wild horse or burro use within an HA.

Area-wide restrictions are needed to achieve objectives. For example, if domestic horses in HMAs are not compatible with wild horse management policies, then domestic horse grazing must not be permitted in or adjacent to HMAs if domestic and wild horses are likely to intermingle (Lund Allotment).

Wildland Fire Ecology

Indicators

National and state BLM fire policy requires current and desired resource conditions related to fire management be described in terms of five fire regimes (see Table 2-33) and three condition classes (see Table 2-34). The Healthy Forest Restoration Act (HFRA) adopts this classification system, known as the Fire Regime Condition Class (FRCC), which describes the amount of departure of an area or landscape from historic to present conditions. This departure from the natural state can be a result of changes in one or more ecosystem conditions. This information is used to prioritize areas for treatment.

Table 2-33. Historic Fire Regime Definitions

Historic Fire Regime	Fire Frequency	Severity
I	0 to 35 years	Low to mixed severity with less than 75 percent of the dominant overstory vegetation replaced
II	0 to 35 years	Replacement severity with greater than 75 percent of the dominant overstory vegetation replaced
III	35 to 200 years	Low to mixed severity
IV	35 to 200 years	High severity, stand replacement fire
V	200 or more years	High severity, stand replacement fire

Table 2-34. Fire Regime Condition Class Descriptions

FRCC	Condition Class Description
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FRCC 1 Acres: 435 Less than 1 percent of Decision Area	Fire regimes are within historic timeframes, and the loss of key ecosystem components from the occurrence of fire is low. Areas are considered to be healthy and functioning adequately.
FRCC 2 Acres: 225,910 11 percent of Decision Area	Fire regimes have been moderately altered from their historic time frames 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.
FRCC 3 Acres: 1,877,057 89 percent of Decision Area	Fire regimes have been significantly altered from their historic time frames, and the loss of key ecosystem components is high. Areas are considered to be unhealthy and nonfunctioning.

Current Conditions

Fire History

Table 2-35 shows the statistics for fire occurrence from 2001 to 2010 (10 years) for BLM-administered lands in the CCFO Planning Area. From 2001 to 2010, the annual average for all fire causes is approximately 75 fires and 13,414 acres per year in the Cedar City Interagency Fire Center area. Human-caused fires account for only 7 percent of all fire causes; approximately 93 percent of fires in the Planning Area were caused by lightning. Fires generally occur from May through October.

Table 2-35. Cedar City Field Office Fire Statistics, 2001-2010

Year	Number of Lightning Fire Starts	Number of Human Fire Starts	Acres Burned (Lightning)	Acres Burned (Human)	Total
2001	96	2	293.0	313.0	606
2002	59	5	3,198.0	51.0	3,249
2003	65	2	24.0	.2	24
2004	112	2	4,681.0	.4	4,681
2005	44	1	6,150.0	35.0	6,185
2006	116	8	11,999.0	66.0	12,065
2007	50	13	85,146.0	3,939.0	89,085
2008	62	6	647.0	3.0	650
2009	41	6	5,065.0	32.0	5,097
2010	40	5	408.0	20.0	428
Total	685	50	117,611.0	4,460.0	134,135

Fuels Management

The number of fuels projects is increasing so as to help address vegetation issues in the Decision Area. Projects in the fuels program in the past 5 years have focused on achieving two

goals: (1) reducing fire hazard with an emphasis on wildland-urban interface (WUI) areas and (2) restoring and/or improving FRCC in the Decision Area. These goals are accomplished through interdisciplinary partnerships such as the Utah Watershed Restoration Initiative (UWRI). Together, these partnerships identify priority watersheds to address a variety of interdependent resource issues and improve long-term watershed conservation and restoration. These watersheds are then targeted and prioritized for funding through BLM program dollars, with additional coordination and funding prioritized through the UWRI. Treatment types include prescribed fire and mechanical and chemical treatments. These treatments are completed for a variety of reasons, including fuels reduction, protecting WUI areas, improving wildlife habitat, improving watershed conditions, and improving rangeland resources.

Prescribed Fire Treatments

The prescribed fire program has several large-scale projects ready for implementation, and planning efforts for future projects are being completed. A typical burning season would average two to three broadcast burns ranging from 500 to 5,000 acres and up to 5 pile burns up to 1,000 acres in aggregate for the pile-burning season. All burns thus far have been in FRCC 3 areas and moved each closer to FRCC 1 or FRCC 2 or a combination based on resource objectives and burn success. Most prescribed fire projects in the CCFO Planning Area are closely tied to habitat, watershed, and other natural resource objectives, and hazardous fuels reduction. These projects are almost always followed by seeding/planting and additional vegetation enhancement work.

Non-Fire Fuels Treatments

The CCFO has an aggressive approach to mechanical treatments and has been extremely successful in enhancing resource values and reducing hazardous fuels. Mechanical treatments meet multiple objectives in the Planning Area where WUI and critical winter range for mule deer typically overlap. Also, weather, resource availability, clearing index, and risk are much more manageable with equipment than prescribed fire. Mechanical treatments being used include hand thinning, hand piling, brush crunching, mowing, Dixie harrow, Ely chaining, and mechanical mulching. Seeding is used in conjunction with each treatment where appropriate. Mechanical treatments account for 7,000 to 10,000 acres per year. Chemical treatments have been limited to up to 1,000 acres in aggregate over the last 3 years. However, significant herbicide applications could be planned to curtail cheatgrass, tamarisk, and other undesired species' domination of sites where resource values and hazardous fuel loading are important issues.

Emergency Stabilization and Rehabilitation

There is an active emergency stabilization and rehabilitation (ESR) program in the Decision Area. The size of the ESR program is in proportion to the severity of the wildfire season. Historically, the ESR workload from 2001 to 2010 has been an average of approximately 12,300 acres a year. The numbers of acres treated have ranged from 428 in 2010 to 89,085 in 2007.

Short-term objectives of ESR actions are to determine the need for and to prescribe and implement emergency treatments to minimize threats to life or property, and stabilize/prevent unacceptable degradation to natural and cultural resources resulting from the effects of fire. ES/R guidelines are listed below.

- ESR teams will be formed and a Stabilization Plan will be submitted no later than 7 calendar days after containment of a fire.
- Emergency stabilization actions will be taken within 1 year of containment of the fire.

- Rehabilitation actions must be taken within 3 years of a wildland fire to repair or improve fire-damaged lands unlikely to recover naturally to a management-approved condition.
- ESR actions are aimed primarily at stabilizing burned areas to prevent, to the extent possible, damage to soils via excessive erosion and the resulting long-term loss of significant resource values. Treatments include, but are not limited to, construction of protective fences, construction of water erosion abatement structures, aerial seeding, chaining to cover seed, and drill seeding a mixture of grass and forb species to reestablish ground cover to hold soil in place.
- Over the short term, nonnative species may be seeded in conjunction with native plant materials to promote soil stability and reduce the encroachment of cheatgrass and/or other invasive weed species.
- Livestock will not be permitted to graze until the vegetation has recovered or has been established (this is usually a minimum of two growing seasons).
- Accomplishments of each plan are performance and fiscally evaluated, tracked, and reported in the National Fire Operations and Reporting System for ESR tracking and project implementation.
- Once ESR treatments are completed and monitored over a 3-year period, the project is turned back to the respective field office program for any further restoration.

Fire Management Plan

The Color Country District Fire Management Program covers BLM, USFS, and state lands in the Planning Area, and fires on private land. Fire personnel handle fire management responsibilities such as preparedness, suppression, and extended attack, with dispatching occurring from the Color Country Interagency Dispatch Center in Cedar City, Utah.

The current suppression strategy for the Planning Area calls for Appropriate Management Response (AMR) on all wildland fires in accordance with management objectives and based on current conditions and fire location. Every wildland fire is assigned an AMR to protect firefighters, the public, and values at risk, and to minimize suppression costs. The protection of human life is the single overriding priority, with the other priorities being communities, property and improvements, natural and cultural resource values, human health and safety, and the costs of suppression. AMR can vary from aggressive initial action to monitoring.

The BLM Fire Management Plan (FMP), which the BLM updates periodically, describes fire and fuels management activities in the Planning Area. The FMP provides for firefighter and public safety and includes fire management strategies, tactics, and alternatives based on direction outlined in the RMP. The FMP identifies values to protect and public health issues, describes fuels and restoration projects, and is consistent with resource management objectives. Suppression tactics outlined in the Southern Utah Support Area FMP vary by vegetative type and resource values at risk. Land use management direction from the CBGA RMP and the Pinyon MFP influenced the portion of the FMP that includes lands managed by the CCFO.

Fire Ecology

Fire is an inherent component of ecosystems and historically has played an important role in the promotion of plant succession and the development of plant community character. Control of fires during the last century has changed plant communities and resulted in conditions that can sustain large-scale fires when natural ignition of vegetation occurs.

Fires in the Planning Area are both naturally occurring and used as a management tool. Naturally occurring fires are widely distributed in terms of frequency and severity. During the

10-year period 2001 through 2010, the area has displayed a moderate to high frequency of fires, averaging 75 fires per year and burning an average of 13,414 acres per year.

Wildfire in many of Utah's vegetative communities was historically a regular occurrence that helped define species composition, structure, and productivity (Bradley et al., 1992; Paysen et al., 2000). Therefore, many plants that make up these communities are adapted to withstand wildland fire. Grasslands, sagebrush, mountain shrub, aspen, and mixed conifer are examples of fire-adapted vegetative communities in the Decision Area. Frequent wildland fire is not part of the normal ecology of other vegetative communities. Salt desert shrub and blackbrush are examples of vegetative communities with long fire-return intervals. Fire in these communities is viewed as detrimental because it can take decades to centuries for the vegetation to recover.

The widespread presence of invasive nonnative species has greatly altered the resource character and values across the landscape and could pose an even greater threat in the future. Historic post-fire recovery processes might no longer dominate the recovery and regeneration process due to introduced species. Cheatgrass and some other types of vegetation are known to alter fire-return intervals and can dramatically expand their range after fire. These communities can facilitate expansion of invasive species, have lower biological resource values, and increase fire hazards.

Appendix F describes how fire interacts with different vegetative communities

Fire Management Units

Fire Management Units (FMUs) are specific land management areas defined by fire management objectives, management constraints, topographic features, access, values to protect, political boundaries, and fuel types. The FMUs were created based on similarities of the specific resource objectives identified in the CBGA RMP and the Pinyon MFP.

An interdisciplinary team in the Decision Area developed 10 FMUs that serve to define management objectives, physical characteristics, resource values, and treatment actions necessary to achieve resource management objectives, as identified in the current Cedar City LUPs. These FMUs, which are listed in Table 2-36, have dominant management objectives and preselected fire suppression strategies assigned to accomplish these objectives. Appendix G describes the FMUs.

Trends

See the discussion on fire history above for the overall trend in wildfires in the Planning and Decision Areas, especially Table 2-35, which identifies the number of wildland fires and acres burned in the Decision Area during the last 10 years. From 2001 to 2010, 735 wildland fires have burned approximately 134,135 acres (6 percent) of the Decision Area. From 2001 through 2010, the average annual occurrence of fires in the Decision Area was 75 and fire burned an annual average of 13,414 acres.

Although there has not been a significant increase in the annual number of fire ignitions or acres burned over the past 10 years, there is a potential for more acres to be burned. Fire frequency and fire severity are expected to be higher than historical levels because most of the Planning Area is in FRCC 2 and FRCC 3. Invasion of annual grasses and conifer woodlands into shrub and grassland, and increased live and dead fuel loads within conifer stands are the primary factors for this potential trend.

Forecast

Wildland fire management options for the CCFO typically include AMR; prescribed fire; non-fire fuels treatments, including mechanical, biological, chemical, and biomass removal; post-fire rehabilitation and restoration; and community protection and assistance and rural fire assistance. In an effort to minimize the impact of wildland fire and reduce the spread of invasive and noxious weeds, the CCFO has available the ESR program. Collectively, the fire management program addresses current FRCC and impacts to other resources. It is expected that due to the current fire regime conditions in the Planning Area and factors outside the control of the fire program (e.g., invasive weed control, vegetation management issues, drought, and grazing), FRCC categories would be maintained at or near their current conditions.

Based on prolonged drought conditions and establishment of invasive species, it is anticipated that the potential for uncharacteristic wildfire effects will continue under present management in the lower elevation sagebrush plant communities. It is also anticipated that under continued management, live and dead fuel loadings in forest stands and conifer/juniper encroachment into aspen and higher elevation sagebrush communities will continue, increasing the risk for wildfires with potentially uncharacteristic fire effects. Management actions to reduce fire severity, including green strips, hazardous fuel reductions, ESR, could slow the decline of resources.

Key Features

Key features include WUI areas and special management areas in the FMUs. Special management areas include ACECs, WSAs, WSRs, and communications sites (see Table 2-36). Special status species are addressed in the Fire Management Plan.

Table 2-36. Key Features for Fire Management

FMU	WUI	ACECs	WSAs	WSRs	Communication s Sites
Beaver	Beaver, North Creek, Sulphurdale, Manderfield, Pine Creek	None	None	None	Communications sites, power lines, telephone lines
Escalante Desert	Numerous WUI areas in Cedar Valley and south of Zane	None	None	None	Communications sties, power lines, telephone lines
Hamblin Valley	Sheep Creek cabins, Commissary Creek cabins, South Hamblin Valley, O'Grain Ranch, UDWR cabin at Indian Peak Wildlife Management Area, Arrowhead Pass, Little Pinto Spring	None	None	None	Transmission lines
Mineral-Black	Beaver, Milford, Minersville,	None	None	None	Communications sites, power lines,

FMU	WUI	ACECs	WSAs	WSRs	Communications Sites
Mountain	Adamsville, Greenville, Ranch Canyon, Corral Canyon, Blundell Geothermal Plant				telephone lines
Mountain Home	Loper's Cabin, Cherry Spring, Vance Spring	None	None	None	None identified
Parowan Front/Antelope Range	Paragonah, Parowan, Summit, Cedar City, Kanarrville, Woolsey Ranch, Red Canyon Subdivision	None	None	None	Red Hills, Iron Mountain, Ash Creek, telephone lines, power lines
Pine Valley	Vance Spring, Pots Um Pa	None	None	None	Telephone lines to Desert Range Experiment Station
Wah Wah-Needles	Frisco, Gold Springs, Pyramid Colony, Stateline, South Hamblin, Modena, Uvada, Pine Grove	None	None	None	Frisco, power lines, telephone lines
Wah Wah Valley	Old New House, Wah Wah Ranch	None	None	None	Frisco, other communications sites, power lines, telephone lines

RESOURCE USES

Forestry and Woodland Products

Current Level

Current planning documents for the CCFO Planning Area provide for personal use and some commercial use of woodland products; however, they do not provide for use of timber products from CCFO forests (e.g., mixed conifer, ponderosa pine, and aspen).

The Vegetation section provides acreages of the various woodland and forest types. There are no, or very limited, acres of "commercial" forestland on BLM-administered lands in the Planning Area due to slow growth rates, low stocking levels, and/or limited access. Many of the higher quality forests are included in either WSAs or citizens' proposed wilderness. Many of the more productive forest stands are situated on slopes that exceed 35 percent.

Products derived from woodlands include Christmas trees, firewood, posts, transplants, and pine nuts. These are all demand-driven products, and levels of utilization can vary widely from year to year. Annual utilization averages somewhere between 1,000 and 2,000 cords of fuelwood, 100 and 400 "cedar" posts, 200 and 500 pinyon Christmas trees, and 0 to more than

25,000 pounds of commercial pine nuts. Personal-use pine nuts are collected without permit and therefore cannot be estimated. Pine nuts are not produced every year due to climatic variables, and therefore can be almost absent in successive droughty years or highly abundant in successive moist years. Being a demand-driven program, the forest/woodland products permit program is oriented to providing a service to the public and generally does not address the achievement of land management goals and objectives.

Since 2005, the CCFO has had a “stewardship” program, under which the BLM (nationally) has actively been promoting the utilization of “biomass” and the creation of a biomass industry. The stewardship program was authorized by Congress through September 2013 in the Omnibus Appropriations Bill of 2003 (Public Law 108-7, Section 323). The BLM stewardship program will likely receive permanent reauthorization before then. The program authorized combining previously separate contract instruments (service contracts and product sale contracts) into one contract. It further required that any vegetative removal must be a byproduct of the project goals. Therefore, the stewardship program is to be used to address and strive to achieve land management goals and objectives.

From 2005 through 2010 the CCFO awarded 12 stewardship contracts for land treatments on approximately 1,570 acres with a biomass volume approaching 4,800 tons. Additional contracts are in various stages of planning and approval. Projects address a diverse set of land management objectives including, but not limited to, forest health, pine nut production, wildlife habitat improvement, wildland fuels reduction, livestock grazing, public recreation, and visual resource management.

Table 2-37. Cedar City Field Officer Stewardship Contracts 2005-2010

Fiscal Year	Stewardship Contract Name	Acres	Tons
2005	Atchison 2005	55	110
2006	Atchison 2006	68	204
	Bunting Fuelwood	32	96
	South Creek	38	38
2007	Atchison 2007	78	351
2008	Atchison 2008	126	567
	Atchison Christmas Trees	34	0
	Nevershine	135	270
2009	Atchison 2009	82	370
	Nevershine Hollow MLR	205	615
	Nevershine Hollow ARRA	155	465
2010	Nevershine Hollow ARRA	561	1,683
Totals		1,569	4,769
Annual Averages		262	795

Forecast

Demand for forest and woodland products has been relatively steady to slightly increasing over the long term, and this trend can be expected to continue. Interest in products generated from stewardship contracts has been growing, and where most of these contracts focus on the pinyon-juniper cover type, might depend mostly on the future of the biomass and bio-energy industries. Under current management direction, management of other forest types is limited by the inability to consider commercial timber harvest as a management tool to achieve land management objectives.

Key Features

As discussed in the Vegetation section, many of the Planning Area's forested stands are in poor condition and are ecologically outside their natural range of variability, putting many stands at risk of loss. CCFO forest stands need to receive priority over the next planning cycle for restoration work to sustain these types in a healthy condition at an appropriate level of stocking and with an appropriate species mix.

Many CCFO pinyon-juniper woodlands, as most pinyon-juniper woodlands across the West, have expanded over the past 150 or more years into vegetative types that were once mostly tree free. These stands should generally be managed for other vegetative types, with limited exceptions as determined by site-specific management objectives. Other pinyon-juniper stands are "persistent" woodlands and should be managed as such.

Wood products could be made available for personal and commercial use as by-products of land management treatments from both woodlands and forests.

Lands and Realty

Utility Corridors

Current Levels

Utility corridors are preferred routes that co-locate multiple linear utility ROWs and are generally adjacent to existing highways or county roads. Utilities within these corridors can include gas and water pipelines, electric transmission and distribution powerlines, and communications lines such as telephone or cable. The BLM encourages the placement of new ROWs within designated transportation and utility corridors, to the extent possible. However, factors such as origination, destination, purpose, compatibility, saturation, and Western Electricity Coordinating Council (WECC) reliability standards for existing corridors can prevent or limit the routing of a new line within an existing corridor.

Section 368 of the Energy Policy Act of 2005 (Public Law 109-58, August 8, 2005), directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities corridors on federal land in 11 western states for oil, gas, and hydrogen pipelines and electric transmission and distribution facilities, or energy corridors. Appendix A, Figure 2-6 shows the West-Wide Energy Corridor Programmatic EIS (U.S. BLM, 2009)-designated corridors in the Decision Area. Other existing transportation and utility corridors designated in the CBGA RMP will also be reviewed to determine the need for revisions.

Forecast

Use of utility corridors or the collocation of ROWs has become a more common practice for the BLM. As development in the Decision Area continues, for both energy and increased population related needs, the demand for and use of utility or energy corridors will increase accordingly. Highways and many major county roads in the Decision Area will have some type of utilities adjacent to them, as most already do. As existing corridors become saturated, new corridors will need to be designated.

One challenge facing the BLM, as it pertains to the agency's desire for using and establishing corridors, is the WECC reliability capacity rating standards for transmission. The mission of the North American Electric Reliability Corporation (NERC) is to ensure the reliability of the bulk power system in North America. To achieve that, NERC develops and enforces reliability standards; assesses adequacy annually via 10-year and seasonal forecasts; monitors the bulk power system; evaluates users, owners, and operators for preparedness; and educates, trains, and certifies industry personnel.

The Reliability Management System (RMS) was created as a way to enforce compliance. This contract obligates entities to abide by certain critical reliability standards and to provide the data needed to verify compliance. The contract also imposes sanctions, both monetary and non-monetary according to a set schedule, for violations of reliability criteria.

WECC has stated their concerns regarding the use of common corridors in *Common Corridor System Performance White Paper* (WECC, 2009). According to WECC, placing transmission lines too close to one another can limit transfer capacity of a line. Project developers must comply with the WECC reliability capacity rating system and are finding that siting proposed transmission lines in existing corridors is not feasible to achieve a maximum transfer capacity rating from WECC. To date, the BLM has not established guidance on the issue; however, guidance must be considered in the planning process.

Key Features

Areas with the highest demand potential for utility corridors would include corridors designated by the West-Wide Energy Corridor Programmatic EIS. In addition, existing major roads and as existing trans-regional pipelines and electric transmission powerlines would be areas targeted for development of designated utility corridors.

Communications Sites

Current Levels

The BLM typically issues Communications Use Leases for communications facilities on public lands. The Decision Area currently has 51 authorized communications facilities, as listed in Table 2-38.

Table 2-38. Communications Sites in the Cedar City Field Office Decision Area

AREA NAME	NUMBER OF FACILITIES	LOCATION
Frisco Peak	9	T. 26 S., R. 13 W., secs. 26 & 27
Gillies Hill	7	T. 27 S., R. 7 W., sec. 17
Mineral Mountain/Mineral Range/Milford Repeater	7	T. 26 S., R. 8 W., secs. 19 & 30 T. 26 S., R. 9 W., sec. 27 T. 28 S., R. 9 W., sec. 19 T. 28 S., R. 10 W., sec. 14
Red Hills	6	T. 34 S., R. 10 W., secs. 15
Rowberry Peak	4	T. 31 S., R. 10 W., sec. 19 & 20
Beaver Ridge	4	T. 30 S., R. 7 W., sec. 34 & 35
Lund	3	T. 31 S., R. 14 W., sec. 15
Iron Mountain	3	T. 36 S., R. 14 W., sec. 25
Rudds Roost	2	T. 33 S., R. 9 W., sec. 9
Bear Mountain	1	T. 32 S., R. 6 W., sec. 24
Beryl	1	T. 36 S., R. 17 W., sec. 3
Iron Springs	1	T. 35 S., R. 12 W., sec. 19
Rocky Ford Hollow	1	T. 30 S., R. 9 W., sec. 21
Bumble Bee	1	T. 37 S., R. 13 W., sec. 22
Enterprise	1	T. 37 S., R. 17 W., sec. 3

Forecast

Planning for communications sites is ongoing. As needed, the BLM will engage in ROW development to access public lands for communications site development and maintenance. With the increasing public demand for communications coverage throughout the country, the probability of companies applying for communications use leases on public lands in the Decision Area is high. Telecommunications companies want to expand communications coverage along the Interstate 15 corridor and in parts of the Decision Area. New equipment to support data services over the wireless interface is being deployed and in certain cases where signals only cover about half the distance of the existing system, more wireless facility locations will be required to meet capacity objectives for coverage and network. These and other expansions will require siting new facilities on mountaintops and other structures to attain maximum coverage to meet the needs of federal, state, and local governments and the public for reliable telecommunications service.

Key Features

The location of communications sites is critical to attaining an optimum functioning telecommunications network. The wireless communications market is very competitive, with speed to market and location being important to all generation providers. Telecommunications companies locate their facilities at elevations (e.g., on mountaintops and buildings) that attain the most coverage for the consumers of digital products. The BLM plays an important role in meeting consumer demands for broadband coverage by permitting telecommunications companies to locate their communication sites on mountaintops, ridges, and in and on other locations on public lands.

The BLM encourages and prefers collocation at existing sites when possible, and many sites have multiple users who are compatible with other users at the sites. However, there will be an increase in applications for new sites on public lands as these existing sites fill to capacity and more consumers utilize new and existing technology, especially in rural areas.

Land Use Authorizations

Current Levels

Rights-of-Way

FLPMA section 501 and the Mineral Leasing Act give the Secretary of Interior the authority to issue ROWs on public lands. Section 28 of the Mineral Leasing Act of 1920 (MLA) authorizes the Secretary of the Interior to grant ROWs for oil and gas pipelines across federal lands. Sections 107 and 317 of the Federal Highway Act of 1958 authorizes the appropriation of public lands for federal aid highways and related material sites. In addition, the BLM administers ROWs that were authorized under previous but repealed authorities. An ROW grant is an authorization to use a specific parcel of public land for a certain use, such as roads, pipelines, transmission lines, and communications sites. An ROW grant authorizes rights and privileges for a specific use of the land for a specific period. In general, a BLM ROW is granted for a term appropriate to the life of the project. ROWs are authorized by grants, leases for communications sites, or temporary use permits related to MLA ROWs. An ROW authorizes the holder to construct, operate, maintain, and/or terminate a new or existing facility over, under, upon, or through public lands. Such authorizations are issued for commercial and non-commercial purposes, and can be for energy- or non-energy-related uses. ROWs are also issued to other federal agencies and state, county, and local agencies and governments. Currently, the CCFO administers 502 authorized ROWs.

While an ROW is typically authorized through a grant, the BLM can issue a permit or lease. Leases are usually long-term authorizations requiring a significant capital investment (such as communications sites).

Impacts to resources are considered when the BLM evaluates the routing or siting of an ROW. ROW authorizations contain special stipulations for surface reclamation, weed control, and other resource concerns. Additional mitigation stipulations (e.g., a stipulation to protect cultural, plant, and wildlife resources) are applied case by case.

Public lands throughout the Decision Area are generally available for all types of ROWs, and the BLM analyzes applications case by case. Certain lands in the Decision Area are or can be designated as areas to be avoided or excluded. ACECs, SRMAs, and WSAs are examples of such areas. Land use authorizations in designated areas generally are not allowed, and if allowed, are subject to stringent stipulations.

In the past several years, the BLM has processed an average of 10 to 15 ROW applications per year in the Decision Area. Typical land use authorizations currently include:

- Roads, including federal and state highways (which can include material storage sites),
- Some county road systems and roads authorized for commercial or private use
- Oil, gas, and water pipelines
- Other water facilities, including irrigation ditches and canals

- Electrical powerlines, including transmission and distribution lines and other related facilities such as substations
- Telephone and fiber optic lines
- Energy-related facilities such as compressor stations
- Film permits
- Reservations to other federal agencies
- Temporary use or short-term (less than 3 years) permits
- Railroads
- Communications sites
- Renewable energy wind development facilities and testing and monitoring areas

Trespass

It is the BLM's responsibility to protect the public lands from trespass and encroachment through means of prevention, detection, and resolution. Land use authorizations, including grants, permits, and land exchanges, have been issued to resolve trespass issues. Locations in the Decision Area where trespass is more likely include areas where residential and commercial development interface with public lands. There are known occurrences of trespass in the Decision Area, and the BLM continually discovers new occurrences. Trespass occurrences are pursued as time, personnel, and priorities allow.

Leases and Permits

FLPMA section 302 authorizes the use, occupancy, and development of public lands, through leases and permits, for uses not authorized through other authorities such as ROWs. Applicants can be state and local governments and private individuals. These uses of public lands include agricultural development, residential use (under certain conditions), commercial use, advertising, and National Guard use. Permits are usually short-term authorizations not to exceed 3 years.

Short-term Permits: The BLM authorizes permits when uses of public lands will be short in duration and involve little or no land improvement, construction, or investment. Permits have been a method used to resolve unauthorized use, stipulating that the applicant remove or halt the unauthorized use and rehabilitate the land if necessary. At present, the CCFO administers eight permits, with future intent to dispose of the land to some of the permit holders.

Long-term Leases: A lease is an authorization to possess and use public land for a fixed period. They are issued when there is going to be substantial construction, development, and improvement and there is an investment of large amounts of capital that will be amortized over time. The CCFO has issued three leases in the Decision Area.

Forecast

Rights-of-Way

Demand for land use authorizations in the Decision Area is anticipated to increase in correlation with future residential and commercial development and increasing population and energy demand needs, both locally and regionally. There is potential for an increase in land use authorizations for renewable energy projects (wind and solar) due to energy-related, residential, and commercial development, community needs, and public lands that interface with areas of increasing population and development.

Leases and Permits

Based on trends and projected future demands, the lands and realty program could be greatly affected throughout the life of the new RMP. Lands and realty actions will need to support resource objectives while providing customer service. Applications for Recreation and Public Purposes (R&PP) leases will increase as communities expand, necessitating the need for more public purposes areas. The Decision Area might also experience an increase in applications for filming permits and apiary sites on public lands. The BLM will continue to authorize agricultural permits for agricultural trespasses on public lands until the land under the agricultural permits can be disposed of. Trespass is likely to occur in the Decision Area where the public lands are bordered by private lands.

Key Features

Rights-of-Way

There is high probability for an increase in ROWs in the Decision Area due to renewable energy-related, residential, and commercial development, and public lands that interface with areas of increasing population and development.

Leases and Permits

Through urban expansion, there is a high potential for communities to apply for R&PP leases for community parks; firehouses; recreational areas for picnicking, camping, and hiking; schools; golf courses; public works buildings; and other public uses. Any state or state agency or political subdivision of a state may purchase for recreational purposes up to 6,400 acres annually, and as many small roadside parks and rest sites, up to 10 acres each, as might be needed. In addition, any state agency or political subdivision of a state may acquire 640 acres annually for each public purpose program other than recreation.

Land Tenure (Ownership)

Current Levels

As mandated by FLPMA section 102(a), public lands are to be retained in federal ownership, unless as a result of the land use planning procedure provided for in the Act it is determined that disposal of a particular parcel will serve the national interest. Land may be identified for disposal by sale, exchange, state indemnity selection, or other authorized methods. Land types will be identified for acquisition based on public benefits, management considerations, and public access needs. Specific actions that meet land tenure adjustment criteria established in the new RMP will occur with public participation and be made in consultation with local, county, state, and tribal governments.

The Decision Area has a mixed ownership land pattern. Although the potential for resource values might be high on some public land parcels, lack of access to these parcels or isolation from other resources make them very difficult to manage. Land tenure adjustments in the Decision Area help to resolve split mineral estate situations, consolidate public lands (through sale, exchange, or acquisition), acquire access, and resolve unauthorized use cases. Such adjustments are also important to local and state governments to consolidate ownership and to make lands available for public purposes.

Sale

The BLM manages public land sales under the disposal criteria set forth in FLPMA section 203. Public lands determined suitable for sale are offered on the initiative of the BLM, identified in the RMP, and sold at not less than fair market value. Public lands classified, withdrawn, reserved, or otherwise designated as not available or not subject to sale are unavailable. Any lands to be disposed of by sale that are not identified in the current RMP require a plan amendment before there can be a sale.

Sale authority under 43 CFR 2710.0-3 (a) authorized by FLPMA allows the BLM to sell public lands where, as a result of land use planning, it is determined that (1) the tract was acquired for a specific purpose but is no longer required for that or any other federal purpose, (2) disposal of such tracts serves important public objectives, including expansion of communities and economic development, and (3) such tracts are difficult and uneconomical to manage because of their location or other characteristics.

According to FLPMA, sales of public lands under 43 CFR 2710.0-6 shall be conducted under competitive bidding procedures. However, if the Secretary of the Interior determines it necessary and proper so as to ensure equitable distribution among purchasers of lands, or to recognize equitable considerations or public policies, lands may be sold by modified competitive bidding, or without competitive bidding. There are three methods of sales: competitive, modified competitive, and direct sale. The current RMP and MFP identify potential land for disposal.

Acquisition

Acquisition of private land is authorized under FLPMA section 205(a) and can be pursued to facilitate various resource management objectives. Acquisitions, including easements, can be completed through exchange, Land and Water Conservation Fund (LWCF) purchases, donations, or receipts from the Federal Land Transaction Facilitation Act. In 1964, Congress established the LWCF (Public Law 88-578) to provide for the acquisition of public lands to meet the needs of all Americans for outdoor recreation and open space.

Exchange

Exchanges of public land are conducted in accordance with FLPMA section 206, which requires a determination that the public interest will be well served by making an exchange. The Secretary, however, must consider better public land management and the needs of state and local people, including land needs for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife. The Secretary must also find that the values and objectives that public lands or interests considered for exchange could serve if retained in federal ownership are not more than the values of the non-public lands or interests and the public objectives they could serve if exchanged.

Public lands have potential for disposal when they are isolated and/or difficult to manage. Lands identified for disposal must meet public objectives, such as community expansion and economic development. The preferred method of disposal is land exchange. Other lands can be considered case by case. Disposal actions are usually in response to public requests or applications that result in a title transfer, wherein the lands leave the public domain.

Recreation and Public Purposes Act

Recognizing the strong public need for a nationwide system of parks and other recreational and public purposes areas, Congress enacted the R&PP Act (43 U.S.C.869 et. seq.) in 1954 as a complete revision of the Recreation Act of 1926 (44 Statute 741). FLPMA section 212 further

amended the Act to require that suitable public lands be available for established or definitely proposed projects, and to establish annual acreage limitations. The BLM administers this Act, which authorizes the sale or lease of public lands for recreational or public purposes to state and local governments and to qualified nonprofit organizations.

Examples of typical uses under the R&PP Act are historic monument sites, parks, campgrounds, schools, firehouses, law enforcement facilities, municipal facilities, hospitals, and fairgrounds. In the Decision Area, R&PP sales and leases include shooting ranges, parks, schools, a boy scout camp, and recreation sites. The CFFO has four leases authorized under this authority.

Forecast

The BLM engages in land exchanges only when such exchanges enhance public resource values and improve land patterns and management capabilities of both private and public lands in the Decision Area by consolidating ownership and reducing the potential for conflicting land use.

The small, isolated parcels of public lands in the Decision Area, especially those surrounded by large blocks of individually owned private parcels, are the most likely to be considered for disposal in the future. The BLM would also consider the disposal of some isolated parcels near communities deemed necessary for community expansion and economic development. An increase in requests from such private individuals and communities to acquire public lands is expected.

The BLM will continue to negotiate land exchanges, acquisitions, easements, R&PP requests, indemnity selections, and potential sales in the Decision Area case by case basis as personnel and priority workload allow. As opportunities arise, each prospect will be reviewed with careful consideration of public benefit.

Key Features

Areas with anticipated higher potential for land tenure adjustments include inholdings or lands adjacent to specially designated areas such as ACECs, SRMAs, WSAs, and existing or potential recreation sites. In addition, public lands that interface with areas of increasing population growth could be targeted for potential land tenure adjustments.

Withdrawals

Current Levels

Withdrawals are formal actions that segregate or reserve federal land by statute or administrative order for public purposes. Withdrawals are often used to preserve sensitive environmental values, protect major federal investments in facilities or improvements, support national security, and provide for public health and safety. Most withdrawals issued before FLPMA remain in effect until they are specifically revoked. Since FLPMA was enacted, withdrawals typically have a term not to exceed 20 years, unless a term is specifically determined by the Secretary of the Interior based on resource use.

Withdrawals typically accomplish one or more of the following:

- Transfer total or partial jurisdiction of federal land between federal agencies, without the land leaving federal ownership.
- Close, segregate, or suspend federal land to operation of all or some of the public land laws and/or mineral laws (withdraw land from settlement, disposal, location, or entry).
- Dedicate federal land to a specific purpose.

Most of the existing withdrawals in the Decision Area include Public Water Reserve withdrawals for the protection of spring resources and FERC withdrawals for the protection of hydroelectric power developments. Table 2-39 lists current withdrawals in the Decision Area.

Table 2-39. Current Withdrawals

TYPE OF WITHDRAWAL	HOLDER OF WITHDRAWAL	PURPOSE
Public Water Reserve (15)	BLM Utah State Office	Water Resource Protection
FERC	FERC/Parowan City	Hydroelectric Site-Center Creek
FERC	FERC/Parowan City	Hydroelectric Site-Red Creek
FERC	FERC/Beaver City	Hydroelectric Site-Upper
FERC	FERC/Beaver City	Hydroelectric Site-Lower
Indian Reservation	Paiute Indian Tribe	Reservation
BLM Miscellaneous	BLM Cedar City Field Office	Watershed Protection

Note: This table excludes withdrawals to the USFS.

Forecast

FLPMA section 204 gives the Secretary the authority to make, modify, extend, or revoke withdrawals and mandates review of withdrawals. Interior Department Policy (Departmental Manual 603) further requires that (1) all withdrawals be kept to a minimum, consistent with the demonstrated needs of the agency requesting the withdrawals, (2) lands shall be available for other public uses to the fullest extent possible, consistent with the purposes of the withdrawal, and (3) a current and continuing review of existing withdrawals shall be instituted. The BLM will manage the withdrawn lands in accordance with the objectives of the new RMP whether the withdrawals are continued, modified, or terminated.

The lands program will continue to administer new and existing withdrawals in accordance with FLPMA on a case-by-case and site-specific basis. If any existing withdrawals were revoked, the lands would be managed in accordance with the surrounding lands and the objectives of the management unit in which they are located.

Due to the restrictive nature, the cost of processing, and the level at which a final decision is made, a withdrawal is used as a last resort. There might be a need, however, to withdraw other lands in the Decision Area, such as newly designated special management areas, national conservation areas, or recreation sites.

Key Features

A review for the continued need of existing Public Water Reserve withdrawals will need to be completed. The BLM must also evaluate all proposed and existing hydroelectric projects for possible impacts to public resources. The BLM must also participate in the licensing or relicensing process to ensure appropriate mitigation measures are included in the new license and appropriately implemented. Areas with anticipated high potential for withdrawals would include newly designated special management areas, national conservation areas, or recreation sites.

Livestock Grazing

The Beaver County and Iron County area was settled in the 1850s. Although some farming occurred in the area, settlers found the area to be more suitable for livestock grazing than subsistence farming because of the primitive and harsh conditions. There was neither intensive grazing management on the public lands nor established livestock numbers or seasons of use during this early settlement period. As a result, the number of cattle, sheep, and horses rapidly increased until the early 1900s. During this period of rapid livestock increase, livestock grazing became a regulated and permitted activity in National Forests. Non-forest federal lands continued to be treated as a “commons,” in which those who moved their stock onto the range first each season secured the use of new forage growth. During this period of unregulated use, rangeland resources and ecological conditions experienced significant harm from overgrazing. Overgrazing resulted in changes to vegetative communities, especially at lower elevations that were used for winter grazing. Control of the ranges did not occur until the enactment of the Taylor Grazing Act in 1934 when grazing allotments were created and the numbers and kinds of livestock and seasons of use were established for the area. The BLM was established in 1946. During the late 1950s and early 1960s, range surveys were completed on public lands to determine the amount of forage being produced. Following the range surveys, grazing capacity for livestock grazing allotments was adjudicated. The number of livestock authorized on most of the allotments was decreased to meet sustained rangeland production objectives.

A federal court agreement on April 11, 1975, as the result of a lawsuit by the Natural Resources Defense Council required the BLM to prepare grazing EISs for public grazing lands over a 10-year period (**NRDC v. Morton**, 458 F.2d 827, 836 (D.C. Cir. 1972)). To comply with this agreement, the BLM prepared the existing LUPs. The BLM used existing monitoring data to prepare and issue Allotment Management Plans, which adjusted the numbers of livestock and seasons of use.

Drought conditions have been and will continue to be an issue of concern throughout the Planning Area and in many parts of the western United States. The CCFO Planning Area experienced extreme drought conditions from 2002 through 2004, and adjustments to livestock numbers were successfully negotiated with livestock grazing permittees. Drought conditions could require annual adjustments in livestock numbers in the future to provide for the sustainability of the vegetative community.

As discussed above, livestock grazing in the region has decreased significantly from the peak, which occurred in the early part of the last century. The decline in livestock grazing is attributed to reducing livestock use to a level more consistent with the range's carrying capacity. This reduction in livestock use helped improve rangeland health. Table 2-40 lists the changes to livestock AUMs since the current LUPs were issued.

Table 2-40. Changes in Livestock Animal Unit Months from Land Use Plans

Livestock AUMs (CBGA)	Livestock AUMs (Pinyon)	Total AUMs Identified in the CBGA and Pinyon Plans	Current Livestock AUMs in Planning Area	Percent Change in Livestock AUMs Since the CBGA and Pinyon Plans Were Issued
81,363	86,085	167,448	137,005	19 (30,443 AUMs)

Since the LUPs were issued, the CCFO has actively worked with grazing permittees to make adjustments to seasons of use, livestock numbers, livestock AUMs, and grazing management systems when necessary to ensure healthy and diverse vegetative communities. Present levels of livestock demand for forage resources are expected to continue. It is expected that range conditions will continue to improve as a result of continued assessment and identification of proper grazing management systems, livestock numbers, seasons of use, and kinds of livestock.

Current Levels

There are a total of 159 grazing allotments actively grazed by livestock in the Planning Area (Appendix A, Figure 2-7). These allotments include BLM-administered land, the State of Utah (SITLA), and private entities. The CCFO has administrative responsibility for federal acres within these allotments, which occur in Beaver and Iron counties with small portions occurring in Garfield, Millard, and Washington counties. Livestock grazing administered by the CCFO occurs on 55 percent of all lands (public, private, and state) within the CCFO Planning Area boundary. Areas not within the boundaries of a grazing allotment include lands around Beaver, Cedar City, Enterprise, Greenville, Milford, Minersville, Modena, New Castle, Parowan, Paragonah, and Interstate 15. Of the lands within grazing allotments 2,073,604 acres (74.8 percent) are public (BLM-administered) lands; 263,367 acres (9.5 percent) are State of Utah lands, and 435,470 acres (15.7 percent) are private lands.

Allotment Management Categories

Each grazing allotment was evaluated and designated for one of three management categories (Intensive – “I,” Maintain – “M,” and Custodial – “C”) based on problems/conflicts in the previous LUPs. Appendix I provides a list of specific criteria used to categorize each allotment. In addition, current livestock management direction is to periodically evaluate management categories and determine whether changes need to be made consistent with the LUPs. Table 2-41 lists the number of grazing allotments identified in the LUPs by each management category.

Table 2-41. Current Number of Grazing Allotments in Each Management Category

Category M (Maintain)	Category I (Improve)	Category C (Custodial)
47	64	48
582,714 (28 percent of the total acreage)	1,312,721 (63 percent of the total acreage)	154,733 (7 percent of the total acreage)

*Note: At present, there are 159 allotments in the CCFO Planning Area authorized for livestock use. Since completion of the CBGA RMP and Pinyon MFP management of certain allotments has been assigned to other Field Offices (Fillmore and Kanab), no longer exist due to land exchanges, or have been allocated to other purposes such as wildlife and wild horses. Refer to Appendix D for grazing allotments that are actively grazed by livestock and their associated management categories.

Rangeland Health Standards and Guidelines

The BLM, through the development of grazing regulations in 1995, was directed to develop state or regional standards and guidelines for rangeland health. The objectives of these regulations are to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to PFC; and to provide for the sustainability of the western livestock industry and communities that depend on productive, healthy rangelands. After a process that incorporated public participation and assistance from the Resource Advisory Councils, the BLM developed statewide standards and guidelines for Utah (BLM 1997). Appendix C lists these standards for rangeland health, which include the following:

- **Standard 1** – Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.
- **Standard 2** – Riparian and wetland areas are in PFC. Stream channel morphology and functions are appropriate to soil type, climate, and landform.
- **Standard 3** – Desired species, including native, threatened, endangered, and special status species are maintained at a level appropriate for the site and species involved.
- **Standard 4** – Water Quality: Surface water and groundwater quality, influenced by agency actions, complies with state water quality standards.

As previously discussed, 135 allotments have been evaluated based on these standards (see Appendix D).

Licensed Use

Of the 159 allotments that are permitted for use by domestic livestock, cattle graze 119 allotments, cattle and domestic horses graze 3 allotments, cattle and sheep graze 17 allotments, and sheep graze 20 allotments. Authorized livestock use is typically expressed in AUMs, which is the amount of forage necessary for the sustenance of one cow, one horse, or five sheep for a period of 1 month. A total of 137,005 AUMs are currently authorized (active) in the Planning Area. Of the total authorized AUMs, cattle use 117,694 (85.9 percent), sheep use 19,205 (14 percent), and domestic horses use 106 (less than 0.1 percent).

In 2011, there were 160 livestock grazing permittees for the grazing allotments identified in Appendix D. Grazing permits are issued for a 10-year period and periodically undergo a renewal process. Active preference or the maximum number of AUMs available for use given appropriate conditions is identified by grazing permit during the permit renewal process.

Grazing allotments are inventoried periodically and evaluated to determine if the standards are being met and whether grazing management complies with the Rangeland Health Standards and Guidelines. By regulation, if the standards are not being met, and livestock grazing is determined to be a significant contributing factor, appropriate actions must be taken, which would result in significant progress toward meeting the standards within the time frames specified in the regulations.

As of March 2011, the standards and guidelines have been evaluated, and livestock grazing decisions have been issued to livestock permittees who have privileges on 135 of the 159 grazing allotments that have been actively grazed by livestock since 2004. Assessments for the remaining 24 grazing allotments are scheduled to be completed by September 30, 2012. If it was determined through the collection of monitoring data that current livestock use was a causal factor for non-attainment of the standards, changes in livestock grazing management were

made through the permit renewal process to ensure there would be progress toward attaining the standards. These changes to livestock grazing that were authorized through the permit renewal decision process included adjustments to seasons of use, livestock numbers, kinds of livestock, and AUMs. In addition, grazing management systems were implemented throughout the allotments to eliminate repeated livestock use during the critical growing period. This was accomplished by implementing deferred grazing systems, rest rotation grazing, and other methods. The Allotment Situation Summary is provided in **Error! Reference source not found.**, which summarizes whether an allotment was meeting or not meeting the Fundamentals of Rangeland Health, Standards for Healthy Rangelands (1997) and the Guidelines for Grazing Management (1997) and whether action was taken to ensure progress toward attaining the standards and guidelines.

Livestock Actual Use (1996 – 2010)

Although the active preference in the Decision Area is 137,005 AUMs, licensed use is the forage the permittees paid to use in a given season or year. The average licensed use from 1996 through 2010 was 82,517 AUMs (60 percent of active preference). Over the past 10 years (2001 through 2010), licensed use has averaged 62 percent of active preference. A number of variables cause this discrepancy between active preference and licensed AUMs. Seasonal changes in precipitation and temperature result in more or less available forage. Over the past 10 years, the area has experienced periodic drought conditions, requiring a reduction in grazing use to maintain range conditions. In addition, fluctuations in the beef or sheep markets can make grazing less profitable. Livestock permittees might also take voluntary nonuse for a variety of reasons, resulting in AUMs that are available, but not licensed for livestock use. These variables can result in the perception that forage is being underutilized, when actually the range is simply being managed for a sustained forage yield. The CCFO has worked diligently with grazing permittees to adjust livestock use based on precipitation and range readiness. Most forage use is attributed to cattle (more than 87 percent of AUMs on 139 allotments) with sheep (23 percent of AUMs on 37 allotments) and horses (1 percent of AUMs on 3 allotments) comprising the remainder of domestic livestock use. Average actual use will always be 100 percent or less of active preference because the BLM cannot normally authorize use above active preference. Table 2-42 lists domestic livestock forage use over the last 15 years.

Table 2-42. Comparison of Total Permitted Use to Licensed Use (AUMs)

Year	Number of Operators			Licensed Use (AUMs)		
	Cattle and Horses	Sheep	Total	Cattle and Horses	Sheep	Total
1996	110	17	127	73,878	9,117	82,995
1997	109	18	127	76,825	9,537	86,362
1998	107	18	125	84,059	11,342	95,401
1999	109	18	127	73,272	10,159	83,431
2000	113	19	132	75,626	10,075	85,701
2001	123	19	142	89,280	10,555	99,835

Year	Number of Operators			Licensed Use (AUMs)		
	Cattle and Horses	Sheep	Total	Cattle and Horses	Sheep	Total
2002	112	17	129	49,006	5,842	54,848
2003	107	17	124	42,456	8,629	51,085
2004	120	18	138	60,820	12,678	73,498
2005	122	19	141	70,653	11,337	81,990
2006	128	19	147	81,119	11,209	92,328
2007	130	19	149	83,742	9,543	93,285
2008	133	21	154	81,532	11,844	93,376
2009	135	22	157	75,566	11,208	86,774
2010	132	23	155	67,089	9,757	76,846
Average	119	19	121	72,328	10,189	82,517

*Note: Licensed use was obtained through the Rangeland Administration System (U.S. BLM, 2011d); therefore, AUMs are billed use.

Grazing Allotment/Use Areas with No Authorized Grazing

There are approximately 19 grazing allotments/use areas with no authorized grazing. These allotments do not have authorized grazing for the following reasons:

- BLM-administered lands were disposed of through Public Land Exchanges, which resulted in the loss of BLM active use and preference.
- Livestock AUMs were relinquished to wildlife by the grazing permittee and the BLM reallocated them for wildlife use.
- Livestock AUMs were reduced or eliminated and reallocated to wild horses.
- Privileges were lost through loss of base property control.
- Privileges were lost through the failure of grazing permittee to apply.
- Small areas too remote for existing grazing permittee to utilize

See Appendix J for a list of the grazing allotment/use areas with no authorized grazing.

Vegetative Monitoring

Vegetative monitoring data and assessments, including nested frequency, utilization (key management area utilization, and use pattern mapping), point cover, line point intercept, PFC and MIM, and interpreting indicators of rangeland health, have been continuously collected throughout CCFO-administered grazing allotments. The CCFO will continue to collect and utilize this monitoring data to identify areas where it might be necessary to make further modifications to livestock grazing management to ensure the attainment of multiple-use objectives and the proper management of public land resources. These modifications could

include a change in livestock numbers, livestock kinds, seasons of use, livestock AUMs, and grazing management systems.

Data on forage utilization by livestock, wildlife, and wild horses is collected following the grazing season every 1 to 3 years on I category allotments, every 3 to 5 years on M category allotments, and usually every 7 to 10 years on C category allotments.

Actual-use reports, which are mandatory reports grazing permittees must submit each year to record the actual livestock numbers and periods of use, are utilized to calculate the AUMs that were used during the grazing year. Permittees have regularly submitted these reports.

Allotment evaluations, which incorporate trend, rangeland health, weather, and other data with utilization and actual-use data are completed as needed to identify and correct resource issues. Evaluations are used to compile and assess rangeland conditions and trends toward management objectives and recommend necessary adjustments in rangeland management.

Range Improvement Projects

Range improvement projects, including fences, cattle guards, water pipelines, well development, spring development, stock ponds, and vegetative enhancement projects, are used to assist in livestock, wild horse, and wildlife management. Fire management practices are also used to achieve ecological diversity and/or reduce catastrophic fuel loads. Rangeland manipulation can be used to rehabilitate or restore a particular ecological community related to plant composition and structure and to meet site specific resource objectives.

General impacts associated with vegetative treatments tier to the Vegetation EIS (BLM 1991b), which analyzes and recommends treatment methods to be used on BLM-administered lands. Methods include mechanical and manual treatments, biological treatments, prescribed burning, chemical applications, and use of livestock. In addition, to authorize vegetative treatments and other range improvement projects, site-specific NEPA analysis and decisions are developed and issued in accordance with BLM regulations and policies.

Forecast

Public land grazing privileges are expected to become more important and more valuable to livestock producers in the Planning Area. This is in response to trends such as:

- Higher costs of alternative forage, such as hay or private land grazing
- Higher costs of grain, resulting in long-term trends to minimize time in feedlots and rely more on rangelands
- Higher costs of fuel, lessening the opportunity to truck cattle away to distant locations for alternative forage
- Loss of agricultural land to urban development.

While the demand for grazing on public lands to help make local operations viable will likely increase in the future, demands for other uses of the public lands will also increase.

Key Features

Where livestock grazing occurs in areas of intermingled public and private landownership patterns (with public lands being relatively small and surrounded by private lands), there usually is less opportunity for intensive management. Livestock grazing is typically less restricted in such areas. The larger blocks of public land better lend themselves to alternative uses and can be considered for further livestock restrictions in favor of other public land management uses or resources. Special status species whose habitat requirements could be affected by livestock are examples of resource conflicts that can be resolved through further restrictions on livestock grazing.

Proper riparian area management and improvement continues to be a high priority for the Decision Area. Riparian areas make up only a small fraction of the total BLM-administered acreage, but receive a disproportional amount of use while providing key habitat for wildlife.

Development of more water sources has the potential to shift grazing from areas that have a history of heavy use to areas that were previously ungrazed or lightly grazed. In addition, water developments provide for the development of grazing management systems which improve resource conditions. Riding and salting can be employed to improve livestock distribution.

There is direct competition for forage and water between livestock and wild horses in some areas. Where there are competition issues, wild horse use might be emphasized over livestock in the Decision Area.

There is direct competition for forage and water between livestock and wildlife in some areas. Where there are competition issues, wildlife use might be emphasized over livestock in the Decision Area.

Existing and planned vegetative manipulation treatments provide quality habitat for wildlife, wild horses, and livestock. Vegetative treatments also require rest from grazing for two growing seasons or more for the establishment of seeded species.

Minerals

The total historically disturbed acreage due to all types of mineral exploration and development is estimated to be 16,600 acres, or approximately 0.4 percent of the overall Planning Area of 3,788,600 acres. The national average for mining-related surface disturbances as a percentage of land area is 0.3 percent. Of these estimated disturbed acres, approximately 10,000 are associated with locatable mineral operations, 5,000 with sand and gravel extraction, and approximately 1,600 acres are related to leasable minerals, such as alunite, oil and gas, coal, and geothermal resource operations. Approximately 3,300 acres of these historically disturbed areas are on CCFO-administered public land.

These acreage estimates of historic and ongoing minerals-related surface disturbances were determined utilizing aerial photography. Disturbed areas that can be readily identified from aerial photography include mine site and mine waste dumps, tailings impoundments, millsites, larger sand and gravel pits, and fluid mineral (geothermal) exploration and production operations activities. Smaller, dispersed disturbances, principally those associated with exploratory drilling sites and associated roads, are difficult to estimate directly from aerial

photography and were assumed to total roughly 50 percent of the gross acreage estimated for the larger features identified.

Most of the public lands in the Planning Area are open to mineral entry under the mining laws. Lands open to mineral entry can include split-estate lands in which the surface estate has become segregated from the mineral estate. The Planning Area includes approximately 2,095,057 acres with both federal surface and federal mineral estates and approximately 479,491 acres of split-estate lands composed of private surface and federal mineral estates.

More information on the mineral resources and geology for the CCFO is available in the Mineral Potential Report and the Reasonable Foreseeable Development Scenario (RFD) This report contains additional acronyms and references (Appendix H).

Locatable Minerals

Locatable minerals are minerals on which locations can be made under the 1872 General Mining Law (as amended). In the Planning Area, these would principally include iron ore, silver, copper, lead, zinc, and gold, but also certain industrial minerals and gemstones. An estimated 80 percent of those disturbed acres now lie on private lands that were patented into private ownership under the patenting provisions of the General Mining Law. The patenting provision is currently unavailable due to a Congressional moratorium.

Locatable mineral exploration and development has been an important use of public lands in Beaver and Iron counties since the first European habitation. The Marysvale-Pioche Mineral belt, one of the three great metallogenic provinces in Utah, covers most of Iron and Beaver counties. There are 15 named mining districts in Beaver County and 9 in Iron County. Iron County obtained its name from the iron resources found west of Cedar City, in the Iron Springs and Pinto Mining Districts, which represent the largest known iron ore resource in the continental United States west of the Mississippi River. Iron County has also produced substantial quantities of silver from the Escalante District and lesser amounts of gold from the Stateline and Gold Springs Districts. The most productive districts in Beaver County have been the San Francisco, Beaver Lake Mountains, Rocky Range, and Star Districts, which were substantial producers of lead, silver, and copper, with lesser amounts of zinc and gold. The famous Hornsilver Mine, a bonanza-grade lead and silver deposit and the associated mining town of Frisco was one of the richest known silver deposits of its time. Beaver County also contains the largest known deposit of what is arguably the rarest gemstone in the world, the red variety of beryl. Beaver County has excellent potential for additional base and precious metal resources; current mineral exploration and development focuses on copper and gold resources.

Current Levels

As of January 31, 2011, there were 2,376 active unpatented mining claims on public lands in Iron and Beaver counties. There are 16 authorized notices and 7 authorized plans of operations issued under the applicable surface management regulations (43 CFR 3809). Currently authorized disturbance associated with locatable mineral development is approximately 200 acres, which will be reclaimed when operations cease. Approximately 100 of these acres are associated with a copper mine operation northwest of Milford in Beaver County.

Forecast

Historically, the economics of locatable mineral resources, particularly the base metals, have been cyclical, reflecting periods of strong demand and limited supplies followed by oversupply and weaker demand. Renewable energy components are driving the rare earth mineral demand worldwide. Demand and prices for precious metals, like gold and silver, is enhanced by periods of general social, political, and economic uncertainties and unrest. Most locatable mineral commodities trade in the worldwide marketplace, so price and demand can be dictated by world events. At present, the single most important marketplace factor is the economic expansion of China and its enormous demand for a wide variety of mineral commodities. This economic growth is forecast to continue to put upward price pressure on all of the base metals. In the last 5 years, this strong demand has allowed the re-opening of the magnetite mine operations on Iron Mountain in Iron County, and the copper mine operation west of Milford in the Beaver Lake Mountains and Rocky Range. Known resource bases are adequate for iron resources in Iron County and copper resources in Beaver County to allow for continued development and expansion during the planning period provided market prices remain firm or continue to escalate. Historically, the price trends of locatable minerals have been cyclical, which affects the supply growth of these commodities.

Key Features

Current locatable mineral development in the Planning Area is dominant in two areas, one in Iron County and one in Beaver County. In Iron County, it is the Iron Mountain portion of the Iron Springs District west of Cedar City. Historic and ongoing development in the Iron Mountain area for its contained iron ore resources has been concentrated on privately held land, but there is the possibility that future development, specifically associated with the Rex Deposit, could significantly impact federal lands west and southwest of Iron Mountain. The area in Beaver County centers on known copper resources in areas northwest and west of Milford, in a broad band stretching from the Rocky Range on the east to the San Francisco Mountains on the west. Unless there are new discoveries of locatable mineral resources, these general areas are likely to see the most concentrated impacts from locatable minerals and will be the most economically important areas of locatable mineral development during the planning period.

Outside these two principal areas, locatable mineral development is much smaller in scale and widely dispersed throughout the Planning Area. The smaller scale of the development considerably lessens the likelihood of critical surface resource impacts, and practical mitigation measures are available to allow development to continue. Most of the western half of the Planning Area has good to excellent potential for locatable mineral resources, and the critical issue to locating these resources is maximizing the areas remaining open to exploration in the higher potential areas.

Mineral Materials

Mineral materials, also referred to as salable minerals, principally include common-variety deposits of sand and gravel and quarried aggregate, and lesser amounts of landscaping rock and cinders. On public lands, the extraction and use of mineral materials is provided for under the Material Act of 1947 and regulated under 43 CFR 3600. On public lands, mineral materials are either provided free of charge to government agencies or sold at fair market value to individuals or commercial entities.

Sand and gravel pits range in size from less than an acre to 100 acres or more. Most of the historically and currently operated pits are on private land on the floodplain of Coal Creek in Cedar Valley and in borrow and aggregate pits along the Interstate 15 corridor. The total area of disturbance, historically made and current authorized, connected with mineral materials sites in the Planning Area was estimated to be on the order of 5,000 acres, 80 percent (4,000 acres) of which is estimated to be on private or state-managed lands and the remainder on BLM-administered land.

Current Levels

As of January 2011, there are 15 community pits, 24 free use permits, and 4 commercial sales contracts authorized under the applicable mineral materials regulations (43 CFR 3600). Currently authorized disturbed and unreclaimed acreage associated with mineral material development on BLM-administered lands totals approximately 400 acres. Approximately 200 of these acres are associated with a single large railroad ballast quarry in Beaver County.

Forecast

Market demand for mineral materials in general mirrors the overall economic well-being and growth of the local and regional economies. The low unit value of mineral material commodities typically makes their cost-effective extraction dependent on transportation costs, resulting in localized supply of demand; certain markets, such as the railroad, with ready transportation, allow for sales into a regional market.

In the immediate future, the demand for mineral materials will likely remain soft, reflecting the general depressed conditions for infrastructure, commercial, and residential growth in southwestern Utah. However, longer term requirements could expand with the local economies

Key Features

Sand and gravel are generally found in old outwash plains (Appendix H).

Solid Leasable Minerals

Solid leasable minerals include coal, phosphate, oil shale, sodium, and potassium minerals. The exploration for and extraction of these minerals are provided for by the Mineral Leasing Act of 1920, and the 1926 and 1927 amendments to this Act. The implementing regulations for the Act are at 43 CFR 3400 for coal and 43 CFR 3500 for solid leasable minerals other than coal and oil shale.

Current Levels

The only known solid leasable minerals in the Planning Area are coal resources in the Kolob-New harmony coal field in Iron County and potassium resources in alunite mineralization in west-central Iron and Beaver counties.

There are no current or pending solid mineral leases of any kind in the Planning Area. Applications for potassium prospecting permits have been filed by two separate companies for prospecting known alunite resources in Iron and Beaver counties. Presumably these applications were inspired by the current high market prices for potash (potassium compounds)

suitable for agricultural use); potassium sulfate, together with alumina (a feedstock for primary aluminum metal production), can be chemically extracted from the mineral alunite.

Forecast

The coal resources in the Kolob-New Harmony coal fields are substantial, but challenged by relatively low quality by current market standards. Historically, coal was produced and important to the local economy. Reported quality of the coal is less than coal resources in the Wasatch and Book Cliff coal fields, which has not prompted current exploration and development. These coal fields are also coincident with lands that now have high-value surface resources that could be in conflict with mineral exploration and development.

The high current and high projected future market value for potash should encourage interest in the acquisition of potash leases on known alunite deposits. While Beaver County contains one of the largest known alunite resources in the world, the best portions of this resource are on State of Utah lands and development of the alunite resource, should it ever occur during the planning period, would likely be associated with those state-owned deposits. Potash extraction from alunite, while technically feasible, requires extensive supporting infrastructure, which presently does not exist for the deposits in the Planning Area. It is likely that most of the world's potash needs during the planning period will continue to be met from more traditional potash minerals resources.

Key Features

See Appendix H for this information.

Fluid Minerals

Current Levels

All of the public lands in the CCFO Planning Area have been categorized for oil and gas leasing. These categories describe the potential level of conflict with other resources. Category 1 areas have the fewest potential conflicts, and subsequently have the fewest stipulations. The categories get progressively more restrictive, until in Category 4 leasing is not allowed in any form. Table 2-43 lists the acreage of BLM-managed federal surface in the Planning Area apportioned to the designated leasing categories. Split estate lands, parcels on which the federal government retains subsurface mineral rights beneath non-federal surface ownerships, are not addressed or categorized for fluid minerals leasing in either the Pinyon MFP or the CBGA RMP.

Table 2-43. Fluid Minerals Leasing Categories

Category	Pinyon MFP		CBGA RMP	
	Acres	Percent of Planning Area (2,104,972 ac)	Acres	Percent of Planning Area (2,104,972 ac)
1. Open with Standard Stipulations	1,384,534	66	607,034	29
2. Open with Special Stipulations	3,919	< 1	100,042	5

	Pinyon MFP		CBGA RMP	
3. Open with No Surface Occupancy	2,347	< 1	7,096	< 1
4. Not Open to Leasing	0	0	0	0
Totals	1,390,800	66	714,172	34

Interest in oil and gas exploration in the CCFO Planning Area is currently low compared to other areas in the Utah or the West, evidenced by a low number of exploration authorizations. No competitive bids were placed for seven oil and gas lease parcels offered for sale in Iron County on May 24, 2011. However, a small number of Applications for Permit to Drill (APDs), possibly relating to the discovery of oil in the Sevier Frontal play, were submitted in 2008. Two of these wells were drilled prior to permit expiration, and both were subsequently plugged and abandoned.

An oil and gas lease is valid for a period of 10 years and may be held beyond the primary term by production in paying quantities (43 CFR 3107.2-1). Therefore, the numbers and acreages of oil and gas leases in the Planning Area since the effective dates of the current LUPs have fluctuated over the years. There are currently 254 authorized oil and gas leases in the Planning Area (Appendix A, Figure 2-8) totaling 462,405 acres, more than 90 percent of which are in the CBGA RMP Planning Area. Only 21 lease parcels are located either fully or partially in the Pinyon MFP Planning Area. The total lease acreage in the Pinyon MFP Planning Area is 34,499 acres. Two pending leases, totaling 3,774 acres, are also located in the CBGA RMP Planning Area.

Well drilling and production development cannot begin until there is a lease in place. Only three wells have been drilled on federal lands in the Planning Area since authorization of the Pinyon MFP and the CBGA RMP: the Hunt Oil USA 1-25 well in 1994, and the Delta Petroleum Parowan Federal 23-44 and Beaver Federal 21-14 wells in 2008. All three of these wells were plugged and abandoned, and all surface disturbances for all three have been reclaimed. The total disturbed area associated with these three wells is 57 acres. There are currently no oil and gas production facilities in the CCFO Planning Area.

The State of Utah and Beaver and Iron counties directly benefit from oil and gas leasing and development in the Planning Area. FLPMA (Section 317, Mineral Revenues) provided that, of all money received from sales, bonuses, royalties, and rentals of the public lands under the provisions of the Act, 50 percent would be paid to the state within the boundaries of which the leased lands or deposits are or were located. This federal mineral revenue disbursement paid to the state was required to be used at the discretion of the state legislature, but giving priority to those subdivisions of the state socially or economically affected by development of minerals leased under the Act, for planning, construction, and maintenance of public facilities, provision of public services, and building up a mandated reclamation fund. Under this authority, the State of Utah, Beaver County, and Iron County annually receive monies from the federal government for lease sales, bonuses, rentals, and royalties related to oil and gas exploration and development in the CCFO Planning Area.

Federal oil and gas production is important to the overall economy and annual budget of the State of Utah. Since 2005, the Federal Government has disbursed more \$0.5 billion to the State of Utah as its 50-percent share of royalty/revenue from federal oil and gas production in the state. There is currently no oil and gas production in the CCFO Planning Area. However, 50 percent of lease sale bonuses and lease rentals associated with lease parcels in the Planning Area are disbursed to the State of Utah.

Forecast

Continued leasing and exploration interest in the Planning Area is expected due to the geologic potential for undiscovered resources. However, interest in drilling expensive exploratory wells is expected to remain low until there is a discovery.

A considerable volume of seismic surveys have been performed in the CCFO Planning Area since the 1970s. Additional future seismic surveys are anticipated when exploration interest in this area returns due to a nearby oil and gas discovery, increased oil and gas demand, or increased interest in wildcat exploration in the oil and gas industry.

Key Features

Current authorized leases are roughly concentrated in a corridor bounded by Interstate 15 on the east and the Union Pacific Railroad on the west (see Appendix A, Figure 2-8). Interest in this corridor is likely to continue, based on similar geologic setting to recent exploration and development in the Sevier Frontal play in Sevier County. Other plays based on other geologic settings, such as the Permian-Triassic Unconformity and Paleozoic carbonates, might also be targets for exploration and subject to leasing.

Plant and Seed Collection

Private individuals can collect seeds and plants after acquiring the proper permits. The CCFO includes a list of stipulations for harvesting seeds on public lands in the Decision Area. The public may collect seeds by hand on BLM-administered lands during non-drought years from a seed source that has been verified to be in good vegetative condition (e.g., vigor, viability, and production). Machine collection is allowed case by case following the appropriate NEPA process. Federally protected plant species cannot be collected; however, BLM-listed sensitive species may be collected for research purposes if the population is large enough that the species would not be affected and the proper permits are obtained prior to collection.

The current BLM policy for permitting the collection of wildland seed resources is to:

- Meet public needs for commodity benefits and uses to the extent possible
- Meet public needs for non-commodity benefits and uses to the extent possible.
- Promote the development and availability of native plant materials for use in restoration and revegetation efforts
- Manage resources to maintain desired ecosystems and improve the health of the land
- Receive fair market value for the products sold while recognizing the validity of limited free use
- Prevent unauthorized use of public lands and resources

- Meet objectives and goals as outlined in land management and activity-level plans and guidance documents

As stated, current BLM policy allows for the sale and collection of plant seed on BLM-administered public lands. Management of public land seed resources is an important component of the ecosystem that benefits both the BLM and the public. These benefits include complementing other BLM-administered resource programs; aiding in restoration projects, including ESR of areas burned by wildfire (particularly providing for locally adapted species); and contributions to local economies. Annually, the CCFO develops a map of areas authorized for seed collection. This allows for restrictions on seed collection during event such drought, wildfire, ESR efforts, and vegetative treatment projects. Stipulations are also attached to the seed collection permit/contract to ensure that seeds and plants are collected in a sustainable manner.

Current Level

There has been a steady and continuing demand for seed collection by the public. The price for available seed changes regularly in response to market conditions. Table 2-44 lists the vegetative species with the highest collection demand by individuals in the Decision Area in the last 10 years and the amount of seed permitted within the last 3 years.

Table 2-44. Plant and Seed Collection

Common Name	Scientific Name	Fiscal Year 2008	Fiscal Year 2009	Fiscal Year 2010
Grasses				
Bottlebrush squirreltail	<i>Elymus elymoides</i>	----	----	----
Needle-and-Thread	<i>Hesperostipa comata</i>	----	----	----
Forbs				
Buckwheat	<i>Eriogonum Strictum</i>	----	----	50
Globemallow	<i>Sphaeralcea spp.</i>	----	30	200
Indian Paintbrush	<i>Castilleja sessiliflora</i>	----	----	20
Lupine	<i>Lupine spp.</i>	160	250	100
Fire Cracker Penstemon	<i>Penstemon eatonii</i>	----	100	----
Palmer Penstemon	<i>Penstemon palmeri</i>	1,000	----	----
Rocky Mountain Bee Plant	<i>Cleome Serrulata</i>	300	100	----

Common Name	Scientific Name	Fiscal Year 2008	Fiscal Year 2009	Fiscal Year 2010
<i>Shrubs</i>				
Basin Big Sagebrush	<i>Artemisia tridentate</i> <i>spp.</i>	----	1,500	----
Bitterbrush	<i>Purshia glandulosa</i>	----	700	100
Cliffrose	<i>Purshia stansburiana</i>	----	----	----
Fourwing Salt Bush	<i>Atriplex canescens</i>	430	900	
Forage Kochia	<i>Kochia prostrata</i>	----	5,950	6,100
Fringed Sagebrush	<i>Artemisia frigida</i>	----	200	----
Green Ephedra	<i>Ephedra viridis</i>	----	----	----
Nevada Ephedra	<i>Ephedra nevadensis</i>	----	----	----
Shadscale	<i>Atriplex confertifolia</i>	----	750	----
<i>Shrubs</i>				
Winterfat	<i>Krascheninnikovia</i> <i>lanata</i>	----	----	2,000
Wyoming Big Sagebrush	<i>Artemisia tridentate</i> <i>spp.</i>	----	23,175	500

Forecast

It is expected that seed collection will continue at historic levels identified in Table 2-44. It is difficult to forecast the annual demand for plant and seed collection; however, plant and seed collection depends on many factors, including seed production, and recent wildfires and subsequent ESR efforts.

Productivity of plants and seeds depends on the amount and timing of precipitation in the Planning Area. Productivity fluctuates annually. Seed collection is not allowed during periods of drought or when the productivity of plants and seeds is not adequate to ensure proper vegetative management.

Key Features

Seed collection occurs throughout the Planning Area, but most collection is in Beaver County. The largest expanse of Forage Kochia in the Decision Area is in the Milford Flat area northeast of Milford, Utah. Many of the perennial forbs are collected in existing wildfire ESR projects.

Shrubs are collected across native ranges. It appears that most seed collection occurs close to population centers

Recreation

Recreation use is increasing throughout southwestern Utah. Visitation numbers at Zion National Park have more than doubled from 1,273,030 to 2,665,972 since 1983; visitor numbers at Cedar Breaks National Monument have increased from 329,268 in 1983 to 525,831 in 2010, an increase of approximately 60 percent (U.S. NPS, 2011). In Great Basin National Park, just to the west of the Planning Area, visitation numbers have increased by 193 percent in the same period. Although actual visitor numbers are expected to be less on public land, the percentage of increase in recreation use is expected to be comparable.

Increased recreation use in the Decision Area can be largely attributed to the increasing number of visitors to neighboring state and national parks, the Dixie National Forest, and other surrounding recreation areas. In addition, increased recreation use can be attributed to population growth in Iron County and nearby areas, particularly St. George, the Wasatch Front, and Las Vegas, Nevada. Recreation use in the Planning Area and the Decision Area is expected to increase due to a combination of social and environmental conditions in Utah and neighboring states and the overall growing trend of people seeking public lands and the opportunities they provide. Without active management, natural resource conditions and the quality of the recreation experience would decline with increased recreation use.

Dispersed Recreation

Current Levels

The BLM reports recreation visitation estimates using the Recreation Management Information System (RMIS), an internal database. The RMIS estimates participation in 65 types of recreation activities recorded at BLM sites and areas, based on registrations, permit records, observations, and professional judgment. Visitation is estimated by the number of participants/visitors and visitor-days. Visitors are the actual number of people who take part in a recreational activity. A visitor-day is a common recreation unit of measure used among federal agencies and represents an aggregate of 12 visitor-hours at a single site or area. Table 2-45 lists the RMIS data from 2001 through 2010.

Table 2-45. Recreation Management Information System Data, 2001 through 2010

Year	C Trail and Overlook		Three Peaks SRMA		Parowan Gap		Rock Corral		Dispersed	
	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days
2001	500	33	N/A	N/A	3,700	678	1,000	650	130,705	2,122,141
2002	520	25	N/A	N/A	3,750	688	1,000	650	159,017	2,361,901
2003	630	42	N/A	N/A	3,800	697	1,000	650	162,325	2,427,220
2004	887	59	N/A	N/A	4,012	736	1,105	718	176,433	2,653,210
2005	1,078	72	N/A	N/A	4,558	836	1,239	805	187,524	341,636
2006	1,087	72	N/A	N/A	4,315	791	1,242	807	194,882	356,480
2007	991	66	N/A	N/A	3,587	658	1,244	809	512,132	940,160
2008	922	61	N/A	N/A	3,991	732	1,370	8,980	570,083	1,095,276

2009	N/A	44,126	N/A	N/A	5,029	922	1,412	918	206,300	395,053
2010	18,250	1,217	18,980	11,072	5,475	1,004	1,095	712	205,306	379,424

Recreation levels in the Planning Area have not been accurately monitored for many years; consequently visitor numbers are not representative of the current level of recreation use. Known types of recreation use in the area include hiking, camping, wildlife viewing, photography, mineral collecting, and hunting.

Many areas lack direct visitation monitoring facilities such as traffic counters or visitor registers. Direct monitoring by BLM personnel is focused on areas of greater use or conflict. Discrepancies in actual use are also a result of the remote nature of much of the Decision Area that does not receive frequent monitoring. In addition, many of the popular use areas/trails are not designated and there is currently no way to accurately determine the actual amount of recreational use these areas receive. OHV use has become one of the fastest growing recreational activities, and is one of the most controversial. As verified by scoping comments, many users want more developed OHV trails, while many other users want areas closed to OHV use. Trails, routes, and roads used by OHVs are discussed in the Transportation section of this document.

Forecast

Estimates have recreation use in the Decision Area increasing an average of 5 percent per year. A number of factors contribute to the anticipated increase in use, including the following:

- An increase in the population of Utah
- Displacement from other recreation areas due to loss of opportunity or change in management
- Increasing leisure time and disposable income for the working population
- Increasingly active retired population with more disposable income
- Rapidly evolving forms of recreation and new vehicles and gear for pursuing recreation activities
- A focus on the importance of natural resource-based recreation due to the population becoming increasingly urbanized
- Increasing importance of recreation as a component of the local and regional economic base, surpassing traditional industries in many areas
- Increasing popularity of outdoor recreation as a family-oriented activity

Together, these factors will likely increase recreation usage and demands on natural resources. Camping, rock climbing, fishing, hunting, visiting parks, sightseeing, nature viewing, OHV use, snowmobile use, hiking, and biking are generally the major outdoor recreation pursuits, with their associated facilities often located on public lands outside local communities.

Key Features

Public lands adjacent to Cedar City and other communities throughout the Planning Area receive regular use from residents. Demand for a variety of recreational opportunities in these areas is high, as evidenced by OHV use in the Three Peaks area, hiking and mountain biking use on the C Trail, and heritage tourism at Parowan Gap.

Recreation Management Areas

Current Levels

Recreation management areas are the BLM's primary means for managing recreational use of the public lands. Public lands are identified either as a SRMA or an Extensive Recreation Management Area (ERMA). SRMAs are areas that require a recreation investment, where more intensive recreation management is needed, and where recreation is a principal management objective. These areas often have high levels of recreation activity or are valuable natural resources. The Three Peaks Recreation Area is the only identified SRMA in the Decision Area. ERMAs constitute all public lands outside SRMAs and other special designation areas. ERMAs are areas where recreation is not specialized, is dispersed, and does not require intensive management. Recreation might not be the primary management objective in these areas, and recreational activities are subject to few restrictions.

The Three Peaks Recreation Area includes 6,000 acres of BLM-administered land managed primarily for multiple uses, including OHV and mountain bike use. The SRMA plan was approved in 2004, and includes a 120-acre core area managed by Iron County through an R&PP lease. Located northwest of Cedar City, Three Peaks makes for a perfect weekend escape for outdoor recreationalists because the region is conducive to a diverse range of activities from the radio controlled flying field to the area's endless miles of equestrian, mountain bike, and OHV trails. Limited development is currently underway for a campsite area that will include cement pads, fire rings, and covered picnic areas. These improved campsites will create an ideal "base camp" for users seeking an extended stay to enjoy participating in a host of activities.

Three Peaks includes a Welcome Center, a mountain bike staging area, an OHV staging area, the Iron County R&PP, a large-group campground with fire pits and tent squares, primitive camping, a short hiking trail called the Rocky Peak Trail, an equestrian staging area with corrals, a model port, and the Iron County Shooting Range. Most of these areas offer graded parking areas, easy access, restrooms, informational signs, and covered picnic tables, and some areas include water.

Forecast

See the Dispersed Recreation section, above.

Key Features

Key features include all areas of the Three Peaks SRMA and adjacent public land.

Developed Recreation Sites

Current Levels

There are four developed recreation sites in the Planning Area – the C Trail, Parowan Gap, Rock Corral, and Three Peaks SRMA.

Developed recreation sites are areas that incorporate visitor use with infrastructure such as roads, parking areas, and facilities that protect the resource and support recreation users in their pursuit of activities, experiences, and benefits. Visitor-use infrastructure is a management tool that can minimize impacts to resources, concentrate use, and reduce visitor conflicts. Developed recreation sites help accomplish these goals.

Parowan Gap

The Parowan Gap is an incredible area that provides stunning examples of petroglyphs combined with a natural wind gap feature. Listed on the NHRP, the Parowan Gap includes many petroglyphs of native people and markings from Spanish explorers and nineteenth century pioneers. The area is still used for livestock grazing. The petroglyphs at Parowan Gap are speculated to have many possible meanings, depending on the interpreter. The Parowan Gap is also unique for its wildlife habitat and use for other recreation such as rock climbing and semi-primitive roads. The area provides important habitat for greater sage-grouse, Utah prairie dog, nesting raptors, lizards, and other animals, along with a variety of vegetation such as spearmint, Brigham tea, sagebrush, rabbitbrush, and pinyon. There is a designated parking area, benches, and a kiosk that includes informational signs and brochures at Parowan Gap. Visitation includes a variety of recreation seekers and groups of hundreds of people for cultural heritage tourism.

C Trail

Just 0.5 mile southeast of Cedar City the C Trail is rapidly becoming one of the area's most popular hiking and biking trails. The trail winds 4.2 miles to a large white painted C on the mountainside and involves an elevation change of 2,200 feet. There are several benches along the way to rest and enjoy the scenery. The overlook affords expansive views of the mountain ranges and valleys to the west.

The C Trail is open to nonmotorized uses, including hiking, biking, horseback riding, snow shoeing, cross-country skiing, trail running, and wildlife viewing. The C Trail Overlook at the top of the trail includes a parking and viewing area, benches, and multiple informational signs. The Lower C Trail access area includes a parking area, directional and informational signs, and benches.

Rock Corral

Rock Corral is east of Milford in the Mineral Mountain Range. It includes a day area offering spectacular views, rest rooms, sheltered tables, fire pits, and parking. Popular activities at Rock Corral include rock hounding, rock climbing, hiking, geocaching, and picnicking. The Rock Corral camping area includes tables, fire pits, and trash cans.

Three Peaks Special Recreation Management Area

Three Peaks SRMA is the only recreation area in the CCFO Planning Area with a special designation. It is the most intensively used developed recreation area in the Planning Area due the variety of uses available and proximity to Cedar City. Activities include hiking, camping, horseback riding, mountain biking, and OHV use. The area contains a radio-controlled flying field and a shooting range. Approximately 120 acres of the area are managed by Iron County under an R&PP ROW.

Forecast

The use of developed recreation sites in the Decision Area is on an upward trend, following growth trends in adventure tourism and heritage tourism, and increased populations in

communities in the Planning Area. For example, groups using the Parowan Gap interpretive site for a variety of public education events draw crowds of hundreds of people. Recent land exchanges have provided an opportunity for the BLM to create additional developed sites in high-use areas along Coal Creek and the Beaver River, and to provide more resources at existing trailheads.

In the next 25 years, it is reasonable to expect that there will be a continuing need to construct recreation facilities in response to community and tourism industry growth. With visitation to BLM-administered public lands around Cedar City continuing to increase (and with present visitation already creating the need for additional facilities), facilities to provide for these visitors must keep pace so as to protect the land and to provide for human sanitation. Current use levels continue to produce degradation of resources, and additional facilities are needed to accommodate visitation and stabilize resource values.

Examples of demand-driven development include (1) providing camping facilities where dispersed camping activity exceeds capacity and (2) providing marked OHV or bike routes when numbers and types of users change so that route marking can maintain public safety and protect resources. In addition, providing for vehicle users often requires building parking lots, trailheads, and restroom facilities.

Key Features

All of the developed recreation sites described above are important.

Historic Trails

Current Levels

There are two known historic trails that cross the Planning Area – the Old Spanish National Historic Trail and the Dominguez-Escalante Historic Trail.

The Old Spanish National Historic Trail, designated December 4, 2002, by the Old Spanish Trail Recognition Act of 2002, is a 2,700-mile-long trade route extending from Santa Fe, New Mexico, to Los Angeles, California, and passing through the Colorado, Utah, Arizona, and Nevada. The trail splits into two routes before entering Utah, and continues through the Utah in the Planning Area (Appendix A, Figure 2-9). The Northern Route of the Old Spanish Trail enters Utah near Moab, splits into two sections at Fremont Junction, and then rejoins near the town of Circleville, northeast of the Planning Area. From there the Northern Route continues southwest, running along the Sevier River, through the Markaguant Plateau and into the Parowan Valley, where it heads southwest out of Utah to rejoin the Armijo Route south of St. George, Utah.

The Dominguez-Escalante Trail follows sections of the trail taken by Father Francisco Atanasio Dominguez and Father Silvestre Velez Escalante. In 1776, they set out from Santa Fe with eight men to explore trading routes to California and establish new missions with the Indians. In early October 1776, faced with a blizzard and short supplies, the party had to decide whether to proceed to Monterrey, California, or return to Santa Fe. At a point just south of Thermo Hot Springs "lots were cast" to make the decision. The historic decision was made and the party turned south to Santa Fe. The marked portion of the trail is 30 miles northwest of Cedar City. The trail can be followed for 25 miles.

Forecast

As with other recreational activities, interest in these trails is expected to continue, and will likely increase.

Key Features

Key features include any markings or commemorations along the trails.

Commercial, Competitive, and Organized Group Recreation

Current Levels

As authorized by the Land and Water Conservation Fund Act, there are five types of uses for which special recreation permits (SRP) are required – commercial, competitive, vending, individual or group use in special areas, and organized group activity and event use. SRPs are issued to outfitters, guides, vendors, recreation clubs, and commercial competitive event organizers that provide recreation opportunities or services without using permanent facilities. SRPs are also issued for competitive and organized group events. SRPs may be issued for 10 years or less, with annual renewal. The permits are issued to manage visitor use, protect natural and cultural resources, and accommodate commercial recreational uses. Demand for SRPs has been increasing in the Decision Area; BLM-issued permits vary annually between 15 and 25 for activities that include big game hunting outfitting, therapeutic youth programs, bicycle races, and horseback riding.

The BLM also issues SRPs for noncommercial use in certain special areas where a permit system for individual use would achieve management objectives. Large non-commercial group activities outside developed campgrounds could require an SRP, if necessary to meet planned resource management objectives or resource conditions. If the group or activity does not warrant an SRP, a letter of agreement (a less formal approach) is often used (e.g., for Boy Scout groups and Southern Utah University campouts). Some of the recreation use can be estimated through recreation activities requiring special permits. Table 2-46 lists the numbers and types of SRPs.

Table 2-46. Special Recreation Permits*

Year	Climbing	Big Game Hunting	Horseback Riding	Bicycle Racing	Youth Therapy	Cultural Viewing	Vending
1999	1	3					
2000	1	6					
2001	1	8	1	1	2		
2002		9	1	1	2	1	
2003		9	1	1	2	1	3
2004		11	1	1	2	1	
2005		14	1	1	2	1	
2006		18	1	1	2	1	
2007		13			2	1	
2008		14			1		
2009		12			1		
2010		9			1		

*From the RMIS database.

Forecast

Although the demand for SRPs to perform commercial services on public lands has not significantly increased over the past 10 years, those activities are anticipated to increase in the future as the population continues to spend more time on public lands. The SRP activities often offer a specialized opportunity for the recreating public to experience activities that they themselves do not have the skills, equipment, or financial abilities to perform independently.

According to the BLM recreation report:

[T]here has been a “growth” of tourism and recreation in the western states, especially on public lands. Region wide, tourism is one of the fastest, and in many cases, one of the few growing industries. In response to this economic reality, state and local initiatives to promote tourist attractions involving BLM administered lands are being developed with the stated objectives of attracting regional, national, and international visitors (BLM 2000, p. 48).

In the Decision Area, an example of this response to the growth in tourism and recreation is the SRP process used for competitive and/or commercial events. In the last few years, the BLM has received numerous requests through the SRP process to authorize mountain bike races, OHV events, and historical and cultural interpretation. The BLM will likely receive more such permit applications for similar and other activities in the future. These events generally receive region-wide publicity, with event organizers seeking out-of-area distribution and participation.

Key Features

Many SRPs are requested in the Three Peaks SRMA and Parowan Gap. These are popular areas used for hunting guide services, competitive bicycle and horseback races, and climbing.

OHV Use

Current Levels

OHV use has become a significant issue because of the increase in the number of users who participate in this recreation opportunity and because of concerns related to the potential resource degradation that can result from high levels of unmanaged use in sensitive areas. During public scoping, approximately 10 percent of overall comments received related specifically to OHV use. Comments included both concern over resource conflicts with other uses, and a desire to identify, designate, and increase opportunities for OHV-related recreation. Over the past 20 years, OHV use has become one of the fastest growing recreation activities in southwest Utah, drawing thousands of visitors each year. Visitors are drawn to these areas to experience the numerous roads and trails available for OHV use, the diverse backcountry opportunities and spectacular scenery the area provide, and the challenging OHV opportunities the landscape and terrain provide. This is evident by an increased demand for SRPs for group OHV events over the past 2 to 3 years. This trend is expected to continue.

The number of OHV registrations in Utah has increased significantly over the past several years, as have registrations in Iron and Beaver counties. Table 2-47 lists local and statewide OHV registrations. The registration data show why OHV use is perceived as one of the fastest growing activities; more OHVs are being registered and it is reasonable to assume that more are being used. Unfortunately, visitation data on OHV use are particularly difficult to collect

because of the dispersed nature of the activity. In addition, the number of registrations might not accurately reflect actual OHV use. The actual number of OHV users could be higher based on use of OHVs registered outside the Planning Area.

Table 2-47. Off-Highway Vehicle, 2004 through 2011

County	2005	2006	2007	2008	2009	2010	2011	Percent Increase 2005-2011
Beaver	733	791	887	976	1,013	934	871	119
Iron	3,440	3,930	4,605	5,153	5,008	4,799	4,564	133
State of Utah	169,016	181,072	198,173	214,444	213,006	206,025	199,070	118

When the existing LUPs were completed, the level of OHV use in the Decision Area did not warrant extensive management restrictions. As a result, much of the area is open to cross-country use, although most use occurs along existing routes, ways, or other areas that are already disturbed. In addition, the area surrounding Cedar City is becoming known in the OHV community as a premier location for challenging rock crawling opportunities, with user groups organizing both sanctioned and unsanctioned events. OHV management in some areas no longer adequately addresses the issues that have arisen as a result of increased OHV use, which has resulted in some conflicts. Several federal, state, and county agencies in the region have cooperated in developing trail systems to provide these varied opportunities. The Paiute All-Terrain Vehicle Trail north and east of the Planning Area, and the currently proposed High Desert Trail are examples of trail systems that allow for increased OHV use while minimizing impacts. In addition, the State of Utah Parks and Recreation Division has identified and publicized motorized trail systems in the Black Mountains, Mineral Mountains, Wah Wah Mountains, Indian Peak, and Mountain Home regions of the Planning Area (USPR, 2011).

Although most of the Decision Area is currently open to cross-country OHV use, some locations receive intensive OHV use based on landscape characteristics, accessibility, or support facilities. One such area is Three Peaks SRMA and the adjacent public lands. Intensive use in and around the Three Peaks has resulted in changes in management over the past 10 years to decrease impacts from OHV use. Designating the SRMA, followed by an amendment to the CBGA RMP, addressed such impacts. There are other travel restrictions in crucial big game winter range along the Hurricane Cliffs and in greater sage-grouse brood rearing habitat surrounding the Parowan Gap.

Forecast

OHV use is expected to intensify in high-demand areas and adjacent to communities. In addition, the direct relationship of this activity to an overall improvement in technology to aid navigation and exploration (GIS, Global Positioning System [GPS], and geocaching) has brought more user groups into dispersed areas. Areas would be necessary to provide the semi-primitive road travel experience and the desired challenge and risk to user groups.

Key Features

Most recreational activities in the Decision Area occur primarily during spring, summer, and fall. However, there has been a steady increase in winter recreation, particularly in the Mineral Mountains where local communities are sledding and snow-mobiling. OHV use has become one of the fastest growing recreational activities. Consequently, existing management efforts and processes, which were developed to address OHV use levels 20 years ago, are often inadequate. Because of the significance of OHV use, it is addressed in the Transportation section.

The Decision Area is unique in the diverse recreational opportunities it provides, ranging from vast open landscapes in the Great Basin, to readily accessible slot canyons at the base of the Colorado Plateau. There are many areas in and near the Decision Area that provide unique recreational opportunities and have become high-use recreational destination areas. These areas provide a moderate degree of challenge and risk sought for a variety of activities. Examples of these destinations include Spring Creek and Kanarra Creek Canyons in the Spring Creek WSA. Recreation use in this area includes “spill-over” use from Zion National Park. Recreation use in this area has been increasing over the last several years and is anticipated to continue to increase. In addition, the accessibility of the C Trail, which ascends Cedar Mountain, provides a unique resource for hiking, mountain biking, and horseback riding to the communities.

There are many parts of the Planning Area that provide good opportunities for the mountain biker to enjoy the scenic and rugged landscapes. Numerous possible biking routes provide a wide range of difficulty, from gentle, long grades to steep, undulating grades with switchbacks. Most of the routes are suitable for and traveled by four-wheeled vehicles. None of the routes in the area are formally developed or signed for mountain biking.

Big game hunting is a major recreational activity, and there are opportunities for hunting deer, pronghorn, elk, upland game, and cougar. Some of the elk units are managed for mature bulls, with limited permits and stiff competition for drawing a permit. Local, statewide, and out-of-state hunters come to hunt big game and game birds. Certain predators are also hunted, including coyote and cougar. There is also trapping for species such as bobcat.

Other parts of the Decision Area that have been identified as receiving increased recreational use include the Wah Wah Mountains WSA and the White Rocks WSA. In addition, lands immediately surrounding communities are receiving increasing pressure and desire for both motorized and nonmotorized recreational opportunities. It should also be noted that adjacent national parks (Zion and Bryce Canyon) have experienced increased visitation and are now experiencing visitor overflows. Consequently, many of these displaced recreationists are seeking additional recreation and camping opportunities outside these areas and are turning to the nearby public lands to serve their needs. Also, as the communities continue to develop a robust tourism industry, additional opportunities are sought on public lands.

Renewable Energy

On August 8, 2005, President Bush signed the Energy Policy Act of 2005. The legislation was written to promote dependable, affordable, and environmentally sound production and distribution of energy for America’s future. Section 211 of Energy Policy Act calls for the Secretary of the Interior to approve non-hydropower renewable energy projects located on public lands with a generation capacity of at least 10,000 megawatts of electricity before the end

of the 10-year period, beginning on the date of the Act's enactment. Renewable energy sources in the Planning Area include wind, solar, geothermal and biomass resources.

More information about these resources is provided in Appendix K. This report also contains additional acronyms and references.

Wind

Current Levels

The BLM initiated the preparation of a Programmatic Environmental Impact Statement (PEIS) in October 2003 to address the impacts of the future development of wind energy resources on public lands. The Record of Decision was signed in 2005 (U.S. BLM, 2005c). The PEIS also addressed the establishment of policies and BMPs as mitigation measures for potential environmental impacts and addressed the amendment of individual BLM land use plans. The Wind PEIS amended the CBGA RMP and the Pinyon MFP. The Cedar City Field Office currently has two authorized wind development ROW grants (known as the Milford Corridor Phase I and II Project), two pending development ROW applications, five authorized wind testing and monitoring ROW grants, five pending wind testing and monitoring applications, and five closed wind testing and monitoring ROW cases.

Forecast

The demand for alternative energy-related ROWs is predicted to increase nationally, including parts of the Decision Area that have potential for wind and solar energy. According to U.S. Department of Energy (DOE) data (U.S. DOE, wind resources in parts of the Decision Area are considered to be moderate (more than 6 meters per second) to high (more than 10 meters per second) based on annual average wind speed projections at 80-meter (approximately 263-foot) elevations (http://www.windpoweringamerica.gov/wind_resource_maps.asp?stateab=ut).

Key Features

See Appendix K.

Solar

Current Levels

Currently, the BLM also has direction and guidance for issuing ROWs for the development of solar-energy systems. The BLM is working under the guidance in IM 2011-003, Solar Energy Development Policy (U.S. BLM, 2010b). The BLM and DOE are currently in the process of writing a PEIS for solar energy development on BLM-administered lands in six western states, including Utah (U.S. BLM, 2011e). The Decision Area has three proposed Solar Energy Zones (SEZ) (two in Beaver County and one in Iron County), which are currently being analyzed as one of three PEIS alternatives. Each of the proposed SEZs is approximately 6,000 acres. If selected, this alternative would only allow solar development on BLM-administered lands in the designated SEZ boundaries. The Program Development Alternative, if selected, would open solar development for a much larger area but would exclude areas such as wilderness, WSAs and ACECs. To date, there are no applications for solar-energy development in the Decision Area.

Forecast

The demand for alternative energy-related ROWs is predicted to increase nationally, including parts of the Decision Area that have potential for wind and solar energy. There are currently no commercial solar-energy producing facilities and no pending applications for solar-energy facilities in the Decision Area. However, data available from the National Renewable Energy Laboratory (NREL), a branch of DOE, indicates the Decision Area has solar resources favorable for full-scale solar-energy development for both concentrated and photovoltaic technologies (kilowatt hours per square meter per day, or kWh/m²/day) (U.S. NREL, 2011). With current technologies considered, an average of more than 6 kWh/m²/day is needed for utility-scale solar-energy development. The Decision Area has areas that would meet this threshold.

Key Features

See Appendix K.

Geothermal

Current Levels

Geothermal resources are subject to the same leasing categories as oil and gas resources. Geothermal resource leasing on federal land is authorized under the Geothermal Resources Act of 1970, an amendment to the Mineral Leasing Act of 1920. The Energy Policy Act of 2005 has prompted new interest in promoting exploration and development of geothermal resources.

The geothermal leasing program and associated activities on public lands in Utah have been active since the mid 1970s. Interest in geothermal development within the CCFO is relatively high, due largely to the well-known high temperatures and sustainable production of the Roosevelt Hot Springs resource and to the availability of shallow heat resources and fault-controlled geothermal brine reservoirs in several locations throughout the Planning Area.

There are currently 15 authorized geothermal leases, totaling 13,697 acres, in the CCFO Planning Area. All 15 lease parcels are in the CBGA RMP Planning Area. Two of the leases, UTU-081048 and UTU-085605, are partially located in Millard County, outside of the CCFO Planning Area. Similar to an oil and gas lease, a geothermal lease is valid for a period of 10 years and may be extended only if a minimal amount of development activities are conducted on the lease within the primary lease term (43 CFR 3207.10).

There are currently two geothermal resource areas in the CCFO Planning Area that have been used for commercial power production from federal geothermal resources – the Cove Fort/Sulphurdale geothermal resource area and the Roosevelt geothermal resource area. The Cove Fort/Sulphurdale geothermal resource area also includes historic production from private land, and there is an operating geothermal power plant and well field on private and state lands in the Thermo Hot Springs area of Beaver County.

The Roosevelt field initiated production in 1984 at the Blundell Power Plant. The plant, currently operated by PacifiCorp, has been operating continuously since 1984 at a nominal capacity of 26 megawatts (MW) gross, 23 MW net. In 2004, PacifiCorp amended their utilization plan to add a binary cycle, which increased power plant generation capacity by 10.6 MW gross, 8.7 MW, net when it became operational in December 2007. In 2008, PacifiCorp began work on expanding

the well field. The expansion was intended to support the construction of additional power production capacity. However, forward movement on this authorized expansion was halted indefinitely by PacifiCorp in 2009. All electricity currently generated at the plant is utilized by Utah customers.

The Cove Fort/Sulphurdale field initiated production in 1985. From 1985 to 1990, steam from two wells in Fishlake National Forest was used to reach a combined generating capacity of 3.3 MW from four binary units and one non-condensing topping turbine. From 1990 to 2003, an additional condensing turbine with a generating capacity of 7.5 MW, and utilizing hot water and flashed steam from three wells on fee land, was added, and electricity was supplied to five Utah cities. In 2003, the plant was sold and has been shut down since the sale.

In 2007, international power developer Enel purchased the Cove Fort/Sulphurdale development, including federal geothermal leases on BLM- and USFS-administered lands totaling 3,525 acres. Enel now holds 22,809 acres of federal geothermal leases in the Cove Fort/Sulphurdale area. Drilling to explore and further develop the well field began in 2009. To date, Enel has drilled five new wells and extended one existing well. An additional new well is planned for 2011. A Plan of Utilization to construct a 20 MW binary power plant at the site has been submitted for joint review by the Utah BLM and Fishlake National Forest. Additionally, Enel has partnered with the Massachusetts Institute of Technology to install monitoring stations on federal and private lands around the well field to determine the effect of removing and re-injecting geothermal fluids on local earthquake activity.

Commercial development of geothermal resources in the Thermo Hot Springs area began with the construction and startup of a 10 MW modular binary power plant by Raser Technologies in 2009. As previously mentioned, this plant and its associated well are not on federal surface estate or utilize federal geothermal resources. However, the Utah Geological Survey conducted gravity and magnetotelluric surveys of the surrounding area in 2010 and plans to drill a temperature gradient well to the south of the plant in an effort to determine the source of the heat energy utilized by the current plant (UGS, 2010). There are currently four federal geothermal leases in the area surrounding the power plant area, and Raser Technologies has expressed interest in future development of geothermal resources in the area.

Last, there are two greenhouse operations in Newcastle, one church building in Newcastle, and one high school in Cedar City that directly use geothermal energy for heating. The greenhouses are used for raising flowers, tomatoes, and bedding plants. None of these direct uses are on federal lands or utilize federal geothermal resources. There are currently two undeveloped federal geothermal lease parcels in the Newcastle area of Iron County.

FLPMA (Section 317, Mineral Revenues) provided that, of all money received from sales, bonuses, royalties, and rentals of the public lands under the provisions of the Act, 50 percent would be paid to the state within the boundaries of which the leased lands or deposits are or were located. This federal mineral revenue disbursement paid to the State was required to be used at the discretion of the state legislature, but giving priority to those subdivisions of the state socially or economically affected by development of minerals leased under the Act, for planning, construction and maintenance of public facilities, provision of public service, and building up a mandated reclamation fund. The Energy Policy Act of 2005 (Subtitle B-Geothermal Energy, Section 224) further provided that, of all monies received by the United States from geothermal sales, bonuses, rentals, and royalties, 50 percent would be paid to the state and 25 percent to the county within the boundaries of which the leased lands or geothermal resources are or were located. By the disbursement provisions of these two Acts, the State of Utah, Beaver County,

and Iron County annually receive monies from the Federal Government for lease sales, bonuses, rentals, and royalties related to oil and gas and geothermal exploration and development in the CCFO Planning Area.

Since implementation of the Energy Policy Act of 2005, more than \$900,000 has been disbursed to the state as its 50-percent share of royalty/revenue from federal geothermal power production in the state. It is important to note that the only producing power plant utilizing federal geothermal resources in the state during that period has been PacifiCorp's Blundell facility in Beaver County, entitling Beaver County to its own disbursement of half of the amount paid to the state. In fiscal year 2010 alone, Beaver County received a disbursement of more than \$100,000 for geothermal royalty/revenue and geothermal lease rentals and bonuses. The Blundell Power Plant also employs 23 full-time equivalents who live in Beaver and Iron counties. And development of the Cove Fort/Sulphurdale geothermal well field, with planned power plant construction in 2012, brings indirect revenue to the local economies through supporting the workers brought in to drill wells and construct the facility. Although Iron County does not have a producing geothermal power plant, geothermal lease rentals and bonuses resulted in a disbursement of more than \$19,000 to the county in fiscal year 2010.

Forecast

Continued high interest in geothermal development in the CCFO Planning Area is anticipated, given the availability of known geothermal resource areas for additional development, increasing demand for electricity from renewable energy sources, and anticipated technological advances that will enhance geothermal power production capabilities from the resources in the Planning Area.

Key Features

Geothermal leasing, exploration, and utilization in the CCFO Planning Area would likely be within a corridor of 1,311,170 acres of federal, private, and state lands that trends northeast to southwest through Beaver and Iron counties (Appendix A, Figure 2-10). This area was delineated in the Utah Renewable Energy Zone Task Force Phase I Report, published in 2009 by the Utah Geological Survey. Key areas of development potential within this corridor are in the areas of Roosevelt Hot Springs (PacifiCorp's Blundell plant), Cove Fort/Sulphurdale, Thermo Hot Springs, and Newcastle. More information is provided in Appendix K.

Biomass

Bioenergy, or biomass power, is the use of biomass (primarily wood and wood residues) to generate electricity. Biomass is also used in other energy applications such as heating. New technologies are being developed at this time.

In the CCFO Planning Area, woody biomass is primarily composed of the wood residues of forest restoration projects designed to improve wildlife habitat, increase forest and rangeland health, and reduce the risks of wildfire. Restoration projects consist primarily of land treatments, which thin and clear overstocked forest and woodland stands, removing understory, smaller diameter trees, and brush. Not all vegetative types have the potential for bioenergy production. In the Planning Area, the dominant forested species and the primary source of woody biomass with the potential for energy production are the Great Basin and Colorado Plateau pinyon-juniper.

Current Conditions

Estimates of existing biomass resources on BLM-administered lands in the Planning Area are expressed in tons per acre (TPA) of biomass yield. Potential biomass yield ranges from less than 12 TPA to more than 44 TPA. TPA levels are divided into three categories of resource potential: low (0 to 5 TPA), medium (5 to 20 TPA), and high (more than 20 TPA). The assessment shows that 51.8 percent (1,090,308 acres) of BLM-administered lands in the Planning Area have low potential for biomass energy, 44.4 percent (933,626 acres) have medium potential, and the remaining 3.8 percent (81,038 acres) have high potential for biomass energy.

Forecast

The theoretical maximum average annual capacity that could be generated from biomass resources on BLM-administered lands in the Planning Area is between 789 and 1,315 MW. To determine this range of values, the total number of tons of biomass material on BLM-administered lands was calculated and converted to bone dry tons (BDT). Experience from completed restoration projects shows that 1 acre in the CCFO Planning Area yields approximately 3 to 5 BDT of biomass. Based on this content and yield, there is an estimated maximum 6,314,916 to 10,524,860 BDT of woody biomass on BLM-administered lands in the Planning Area. Approximately 8,000 BDTs are consumed to produce 1 MW of power. However, the theoretical maximum annual energy capacity from biomass resources could be substantially less depending on a number of factors, including stand density, policy or regulatory “exclusion” or “avoidance” areas, or reductions or adjustments resulting from technical, economic, or market constraints.

Key Features

Most of the biomass resource will be derived from pinyon pine and juniper cleared in vegetative treatments and other developments. Other trees and smaller woody species could also be used if they are being removed for habitat, forest health, or biodiversity improvements. More information is provided in Appendix K **Appendix K. Renewable Resources Report.**

Transportation

Current Conditions

Current transportation and access routes into and through the Planning Area consist of federal and state highways; BLM, USFS, and county road systems; and private roads. There are no back-country airstrips on public land in the area. In addition to arterial and collector routes, there are numerous smaller routes that connect more remote locations to the larger roads. These routes are used for recreational purposes, access to range improvements, mineral development, and inholdings not managed by the BLM. Most of these routes are not paved and most are unimproved with dirt or gravel surfaces. There are also numerous routes with no apparent destination. Non-motorized vehicle trails are discussed in the Recreation section of this document.

Most of the state- and county-maintained roads have either an ROW from the BLM or have historically been maintained by these other agencies. The BLM also maintains several routes in

the Decision Area. There are approximately 8,400 miles of identified routes in the Decision Area. This information has been collected using information from state and county governments, local individuals, and photo-enhanced aerial photography.

A Travel Management Plan (TMP) will be prepared in conjunction with the new RMP. During the public scoping meetings, input was solicited from the public to help the BLM determine which parts of CCFO Planning Area will be open to cross-country travel and which areas should be limited or closed. That decision will be part of the RMP process. Separately, in the TMP, all routes in the Planning Area will be designated as open, limited to certain uses or times of the year, or closed. Preparation of the TMP will continue for up to 5 years past the completion of the new RMP, with additional opportunities for public input and comments on the road network.

Although most of the use on existing routes on BLM-administered lands in the Planning Area is defined as casual use, other travel considerations associated with administrative use and authorized actions such as mining claims, mineral leases, livestock grazing, and emergency purposes will be considered during the travel planning process. Administrative access and authorized uses are exempt from the regulations dealing with management of OHVs; however, these kinds of uses will be considered when determining the purpose and need of routes individually and as a network.

OHVs are used in the area for recreational and non-recreational purposes. Much of the non-recreational OHV use, or administrative use, involves OHVs driven by local ranchers for administration of their grazing operations. Administrative OHV use occurs in association with permitted uses and is determined case by case. OHV use has become a popular method of recreation in itself, and a means of transportation while hunting, fishing, or camping. More information about OHV use is provided in the Recreation section of this document.

Forecast

The population is increasing in Beaver and Iron counties, which is expected to result in increased public demand on the existing transportation system. Increased travel across public lands by motorized and nonmotorized equipment will increase the need to manage, maintain, and in some cases, improve the current transportation system.

Key Features

The highways and main roads that allow access to larger parcels of public lands receive the most use in the Decision Area. Secondary paved and unpaved roads used heavily by the public primarily include roads maintained by Beaver and Iron counties, and the USFS and BLM road systems. The combination of these road systems creates the access web for current uses and will continue to be the main influence for future use

Wilderness Characteristics

BLM Manual 6310 provides guidelines to assess BLM-administered lands for wilderness characteristics that are not currently managed for such characteristics, such as wilderness areas and WSAs. BLM Manual 6320 provide guidelines to managed these areas. The assessments are based on determining if roadless tracts of public lands of 5,000 acres or less have wilderness characteristics of naturalness, solitude, and primitive recreation, as follows:

- **Naturalness:** Lands and resources exhibit a high degree of naturalness, are affected primarily by the forces of nature, and are areas where the imprint of human activity is substantially unnoticeable. The BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes can include the presence or absence of roads and trails, fences and other improvements, and the nature and extent of landscape modifications.
- **Outstanding Opportunities for Solitude:** Visitors can have outstanding opportunities for solitude when the sights, sounds, and evidence of other people are rare or infrequent and where visitors can be isolated, alone, or secluded from others.
- **Outstanding Opportunities for Primitive and Unconfined Types of Recreation:** Visitors can have outstanding opportunities for primitive and unconfined types of recreation where the use of the area is through nonmotorized, nonmechanized means, and where no or minimal developed recreation facilities are encountered.

Public lands possessing these characteristics can be managed to maintain some or all of the characteristics. Wilderness characteristics such as solitude, primitive recreation, and naturalness are a part of the land use planning process and have been evaluated and addressed along with all other resource values and uses. The BLM is authorized to consider this information when developing the EIS affected environment section and the range of alternatives, or to analyze the environmental impacts to other resources.

In 1979, the Utah BLM performed an initial wilderness review under FLPMA to identify areas that might qualify as wilderness under the Wilderness Act. Three areas were found to possess wilderness characteristics and were recommended as WSAs. Of the remaining BLM-administered lands, none were found to have wilderness characteristics at the time (U.S. BLM 1991c). In 1999, three areas were reinventoried, and found at that time to have wilderness characteristics: the Granite Peak, North Wah Wah and Central Wah Wah units (U.S. BLM 2005d)

A new wilderness characteristics inventory of public lands in the Planning Area was completed in 2011. The first step was to identify lands which met the 5,000-acre minimum size criterion required for an area to be considered as having wilderness characteristics. Areas which met this criteria were then ground-checked to verify the existence of wilderness characteristics.

The Utah Wilderness Coalition has nominated to Congress 19 parcels of public land in the Planning Area for designation as wilderness. All of these areas were ground-checked as part of the 2011 inventory process.

The inventory resulted in 11 units (182,880 acres) identified as have wilderness characteristics: Antelope Range (5,333 acres), Central Wah Wah (53,079 acres), Granite Peak (19,987 acres), Needle Mountain (6,596 acres), North Wah Wah Mountains B (5,342 acres), Paradise Mountain (32,000 acres), Steamboat Mountain (32,769 acres), UT-040-136 (5,782 acres), North Peak (5,090 acres), South Wah Wah (16,497 acres), White Rock (404 acres). These areas are shown in Appendix A, Figure 2-11. Summary inventory forms are included in Appendix M.

Future commercial development and recreation use could reduce or eliminate naturalness, solitude, and primitive recreation values in areas with wilderness characteristics that lie outside established WSAs if they are not managed specifically to preserve such values.

The key features that determine wilderness characteristics (i.e., naturalness and outstanding opportunities for solitude and primitive and unconfined types of recreation) are identified above.

SPECIAL DESIGNATIONS

Special designation areas are designated to protect or preserve their unique values or uses. These areas therefore require different management than would be applied to the surrounding public lands. This section identifies the various special management areas in the Decision Area and addresses the qualities or uses that have resulted in their designations.

Areas of Critical Environmental Concern

ACECs are defined in FLPMA section 103(a) as “areas within the public lands where special management attention is required (when such areas are developed or used or where no development 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 prepared regulations for implementing the ACEC provisions of FLPMA (43 CFR 1610.7-2). The BLM also developed policy on ACECs (45 *Federal Register* 57318 and BLM Manual 1613). There are no designated ACECs in the Planning Area. Nominations for ACECs received during scoping include Parowan Gap, the Mineral Mountains, and the Wah Wah Mountains, and with high-value cultural resource sites. Some additional areas might meet the relevance and importance criteria to be considered as potential ACECs. All of these areas will be evaluated, and if they meet the required relevance and importance criteria, they will be included in at least one alternative of the CCFO RMP.

National Trails

National Historic Trails are “extended trails which follow as closely as possible and practicable the original route or routes of travel of national historical significance” (NPS 2001). The purpose of the National Historic Trails is “the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment” (NPS 2001).

The Old Spanish National Historic Trail, designated December 4, 2002, by the Old Spanish Trail Recognition Act of 2002, is a 2,700-mile long trade route extending from Santa Fe, New Mexico, to Los Angeles, California, passing through Colorado, Utah, Arizona, and Nevada. The trail splits into two routes before entering Utah, and continues through Utah in the Planning Area (see Appendix A, Figure 2-9). The Northern Route of the Old Spanish Trail enters Utah near Moab, splits into two sections at Fremont Junction, and then rejoins near the town of Circleville, northeast of the Planning Area. From there the Northern Route continues southwest, running along the Sevier River, through the Markaguant Plateau and into the Parowan Valley, where it heads southwest out of Utah to rejoin the Armijo Route south of St. George, Utah.

Wild and Scenic Rivers

Section 5(d)(1) of the Wild and Scenic Rivers Act of 1968, as amended, requires that federal agencies make wild and scenic river considerations during planning. Congressional WSR designation is intended to protect a river’s free-flowing condition, water quality, and outstandingly remarkable values such as cultural, geological, wildlife, scenic, and recreational. During planning efforts, the BLM reviews all potentially eligible streams in its jurisdiction and makes decisions on eligibility, suitability, and tentative classification. The three types of

tentative classification are wild, scenic, and recreational. The tentative classification is based on the degree of human development currently along an eligible river, and is used as a guide for future management activities. Congress has not designated any river segments in the Decision Area into the National Wild and Scenic Rivers System (NWSRS). Nominations for WSRs received from the public during scoping include Kanarra Creek and Spring Creek. An eligibility review of other rivers and streams in the Planning Area has been completed. Nine river segments (14 miles) were found to meet the WSR eligibility criteria as identified in the Wild and Scenic Rivers Act. A draft evaluation report for potential eligible segments is contained in Appendix L. This report was made available for public comment in September and October 2011.

Wilderness and Wilderness Study Areas

The Wilderness Act of 1964 established a national system of lands for the purpose of preserving a representative sample of ecosystems in a natural condition for the benefit of future generations. With the passage of FLPMA in 1976, Congress directed the BLM to inventory, study, and recommend which public lands under its administration should be designated wilderness. The FLPMA-mandated wilderness review process was completed in Utah in October 1991.

The BLM wilderness review process applied three steps. The first step of inventorying public lands to determine which lands had wilderness characteristics was performed with extensive public involvement. Lands found to have wilderness characteristics were administratively designated as WSAs. The next step involved studying the WSAs to determine their suitability for wilderness designation. In Utah, that study included the preparation of a statewide wilderness EIS. The Utah Statewide Wilderness Study Report, published in October of 1991, reported the results of the study and made recommendations to Congress through the President about which should be designated wilderness. This was the third step. The final recommendation for wilderness designation was forwarded to Congress on June 22, 1992. Congress has not acted on that recommendation. This completed the FLPMA-mandated wilderness review process.

From the recommendations in the Utah Statewide Wilderness Study Report, three WSAs were identified in the Decision Area. A discussion of the current wilderness characteristics and other resource values and uses found in each WSA are provided in the Wilderness Study Report (BLM, 1991b). These three WSAs account for approximately 32,265 acres (1.5 percent) of the Decision Area (See Appendix A, Figure 2-11 and Table 2-48).

Table 2-48. Wilderness Study Areas

Name	Acres
Spring Creek	4,433
North Wah Wahs	24,065
White Rocks	3,767
Total	32,265

Source: BLM, 1991a.

The three WSAs, established under the authority of FLPMA section 603(c), are being managed to preserve their wilderness values according to the BLM Interim Management Policy for Lands

Under Wilderness Review, and will continue to be managed in that manner until Congress either designates them as wilderness or releases them for other uses.

Only Congress can designate the WSAs established under FLPMA section 603 as wilderness or release them for other uses. The current status of WSAs will not change in the CCFO RMP process; however, an understanding of the WSAs and the reasoning for their designation will give insight to current management procedures and issues that must be addressed during the RMP process. The following is a brief description of each WSA.

Spring Creek Canyon

There are two major canyons – Spring Creek and Kanarra – in this WSA. Spring Creek Canyon is in southeastern Iron County, approximately 7 miles southwest of Cedar City. The canyon mouth includes a portion of the Hurricane Cliffs, a west-facing escarpment that extends from north of Cedar City into northwestern Arizona. After about a mile, it narrows into a narrow red rock slot canyon. The WSA has scenic values similar to those found in contiguous Zion National Park. Approximately 73 percent of the WSA is rated as outstanding for scenic quality. It receives steady use for hiking and horseback riding. The WSA might be habitat for, or be visited by, bald eagles, peregrine falcons, California condors, 13 animal species, and 4 plant species that are considered sensitive. The Spring Creek hiking area has a maintained road and parking area at the mouth of the WSA. The first mile has been bladed in the past. OHV use remains a problem in the canyon, but does not seem as prevalent as in the past.

Kanarra Canyon is a separate canyon just north of Spring Creek Canyon. There is a water tank owned by the city of Kanarraville near the head of the canyon. A road continues to and past this tank for about a mile, before the boundary of the WSA. There is a water line ROW that runs adjacent to the road, used for the water supply of Kanarraville. At the end of the road, which is used by OHVs, the canyon narrows and visitors must walk in the creek to continue. This canyon receives a large amount of visitor use year-round. There is an obvious social trail and people hike the river in the slot canyon.

North Wah Wah Mountains

This WSA is in southwestern Millard County and northwestern Beaver County, about 30 miles west of Milford, Utah. It is administered by the BLM Fillmore Field Office. Pinyon-juniper woodland is the dominant vegetative type. The WSA encloses a narrow, flat-topped mountain range with steep, rugged sides. Bald eagles, peregrine falcons, and golden eagles are raptor species in the WSA. Other sensitive species that could inhabit the WSA include the ferruginous hawk, long-billed curlew, burrowing owl, and kit fox. Three sensitive plant species can be present in the WSA – *Cryptantha compacta* and *Sphaeralcea caespitosa* var. *caespitosa* and bristlecone pine. Bristlecone pine grows on approximately 190 acres in the higher parts of the WSA. Bristlecones are rare in this area and those in the WSA are exceptionally large, reaching heights of 50 feet or more. Bristlecone pines are among the oldest living trees.

White Rocks

Most of this WSA is in Lincoln County, Nevada, and is now a designated Wilderness Area. The portion of the WSA in Utah is still a WSA. Most of the WSA is forested with juniper, pinyon-juniper woodland, and fir woodland, varying by elevation. The north end exhibits some interesting differences, including high, open sagebrush country, ponderosa pines, white fir-aspen, and two high-mountain lakes. Interspersed throughout the area are numerous small grassy meadows where springs support riparian vegetation. The WSA is comprised of gentle mountain terrain with associated foothills and bench lands. The broad, north-south trending

range is dissected by numerous side canyons and drainages. The area supports elk and mule deer and is popular for hunting. Sensitive plant species in the White Rock WSA include *Eriogonum pharnaceoides* var. *cervinum*.

Other Special Designations

Designation and management of scenic byways can occur at local, state, or national levels. Because of the number of visitors to the state and national parks and monuments, the popularity of these roadways has resulted in issues that public land management can address. The following is a description of the seven byways that are either entirely or partially included in the Decision Area (see Appendix A, Figure 2-12 **Error! Reference source not found.**).

National Scenic Byways

The National Scenic Byways (NSB) Program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, and scenic qualities. All-American Roads must exhibit multiple intrinsic qualities. For a highway to be considered for inclusion in the NSB Program, it must provide safe passage for passenger cars year-round, it must be designated a State Scenic Byway, and it must have a current corridor management plan in place. Installation of offsite outdoor advertising (e.g., billboards) is not currently allowed along byways.

Highway 143 is the only National Scenic Byway in the Planning Area. This 55-mile byway extends from Parowan to Panguitch. Ascending to an elevation of 10,000 feet through Parowan Canyon, the route travels past Brian Head Resort and Cedar Breaks National Monument. From the Dixie National Forest the byway enters the Decision Area southwest of Panguitch. Parowan Gap is also considered part of the National Scenic Byway designation.

Utah Scenic Byways

Similar to National Scenic Byways, Utah State Scenic Byways are paved highways that have been designated by official state declaration for their scenic, historic, recreational, cultural, archeological, or natural qualities. The byways are paved roads that are generally safe, year-round, for passenger cars. Installation of offsite outdoor advertising is not currently allowed along byways.

There are two Utah Scenic Byway in the Planning Area: the Markagunt High Plateau Byway and the Beaver Canyon Byway. The Markagunt High Plateau Byway is one of the most traveled areas in Southern Utah. Accessed off Interstate 15 at Cedar City, this 40-mile byway ascends through a narrow canyon, passes Cedar Breaks National Monument, the Ashdown Gorge, and the Zion Overlook. From the summit, the byway continues into Dixie National Forest to Cedar Mountain and several points of interest, including Navajo Lake. The Markagunt High Plateau Byway is known for its cultural, historical, natural, recreational, and scenic attractions. While the byway never crosses the Decision Area, the area is within the byway's viewshed.

The Beaver Canyon Byway begins east of Beaver, Utah, and travels 17 miles into the Tushar Mountains. These rugged mountains offer plentiful opportunities for hiking, camping, fishing, mountain biking, hunting and other recreational opportunities. The Byway ends at the Eagle Point Ski Resort.

Utah Scenic Backways

State Scenic Backways are roads that do not generally meet federal safety standards for safe year-round travel by passenger cars. They have been designated by official state declaration for their scenic, historic, and recreational qualities. Backways often require four-wheel drive, and road conditions can vary due to such factors as season and weather. There are two Utah Scenic Backways in the Decision Area.

The Dry Lakes/High Mountain Backway is a 19-mile-long route that provides sweeping views of Parowan Canyon, Sugarloaf Mountain, High Mountain, and Cedar Breaks National Monument. This is also the access to road to Twisted Forest hiking trail and Ashdown Gorge Wilderness area. The road begins 8 miles up State Route 143. This a good gravel road with very steep grade coming off the High Mountain toward Summit Township.

The Kolob Reservoir Scenic Backway is a 45-mile-long route that travels through thick aspen forest to Kolob Reservoir, through grassy meadows to the red and white backcountry of Zion National Park. The route begins 5 miles east of Cedar City, off State Route 14, and ends at State Route 9.

BLM Back Country Byways

The BLM developed its Back Country Byway Program to complement the National Scenic Byway Program. These byways highlight the spectacular nature of the western landscapes. Back Country Byways vary from narrow, graded roads, passable only during a few months of the year, to two-lane paved highways providing year-round access. There are no BLM Back Country Byways in the Decision Area.

SOCIAL AND ECONOMIC FEATURES

Hazardous Materials and Public Safety

Hazardous Materials

Hazardous materials are defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, could pose a real hazard to human health or the environment. Hazardous materials include flammable or combustible material, toxic material, corrosive material, oxidizers, aerosols, and compressed gases. Management of hazardous materials, substances, and waste (including storage, transportation, and spills) will be in compliance with 29 CFR 1910, 49 CFR 100-185, 40 CFR 100-400, the Comprehensive Environmental Response Compensation and Liability Act, the Resource Conservation and Recovery Act, the Superfund Amendment Reauthorization Act, the Toxic Substances Control Act, the Clean Water Act, and other federal and state regulations and policies regarding hazardous materials management.

There are no known occurrences of hazardous materials or approved hazardous waste disposal facilities in the Planning Area.

Abandoned Mine Land

Before 1981, there was no comprehensive regulatory control on mineral exploratory or extractive disturbances, and many of these disturbances were left unreclaimed or abandoned. The State of Utah has an on-going reclamation program for all abandoned mines in the state,

regardless of land ownership. These reclamation efforts are completed on a priority basis. At some time in the future, the physical hazardous materials associated with abandoned mines in the Planning Area should be remediated.

The Planning Area encompasses 24 mining districts that, in total, contain thousands of individual abandoned mined land features representing some degree of risk to users of public lands. Abandoned mined land features include vertical shafts, horizontal and angled adits (tunnels), surface pits, waste dumps, exploration drill holes and trenches, roads, mill tailings, and structures. In the Planning Area, most of these features are on private lands; the number on BLM-administered lands in the Planning Area is likely less than 1,000, but no precise number can be given because the features have not been comprehensively inventoried. Abandoned mined land site hazards are typically grouped by the type of hazard they present, the three categories being physical hazards, human health hazards, and environmental hazards. In the Planning Area, physical site hazards are the predominant issue.

Abandoned mined land projects in the Planning Area since the program's inception have all been of the physical safety type and include the Tushar Mountain Project, the Stateline/Gold Springs Project, and the North Star Range Project. Inventory work and environmental review is currently underway for a physical safety project in the San Francisco Mining district.

Native American Religious Concerns

The Paiute Indian Tribe of Utah and the Hopi Tribe have indicated interest in CCFO-administered public lands. Because the BLM manages lands in the historical and traditional use areas, it has a responsibility to consult with tribes to consider the continuation of traditional uses in areas of interest. Currently, tribal members may use public land resources for cultural purposes, although the BLM might not know the specific locations of such resources.

The BLM is responsible for ensuring meaningful consultation and coordination on a government-to-government basis with federally recognized tribes. Through the consultation process, the BLM and tribes can identify issues and concerns about cultural resources, historic properties, sacred sites, traditional uses, and TCPs that need to be considered in land use or project plans.

An MOU between the BLM and the Paiute Indian Tribe of Utah was signed on March 3, 1999 (U.S. BLM, 1999). The Tribal Chairperson and each Bands Chairperson signed this document. BLM Field Office Managers from Cedar City, Fillmore, Richfield, and St. George, and the BLM State Director signed for the BLM. The purpose of this agreement is to formalize the communication and coordination of all BLM actions that are of concern to the tribe and each of its bands. Specifically, the document outlines responsibilities for planning, tribal involvement, time frames for review, meaningful participation, public interpretation, land exchanges, and which activities require consultation.

Socioeconomic Conditions

This section summarizes the social and economic aspects of the region that could be affected by a new RMP. This section includes only information pertaining to the contribution from public lands. Additional information, such as human population and migratory trends, demand for housing and public services, employment and income generation is included in the

Socioeconomic Baseline Report (see Appendix NAppendix M. . This report also contains additional acronyms and references.

BLM-administered lands in the Planning Area contribute to the livelihoods of residents in the region by supporting subsistence activities and market-based economic production and income generation. Subsistence activities are supported by public lands at no or low cost (permit fees) through access to fuelwood, wood for wood posts, and land for livestock grazing, fish, game, plants, berries, and seeds.

Table 2-49 summarizes BLM contributions to the local economy that can be quantified for a variety of resources, followed by discussion of specific resource contributions. Certain resources that might be economically important to some residents in the Planning Area are not discussed, either due to lack of data or because numbers are too small to realistically analyze.

Table 2-49. Estimated Economic Impact of Cedar City Field Office Contributions to the Local Economy by Resource (2010 dollars)

Resource Program	Employment	Labor income (\$1,000)	Output (\$1,000)
Recreation	223	3,753	11,389
Grazing	217	4,486	25,774
Timber and Forestry	2	65	228
Fuels Treatments	7	375	625
Minerals	142	6,6876	34,878
Renewable Energy	148	8,973	13,511
Payments to Counties	78	3,431	4,915
BLM Expenditures	73	3,929	8,007
Total BLM Management	890	31,699	99,327
Total for Planning Area (2009)	25,460	733,859	1,258,646
BLM Percent Contribution	3.50	4.32	7.89

Source: BLM elaboration using IMPLAN (2009).

Recreation

The Economic Profile System-Human Dimensions Toolkit (EPS-HDT) estimates that approximately 2,988 jobs (21 percent of all jobs) in the Planning Area are related to travel and tourism (EPS-HDT, 2011c). This estimate is based on data from the U.S. Census Bureau County Business Patterns and selects industrial sectors that, at least in part, provide goods and services to visitors to the local economy and to the local population. It includes both full- and part-time jobs. Most of these jobs are concentrated in the “accommodations and food” and “retail trade” sectors. This share of travel and tourism-related jobs is approximately 50 percent higher than the national average. Jobs in these sectors are more likely to be seasonal and might pay less than jobs in non-travel and tourism-related sectors. The average annual wage per job in this sector was \$12,205 in the Planning Area in 2009, compared to \$28,974 for jobs

not related to travel and tourism (EPS-HDT, 2011c). This is due in part to many of these jobs being seasonal, because the wage data are not annualized or reported as full-time equivalents.

The extent to which BLM-administered lands contribute to employment in travel and tourism is not easy to quantify. The data in Table 2-50 makes use of the economic impact model IMPLAN to estimate employment supported by expenditures by visitors to BLM-administered regions. Although much of the recreation use in the Planning Area is dispersed, and far from counting devices such as trail registers, fee stations, or vehicle traffic counters, the number of visitors to BLM-administered lands can be obtained from the BLM RMIS database, which requires BLM recreation specialists to estimate as accurately as possible total visits and visitor days to various sites in the CCFO boundaries. Table 2-50 summarizes BLM visitation data for fiscal year 2010 in the CCFO Planning Area.

Table 2-50. Visits and Visitor Days in the Cedar City Field Office Planning Area, Fiscal Year 2010

Site	Visits ¹	Visitor Days ¹	Local ²		Non-Local ²	
			Day	Overnight	Day	Overnight
"C" Overlook	18,250	1,217	5,840	0	12,410	0
Dispersed-Cedar City	206,306	379,424	63,419	20,960	36,200	85,727
Dispersed-Three Peaks Special Recreation Management Area	18,980	11,072	6,074	0 ³	12,906	0
Parowan Gap	5,475	1,004	1,752	0	3,723	0
Rock Corral Recreation Area	1,095	712	32	0	68	0
Totals	250,106	393,429	77,117	20,960	65,307	85,727

Sources: 1. DOI, 2011; 2. CCFO personnel estimates based on USFS, 2010.

Visitor expenditures can be approximated by using data from the USFS, which has constructed recreation visitor spending profiles based on years of survey data gathered through the National Visitation Use Monitoring (NVUM) Program. Although the data were collected from USFS visitors, and because the BLM has no similar database, the analysis that follows is based on the NVUM profiles. A detailed analysis was performed in 2006 and updated in 2010 (Stynes and White, 2006; USFS, 2010). The profiles break down recreation spending by type of activity, day use versus overnight use, and local versus non-local visitors. Table 2-51 summarizes spending profile data, which are based on spending per party in regions with average costs (overall averaging 2.1 persons per party [USFS, 2010]). Although the detailed spending data are for survey data prior to 2006, the updated 2009 summary (only displaying spending per party per day) shows little difference in daily spending. Because the breakdown on what specifically visitors are spending is needed to meet the data requirements of IMPLAN, the analysis below used data from the 2006 report (Stynes and White, 2006).

Table 2-51. National Visitation Use Monitoring Program Recreation Visitor Spending Profiles
(Average Dollars per Party, 2003 dollars)

Category	Non-Local, Day	Non-Local, Overnight	Local, Day	Local, Overnight
Lodging	N/A	47.08	N/A	16.82

Restaurant/Bar	13.60	43.98	6.12	16.96
Groceries	7.61	34.13	5.41	33.63
Gas and Oil	15.99	36.53	11.67	26.95
Other Transportation	0.98	5.42	0.21	0.58
Activities	3.87	12.32	1.82	5.06
Admissions/Fees	5.24	9.53	3.42	9.62
Souvenirs/Other	4.31	19.26	4.19	11.32

Source: Stynes and White, 2006.

Table 2-52 summarizes the total contribution to the local economy, and indicates that approximately 7.5 percent of travel and tourism-related jobs in the Planning Area can be attributed to recreation on BLM-administered lands.

Table 2-52. Estimated Economic Impact of Cedar City Field Office Contributions (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	183	2,767	8,058
Indirect Effect	21	494	1,686
Induced Effect	19	492	1,644
Total Effect	223	3,753	11,389

Source: BLM elaboration using IMPLAN (2009).

The economic contribution to the local economy could be higher or lower depending on the accuracy of the estimates of numbers and types of visitors to BLM-administered lands in the Planning Area. For example, a higher percentage of non-local overnight visitors would produce larger economic impacts. Similarly, a visitor might be on a short day trip to BLM-administered lands, in which case the economic impact would be overestimated because spending profiles assume that a visit equals an expenditure day for that specific activity. Expenditure profiles of visitors to USFS areas also might not accurately reflect expenditure profiles of visitors to BLM-administered lands. In addition, indirect and induced employment would be generated in various sectors of the economy, not necessarily only in those related to travel and tourism. However, the analysis above is based on the best available data and serves as an approximate indicator of the contribution of BLM-administered lands to travel and tourism in the Planning Area.

A second indicator of the contribution of BLM-administered lands to the local economy can be obtained for a subset of the recreational activities supported by BLM-administered lands – those requiring an SRP. Typically, the BLM requires commercial and competitive events to acquire an SRP. This serves to protect the resource, the government, the permittee (the holder of an SRP), and clients of the permittee. In fiscal year 2010, the CCFO had 12 entities under permit. These permittees provide a range of recreation services, including hunting outfitters and youth wilderness therapy programs. The permittees reported 14,500 visitor days and remitted more than \$139,000 in permit fees to the CCFO (CCFO, 2011). These fees, based on 3 percent of

gross revenues (DOI, Undated), indicate that these SRP holders were able to generate more than \$4.63 million in gross revenues from activities on BLM-administered lands.

Grazing

The CCFO Planning Area has 159 allotments under permit for grazing (CCFO, 2011). Almost all the permittees reside locally. For many families, livestock operations on BLM-administered lands supplement family income, although for some it is a full-time occupation. Most of the grazing permits are for cattle and sheep, but a very small number are for horses. Most cattle and sheep utilize BLM-administered lands for only a portion of the grazing season. For the remainder of the year, permittees rely on USFS or private lands (CCFO, 2011). To estimate the contribution of BLM-administered lands to grazing in the Planning Area, the BLM estimated the numbers of calves and lambs brought to market and adjusted for time spent on BLM-administered lands. For example, a calf that spent 9 months on BLM-administered lands would be evaluated at 0.75 (12 months divided by 9), while a calf that spent 6 months on BLM-administered lands would be evaluated at 0.5. Applying these estimates to calf and lamb production and multiplying by average sales prices, the BLM calculated the total market value of such production. The BLM entered these data into IMPLAN to estimate economic impacts. This type of analysis might understate the BLM contribution because often, the availability of BLM forage for at least a part of the year makes grazing operations possible in the first place.

Range management personnel at the CCFO estimate that approximately 90 percent of cows grazing within the boundaries of the Planning Area successfully produce and sustain a calf until weaning. Applying this percentage to the numbers of cows on BLM-administered lands, weighted for time spent on BLM-administered lands, produces a total number of calves available for market whose production depends on BLM-administered lands. A similar analysis can be performed for sheep. Research at the University of Montana indicates an average lambing rate of 1.5 lambs per ewe on the range, and an average weaning rate of 1.3 lambs per ewe (Kott, 2006). Applying the weaning rate to the weighted average number of ewes on BLM-administered lands in the CCFO Planning Area and multiplying by sales value, the BLM estimated the market value of lambs attributable to grazing on BLM-administered lands. The values computed through this process were then entered into IMPLAN to estimate total employment, labor income, and output attributable to the CCFO grazing program. Table 2-53 summarizes these results.

Table 2-53. Estimated Economic Impact of Cedar City Field Office Contributions to Grazing (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	144	2,666	16,788
Indirect Effect	51	1,239	7,050
Induced Effect	22	581	1,935
Total Effect	217	4,486	25,774

Source: BLM elaboration using IMPLAN (2009).

These results are based on an average sales price of \$920 for a 600-pound steer, \$840 for a 600-pound heifer (with a 50/50 mix of steers and heifers), and \$179 for a slaughter lamb. These prices are for 2010, which was a good year for livestock prices. However, prices can vary widely from year to year (CCFO, 2011).

Forestry and Wood Products

As do most BLM field offices, the CCFO sells both commercial and private permits for a variety of forestry and wood products. These include commercial and private firewood permits, commercial and private Christmas tree permits, and native-seed-gathering permits (typically commercial). In fiscal year 2010, the CCFO sold permits for 250 acres of commercial firewood removal with an estimated sales value of \$125,000 (1,250 cords at \$100 per cord). The office sold commercial permits for Christmas trees with an estimated sales value of \$13,625, and smaller quantities of items such as wood posts and Christmas boughs (CCFO, 2011). Table 2-54 lists the estimated economic impact of the CFFO contributions to commercial wood and forestry products in fiscal year 2010.

Table 2-54. Estimated Economic Impact of Cedar City Field Office Contributions to Commercial Wood Products (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	1.3	41	145
Indirect Effect	0.7	15	52
Induced Effect	0.4	9	31
Total Effect	2.3	65	228

Source: BLM elaboration using IMPLAN (2009).

The CCFO also sells permits for native-seed and pine-nut harvesting (both typically commercial). In fiscal year 2010, the CCFO sold permits with a commercial sales value for these commodities of more than \$177,000 (CCFO, 2011). The Planning Area does not include an industrial sector corresponding to these activities, and they are not included in the IMPLAN analysis. Although there is likely some local economic benefit, most of the economic impact from these activities occurs outside the Planning Area.

Not included in Table 2-54 are CFFO sales of 300 private firewood permits and 100 private Christmas tree permits. Although these sales do not generally create employment and labor income in the local economy, they are important to the private individuals who purchase such permits.

Renewable Energy Resources

The Planning Area has been identified as an attractive region for solar energy development (DOE, 2010). In addition, there are wind energy and geothermal energy plants in the Planning Area. The Milford Wind Corridor Phase 1 project came on line in 2009, with Phase 2 due to come on line in mid 2011. The two phases will have a combined energy output of more than 333 MW of electricity. The Blundell geothermal facility generates approximately 34 MW annually. Most of the wind turbines and the entire geothermal project are on public lands leased from the BLM (CCFO, 2011).

PacifiCorp Energy currently operates the 34 MW (net) Blundell Geothermal Power Plant, which is approximately 9.5 miles northeast of the City of Milford. Completed in 1984, Blundell became the first U.S. geothermal plant outside California. The facility uses water heated by hot rock approximately 3,000 feet below the ground surface, with measured water temperatures in excess of 500 °F and pressures in excess of 500 pounds per square inch. Heated water is brought to the surface and used to generate electricity. No fossil fuels are used to generate

electricity, and effluent geothermal fluid is returned to the reservoir via injection wells. The affected surface region, incorporating the plant region, well-field development, and roads, is approximately 300 acres. The plant has the equivalent of 23 full-time employees. This facility has generated more than \$100,000 annually in lease payments accruing to Beaver County, but these payments ceased in 2010. At present, there are 15 authorized geothermal leases, including Blundell, totaling 13,697 acres (13 entirely and 2 partially in the CCFO Planning Area) (CCFO, 2011). Although Iron County does not have a producing geothermal power plant, geothermal lease rentals and bonuses for small geothermal wells (not producing commercial power) resulted in a disbursement of more than \$19,000 to the county in fiscal year 2010 (DOI, 2010a).

To estimate the present economic impact of a variety of renewable energy projects, the National Renewable Energy Laboratory (NREL) has developed an economic impact model known as JEDI (NREL, 2011). This model uses IMPLAN multipliers, but refines the analysis specifically for renewable energy projects. At present, JEDI includes models for all but geothermal projects, for which IMPLAN can be used directly to estimate economic impacts. Table 2-55 and Table 2-56 summarize the economic impacts accruing to operating activities of the renewable energy projects described above. Economic impacts during the development and construction phases would be much greater.

Table 2-55. Estimated Economic Impact of Cedar City FO Contributions to Wind Energy (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	17	850	850
Indirect Effect	24	1,020	8,670
Induced Effect	26	980	3,140
Total Effect	66	2,840	10,860

Sources: Estimates from CCFO personnel; JEDI (2010)

Table 2-56. Estimated Economic Impact of Cedar City Field Office Contributions to Geothermal Energy (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	23	4,477	21,502
Indirect Effect	28	862	2,662
Induced Effect	31	794	2,651
Total Effect	82	6,133	26,815

Sources: Estimates from CCFO personnel; IMPLAN (2009)

In addition to the active projects described above, the CCFO Planning Area has been identified as an important potential site for large-scale solar energy developments. DOE has identified three sites in the CCFO Planning Area that meet its requirements for this scale of development (DOE, 2010). None of the sites has been developed. Depending on the type of facility constructed, DOE estimates that each of these sites has the potential to generate from almost 600 to more than 3,500 direct and indirect jobs and from more than \$28 million to more than

\$177 million in labor income during the construction phase. Employment and labor income during the operating phases would be lower. DOE also has identified potential adverse impacts, including increasing pressure on the lodging and housing markets in the Planning Area. In addition to the three identified sites, there are ongoing efforts to identify additional sites with solar energy potential (DOE, 2010).

Minerals

Iron and Beaver counties have a long history of minerals exploration and production, dating back to pioneer settlement in the midnineteenth century. However, over the past several decades, this industry has declined in relative economic importance in both counties, despite the continuing importance of the industry in terms of the historical and cultural identity of the counties. Mining (including fossil fuels) has declined in Iron County to virtually none. Beaver County has a similar history, at least through 2000, but has rebounded somewhat in recent years, primarily due to two mines near Milford. Mining provided 124 jobs in 2009 in the Planning Area, of which approximately 75 were related to activities on BLM-administered lands (CCFO, 2011). Most of the BLM-related jobs were in limbo in 2011 due to bankruptcy filings by one of the two mines; however, that mine is expected to resume operations with continued employment (CCFO, 2011). As Table 2-57 shows, as with any resource use, the economic impacts go beyond the direct effect and include both indirect and induced effects as dollars ripple through the local economy.

At present, there is no oil or gas production in the CCFO Planning Area. However, 50 percent of lease sale bonuses and lease rentals associated with lease parcels in the Planning Area are disbursed to the State of Utah. Approximately half of these are returned to individual counties, both on the basis of county of origin and through project-specific disbursements to individual counties. In fiscal year 2010, the CCFO had 254 active oil and gas minerals leases with 422,504 acres under lease (CCFO, 2011). Total lease payments on these leases for rents and bonus payments, including geothermal (discussed above) were approximately \$400,000 in fiscal 2010, with virtually all of these monies going to county-level road districts. In fiscal year 2010, the CCFO had 254 active oil and gas leases with 422,504 acres under lease (CCFO, 2011). Table 2-57 summarizes the estimated economic impacts from minerals activities in the Planning Area, including mineral lease payments.

Table 2-57. Estimated Economic Impact of CCFO Contributions to Minerals (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	83	4,838	28,567
Indirect Effect	26	984	3,423
Induced Effect	33	865	2,888
Total Effect	142	6,687	34,878

Sources: Estimates from CCFO personnel; IMPLAN (2009). Includes Mineral Lease Payments to Counties

Fiscal

The non-taxable status of BLM-administered lands is important to local governments, which must provide services to county residents and provide public safety and law enforcement services on BLM-administered lands. BLM revenue-sharing programs provide resources to local governments in lieu of property taxes because state and local governments cannot tax

federally owned lands the way they would if the land were privately owned. There are a number of federal programs to compensate county governments for the presence of federal lands. These programs can represent a significant portion of local government revenue in rural counties with large federal land holdings. Before 1976, all federal payments were linked directly to receipts generated on public lands. Congress funded Payments in Lieu of Taxes (PILT), with appropriations beginning in 1977 in recognition of the volatility and inadequacy of federal revenue-sharing programs. PILT was intended to stabilize and increase federal land payments to county governments. Payments are calculated on a per-acre basis, and can vary from year to year and from county to county. In addition, counties receive payments from the BLM related to other activities, including grazing, mineral lease payments (including geothermal), and sales of land and materials. Table 2-58 summarizes BLM-related payments to Beaver and Iron counties. Table 2-59 summarizes the associated economic impacts.

Table 2-58 BLM-Related Payments to Beaver and Iron Counties
FY 2009 (2010 dollars)

	Beaver County	Iron County	Total
Eligible BLM acreage	1,146,131	993,579	2,139,710
Payments in Lieu of Taxes on BLM acreage (\$0.69 per acre average for Beaver County and \$2.36 average for Iron County)	790,830	2,334,846	3,135,676
Other BLM Payments	109,746	84,302	194,048
Total Payments in Lieu of Taxes and Other BLM Payments	900,576	3,329,724	3,329,724

Source: DOI (2010b), except for Other BLM Payments, the source of which is EPS-HDT (2011d).

Table 2-59. Estimated Economic Impact of Cedar City Field Office-Related Payments to
Beaver and Iron Counties, FY 2009 (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	61	2,991	3,444
Indirect Effect	0	0	0
Induced Effect	17	440	1,471
Total Effect	78	3,431	4,915

Source: IMPLAN 2009. Analysis performed using IMPLAN sector 437 "Employment and payroll, state and local government" (to the extent that these monies are spent on purchases of goods, the impacts are less).

BLM Expenditures and Employment

The CCFO is headquartered in Cedar City. Virtually all CCFO personnel live in the Planning Area and contribute to the economy of the local Planning Area through their own family expenditures (CCFO, 2011). Additionally, the CCFO expends monies on non-government-provided goods and services, much of which is spent in the Planning Area. In addition, the

Color Country District Office in Cedar City has expenditures in the area on behalf of all the BLM field offices in the District. Table 2-60 summarizes the economic impacts in the Planning Area accruing to the CCFO and District expenditures on employment and purchases of goods and services. The estimated impacts include CCFO expenditures and the CCFO-allocated share of District expenditures. Not included in Table 2-60 are expenditures on fire suppression (variable and unpredictable) or expenditures on fuels reduction programs (discussed below).

Table 2-60. Estimated Economic Impact of Cedar City Field Office-Related Expenditures for Salaries and Payments for Goods and Services on Beaver and Iron Counties

FY 2009 (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output(\$1,000)
Direct Effect	42	3,077	5,067
Indirect Effect	11	345	1,249
Induced Effect	20	507	1,691
Total Effect	73	3,929	8,007

Source: District Office personnel; IMPLAN 2009.

In addition to the BLM office-related expenditures described above, the Interagency Fire Center, which includes the BLM and other federal agencies, is in Cedar City. Many of these shared expenditures are difficult to allocate to individual field offices and are not included in the Table 2-60 totals. However, there is an important piece of information associated with the fire program – expenditures for fuels reduction projects. In fiscal 2010, the District fuels program incurred expenditures on salaries, goods, and services to treat 5,611 acres in the Planning Area. These expenditures were computed by taking the entire District expenditures on fuels treatments, and adjusting this total by the CCFO share of acreage treated within the District. Additionally, the fuels reduction program was able to leverage its expenditures for additional funding from state agencies, monies which would not have been available without the BLM contribution. Table 2-61 summarizes the economic impact of these expenditures in fiscal year 2010.

Table 2-61. Estimated Economic Impact of Color Country District Office Expenditures with the Fuels Treatment Program (2010 dollars)

Impact Type	Employment	Labor Income (\$1,000)	Output (\$1,000)
Direct Effect	4.3	316,341	425,718
Indirect Effect	0.5	10,246	35,787
Induced Effect	1.9	48,867	163,704
Total Effect	6.7	375,453	625,209

Source: District Office personnel; IMPLAN 2009.

The economic benefits accruing to the District's fuels reduction program exceed the amounts shown above. This is because almost all the District expenditures for salaries and purchases of goods and services are spent in the Planning Area, even though most of the projects occur

outside the Planning Area boundaries. There also are monies spent by non-local fuels contractors working on CCFO projects in the Planning Area.

Special Designations (Wilderness Study Areas)

The CCFO currently manages 32,265 acres in three WSAs. Although it is difficult to quantify the economic benefits of these resources, they provide value to users such as recreationists. Some hunters seeking a more primitive (and perhaps less crowded) region are attracted to roadless regions. The largest source of SRP revenue in the CCFO Planning Area is from wilderness therapy activities, which presumably benefit from WSAs (CCFO, 2011). Conversely, WSAs could preclude other economically beneficial activities due to restrictions on surface-disturbing activities and the lack of motorized access.

Wild Horses and Burros

The CCFO manages 10 Wild Horse Management Areas populated by approximately 769 wild horses. During scoping for the current planning effort, the CCFO received more than 40,000 letters supporting continued or increased numbers of wild horses. Although almost all of these letters were form letters, the scope of this response indicates a large base of support for the wild horse and burro program. Although there could be some increase in recreation visitation to view wild horses, most of the economic value is likely non-market in nature (essentially a “non-use” value). Conversely, several local residents have expressed concern about wild horse numbers and the potential adverse impacts on other resources, including the potential adverse economic impact that could result from reduced grazing opportunities for cattle and sheep.

3.0 CURRENT MANAGEMENT DIRECTION

This chapter describes current management direction for public lands and resources in the Decision Area. The CCFO is currently subject to two LUPs, as amended. Table 3-1 lists the plans and amendments.

Table 3-1. Relevant Planning Documents

Document Title	Year	Description
Pinyon MFP	1983	Management Framework Plan for the old Pinyon Planning Unit in western Beaver and Iron counties.
Cedar-Beaver-Garfield-Antimony (CBGA) RMP	1986	Resource Management Plan for four counties (Cedar, Beaver, Garfield, and Antimony). Only the Cedar and Beaver planning units (located in eastern Beaver and Iron counties) are included in the CCFO.
Pinyon MFP Geothermal Amendment	1987	Allowed for geothermal leasing in the Pinyon Planning Unit.
Pinyon MFP and CBGA RMP Amendment for Land Tenure Adjustments	1997	Required any form of land tenure adjustment (with the exception of land sales) to meet one or more of five criteria and requires site-specific NEPA on each action.
CBGA and Pinyon Amendment for Wind Energy	2005	Amended both LUPs to address wind energy development.
Standards and Guidelines for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah.	1997	Amended both LUPs to include the title document.
CBGA RMP Amendment for SMRA	2006	Authorized the designation of the Greater Three Peaks SRMA
Southern Utah Support Area FMP EA (Utah Land Use Plan Amendment for Fire and Fuels Management)	2005	Amended the fire and fuels management portions of all existing LUPs in the Decision Area.
CBGA and Pinyon Amendment for Threatened and Endangered Species	2007	Amended all LUPs in the State of Utah to update the threatened and endangered species list and conservation measures.

The chapter is organized into three sections: Resources, Resource Uses, and Special Designations. The existing LUPs do not include decisions for every resource or use. In the absence of decisions in LUPs, applicable laws, rules, regulations, and policies are applied or an LUP amendment is undertaken. This chapter represents the current management of the BLM-administered lands in the CCFO Planning Area and forms the basis for the No Action Alternative in the Draft RMP/EIS. This management direction represents what would continue into the future if a new RMP were not completed. Chapter 6 describes the specific mandates and authorities for managing these resources.

RESOURCES

Decisions in this section address management of natural, biological, and/or cultural components of the Planning Area.

Table 3-2. Resource Management Decisions

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Air Quality and Climate Change		
<p>Maintain compliance with the Clean Air Act through application of the NEPA process on a case-by-case basis (CBGA).</p>	<p>Current policy</p>	<p>The BLM needs to comply with NAAQS and other pollutant standards.</p> <p>Provide for revegetation of blow areas, which would include artificial seeding and revegetation, needed facilities (e.g., sediment fencing), and rest from livestock and wildlife grazing to promote ground cover capable of holding soils in place during high wind events.</p> <p>Favor binary geothermal production plants (closed systems) over steam plants to reduce the release of criteria pollutants (particularly SOx) into the atmosphere.</p> <p>Provide for collaboration on regional issues with local, state, and federal agencies. Provide adequate restrictions to maintain air quality on adjacent Class I air quality areas such as national parks and wilderness areas.</p> <p>Allow for analysis and opportunity to provide input to travel plans, particularly those dealing with recreational use of vehicles.</p> <p>Implement renewable energy generation projects on lands managed by the CCFO that are in highly productive energy areas and are the least deleterious to the area’s resources and natural values.</p> <p>Includes a decision that allows the CCFO to continue addressing project proposals on a site-specific basis, in accordance with NEPA, subject to the most current guidance on GHG emissions and climate change.</p> <p>Provide for utilization of the BLM Utah Air Resource Management Strategy as a guidance document on how and when to perform project-specific air analysis for specific projects that require NEPA.</p>
<p>Prescribed burning will be required to comply with BLM Manual Section 7723, Air Quality Maintenance Requirements (CBGA RMP).</p>	<p>Outdated</p>	<p>The BLM needs to comply with the Utah Interagency Smoke Management Program. Bring decision current with smoke management guidance and allow flexibility for changes in smoke management guidance.</p> <p>Provide for fuels reduction treatments that reduce understory fuels and canopy species to the degree necessary to protect forest health and larger trees. Fuels treatments aimed toward preventing large-scale, catastrophic fires and promoting forest health by limiting beetle kill, and the like are an important tool in maintenance of carbon storage. It can take decades for forest regrowth to sequester the amount of</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Climate change—no current Management Decision.	Not Applicable	carbon emitted in a single fire. Comply with Secretarial Order #3226, Amendment 1, and/or any new direction issued that is pertinent to the management of public lands in the Decision Area.
Cultural Resources		
In accordance with law and policy, require cultural resources clearances and mitigations on all projects involving surface-disturbing activities prior to construction or development (CBGA RMP).	Current policy	This decision will be made current by adding decision language that stresses that the first option in preventing adverse effects to historic properties will be avoidance, followed by mitigation.
Provide maximum protection to National Register sites at Parowan Gap and Wild Horse Obsidian Quarry(CBGA RMP).	Current policy	An increase in public use and potential threats at these sites warrants more specific planning decisions. These decisions might include: Adding decision language for managing or limiting surface-disturbing activities at these locations. Adding management direction at these sites, which could include, but is not limited to, public participation, American Indian uses, monitoring, site stabilization, and restoration efforts. Adding the two other HRHP-listed sites, the Sand Hill Signatures and Gold Springs (structures), to this decision.
Complete a cultural resource inventory and map depicting site densities and archeological values within the planning units. The map will be used as a planning tool to identify avoidance areas and gauge potential impacts to cultural resources before projects are proposed which may affect cultural values (CBGA RMP).		This decision is responsive to current issues, but would be better defined if separated into two separate decisions. One decision would address the need for prioritizing Section 110 inventories and the other decision would describe the potential impact planning map.
Fish and Wildlife		
Establish studies on key wildlife forage species on four allotments (Government Well, Shauntie, SUSC Winter, and Uvada) to determine the ecological trend and forage suitability trend of key big game forage species and make necessary changes in management if the monitoring studies so indicate the need (Pinyon MFP).	Outdated	Big game habitat needs to be managed on a herd-unit basis in coordination with the UDWR and consistent with UDWR big game herd management plans, if possible. Additional monitoring should be established in areas identified as areas of concern or conflict.
Incorporate intensive monitoring studies on 61,236 federal acres of antelope habitat and 4,495 federal acres of mule deer habitat on Wah Wah-Lawson Cove, which currently has a rest rotation grazing system, and make the necessary changes in the existing system if the habitat condition does not improve Appendix D, for detailed information) (Pinyon	Outdated	Existing rangeland monitoring studies administered through The grazing program might or might not be adequate. Big game habitat needs to be managed on a herd-unit basis in coordination with the UDWR and consistent with UDWR big game herd management plans, if possible. Additional monitoring should be established in areas identified as areas of concern or conflict.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
MFP).		
Perform vegetation treatments in a mosaic pattern on 4,552 acres of important mule deer habitat, 10,549 acres of important antelope habitat (Indian Peak Allotment), of which 8,329 acres are important sage grouse habitat (Pinyon MFP).	On-going	Vegetative treatments are ongoing throughout the CCFO Planning Area. A needs assessment should be performed for the entire Planning Area to identify wildlife habitat treatment needs and priorities.
Allocate sufficient forage to satisfy the demands of current big game populations (estimated at a combined total of 2,742 AUMs for mule deer at 1,314 head in winter and 1,066 head in summer, 60 elk, and 598 antelope; in the Pinyon Planning Unit Deer Herd Units 61-C and 62-C and allow for additional forage requirements up to prior stable (deer) and longterm (elk and antelope) numbers (estimated at a combined total of 5,414 AUMs for mule deer at 2,467 head in winter and 2,219 head in summer, 200 elk, and 1,071 antelope) if big game numbers increase. Allotments listed as "C" category allotments may not improve to the point that prior stable and long-term big game population goals can be supported on those allotments. The additional big game AUMs required for the increase in numbers will have to come from future range and wildlife vegetation treatment projects in the "I" category allotments (Table 1, Range MFP) and habitat improvement from management practices in the "I" and "M" category allotments (Table 4, Range MFP). (Pinyon MFP).	Outdated	Big game habitat needs to be managed on a herd-unit basis in coordination with the UDWR and consistent with UDWR big game herd management plans, if possible. Rangeland Health Assessments assist BLM in determining if there are forage concerns or conflicts. Current big game plans likely have different population objectives than the plans from 20 to 30 years ago. Many vegetative treatments have been completed since the existing LUPs were issued. Areas of concern or conflict need to be identified and wildlife habitat treatment needs and priorities should be identified on for the entire Planning Area.
Sell or trade isolated tracts of federal land near Beryl, New Castle, and Enterprise as they are unmanageable for ringneck pheasant habitat (Pinyon MFP).	Outdated	No. Status of lands will be considered in the new RMP
Big game will be provided short term and long term forage if big game numbers increase to prior stable or long-term levels and habitat is improved. (CBGA RMP).	Outdated	Big game habitat needs to be managed on a herd-unit basis in coordination with the UDWR and consistent with UDWR big game herd management plans, if possible. Current big game plans likely have different population objectives than the plans from 20 to 30 years ago. Areas of concern or conflict need to be identified and wildlife habitat treatment needs and priorities should be identified for the entire Planning Area.
Seven Habitat Management Plans will be written and will include the	Outdated	Same as above.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
objectives of improving wildlife habitat condition from poor to fair or good on mule deer, elk and antelope habitat (CBGA RMP).		
Land treatments will be implemented to improve crucial big game habitat. Priorities for implementation and proposed management actions for each of the Habitat Management Plans are found in Wildlife Table 1 of the RMP (CBGA RMP).	Outdated	Same as above.
Deterioration of riparian/fisheries habitat will be avoided on streams identified in fair or good condition. Riparian/fisheries habitat will be improved along some stream miles by restricting or eliminating livestock grazing. These areas are included in 5 of the Habitat Management Plans. Priorities for the implementation of actions to protect riparian/fisheries habitat are discussed in the CBGA RMP (CBGA RMP).	Outdated	See Chapter 4, Management Opportunities.
Paleontology		
Neither of the current land use plans addresses paleontological resources.		No. Evaluate OHV designations to determine whether limitations are needed at important paleontological localities. Develop and implement strategies to regularly monitor areas where important paleontological localities are identified.
Riparian and Wetlands		
Grazing system design during Allotment Management Plan development will consider riparian habitat protection (Pinyon MFP).	Current	Yes. Grazing management systems are considered during the grazing permit renewal and Rangeland Health Standards and Guidelines processes.
Develop an OHV Management Plan and designate public lands as depicted on Recreation Map 1 into the following OHV categories by 1987...limited to existing roads and trails, 47,700 acres, including...14,100 acres of riparian habitat (yearlong limitation). (CBGA RMP)	Outdated	No. OHV use and the number of roads in the Planning Area have increased since this decision was made. New travel mitigation/restriction measures need to be implemented to respond to issues in riparian areas.
Riparian/fisheries habitat will be improved on 23 acres on 7 stream miles by restricting or eliminating livestock grazing. These areas are included in 5 of the Habitat Management Plans. (see Wildlife Tables in the RMP for priorities) (CBGA RMP).	Outdated	No. Need new inventories and better data.
No cutting of deciduous trees within 100 feet of riparian areas (CBGA RMP).	Outdated	Invasive deciduous trees need to be removed within riparian corridors to provide for improved recruitment of native and desirable nonnative woody species. Cutting of trees in riparian areas should be determined case by case based on goals and objectives of individual projects.
Category 2 Oil and Gas stipulations	Outdated	Categories need to meet new inventory data.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
for listed areas (see Minerals Tables 1 in RMP/ROD) (CBGA RMP).		
Special Status Species		
There are no objectives or decisions in the existing LUPs that specifically address special status species. All wildlife objectives and decisions are described in the Fish and Wildlife section above. However, these species are subject to the Endangered Species Act of 1973.	Outdated	No. See Chapter 4, Management Opportunities.
Vegetation and Rangeland Health		
1997 Amendment: Standards and Guidelines for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah.	Current	Yes
2007 Amendment: National Vegetation Treatments Final Programmatic EIS (PEIS), 2007: outlines the herbicides that are approved for use on public lands, identifies a protocol that can be used to add new EPA-registered chemical formulations to the BLM list of approved herbicides and identifies which standard operating procedures must be used with all applications of herbicides.	Current	Yes.
There are no objectives or decisions in the LUPs that specifically address vegetation and rangeland health. All vegetation and rangeland health objectives and decisions are described in the Riparian and Livestock Grazing sections of this table.	Outdated	No. See Chapter 4, Management Opportunities.
Visual Resources		
Provide VRM Class III management level (Appendix VR-1) to Wah Wah and San Francisco mountains as indicated on Visual Resource MFP 1 overlay (Pinyon MFP).	Outdated	No. New VRM classes will be determined in the new RMP.
Provide VRM Class IV management level (Appendix VR-1) to all areas delineated on the VRM MFP 1 overlay (Pinyon MFP).	Outdated	No. New VRM classes will be determined in the new RMP.
VRM classes are assigned within the CBGA Planning Area as follows: VRM Class I – 0 acres, Class II – 68,600 acres; Class III – 99,000 acres, Class IV – 766,400 acres. Design and mitigate surface-disturbing activities to meet VRM objectives where possible.	Outdated	No. New VRM classes will be determined in the new RMP.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Priority will be given to maintain VRM objectives in the foreground visual zone in VRM Class II areas, and every attempt will be made to meet those VRM objectives through mitigation (CBGA RMP).		
Soils		
In the design of the grazing systems (AWP development), provide for protection of those areas in critical erosion condition. In grazing system design, give consideration to projects which will benefit the watershed (Pinyon FMP).	Current policy	AMPs are not prepared much anymore. Consideration should be given during development of AMP equivalents, such as grazing permit renewals and implementation plans.
In the future, construct roads to avoid stream channels, areas of unstable soils, and seeps. Avoid constructing long, downslope straightaways, providing instead curves with water drainages off the road bed (Pinyon MFP).	Current policy	
Examine stream channels as part of AMP development. Coordination between resource activity specialists will be used to decide the suitability of check dams as each AMP is developed. Grazing-system design during AMP development will consider riparian habitat protection. Seeding needs will also be evaluated during AMP development (Pinyon MFP).	Current policy	Reference should be away from AMPs to AMP equivalents, such as grazing permit renewals.
Retain Public Law 566 withdrawals in public ownership and continue to monitor withdrawal areas for satisfactory watershed conditions (CBGA RMP).	Current policy	Yes.
Prepare Watershed Management Plans for the Cedar and Beaver Planning Units. The management plans will provide for assessments of current information regarding significant erosion areas, groundwater, surface water, floodplains, salinity, municipal watersheds, the identification of data gaps, field inventories to verify existing data or fill in data gaps, and a ranking or prioritization of problem areas for activity planning purposes (CBGA RMP).	Outdated	A shortage of resources prohibit development of such plans on a wide-scale basis. Prepare plans as needed to address existing and potential resource issues.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
<p>Water Quality</p> <p>Baseline data studies should be conducted on water sources in the planning unit. The continued monitoring of the springs found unsuitable for use is not required unless problems resulting from the quality concerns are identified in the future (Pinyon MFP).</p>	<p>Outdated</p>	<p>Conduct issue-based water quality sampling. Coordinate macroinvertebrate sampling with UDEQ as an indicator of water quality.</p>
<p>Cooperate and coordinate with local and state health departments, and the Utah Water Pollution Control Committee in maintaining water quality in the Cedar and Beaver Planning Areas (CBGA RMP)</p>	<p>Outdated</p>	<p>Acquire or develop a database of well and spring protection zones for the field office. Coordinate with public health officials as necessary.</p>
<p>Wild Horses</p>		
<p>Accept as the long-term objective management for horse numbers at 1971 levels. The number of herd units would not be established at this time but would depend on the results of monitoring studies (Pinyon MFP).</p>	<p>Outdated</p>	<p>No. The AML on several of the HMAPs have been set at different levels than the 1971 levels. For HMAPs, identify the following:</p> <ol style="list-style-type: none"> 1. Initial and estimated herd size that could be managed while still preserving and maintaining a thriving natural ecological balance and multiple use relationships for that area. 2. Guidelines and criteria for adjusting herd size. <p>Designate what studies and process (i.e., an EA) would be used to set or adjust the AMLs from current levels. Identify which HMAPs are still managed at 1971 levels.</p>
<p>In the short term, remove horses as required to maintain horse numbers at or below 1982 inventory levels but not less than 1971 levels, except for the North Hills and Mountain Home-Sulphur herds (Pinyon MFP).</p>	<p>Outdated</p>	<p>No. The AML on several of the HMAPs have been set at different levels than the 1971 levels. Make table that reflects the current AMLs for the HMAP in the planning unit. This would include the Sulphur HMAP, with total population for the whole HMAP and all wild horses, not just those over 2 years of age. This would put the AML at 165 to 250 for the HMAP.</p> <p>All the HAs boundaries in the CCFO Planning Area need to be adjusted to match natural or manmade boundaries that restrict the movement of wild horses. The current HA boundaries do not match where wild horses were found in 1971.</p> <p>The three HMAPs (Bible, Four Mile, and Tilly Creek) combined into one single HMAP.</p> <p>The Blawn Wash HMAP changed to an HA.</p> <p>Remove any wild horses in the CCFO Planning Area that are not within an HMAP.</p> <p>Possibly split the Sulphur HMAP into two different HMAPs of North and South.</p>
<p>Continue cooperative management of the North Hills herd with the Dixie National Forest in accordance with the existing management plan. Horses in this unit will be maintained between 40</p>	<p>Current</p>	<p>Yes. Change wording to read: Continue cooperative management of the North Hills HMAP with the Dixie National Forest North Hills wild horse territory in accordance with the existing management plan. Update the management plan every 10 to 15 years to review achievement of the objectives</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
and 60 horses as specified in the plan (Pinyon MFP).		and make changes that reflect the current management direction for wild horses. (AML numbers would be referenced in a table.)
Consolidate and stabilize the Mountain Home-Sulphur herd unit and establish these numbers between 135 and 180 horses. The Mountain Home Allotment presently has no grazing privileges. Livestock grazing will not be permitted unless monitoring studies following consolidation and stabilization of the horse numbers confirm adequate forage exists for the established numbers and wildlife (Pinyon MFP).	Outdated	No. The AML for the whole Sulphur HMAP would be 165 to 250 head of wild horses. Continue with no livestock grazing in the Mountain Home Allotment.
Remove all horses from the Mt. Elinor herd unit (Pinyon MPF).	Not Completed	No. Will not be included in the new RMP.
Manage the Chloride Canyon Wild Horse Herd in the short term to maintain the current viability of the herd while keeping the number of animals between 15 and 30 head, pending completion of an HMAPP. (This will require the periodic removal of wild horses.) (CBGA RMP)	Current	Yes. A HMAPP still needs to be completed and the AML reviewed and/or changed at that time. The AML of 15 to 30 is the current estimated population of wild horses that can be managed in this HMAP while still preserving and maintaining a thriving natural ecological balance and multiple use relationships for that area. Guidelines and criteria for setting, reviewing, and changing AMLs need to be identified.
Initiate and compile inventory/monitoring studies to more precisely determine the following characteristics of the herd and its habitat: (1) accurate population numbers, (2) age and sex ratios, (3) social structure, (4) general physical conformation and condition of animals, (5) colt production, (6) general distribution of animals and seasonal concentrations, (7) all water sources, (8) forage utilization and range trend, and (9) updated herd unit boundaries (CBGA RMP).	Current	Yes, but add (10) fertility control treatment studies and effectiveness (11) genetic diversity as available.
Prepare an HMAPP to establish long-term objectives and management actions for the Chloride Canyon Herd Management Area (Wild Horse Map 1). Priorities for these management actions are as follows: (a) maintain the current viability of the Chloride Canyon Wild Horse Herd pending completion of monitoring studies and the preparation and adoption of a HMAPP, (b) initiate and complete inventory/monitoring studies of the Chloride Canyon Wild Horse Herd, and (c) prepare an HMAPP for the Chloride Canyon Wild Horse Herd (CBGA RMP).	Current	Yes. HMAPPs need to be implemented for all HMAPs.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Wildland Fire Ecology		
<p>The 2005 Amendment divided public lands into the following categories:</p> <p><i>Suppression Emphasis Category FMUs:</i> These FMUs emphasize fire suppression to protect important resources. Resource improvements may be accomplished using wildfire, prescribed fire, and non-fire treatments for pinyon and juniper woodland, juniper, and sagebrush on a smaller scale compared to the other FMU categories. Treatments would convert pinyon and juniper woodland and juniper vegetation communities to sagebrush and grass plant communities. Sagebrush treatment would create a diversity of age classes within the sagebrush plant community. Resource objectives would be met by improving habitat for deer, greater sage-grouse, and other species, including special status species.</p> <p><i>Resources Objectives Emphasis Category FMUs:</i> Large acreages of pinyon and juniper woodland, juniper, and sagebrush are targeted for improvements using fire management. However, these FMUs have areas where suppression is critical in order to protect communities and private property, and protect sensitive natural resources. Treatments would convert pinyon and juniper woodland and juniper vegetation communities to sagebrush and grass plant communities. Sagebrush treatment would create a diversity of age classes within the sagebrush plant community. Resource objectives would be met by improvement of habitat for deer, greater sage-grouse, and other species, including special status species.</p> <p><i>Natural Fire Emphasis Category FMUs:</i> These FMUs contain areas where vegetation conversion and fuel reduction on larger acreages are important considerations. There are 2.6 million acres of public land in this category. While there are sensitive resources and other values requiring suppression, there are fewer constraints to bringing back the role of</p>	Current	Yes.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
fire into these systems. Additional information such as the specific goals, objectives, fire management actions and resource protection measures for each FMU can be found in the appendices of the Southern Utah Support Area FMP EA		
Accept the Pinyon Modified Fire Suppression Plan. Implementation of the plan is contingent on acceptance of the plan and associated MOU by the State of Utah. Initiate public participation as soon as the state approves the memorandum and the plan (Pinyon MFP).	Outdated	No. The new Fire Management Plan updated this information.
Full fire suppression will be carried out in all planning units (CBGA RMP).	Outdated	No. The new Fire Management Plan updated this information
Complete a Beaver River Fire Plan (including Pinyon, Cedar, and Beaver Planning Units) based on the existing plan for Pinyon Planning Unit. Based upon additional analysis, consider the establishment of modified and observation suppression areas based upon review of escape fire analysis, post burn reports, fuel models, vegetation aspect, and other resource values as appropriate for Cedar and Beaver Planning Units (CBGA RMP)	Completed	Yes. The new Fire Management Plan updated this information.

RESOURCE USES

Decisions in this section pertain to activities that utilize the natural, biological, and/or cultural components, such as livestock grazing, recreation, or mineral development.

Table 3-3. Resources Uses Management Decisions

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Forestry and Woodland Products		
Do not authorize the harvest of ponderosa pine, aspen, and fir, and maintain the stands for their values for wildlife habitat, aesthetic, watershed, and other resource values (Pinyon MFP).	Outdated	No. Management of these vegetative types requires a full slate of tools. Harvest is a tool that can be used to sustain and enhance the "values" noted.
Present policy does not allow free-use permits on forest products. Allow non-commercial sales of firewood and Christmas trees on the protective woodland zones.	Outdated	Correction: National-level policy does not allow free "personal-use." Free use is permitted to governmental agencies and may be permitted to non-governmental agencies.
Do not allow commercial sales of Christmas trees or firewood on protective woodland zones (Pinyon MFP).	Outdated	No. Currently, personal-use firewood, post, and Christmas tree permits are issued across the Planning Area (with

Current Management Decision	Status	Is decision responsive to current issues?/Comments
		closure of specified areas). Commercial-use firewood, post, and Christmas tree permits are issued on a case-by-case basis, with the permitted area specified in each permit.
Allow the commercial and non-commercial harvest of all woodland products within the commercial woodland stands.	Outdated	No. See above.
Promote the utilization of green pinyon and juniper products by establishing green cutting areas within these zones (Pinyon MFP).	Current	Yes. The use of greenwood cutting areas can be used in coordination with fuels management areas and wildlife habitat objectives where reductions in woody vegetation is desired to improve habitat.
Promote the cutting of forest products in areas scheduled for chainings by removing stumpage fees to commercial cutters of all woodland products. The waiver of fees or free-use permits can no longer be issued (Pinyon MFP).	Outdated	No. See discussion above regarding free-use of woody products, and the discussion regarding greenwood cutting areas.
Manage the woodland stands (Forestry Map 1) within Cedar and Beaver Planning Units for the sustained production of woodland products. Establish green wood cutting areas and provide additional access to and within those areas. Continue to authorize harvest of posts, Christmas trees, and pinenuts area-wide (CBGA RMP).	Current	Yes. Might modify greenwood cutting to focus this use in areas where fuels tree removal is a management objective.
Complete a Woodland Management Plan for Cedar and Beaver Planning Units. The Woodland Management Plan will identify needed access, establishment of green cutting areas, levels of harvest, use supervision, plan implementation, funding requirements, interpretive needs, and will supply an orderly schedule to provide for harvest of woodland products. An EA would be prepared for the activity plan and cover impacts of harvest so EAs would not be required for each sale (CBGA RMP).	Completed in 1984, now outdated	Yes, however, the Woodland Management Plan needs to be updated and brought current with BLM state and national direction.
Continue to authorize the sale of fuelwood and posts through the EA process within Antimony and Garfield Planning Units. Dead and downed wood will be sold area-wide and harvest of green fuelwood will be limited to green cutting areas to be established on a case-by-case basis, as needed (CBGA RMP).	Outdated	See discussions above.
Prohibit commercial sales of all fuelwood within green wood cutting areas in Cedar and Beaver Planning Units and limit cutting of oak to 10 cords per family per year. Expand the oak green cutting area to include all of the oak on public lands between Crater Knoll and the Ranch Exit on Interstate I5. Commercial cutting outside green cutting areas may be authorized to achieve management objectives of other programs (CBGA RMP).	Outdated	Superseded by the Woodland Management Plan.
Allow the harvest of woodland species with a maximum allowable harvest of 6,000 cords per year for the Cedar and Beaver Planning Units. Reduce from the maximum allowable harvest by 10 cords per acre as woodlands are taken out of the sustained yield base by land	Outdated	No. The CCFO Planning Area contains nearly 1 million acres of pinyon-juniper woodland that averages five cords per acre. Permitted harvest and treatments combined can be greatly expanded over

Current Management Decision	Status	Is decision responsive to current issues?/Comments
<p>treatment (chainings, burnings, etc.) to a minimum of 3,750 cords per year.</p> <p>Place priority on salvaging woodland products before land treatments (CBGA RMP).</p>	Current	<p>this figure, and might be better expressed on an acreage basis.</p> <p>Yes. See greenwood discussion above.</p>
<p>No cutting of deciduous trees within 100 feet of riparian areas or within VRM Class II areas (CBGA RMP).</p>	Outdated	<p>No. This should be determined case by case depending on the need and management objectives for each riparian area.</p>
<p>No cutting of pinyon-juniper within portions of crucial deer winter range important for thermal cover (CBGA RMP).</p>	Outdated	<p>No. This should be determined by the needs of the area being managed for winter range.</p>
<p>Lands and Realty</p>		
<p>1997 Amendment: Public lands in order to be considered for any form land tenure adjustment, including but not limited to, exchanges, in lieu selections, desert land entries, R&PPs etc. (except FLPMA 203 Sales) within the above stated Planning Areas, must meet one or more of the following criteria: (1) is in the public interest and accommodates the needs of state, local or private entities, including needs for the economy, community growth, and expansion and are in accordance with other land use goals and objectives and RMP/MFP planning decisions; (2) results in a net gain of important and manageable resource values on public lands, such as crucial wildlife habitat, significant cultural sites, high-value recreation areas, high-quality riparian areas, live water, threatened and endangered species habitat, or areas key to the maintenance of productive ecosystems; (3) ensures the accessibility of public lands in areas where access is needed and cannot otherwise be obtained; (4) is essential to allow effective management of public lands in areas where consolidation of ownership is necessary to meet resource management objectives; (5) results in the acquisition of lands which serve a national priority as identified in national policy directives.</p> <p>In addition to above criteria, all future land disposal actions will require a site-specific environmental analysis in accordance with NEPA when an actual land tenure adjustment action is proposed. A subsequent analysis may reveal resource conditions that could not be mitigated to the satisfaction of the Authorized Officer and may therefore preclude disposal.</p> <p>All future land tenure adjustments must meet one or more of the above land tenure adjustment criteria as well as be in conformance with other goals and objectives in the subject plan, some of which could preclude land tenure adjustment. All land tenure adjustments would be subject to valid existing rights as determined by the Authorized Officer.</p>	Current, with one change	<p>Consistent with current policy. Exclude Desert Land Entry, Indian Allotments, and Carey Act Grants from methods of disposal considered.</p> <p>Plan Language: Do not classify, open, or make available any BLM-administered public lands in the Planning Area under Desert Land Entry, Indian Allotment, and Carey Act Grants for one or more of the following reasons: rugged topography, presence of sensitive resources, lack of water or access, small parcel size, or unsuitable soils.</p>
<p>Provide suitable public lands for community expansion purposes and to assist in developing the area's agricultural potential through sales, leases, and permits (Pinyon MFP).</p>	Outdated	<p>Update will be necessary. Through the planning process, the CCFO will need to compare areas designated in past plans and compare to current community needs.</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Major utility systems will not be required to pass only through the corridors identified on the MFP 1 Overlay. Exceptions will be made as the need is demonstrated for deviations from corridors designated on the MFP 1 Overlay (Pinyon MFP).	Outdated	Will need to adapt WWEC plan amendments.
Make available for disposal over the life of the plan approximately 37,000 acres of public land described in Lands Table 1 and Lands Map 1 (CBGA RMP).	Outdated	New analysis required, along with coordination with the public and local and state governments.
Land Disposal: (a) analyzing each proposed disposal to determine what effects the proposed action will have on the social, economical, and resource values; (b) establishing the fair market value through appraisal; (c) public notification of the details of the proposed disposal for public comment (CBGA RMP).	Current	Yes.
Develop a disposal plan which identifies a preferred annual rate of lands availability, method of priority establishment, and means of coordinating disposal program with adjacent planning units (CBGA RMP).	Outdated	No. Remove
Assure that no major investments, such as seedings, fences, roads, etc., will be made on land identified for disposal. (CBGA)	Current	Yes.
Trespass resolution was not addressed in either plan.	N/A	<p>Add:</p> <p>Intentional trespass resolution will be limited to removal and/or restoration as appropriate.</p> <p>Unintentional trespass resolution can include:</p> <ul style="list-style-type: none"> • Authorization under ROW grant, commercial/agricultural lease, or permit • Disposal of the affected land through sale or exchange • Removal, depending on the nature of the trespass
Designate two corridors for power transmission lines covering approximately 110 miles, one mile in width, as identified in Lands Map 2. These corridors were analyzed for establishment of power transmission lines and are designated for that purpose. Any use authorization other than for electrical transmission lines will require a separate analysis (CBGA RMP).	Outdated	Will need to incorporate WWEC corridors and analyze the potential for additional corridors.
Encourage, to the maximum extent practicable, the location of new major ROWs in designated corridors (CBGA RMP).	Current policy	
A regional or state-wide study and analysis will be made of corridor needs and additional corridor designations made based on that analysis. Any additional corridor designations identified as a result of this study would require a planning amendment (CBGA RMP).	Change	Implement IM 2002-196.
Attach the following stipulations to ROWs for electrical transmission lines located within these corridors on lands administered by BLM: (1) Blasting and other surface disturbances would be prohibited within 500 feet of all live springs, reservoirs, or water wells. (2) During critical periods, transmission line construction would cease in deer, greater sage-grouse, and bald eagle habitat along the transmission lines. Table	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.

Current Management Decision	Status	Is decision responsive to current issues?/Comments															
<p>Lands-2 lists habitat areas and crucial periods. (3) Following the advice of a qualified wildlife biologist as designated by the appropriate federal official, roads, railroads, towers, and other ground-disturbing activities would be located 200 yards from identified active dens, burrows, nests, or roosting sites to protect the species listed below:</p> <table border="1"> <thead> <tr> <th>Species</th> <th>Concern</th> <th>Critical Periods</th> </tr> </thead> <tbody> <tr> <td>Deer</td> <td>Crucial Deer Winter Range</td> <td>Jan 1 – April 30</td> </tr> <tr> <td>Utah Prairie Dog</td> <td>Town Sites</td> <td>Year-round</td> </tr> <tr> <td>Sage Grouse</td> <td>Strutting Grounds</td> <td>Mar 15 – May 1</td> </tr> <tr> <td>Bald and Golden Eagle</td> <td>Winter Roost Sites</td> <td>Feb 15 – June 30</td> </tr> </tbody> </table>	Species	Concern	Critical Periods	Deer	Crucial Deer Winter Range	Jan 1 – April 30	Utah Prairie Dog	Town Sites	Year-round	Sage Grouse	Strutting Grounds	Mar 15 – May 1	Bald and Golden Eagle	Winter Roost Sites	Feb 15 – June 30		
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Bald and Golden Eagle	Winter Roost Sites	Feb 15 – June 30															
<p>Use helicopters to erect towers and string conductors in areas designated by the appropriate federal official, where access across the terrain or management constraints precludes standard construction methods (CBGA RMP).</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>The applicant would prepare photographic simulations of areas in which facilities are proposed within foreground-middleground areas of high scenic value or high sensitivity. Using the simulation as a guide, the applicant would design and locate structures to blend into the existing environment. Affected government agencies would evaluate and approve measures before construction is begun (CBGA RMP).</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>Transmission lines would be maintained and repaired to specifications established by the Authorized Officer. All existing improvements along transmission systems would be protected and damage would be repaired. All public land survey monuments, private property corners, and forest boundary monuments would be located, marked, and protected in place. In the event of destruction, they would be replaced (CBGA RMP).</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>Clearing would be restricted to the minimum necessary.</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>Scalping of top soil would not be permitted along the transmission line. Dozer, blade, or ripper-equipped tracked vehicles would not be allowed except for access-road construction (CBGA RMP).</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>The applicant shall conduct surveys of the grant area to determine if any threatened or endangered species (flora and fauna) are present. If such species are found, the applicant shall comply with the provisions of the ESA, including consultation with the USFWS. The applicant will take no action that will in any way destroy or adversely modify the critical habitat of any federally listed threatened or endangered species (CBGA RMP).</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															
<p>A plan of operation would be prepared covering the construction of all project facilities in cooperation with the appropriate federal agencies. The applicant would provide funding to the appropriate federal agencies for administration of construction activities (CBGA RMP.)</p>	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.															

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Material borrow areas would be restored when possible to blend with adjacent terrain (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Along transmission lines, removal of trees would be limited to those closer than 20 feet to an electrical power conductor. Whenever possible, clearing of trees creating a hazard would be done after conductor installation to minimize tree removal (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Appropriate road signs for public safety purposes would be provided during construction, such as "Caution Heavy Truck Traffic" or "Be Prepared to Stop," where considered necessary (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
All rivers, streams, and washes would be crossed at existing roads or bridges, except at locations designated by the appropriate federal official. The applicant would be required to install culverts or bridges at points where new permanent access roads would cross live streams. Where streams are crossed by temporary roads, dirt fills or culverts would be placed and removed upon completion of the project. Any construction activity in a perennial stream would be prohibited unless specifically allowed by the appropriate federal official. All stream channels and washes would be returned to their natural state (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Vegetation which has been cleared due to construction or other activity associated with this project would be reestablished (to the extent practical) where designated by the appropriate federal official. Vegetation cleared during construction would be shredded and left as mulch (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
The applicant would prepare a screening plan to minimize visual impacts from structures. The plan must be submitted in writing to the appropriate federal official, to obtain approval before starting construction (CBGA RMP.)	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
All trash, packing material, and other refuse would be removed from construction areas on federal land and placed in approved sanitary landfills (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Nonspecular conductors and compatible insulators would be installed on transmission line systems where required by the Authorized Officer.	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Access roads on federal lands blocked as the result of construction of project components would be rerouted or rebuilt. Cattle guards or gates would be provided along the new access roads as directed by the appropriate federal official (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Intensive archeological surveys and clearance would be required for all project sites (as specified in BLM Manual 8111.14) prior to new construction. Properties eligible for inclusion in the NRHP would be identified in consultation with the appropriate SHPO as specified in 36 CFR 800.4 and 36 CFR 63. Wherever possible, sites would be avoided. Where avoidance is not possible, mitigation of adverse effects to sites eligible for the NRHP would be undertaken in compliance with 36 CFR 800. Sites discovered during construction or other activities authorized by the BLM would be	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
evaluated and managed as specified in 36 CFR 800 (CBGA RMP).		
The applicant would provide funding for a qualified paleontologist who would be approved by the appropriate federal official. The paleontologist would conduct an intensive survey of all areas to be disturbed which are identified by the appropriate federal official as having high potential for paleontological resources. An approved paleontologist would be available, as needed, during surface disturbance. If the paleontologist determines that paleontological values would be disturbed, construction would be halted until appropriate action could be taken (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
In cooperation with the appropriate federal official, a fire control plan would be prepared. Internal combustion engines would be equipped with approved exhaust mufflers or spark arrestors (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Travel would be restricted to ROWs and existing public roads. Cross-country motor vehicle travel would be restricted on lands within the limited categories (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
All low-voltage power transmission lines would be designed to prevent electrocution of raptors (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Transmission line construction would not be allowed when in conflict with existing mining and drilling operations (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Water bars would be constructed on permanent access roads to adequately divert runoff to natural drainages. Location of water bars would be determined by the appropriate federal official. Roadside drainage ditches would be constructed on access roads to reduce water flow and velocity. Drainage ditches would be dug at intervals determined by the federal authorizing officer. Roads would be "out-sloped" as much as possible. Berms would be removed (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Use Authorization: (1) Process applications for use authorizations such as ROWs, leases, and permits on a case-by-case basis. (2) Provide timely response to applications for use authorizations and state selections in accordance with current procedures and policies (CBGA RMP).	Update	Implement BMPs from nationwide PEISs and current IMs and any other BMPs deemed necessary through analysis.
Livestock Grazing		
RM 1.1 On 31 allotments in the I category, make initial adjustments and allocations of livestock forage. Initial and future adjustments in stocking levels will be based on inventory, consultation and monitoring studies which include climate, actual use, utilization, and trend. Data from the studies will be evaluated at the beginning of the third and fifth year following initial adjustments to determine if additional adjustments are needed. No adjustments will be totally based on Range Inventory data. Adjustments will be made by mutual agreement, where this is not possible by decision. Where adequate data is not available, it will be gathered prior to any adjustment. (Table 2 in the Pinyon MFP shows allotments and indicated adjustments.)	Outdated	<p>No. The allotment categorization (I, M, or C) needs to be updated throughout the Planning Area to account for current issues, conditions, and the like.</p> <p>Flexibility to update the allotment categorization without a plan amendment would allow greater flexibility to concentrate available resources.</p> <p>Further changes to livestock grazing management would be in conformance with all applicable laws, regulations, and policies and based on current vegetative</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
<p>No adjustments in stocking levels will be based only on inventory data. Where information is available to show adjustments are appropriate and they can be agreed upon, reductions will be made. On other allotments, monitor and adjust to grazing capacity after sufficient data has been gathered (Pinyon MFP).</p>		<p>monitoring data. Vegetative monitoring data have continually been collected throughout the Planning Area since the CBGA RMP was issued.</p> <p>Management actions affecting seasons of use, grazing management systems, and grazing use levels through formal grazing agreements, decisions, or AMPs have been continually updated and completed.</p> <p>One hundred thirty-five of the 159 allotments have current AMPs. These actions were based on the analysis of vegetative monitoring data.</p>
<p>RM 1.2 On a case-by-case basis as season of use and stocking levels are agreed upon or determined by monitoring, implement AMPs until all allotments have implemented AMPs (Pinyon MFP).</p>	Update	<p>No. Further changes to livestock grazing management would be in conformance with all applicable laws, regulations, and policies and based on current vegetative monitoring data. Management actions affecting seasons of use, grazing management systems, and grazing use levels through formal grazing agreements, decisions, or AMPs have been continually updated and completed.</p>
<p>RM 1.3 New facilities will be determined by AMP formulation in accordance with decisions in RM 1.1 and RM 1.2 (Pinyon MFP).</p>	Update	<p>No. Additional range improvement projects would be identified in the ongoing RMP and grazing permit renewal efforts.</p>
<p>RM 1.4 Land treatment will be determined by AMP formulation in accordance with decisions in RM 1.1, RM 1.2, and RM 1.3 (Pinyon MFP).</p>	Update	<p>No. Additional range improvement projects would be identified in the ongoing RMP and grazing permit renewal efforts</p>
<p>RM 1.5 Allow for change in class of livestock from sheep to cattle on Antelope Peak, Buckhorn, Indian Creek, and Willow Creek allotments contingent upon the operators' acceptance of an appropriate AMP. Allow for change in class of livestock in other allotments upon written request from the operator if it can be supported by an EA (Pinyon MFP).</p>	Update	<p>No. Changes have been made through the permit renewal process. Additional allotments where change in class of livestock would be considered through ongoing RMP efforts.</p>
<p>RM 1.6 Incorporated into RM 1.1 (Pinyon MFP).</p>		
<p>RM 1.7 Allow for the inclusion of 3,209 acres of suitable public rangelands, which produce 314 currently unallocated AUMs and are known as the No Grazing Areas, into the Jockeys Allotment (Pinyon MFP).</p>		<p>Change was made to Jockeys Allotment.</p>
<p>RM 1.8 See Wild Horse Decisions for Pinyon MFP. Consolidate and stabilize the Mountain Home-Sulphur herd unit and establish these numbers between 135 and 180 horses. The Mountain Home Allotment presently has no grazing privileges. Livestock grazing will not be permitted unless monitoring studies following consolidation and stabilization of the horse numbers confirm adequate forage exists for the established numbers and wildlife (Pinyon MFP).</p>	Update	<p>Mountain Home will continue to have no grazing privileges.</p>
<p>RM 2.1 On 22 allotments in the M category where present grazing management has been satisfactory, continue with existing management practices with forage allocations as shown in MFP Range Table 4. Initiate or continue monitoring studies, including climate studies, actual use yearly, trend at 3- to 5-year intervals,</p>	Update	<p>No. The allotment categorization (I, M, or C) needs to be updated throughout the Planning Area to account for current issues, conditions, and the like.</p> <p>Flexibility to update the allotment</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
and utilization as time and funds permit (Pinyon MFP).		<p>categorization without a plan amendment would allow greater flexibility to concentrate available resources.</p> <p>Further changes to livestock grazing management would be in conformance with all applicable laws, regulations, and policies and based on current vegetative monitoring data. Vegetative monitoring data have continually been collected throughout the Planning Area since the CBGA RMP was issued.</p> <p>Management actions affecting seasons of use, grazing management systems, and grazing use levels through formal grazing agreements, decisions, or AMPs have been continually updated and completed.</p> <p>One hundred thirty-five of the 159 allotments have current AMPs. These actions were based on the analysis of vegetative monitoring data.</p>
<p>RM 3.1 Continue the present stocking level and season of use on 18 allotments (in the C category) and place them under custodial agreement. Monitor climate monthly and actual use annually. Utilization and trend studies will be conducted on a priority basis as the need is identified (Pinyon MFP).</p>	Update	<p>No. The allotment categorization (I, M, or C) needs to be updated throughout the Planning Area to account for current issues, conditions, and the like.</p> <p>Flexibility to update the allotment categorization without a plan amendment would allow greater flexibility to concentrate available resources.</p> <p>Further changes to livestock grazing management would be in conformance with all applicable laws, regulations, and policies and based on current vegetative monitoring data. Vegetative monitoring data have continually been collected throughout the Planning Area since the CBGA RMP was issued.</p> <p>Management actions affecting seasons of use, grazing management systems, and grazing use levels through formal grazing agreements, decisions, or AMPs have been continually updated and completed.</p> <p>One hundred thirty-five of the 159 allotments have current AMPs. These actions were based on the analysis of vegetative monitoring data.</p>
<p>RM 3.2 Exchange or sell isolated tracts within seven allotments (Austin, Beryl, Del Vecchio, Flat Top, Meadow Valley, South of R.R. Tracks, Winsor) and eliminate the grazing permit. In the interim, manage the lands under custodial management. (Pinyon MFP).</p>	Update	<p>No. Do not include in new RMP.</p>
<p>RM 3.3 Allow for uses other than livestock grazing on currently unallotted isolated tracts of public lands. Allow</p>	Update	<p>Identify areas for exchange in the new RMP.</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
for the exchange or sale of these parcels as soon as practical (Pinyon MFP).		
<p>Initiate management prescriptions affecting seasons of use, grazing systems, and grazing use levels through formal grazing agreements, decisions, or AMPS. These prescriptions will be applied on all allotments identified as having one or more of the following characteristics to resolve problems and conflicts and meet objectives as identified in Range Table 5 (Intensive Management Allotments):</p> <ul style="list-style-type: none"> • Present range condition is unsatisfactory. • Allotments have moderate to high resource production potential and are producing at low to moderate levels. • Serious resource use conflict exist. • Opportunities exist for positive economic return from public investments. • Present management appears unsatisfactory. • Other criteria appropriate to EIS area (CBGA RMP). 	Update	Update I allotments and carry decision forward into the new RMP.
<p>Continue current management practices to maintain or improve on resource conditions and to meet the objectives shown for the allotments which have been identified in Range Table 6 as generally conforming to the following characteristics (Maintain Management Allotments):</p> <ul style="list-style-type: none"> • Present range condition is satisfactory. • Allotments have moderate or high resource production potential and are producing near their potential (or trend is moving in that direction). • No serious resource use conflicts exist. • Opportunities may exist for positive economic return from public investments. • Present management appears satisfactory. • Other criteria appropriate to the EIS area (CBGA RMP). 	Update	Update M allotments and carry decision forward into the new RMP.
<p>Continue current custodial management on all allotments (shown in Range Table 4 of the RMP) which generally conform to the following criteria (Custodial Management Allotments):</p> <ul style="list-style-type: none"> • Present range condition is not a factor. • Allotments have low resource production potential and are producing near their potential. • Limited resource - use conflicts may exist. • Opportunities for positive economic return on public investment do not exist or are constrained by technological or economic factors. • Present management appears satisfactory or is the only logical practice under existing resource conditions (CBGA RMP). 	Update	Update C allotments and carry decision forward into the new RMP.
Minerals		
Neither existing LUP lists objectives or decisions for locatable minerals. It was assumed that the regulations at 43 CFR 3809 were sufficient for this resource.	Ongoing	The current and projected level of locatable mineral development can be accommodated using project-specific environmental analyses and the undue or unnecessary degradation standard. Operating practices and reclamation standards should be drawn from a list of

Current Management Decision	Status	Is decision responsive to current issues?/Comments
		BMPs appropriate for the Planning Area as a whole.
Issue sand and gravel free-use permits and/or sales in areas of potential demand. Identified subeconomic sand and gravel deposits close to towns or near roads. Other deposits may be considered if required on a case-by-case basis (Pinyon MFP).	Ongoing	Based on the current and projected levels of demand, the continued management of the sand and gravel resource on a case-by-case basis is considered an appropriate management decision. This objective should be broadened to encompass all of the salable mineral materials.
Within the Pinyon unit delete 4,363 acres from oil and gas Category 1 and add 12,048 acres. Delete 540 acres from Category 2 and add 4,373 acres. Delete 5,395 acres from Category 3 and delete 5,853 acres from Category 4 (see Table M2.1-1) (Pinyon MFP).	Update	Categories will be updated in the new RMP.
1986 Geothermal Amendment: Upon their renewal or initial granting, Seasonal Stipulations will be placed upon geothermal leases for the protection of 3,919 acres of raptor and sage grouse habitat. A no surface occupancy stipulation for the protection of 2,347 acres of Utah prairie dog habitat and three historical recreation sites will be placed upon geothermal leases in the planning unit. Unneeded seasonal stipulations on 15,360 acres will be dropped.(Pinyon MFP)	Outdated	Stipulations need to be revised.
Geothermal Resources Leasing Programmatic EIS, 2009: Programmatically assess the direct, indirect, and cumulative effects of leasing, exploration and development of geothermal resources on high priority areas (critical locations) on BLM- and FS-administered lands in order to expedite leasing. Additional environmental documentation would be required prior to actual exploration drilling and development.	Current	Yes.
Apply the revised oil, gas, and geothermal leasing categories and stipulations as described in Minerals Table 1 and Minerals Map. This decision does not apply to geophysical exploration, which is administered under the NOI process (43 CFR 3045) (CBGA RMP).	Update	Categories will be updated in the new RMP.
<p>The potential coal development areas within the Kolob, Alton, and Johns Valley Coal Fields (Minerals Map 2) are suitable for further leasing consideration as described below:</p> <p>(1) Based on the coal lease screening process, the following lands will be considered suitable for further leasing consideration for underground and surface mining: Kolob Coal Field - 19,788 acres, Alton Coal Field - 837 acres, and Johns Valley Coal Field - 12,506 acres. An additional 3,900 acres, identified under criteria numbers 2, 3, 9, 11, 12, and 15 will be considered suitable for further leasing consideration for underground mining, but will be considered unsuitable for surface mining (Minerals Table 2 and Minerals Map 2). It should be noted that application of Unsuitability Criterion 16 (Flood Plains) was not completed, and Criterion 19 (Alluvial Valley Floors) was not applied to any of the potential coal areas. These criteria will be applied prior to any leasing (see c. below) and could</p>	Ongoing	The potential coal development areas should be reanalyzed for suitability due to changes in surface resources that have occurred since the last suitability analysis.

Current Management Decision	Status	Is decision responsive to current issues?/Comments
<p>result in additional acreages considered unsuitable.</p> <p>(2) Visual resources will be mitigated from surface disturbances to meet VRM Class II objectives in the foreground visual zone on 2,800 acres within the Kolob Coal Field (Minerals Map 2).</p> <p>(3) Apply coal unsuitability criteria 16 and 19 (Floodplains and Alluvial Valley Floors, respectively) prior to leasing (43 CFR 3461.4-I) (CBGA RMP).</p>		
<p>Continue to meet public demand for salable and free-use mineral materials on a case-by-case basis (CBGA RMP).</p>	Ongoing	<p>Based on the current and projected level of demand, the continued management of this resource on a case-by-case basis is considered an appropriate management decision.</p> <p>Maximize areas open to mineral materials disposals adjacent to travel corridors and municipalities and other areas with high to moderate occurrence potential.</p>
<p>Prevent undue and unnecessary degradation on lands open for locatable minerals exploration and development (CBGA RMP).</p>	Ongoing	<p>This is the overarching standard set by FLPMA that the BLM is mandated to achieve. It would be beneficial for both the BLM and potential project proponents to have some BMPs in place that are specifically linked to the term "preventing undue and unnecessary degradation."</p>
Plant and Seed Collection		
<p>Neither existing LUP includes decisions about plant and seed collection.</p>	Outdated	<p>No. See Chapter 4, Management Opportunities.</p>
Recreation		
<p>Amendment 2006: Authorize the Greater Three Peaks Special Recreation Management Area.</p>	Current	<p>Yes.</p>
<p>Manage the Pinyon Planning Unit as an ERMA. The existing Recreation Opportunity Spectrum inventory will be used as reference only. Current policy does not call for Recreation Opportunity Spectrum inventory on extensive management areas and the terminology used to describe the various zones is misleading, obsolete, and is not approved (Pinyon MFP)</p>	Outdated	<p>No. Current policy defines SRMAs, ERMAs, and areas that will not be managed as recreation management areas. Classifications must be updated to respond to needs and opportunities. In addition, objectives need to be revised for recreation management areas.</p>
<p>Manage the CBGA Planning Area as an ERMA, utilizing extensive, unstructured, and custodial management principles (CBGA RMP).</p>	Outdated	<p>No. Current policy defines SRMAs, ERMAs, and areas that will not be managed as recreation management areas. Classifications must be updated to respond to needs and opportunities. In addition, objectives need to be revised for recreation management areas.</p>
<p>Place priority for management and maintenance of developed recreation facilities at Rock Corral. Explore possibilities to transfer facilities to local residents through R&PP authorities (with assurance of public access) or manage the area under a cooperative management agreement for maintenance (CBGA RMP).</p>	Outdated	<p>No. See Chapter 4, Management Opportunities.</p>
<p>Provide for the interpretation of the recreational opportunities within the Planning Area, emphasizing OHV use, rockhounding, hiking, and sightseeing opportunities and values (CBGA RMP).</p>	Outdated	<p>No. See Chapter 4, Management Opportunities</p>

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Renewable Energy		
The potential for renewable energy resources in the CCFO Planning Area was not evaluated in the existing LUPs. Wind and solar resource production is permitted via ROWs through the lands and realty program, whereas geothermal resources are permitted through the leasable minerals program.	Outdated	No. See Chapter 4, Management Opportunities.
2005 Amendment: implement a comprehensive program to address issues associated with wind energy development on BLM-administered public lands under a maximum potential development scenario (MPDS). The program will establish policies and BMPs to address the administration of wind energy development activities and identify minimum requirements for mitigation measures. These programmatic policies and BMPs will be applicable to all wind energy development projects on BLM-administered public lands. Site-specific concerns, and the development of additional mitigation measures, will be addressed in project-level reviews, including NEPA analyses, as required. To the extent appropriate, future project-specific analyses will tier from the analyses conducted in the PEIS and the decisions in this Record of Decision (ROD) to allow project-specific analyses to focus just on the critical, site-specific issues of concern.	Current	Yes. Implement the new policy.
Transportation		
Allow off-road vehicle use on all public lands in the Pinyon Planning Unit to provide opportunities for casual OHV use. As needed, place signs at high-hazard areas and sensitive watershed areas. In these areas, encourage OHV users to stay on existing roads and trails (Pinyon MFP).	Outdated	No. Federal policy now mandates that travel off of existing routes is not allowed unless an area has been designated as open to cross-country travel. This will be included in all alternatives of the RMP/EIS.
Develop an OHV Management Plan and designate public lands as depicted on Recreation Map 1 into the following OHV categories by 1987: Open, 1,023,700, and limited to existing roads and trails, 47,700, including 14,200 acres of crucial deer winter range in the Cedar Planning Unit (seasonal limitation between January 1 to April 30), 11,100 acres of crucial greater sage-grouse strutting grounds (seasonal limitation between March 15 to May 1), 4,400 acres of nesting and roosting sites for bald and golden eagles (seasonal limitation between February 15 and June 30), 3,900 acres of critical prairie dog habitat (yearlong limitation), and 14,100 acres of riparian habitat (yearlong limitation) (CBGA RMP).	Completed	No. A new Travel Management Plan is needed and will be completed in the future.
Maintain public access to fishing streams and important recreation values including North Creek and Ranch Canyon Recreation Areas. (CBGA)	Outdated	Will be addressed in new TMP.

SPECIAL DESIGNATIONS

BLM Special Designations include ACECs, WSRs, Back Country Byways, and WSAs. Congressional designations include Wilderness Areas and National Historic Trails.

Table 3-4. Special Designations Management Decisions

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Neither of the existing LUPs addressed ACECs, National Trails, WSRs, Wilderness, WSAs, or any other special designations.	Outdated	No. All of these special designations will need to be considered in the new RMP.

SOCIAL AND ECONOMIC FEATURES

Social and Economic Features include Hazardous Materials, Public Safety, Native American Religious Concerns and Socioeconomic Conditions.

Table 3-5. Social and Economic Features Management Decisions

Current Management Decision	Status	Is decision responsive to current issues?/Comments
Hazardous Materials and Public Safety		
Neither of the existing LUPs addressed hazardous materials or public safety issues. The Lands section of the CBGA RMP lists some stipulations that would be required for ROW grants to increase public safety.	Outdated	No. Both of these issues will be addressed in the new RMP.
Native American Religious Concerns		
While Native American religious concerns were not considered separately in either existing LUP, the CBGA RMP stated that the plan would be evaluated to determine "if it is still consistent with the plans and policies of State or local government, other Federal agencies, and Indian tribes, insofar as practicable...".	Outdated	No. See Chapter 4, Management Opportunities.
Socioeconomic Conditions		
The Pinyon MFP did not contain a separate analysis for socioeconomics. It did mention how some decisions in the plan might affect the economics of specific resources. Socioeconomics was not addressed in the CBGA RMP.	Outdated	No. The new RMP will address socioeconomic resources issues and impacts.

4.0 MANAGEMENT OPPORTUNITIES

This section describes the management opportunities that should be considered in at least one of the alternatives of the EIS associated with the RMP. These management opportunities were derived from considering the current conditions and trends described in Chapter 2 and the adequacy of the existing decisions described in Chapter 3.

RESOURCES

Air Quality

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Provide for revegetation of blow areas, which would include artificial seeding and revegetation, needed facilities (e.g., sediment fencing), and rest from livestock and wildlife grazing, to promote ground cover capable of holding soils in place during high wind events.
2. Favor binary geothermal production plants (closed systems) over steam plants to reduce the release of criteria pollutants (particularly SO_x) into the atmosphere.
3. Provide for collaboration on regional issues with local, state, and federal agencies. Provide adequate restrictions to maintain air quality in adjacent Class I air quality areas such as national parks and wilderness areas.
4. Allow for analysis and opportunity to provide input to travel plans, particularly those dealing with recreational use of vehicles.
5. Consider climate change and noise pollution in future site-specific project planning.
6. Provide for fuels reduction treatments that reduce overstory fuels and canopy species, and establish and restore grass and forb components in the understory to the degree necessary to protect and restore sagebrush habitat, rangeland and watershed health, and wildlife habitat. Fuels treatments aimed toward preventing large-scale, catastrophic fires and promoting rangeland health by restoring ecosystem function.
7. Implement renewable energy generation projects on CCFO-administered lands in highly productive energy areas that are the least deleterious to the area's resource and natural values.

Areas of Relative Ecological Importance

Areas of relative ecological importance are restricted primarily to those areas with a current or potential critical or severe soil erosion hazard rating. This is for the minimization or prevention of fugitive dust.

Climate Change

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Maintain vegetative communities in good vegetative and soil health.
2. Follow air quality, soil, and vegetation management opportunities in this document.
3. Comply with Secretarial Order #3226, Amendment 1, and/or any new direction issued that is pertinent to the management of public lands in the Decision Area.

Areas of Relative Ecological Importance

All of the Planning Area meets air quality standards, so there are no specific areas of concern.

Cultural Resources

Management Opportunities to be Considered in Land Use Plan Alternatives

While the present management direction is effective in conserving and protecting cultural resource values in the context of specific actions, it has been less effective in protecting resources where permitting or other compliance measures are not required. In addition, the current planning decisions do not address identification and management for areas of traditional use or importance to Native American Tribes. Consultation with tribes to identify traditional places of importance occurs only when a project-specific undertaking is proposed. A more proactive approach to cultural resource management could include the following:

1. Consider nominations for ACECs at the Parowan Gap Petroglyphs and Wildhorse Canyon Obsidian Quarry and other high-density and at-risk cultural resource areas.
2. Identify recreation opportunities at Gold Springs, Sand Cliff Signatures, and other frequently visited archeological areas.
3. Identify threatened historic properties for protection or interpretation on adjacent lands for acquisition.
4. Establish priorities for Section 110 inventories in areas of high probability and/or potential high use. Such areas could include, but are not limited to, Hamlin Valley, the Frisco Mining District, the areas around the Parowan Gap, and the Old Spanish National Historic Trail.
5. Establish priorities for site monitoring. Such areas could include, but are not limited to, Black Point Petroglyphs, Parowan Gap Petroglyphs, Wildhorse Canyon Obsidian Quarry, Sand Hill Signatures, and other fragile or at-risk resources.
6. Identify and prioritize known cultural resources that need to be recorded or need updating (including site, eligibility, condition, and location). Incorporate all updates into the SHPO database.
7. Support the continual development and enhancement of the SHPO database and CCFO cultural resource records and GIS.
8. Identify and prioritize the study of cumulative impacts to cultural resources.
9. Identify priorities for physical protection measures, including stabilization and restoration. Examples include Parowan Gap Petroglyphs, Wildhorse Canyon Obsidian Quarry, Sand Hill Signatures, Gold Springs Cabins, and the Stateline Store.
10. Establish planning direction for managing the Old Spanish National Historic Trail.
11. Develop partnerships with communities, tribes, scientific and educational institutions, and other interested parties.
12. Pursue an active role for tribal involvement in site protection and stabilization.
13. Identify locations of traditional religious and cultural importance in consultation with tribes who have traditional interests in the Planning Area.
14. Establish goals for NRHP evaluations and nominations that reflect the potential cultural and historical significance of geographic areas or watersheds.
15. Provide a clear strategy for complying with Section 106 for OHV route designations and schedule for surveying the Planning Area for scientifically valuable archeological resources.
16. Adequately assess the environmental consequences of OHV use on significant cultural resources in the Planning Area

Areas of Relative Ecological Importance

Areas of particular importance include Parowan Gap Petroglyphs, Wildhorse Canyon Obsidian Quarry, Gold Springs, Sand Cliff Signatures, Hamlin Valley, Frisco Mining District, the areas around the Parowan Gap, and the Old Spanish National Historic Trail.

Fish and Wildlife Habitat

Management Opportunities to be Considered in Land Use Plan Alternatives

Management opportunities for the revised RMP could include:

1. Identify desired habitat conditions and population objectives for major habitat types that support a wide variety of wildlife species
2. Designate priority species, including populations of fish or wildlife species, and their corresponding habitats
3. Identify actions and area-wide use restrictions needed to achieve desired population and habitat conditions.
4. Improve, maintain, or restore habitat condition and trend through a variety of vegetation treatment practices, or through prescriptive grazing management.
5. Maintain all good-condition habitat areas
6. Protect and enhance aspen and ponderosa pine habitats.
7. Address water needs for pronghorn, chukar, and other species.
8. Retain or reestablish habitat connectivity.
9. Identify key areas that could be used for potential reintroductions of native fish and wildlife species and provide a set of criteria that need to be met.
10. Protect, maintain, or enhance greater sage-grouse breeding, nesting, brood-rearing, and wintering habitat, and provide or maintain habitat connectivity.
11. Protect pygmy rabbit habitat and habitat for other sagebrush obligates, and protect connectivity.
12. Consider the identification of core habitat areas for the Utah prairie dog and connectivity corridors.
13. Protect migratory bird nesting habitat, bald eagle foraging, roosting, and concentration areas, peregrine falcon use areas, and other raptor nest sites on public lands from all types of undue intrusions (e.g., OHV use, mineral operations, and land treatments).
14. Protect important migratory bird habitat areas (e.g. areas of high-concentration nesting and/or high species diversity) in addition to raptor areas.
15. Identify important areas for both raptors and non-raptor avian species, and outline special protective measures for these areas.
16. Incorporate the Utah Supplemental Planning Guidance: Raptor Best Management Practices.
17. Consider the population and habitat objectives of HMPs and the UDWR herd management plans, and reduce threats and risks to at-risk wildlife and habitats as identified in the Utah State Wildlife Action Plan (UDWR, 2005).
18. Identify opportunities to achieve management objectives, or the restrictions that limit the ability to achieve objectives.
19. Adjustments of seasons, locations, or intensities of livestock grazing use.
20. Locations, extent, and plant compositions of rangeland seeding or wildfire rehabilitation projects.
21. Adjustments of the timing and location of mineral exploration activities.
22. Adjustments of permitted recreational uses and travel management.
23. Adjustments to locations and access for energy development and transmission.

Specific wildlife management issues, needs, and opportunities are identified below.

Insufficient Wildlife and Fisheries Habitat Inventories

24. Update fish and wildlife habitat and population inventories.
25. Identify measurable objectives for important wildlife habitats, including desired future conditions.
26. Identify and map raptor nesting locations, foraging habitats, prey species, migration corridors, nesting territories and seasonal-use areas (i.e., roosts), and the like and determine and record annual activity and production.
27. Determine the extent of northern goshawk nesting on BLM-administered lands and learn more about this bird's winter habitat needs on BLM-administered lands.
28. Inventory non-game species, including reptiles, amphibians, bats, migratory birds, and other species. Inventories are needed to determine locations, populations, suitable habitat, and potential nesting and foraging areas.

Habitat Fragmentation and Habitat-Use Patterns

29. Designate wildlife corridors to mitigate habitat fragmentation.
30. Manage recreational use to protect and enhance these habitats.
31. Monitor seasonal habitat-use patterns.
32. Resolve big-game winter-use conflicts with livestock, OHV use, and resource development.
33. Protect crucial deer winter range by working cooperatively with other federal, state, and county governments and non-governmental organizations on highways, crossing structures, and local land uses.
34. Evaluate and prioritize crucial deer winter range for habitat treatments through the Utah Watershed Restoration Initiative.
35. Keep crucial deer winter range in public ownership.

Response to Drought Concerns

36. Adjust forage use for livestock during drought conditions.
37. Remove or decrease cattle during droughts longer than 1 year until drought conditions subside.
38. Work cooperatively with the UDWR to maintain or decrease big game populations during drought.
39. Request special hunts from the UDWR to address localized conditions.
40. Control wild horse numbers.

Invasive Species Concerns

41. Implement measures to prevent the spread of invasive species, both terrestrial and aquatic.

Diseases

42. Implement current protocols and BMPs internally and apply restrictions to resource users as needed.
43. Monitor and manage habitats to prevent the risk of spread of the following diseases:
 - Chronic Wasting Disease. Monitoring indicates that this disease, as of 2010, does not occur in the CCFO Planning Area; however, there is a need for continued monitoring because the disease has been actively moving.
 - West Nile Virus
 - White Nose Syndrome

- Plague
- Whirling Disease. The BLM needs to implement BMPs such as cleaning all equipment, including waders and boots, of mud before leaving an aquatic area, and to thoroughly dry equipment in the sun if possible before reuse, or use a disinfectant. There are protocols to follow for fire fighting and dipping water out of ponds or reservoirs and moving it to other areas.
- Pneumococcal disease transmittal between domestic sheep and wild species of bighorn sheep. This issue needs to be addressed if existing herds (such as in Zion National Park) expand into the Planning Area or before the reintroduction of bighorn sheep into suitable historic habitats.
- Bluetongue
- Epizootic hemorrhagic disease
- Pneumonia
- Enterotoxemia
- *Elaeophora (Elaeophora schneideri)*.

Management of Fish and Fish Habitat

44. Work cooperatively with the UDWR to perform quantitative population monitoring on fisheries streams throughout the Decision Area.
45. Manage native and recreational fisheries and their habitats. Work cooperatively with the UDWR, private groups, and others to maintain viable fisheries.

Management of Big Game Habitat

46. Manage habitat for big game on a herd-unit basis consistent with UDWR herd management plans, if possible.
47. Identify areas of concern or conflict. Potential methods to resolve conflicts include:
 - Wildlife habitat treatments
 - Water developments
 - Fence modifications.
48. Identify treatment needs and priorities across the Planning Area. Concerns might also be addressed by working cooperatively with the UDWR to:
 - Manage herd sizes that can be supported by existing habitat
 - Authorize hunts that address specific concerns.
49. Consider modifying livestock grazing rotations, use area or allotment boundaries to eliminate or reduce livestock from areas crucial to big game.
50. Consider limiting or closing crucial areas to OHV use.
51. Mitigate existing operational leases for mineral or fossil fuel development occurring in big game areas by improving habitat (e.g., vegetative treatments water developments) to compensate for acreages disturbed by the existing activity.
52. Create additional forage via vegetative treatments to reset the seral stage of crucial areas and reseed areas with favorable plant species.
53. Revise and change livestock grazing systems to stabilize downward vegetation and riparian trends where applicable.
54. Acquire and protect crucial wildlife habitat through sale or exchange.
55. Consider seasonal road closures on crucial habitat.
56. Restrict vehicles to designated roads.
57. Manage road densities to decrease fragmentation.

Management of Crucial Winter Deer and Elk Habitat

58. Review and update mapped winter ranges with the UDWR.
59. Assess the habitat quality of crucial winter ranges for deer and elk.
60. Manage grazing, minerals, realty actions, and recreation activities (including motorized cross-country travel) in this habitat.
61. Review winter ranges annually in cooperation with the UDWR, and make changes to land use, as appropriate.
62. Adjust the condition of rangeland in crucial winter ranges to avoid any degradation to shrub-dominated rangelands.
63. Implement appropriate vegetative treatments on winter ranges that will achieve the objectives of the treatment.
64. Review monitoring of vegetation trends and threats with the UDWR.
65. Build cooperative efforts to ensure both state and federal agencies are in agreement on management of crucial winter ranges.
66. Adjust leasing categories and stipulations on an ongoing basis to protect crucial winter habitat for deer and elk. Establish a cooperative set of criteria for considering requests for exceptions to, waivers of, or modifications to lease stipulations.
67. Consider closing certain winter ranges (such as Cedar City to Summit) to all motorized vehicles from January 1 to May 1.

Management of Crucial Fawning and Calving Grounds

68. Protect crucial calving and fawning areas by restricting land use authorizations and uses during critical times. Establish a cooperative set of criteria for considering requests for exception to, waivers of, or modifications to lease stipulations.
69. Maintain or improve habitat conditions for fawning or calving and provide forage important for lactating cow elk, and mule deer and pronghorn does.
70. Review, identify, and update maps of calving and fawning habitat with the UDWR.

Management of Big Game Water Sources

71. Provide wildlife access to existing springs, seeps, and other natural water sources.
72. Water sources should provide a ground-level source of water. If it is not possible to provide ground-level sources, all troughs should be 20 inches or less in height above ground level to provide access to fawns and calves.
73. Prohibit management actions that would dewater sources.
74. Provide water from spring through fall.
75. Do not fence big game out of springs and seeps. If this is done, provide ground-level water sources outside the fence. Fencing out big game should be a last resort to protect riparian resources.
76. Fences to allow mule deer access but not livestock should be a minimum of 0.5 acre in size to be used by deer.

Management of Artificial Wildlife Waters

77. Install wildlife escape ramps in all water troughs.
78. Design access for bats. Bats make extensive use of both natural and man-made water sources. Follow guidelines for minimum available water surface areas.
79. Inventory and maintain existing guzzlers and consider placement of new guzzlers.
80. Develop a provision to allow maintenance of existing guzzlers even if surface use changes (such as allowing administrative vehicle access).
81. Ground-level water sources are preferable to livestock troughs. All ponds or troughs fed by pipelines should be left full when livestock leave an area.

Reintroduction of Native Wildlife to Historic Ranges

82. Identify lands that could be used for species reintroduction and the conditions under which this would be allowed. Two species in particular need to be addressed: Utah prairie dog and bighorn sheep. Greater sage-grouse translocations might be a future need.

Translocation of Wildlife within the Planning Area

83. Identify lands that could be used for species translocation and the conditions under which this would be allowed. Species to consider include Utah prairie dog, beaver, mule deer, and fish.

Elk Expansion throughout the Planning Area

84. Elk have the potential to move and establish in areas where they do not currently occur or are only transient. Cooperatively address conflicts with the UDWR and determine when management plans might be needed for new herds.

Protection of Riparian and Aquatic Habitats

85. Designate all riparian habitats in the area as oil and gas leasing Category 2 (Open to Leasing with Special Stipulations) or Category 3 (No Surface Occupancy).
86. Change livestock systems and seasons of use to avoid grazing during warm-season growing periods in riparian areas.
87. Construct protective fencing around springs and seeps to provide water for livestock outside protection areas.
88. Require permittees to provide alternative water sources to alleviate livestock use of riparian areas.
89. Require special use permits for large reservoir construction (more than 2 surface acres) to address opportunities for fisheries management. The developer should maintain an adequate conservation pool and sediment basin to permit a fishery to exist and should take into consideration fish passage across the dam.
90. Analyze water rights to explore opportunities for improving existing and potential fisheries.
91. Restrict recreation uses in riparian areas, such as limiting driving to designated roads.
92. Only designate roads in riparian zones that are absolutely crucial to transportation networks. Design roads to avoid riparian areas. Consider closing or rerouting roads in riparian areas or wet meadow habitats.
93. Perform inventories to determine the current distribution and occurrence of species, the habitat potential and suitability, and the habitat quality in drainages, streams, rivers, and riparian areas in the Planning Area.
94. As plans are developed, seek funding through Challenge Cost Share Programs, Cooperative Agreements, and cooperative efforts from agencies and conservation groups and other affiliations that support or are interested in environmental and ecological projects.
95. Through funding and cooperative efforts, establish partnerships with federal, non-federal, state, and private agencies to assist in the implementation and execution of each plan.

Existing and Future Fencing Standards

96. All new fences should conform to BLM fence standards and old, hazardous fences should be removed or replaced as opportunities become available.
97. Big game movement corridors might require special fence standards to allow for movement or reduce maintenance costs. A policy for flagging, or making new fences visible, should be developed.
98. New fences should be carefully analyzed before authorization to reduce additional fragmentation of wildlife habitat.

99. New fences in greater sage-grouse habitat should be carefully considered and sited on the landscape. Follow current policy for flagging or making the fences as visible as possible.

Recreation Conflict with Wildlife Habitat

100. Consider restricting recreational uses that conflict with wildlife.
101. Consider limiting motorized recreation where necessary to enhance wildlife populations and habitat conditions, and reduce habitat fragmentation.
102. Recreation in particularly sensitive areas, such as riparian zones, or threatened or endangered species habitat, might need to be restricted.
103. Implement climbing closures on cliffs with nesting raptors.

Restoration of Sagebrush Habitat

104. Protect, maintain, or restore crucial sagebrush habitat, such as in greater sage-grouse and pygmy rabbit habitat or mule deer winter ranges.

Monitoring and Managing Raptors

105. Complete and update the raptor inventories and develop a monitoring schedule in coordination with the UDWR for species of concern.
106. Manage key habitats, emphasizing maintenance and restoration of natural biological diversity.
107. Consider developing cooperative agreements with federal and non-federal agencies, private contractors, and research partners to perform inventory and monitoring.

Need for Adequate Regulatory Mechanisms to Protect Threatened, Endangered, and Candidate Species

108. Species-specific regulatory mechanisms need to be developed to protect threatened, endangered, and candidate species.

Inadequate Leasing Categories and Stipulations and Project Conservation Measures

109. Application of fluid mineral leasing categories needs to be reevaluated
110. Stipulations are inadequate and not current with accepted BMPs for spatial and timing buffers.
111. Spatial and timing buffers (conservation measures) need to be developed for the protection of special status species and other species of concern for application to all resource uses.

Protection of Raptors and Raptor Habitat

112. Adopt and implement the BLM Utah raptor BMPs.
113. Review leasing categories and change application if needed to protect raptors.
114. Develop leasing stipulations to implement raptor BMPs.
115. ROWs for electric transmission lines should ensure that support towers are designed to protect raptors from electrocution. Old transmission lines should be inspected to see if any additional modifications are necessary. Incorporate Avian Power Line Interaction Committee guidelines.
116. Develop site-specific Avian Protection Plans. Implement USFWS Land-Based Wind Energy Guidelines as appropriate through BLM guidance.

Disposal of Isolated Tracts

117. Consider value to wildlife both as local refugia and as the parcel's role in connectivity before disposal.

Protection of Migratory Birds and Migratory Bird Habitat

118. Add a provision for management of migratory birds and their habitat pursuant to the MBTA and Executive Order 13186 and the new BLM/USFWS MOU (2010).
119. Address the conservation of migratory bird habitat and populations for BLM-administered lands, consistent with the FLPMA, the ESA, the MBTA, and other applicable law.
120. When developing the list of species to be considered in the planning process, the BLM will consult the current USFWS Birds of Conservation Concern lists (USFWS, 2008).
121. Evaluate and consider management objectives and recommendations for migratory birds resulting from comprehensive planning efforts (this includes the PIF North American Landbird Conservation Plan, North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Western Hemisphere Shorebird Reserve Network, North American Waterbird Conservation Plan, and other planning integrated through the North American Bird Conservation Initiative).
122. Consider special designations that might apply to all or part of the Planning Area, such as Important Bird Areas in the United States, and consider such designations in the appropriate planning documents.
123. In coordination with the USFWS, develop conservation measures and ensure monitoring of the effectiveness of conservation measures to minimize, reduce, or avoid unintentional take of migratory birds.
124. As needed, modify conservation measures to be more effective in reducing unintentional take and, as practicable, to restore and enhance the habitat of migratory birds, golden eagles in particular.
125. Develop leasing stipulations for migratory birds.
126. Integrate migratory bird conservation measures, as applicable, into future Activity Management Planning (e.g., grazing, recreation, cultural Resources, and wildlife), surface operating standards and guidelines for oil and gas exploration and development, and renewable (wind, solar, and geothermal) energy development NEPA mitigation.

Areas of Relative Ecological Importance

Important habitat areas include crucial mule deer winter ranges, and pygmy rabbit, greater sage-grouse, and Utah prairie dog habitat. Specific locations that need protection include sage-grouse leks, raptor nests, Utah prairie dog colonies, dispersal corridors for Utah prairie dogs and pygmy rabbits, and the crucial deer winter ranges east of Interstate 15.

Hamlin Valley is a large tract of relatively undisturbed sagebrush steppe habitat. The Bald Hills are a unique, high-elevation sagebrush site above the pinyon pine and juniper woodland belt that ends in mixed conifer habitat at the top. The entire Parowan Gap Canyon supports an amazing diversity and density of nesting raptors. The surrounding sagebrush steppe habitat supports greater sage-grouse, pygmy rabbits, Utah prairie dogs, burrowing owls, ferruginous hawks, and other species. The canyon, cliffs, and associated bench areas are collectively unique, especially where they are close to cities. The canyons east of Interstate 15 represent the transition of the Basin and Range region into the Colorado Plateau and support unique species such as the Mexican spotted owl. The Mineral Mountains, with sharp granite peaks, riparian areas, high-elevation mountain shrub and open habitat on the dry west side contrasting with wetter, oak brush habitat on the east side, provides many unique habitats within one mountain range. Bumblebee Mountain and the extreme southeastern corner of the Planning Area are also unique areas.

Paleontology

Management Opportunities to be Considered in Land Use Plan Alternatives

While the current management direction for fossil resources in the CCFO Planning Area contains no specific goals or direction other than following national-level guidance, in general, national-level guidance has been adequate to manage the known fossil resource in the Planning Area. Decisions that should be considered include:

1. Paleontological localities will be protected through review of all proposals for activities that would disturb the surface.
2. Collection of important vertebrate fossils will be allowed subject to existing restrictions and permitting requirements.
3. Commercial or hobby collection of common fossils will be allowed subject to existing federal regulations.
4. Evaluate off-road vehicle designations to determine whether limitations are needed at important paleontological localities.
5. Localities with vertebrate fossils and paleontological resources that might provide important scientific information will receive priority for protection and evaluation. Common invertebrate or common plant fossil localities are not ordinarily the focus of protective measures.

Areas of Relative Ecological Importance

The current most significant fossil resource on public lands in the CCFO Planning Area is a dinosaur trackway site in the Iron Springs Formation near the east end of Parowan Canyon. The site is adjacent to a paved, well-traveled county road and local public visitation to this site is well-established and growing. The site is presently unsigned and unprotected. The situation could be mitigated by designating the general fossil area closed to off-pavement travel, and installing interpretive and educational signs for the site to raise visitor awareness of the significance of the site and of the fossil resource in general.

Riparian and Wetlands Resources

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Prioritize riparian areas in the Decision Area for monitoring and management actions.
2. Ensure compliance with no surface occupancy guidelines in IM UT 2005-091(U.S. BLM 2005a).
3. Continue to make changes to livestock grazing management, including but not limited to, changes to seasons of use, reducing numbers, improving livestock distribution through range improvement projects and herding practices, and implementing short-term monitoring.
4. Consider management actions to mitigate the impacts of livestock, wild horses, and wildlife to riparian areas.
5. Remove invasive species adversely affecting riparian-wetland functionality and desired condition.
6. Remove pinyon pine and juniper trees in and adjacent to riparian-wetland areas.
7. Improve, relocate, or close roads adjacent to or in riparian areas that are contributing excess sedimentation to a riparian area.
8. Continue to maintain existing exclosures.
9. Construct new exclosures as necessary.

10. Consider special designations, such as ACECs or WSRs, to protect important riparian-wetland features.
11. Manage/minimize recreation impacts to riparian areas. These impacts include day hiking, hunting, OHV use, and camping.

Areas of Relative Ecological Importance

Selected streams in the Planning Area have existing and historic habitat for Bonneville cutthroat trout. These streams and the associated riparian habitat are ecologically important because they represent the southernmost extent of the current Bonneville cutthroat habitat. Streams that support these trout populations include Birch Creek and Little Creek. The Bonneville cutthroat is both a State and BLM sensitive species, and there is an inter-agency Range-Wide Conservation Agreement and Strategy.

Overall, each riparian-wetland area is ecologically important because of the unique resource they provide on less than 1 percent of the total land in the Planning Area. However, riparian-wetland areas in the Planning Area are relatively common compared to the Great Basin and Colorado Plateau ecoregions.

Soils

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Build and maintain existing exclosures to document natural changes and assess other impacts.
2. Identify areas that need increased soil productivity, stabilization, restoration, and/or long-term rest. Develop BMPs for these areas.
3. Reevaluate critical watersheds, and enlarge them based on high salinity and/or erodibility.
4. Develop drought management strategies.
5. Soil erosion condition and sediment yield trends should be evaluated by establishing permanent monitoring sites at representative locations.
6. Vegetation diversity and density should be improved on soils with high erosion potential.
7. Only authorize topsoil mining in specific outwash soil locations.

Areas of Relative Ecological Importance

Areas include prime and unique farmlands, and soils of statewide importance, Wah Wah Valley, the Beaver Bottoms, and Buckhorn Flat. There are public health and safety issues associated with fugitive dust, highways, and motorists in all three cases. Smaller areas of wind-erosion concern include sensitive soils in the areas of Zane and on the Milford Flat Fire Rehabilitation area, particularly the areas south of the Milford Wind Corridor wind farm. Also included are preferred swale habitats for Utah prairie dogs.

Special Status Species

Plants

Management Opportunities to be Considered in Land Use Plan Alternatives

Management considerations that need to be addressed for special status plants include increases in resource users, such as motorized recreation use (including OHV use), dispersed camping in association with recreation (e.g., hunting camps, woodcutters, pine nut harvesting),

and other authorized uses such as ROW authorizations (e.g., energy development and transmission lines), mineral material extraction, livestock range improvement projects, livestock grazing (soil compaction), invasive weed treatments, seed collection, wildfire and ESR efforts, and vegetation improvement projects (e.g., fuels treatments and stewardship projects).

Recommendations to provide opportunities to address these concerns in the new RMP include the following:

1. Survey and inventory all populations of special status plants in the Decision Area to obtain adequate baseline information so as to make well-informed decisions.
2. Monitor special status plants to document the extent of occupied habitat and identify specific threats. This information will be used in BLM decision-making processes to identify needs for change in current management situations and will be provided to the USFWS during status reviews for determinations of the need to list, de-list, or reclassify species under the ESA.
3. Develop direction and guidance for rehabilitating and/or restoring public lands after ground-disturbing activities in special status plant habitat.
4. Avoid concentrating authorized recreational activities in occupied special status plant habitat.
5. Minimize OHV use in occupied special status plant habitat through route designations and closures.
6. Avoid mechanical seed collecting in occupied special status plant habitat.
7. Allow for the avoidance of authorizing resource uses in locations that are not consistent with protection and management of special status plants.
8. Increase research opportunities, public education, and outreach.
9. Eliminate and avoid future placement of livestock range improvement projects that are not conducive to maintenance of special status plant populations (i.e., sheep bedding and feeding grounds and water hauls in occupied habitat in the Upper Horse Hollow Allotment).
10. Allow for hand treatment of invasive, noxious weeds in areas occupied by special status plants.
11. Ensure seed or plant material collection for special status plants are completed with appropriate permits for research purposes only and does not lead to the need to further list the species under the ESA.
12. Support research based analysis to increase further knowledge of special status plants and threats (e.g., drought and pathogens)
13. Adjust livestock grazing management (seasons of use) as appropriate.

Areas of Relative Ecological Importance

Many of the special status plant species in the Decision Area are endemics and occupy unique habitats, which restrict the ranges of many of these species. Areas of relative ecological importance in the Decision Area include San Francisco Mountains, Beaver Lake Mountains, Wah Wah Mountains, Tunnel Springs Mountains, Antelope Range, Horse Hollow, Lower Bear Valley, and Hamlin Valley.

Wildlife

Management Opportunities to be Considered in Land Use Plan Alternatives

In the case of formally listed species under the ESA, special status species management can be directed by law or by USFWS recovery plans. In the case of non-listed special status species, policy and interagency cooperation under conservation agreements can direct management. Both kinds of management arrangements can and will influence land use and management actions in the Decision Area.

Special status species lists are prone to change as new inventory data are gathered. Therefore, the list of special status species will probably change over time. List changes could include (1) addition of new species, (2) delisting species (removal from special status), or (3) elevating species to federal or state threatened or endangered status.

The BLM could require adjusting land uses to provide the proper quality and quantity of habitat for special status species on public lands. Adjustments necessary depend on the (1) species, (2) their life history needs, (3) the seasons of use potentially affected, and (4) the nature of the land use allowed.

Management opportunities to protect special status species and specific wildlife management issues, needs, and opportunities are identified in the Fish and Wildlife Habitat section.

Areas of Relative Ecological Importance

These areas of relative ecological importance are also included in the general descriptions in the Fish and Wildlife Habitat section above.

Specific areas for special status species include Spring Creek Canyon for the Mexican spotted owl and Duncan Creek for the southwestern willow flycatcher. Utah prairie dog core habitat areas need to be officially identified, but will likely include most or all of the following areas: Pine Valley, Black Mountains, the eastern edge of the Escalante Desert from northern Cedar Valley up to the southwestern corner of the Black Mountains, and Buckskin Valley.

Birch Creek and Little Creek provide important habitat for the Bonneville cutthroat trout. The Southwest Desert Greater Sage-grouse Local Working Group has identified four focus areas: Hamlin and Pine Valleys, the Black Mountains, the Mineral Range area, and Buckskin Valley. There is important pygmy rabbit habitat in Hamlin and Pine valleys, southern Escalante Valley, eastern Parowan Valley, and northern Cedar Valley into the Black Mountains. In addition to other sites mentioned in this document as important for raptors, the public has mentioned Table Butte in the Escalante Desert. Also, the BLM has noted that several areas, such as southern Pine Valley, lower Fourmile Wash, northern Cedar Valley, and the Minersville Bench, have burrowing owl nesting habitat. Additional areas could be identified as inventories are performed. Another area of importance is in the central Escalante Desert and could contain the largest known population of dark kangaroo mouse.

Vegetation

Management Opportunities to be Considered in Land Use Plan Alternatives

As previously discussed, 135 of the 159 allotments currently being grazed by livestock have been fully processed through the NEPA/Finding of No Significant Impact/Decision process since 2004. Grazing permit renewals (AMP equivalents) would continue to be modified if it is determined to be necessary to ensure that Rangeland Health Standards and Guidelines are being maintained/attained. Opportunities for management under a grazing permit renewal include (1) change in kinds of livestock, (2) adjustments in permitted numbers, (3) change in seasons of use, (4) initiation and/or change in the grazing system, (5) land treatments such as chaining and prescribed burning, and (6) construction of range improvement projects, including fences, water developments, mechanical treatment (e.g., Dixie harrow, Ely or smooth chain, rotobearer, and rotary mower), chemical treatment, and prescribed fire. AMPs would continue to be developed and refined, and livestock management decisions would be based on vegetative monitoring data and assessments, including nested frequency, utilization (key management area utilization and use-pattern mapping), point cover, line intercept, photo trend, PFC, MIM, and Rangeland Health Assessment.

To continue to improve vegetative resources in the Decision Area, the following management opportunities should be considered:

1. Achieve an upward trend in areas that are in a static or downward trend.
2. Improve habitat condition and trend with vegetative treatments or prescription grazing management.
3. Revise and change livestock grazing systems to stabilize downward vegetation trends where applicable.
4. Adjust forage use for livestock during drought conditions.
5. Remove or decrease cattle during droughts longer than 1 year until drought conditions subside.
6. Reduce or eliminate rangeland resource problems on all allotments identified for I category management while maintaining a production goal of livestock forage over the long term.
7. Maintain or improve current resource conditions on all allotments identified for M category management while permitting livestock grazing use over the long term.
8. Continue current management unless resource conditions are being adversely affected. In this case, consider actions that would require a minimum of input on all allotments identified for C category management to prevent further resource deterioration.
9. Re-treat existing vegetative treatments that have been invaded by pinyon-juniper, sagebrush, and the like to provide forage for livestock, wildlife, and wild horses to ensure that adequate forage is available, ecological diversity is promoted, and healthy vegetative communities are sustainable.
10. Identify vegetative treatment areas that have been invaded by such species as pinyon-juniper, sagebrush, and cheatgrass for vegetative treatment to provide forage for livestock, wildlife, and wild horses to ensure that adequate forage is available, ecological diversity is promoted, and healthy vegetative communities are sustainable.

11. Focus management on areas that are at risk that have considerable quantities of desirable native vegetation. Areas would include locations that are being invaded by excessive pinyon and juniper, sagebrush, cheatgrass, and the like.
12. Provide for fuels reduction treatments that reduce overstory fuels and canopy species, and establish and restore grass and forb components in the understory to the degree necessary to protect and restore sagebrush habitat, rangeland and watershed health, and wildlife habitat. Fuels treatments aimed toward preventing large-scale, catastrophic fires, and promoting rangeland health by restoring ecosystem function.
13. Rest allotments or pastures on grazing allotments for a minimum of two growing seasons after a vegetative treatment project is completed to provide for project success, which could disrupt livestock grazing operations.
14. Rest allotments or pastures on grazing allotments for a minimum of two growing seasons following a wildfire and the completion of subsequent ERS efforts to provide for project success, which could disrupt livestock grazing operations.
15. As needed to promote/attain the Rangeland Health Standards and Guidelines and other resource objectives, implement livestock management actions to change seasons of use and grazing management systems, and identify the kinds of livestock and grazing use levels through formal grazing agreements, grazing permit renewal decisions, or AMPs. These actions would be based on the collection and analysis of all available vegetative monitoring data.
16. To facilitate livestock management and help improve forage conditions in areas where burning has been designated as a method of land treatment, initiate a fire action modification plan incorporating modified fire suppression procedures.
17. Allow a temporary change in kinds of livestock for bio-control of weeds, invasive species, and cheatgrass to meet management objectives.
18. Allow study plot/restoration of disturbed areas (i.e., sheep bedding grounds).
19. Utilize livestock as a management tool to thin shrub-dominated areas with limited perennial understory.
20. Allow for the construction of reference area exclosures in undisturbed areas and in use areas to provide the ability for long-term monitoring comparison.
21. Allow for the increase of AUMs on grazing allotments where excess forage has become available as a result of successful ES&R treatments, fuels treatments, vegetative enhancement projects, where supported by vegetative monitoring data.
22. Special status plants are typically isolated and located in small areas in the Planning Area. If it is determined that livestock are adversely affecting special status plants, implement terms and conditions that would eliminate sheep bedding, water hauling, and salting in the immediate area where the plant is present.
23. Allow for range improvement projects (e.g., water pipeline and fence) design specifications and BMPs through survey and design to minimize impacts to vegetation.
24. Allow for design specifications and BMPs through survey and design to ensure that the free-roaming nature of wild horses is not impeded and vegetative resources are improved.
25. Allow for re-categorization of grazing allotments in the Decision Area throughout the life of the RMP without a Plan Amendment. Updates to the categorization of allotments will ensure the best use of limited personnel resources to effectively monitor/manage livestock grazing allotments. Triggers for re-categorization could include successful/unsuccessful ESR efforts and upward/downward vegetative trend through the evaluation of allotment(s) by an interdisciplinary team of specialists.
26. Maintain the integrity of vegetation experimental or research sites.

Pinyon-Juniper

27. Continue to manage pinyon-juniper stands for traditional wood products (posts, firewood, pine nuts, and Christmas trees).

Ponderosa Pine

28. Manage ponderosa pine where it is found for its sustained presence on the landscape.
29. Remove competing vegetation and understory vegetation that provides “fuel ladders.”
30. Thin overly dense portions of ponderosa stands.
31. Reintroduce periodic low-intensity ground fire to ponderosa stands to manage stand densities and understory vegetation.
32. Some wood products might be made available for personal or commercial use as byproducts of vegetative treatment activities.

Mixed Conifer

33. Remove all or most of the conifer to favor aspen regeneration and therefore convert the mixed conifer stand to an aspen stand (where aspen is a stand component in sufficient quantities to potentially dominate the stand)
34. Favor the continued presence of ponderosa pine over other species because it will likely be the most fire-adapted tree species on the site.
35. Retain bristlecone pine, limber pine, Engelmann spruce, and blue spruce where found.
36. Retain Douglas-fir, but not at the expense of the above list.
37. Consider subalpine fir and white fir less desirable than other tree species.
38. Allow harvest (commercial or non-commercial) and fire use to manage mixed conifer where slopes and access allow.

Aspen

39. Manage aspen stands to increase the health and dominance of aspen where the species is found. This could include removing competing species, fencing, and cutting or burning to stimulate regeneration.

Gambel Oak

40. Continue to manage select areas containing Gambel oak for personal-use green firewood opportunities. Such areas might be where it is desirable to manage oak for fuels or wildlife considerations. Gambel oak re-sprouts from the root collar following cutting or fire.

Mountain Mahogany

41. Manage select areas of mountain mahogany for green firewood cutting. Selected areas might be those where mahogany forms dense, closed-canopy stands and it is desirable to create a mosaic of vegetative types and/or size classes to address wildland fire spread concerns.

Areas of Relative Ecological Importance

Areas of relative ecological importance are primarily those at risk of conversion to cheatgrass-dominated sites following disturbance. However, it is critical to ensure that proper vegetative management is applied throughout the Decision Area. The Indian Peak Range west of Cedar City has traditionally been the “go-to” spot for both personal-use and commercial-use pine-nut

gathering. The Great Basin pinyon pine, which grows on this range, produces a larger nut with a softer shell than does the Colorado Plateau pinyon pine to the east. Stands of pinyon pine on this mountain range that are generally above 7,000 feet elevation (where moisture conditions favor nut production) could be managed for sustained yield of pine nuts. The ponderosa pines on the west side of the Planning Area contain the oldest genetics of ponderosa pine and some of the oldest individual trees. Emphasis for these stands should be management for the protection and sustained presence of the species and the old tree component. This includes stands in the Wah Wah Mountains, on Steamboat Mountain, in the Paradise Mountains, and on Frisco Peak. Bristlecone pine and limber pine form some of the oldest trees in the Great Basin. The Planning Area has scattered individuals in many locations and a few stands of these species. Where found, management should strive to retain and enhance the health of these species. The largest populations of these species Planning Area have been identified on the Mountain Home Range, Frisco Peak, and the Wah Wah Mountains. Aspen stands in the Planning Area are often small and scattered. They provide high-quality wildlife habitat and high visual diversity to the surrounding landscape. Their continued presence and health on the landscape should be a priority.

Visual Resources

Management Opportunities to be Considered in Land Use Plan Alternatives

Opportunities to improve the quality of the information that upon which decisions are based and to modify existing decisions include the following:

1. Review/update inventory information on scenic quality in areas where class designation is believed to be inconsistent with management needs. Current manual guidance on scenic quality ratings differs somewhat from the guidance at the time of the previous inventory.
2. Update visual sensitivity ratings. Visual sensitivity is partially determined by use volume and by type of user. With the increase in population and in recreation use in the Planning Area, visual sensitivity has increased.
3. Display more comprehensively inventory information in GIS layers with more precise boundary identification.
4. Reevaluate designated management classes to ensure that scenic quality is protected in balance with resource use.
5. Develop management actions that would protect high-quality scenic areas.

Areas of Relative Ecological Importance

Special consideration should be given to areas of high public use and visibility, such as those along interstate and state highways, reservoirs, or highly desired recreation areas. Other key features of the visual landscape that receive greater public attention include unique landforms, historic trails, pristine areas, and large, solid blocks of public lands.

The Mineral Mountains, Mountain Home Range, Spring Creek Canyon, Kanarra Creek Canyon, and Hurricane Front are several of the Planning Area's key visual elements, and offer multiple public access points. Two areas are within the Spring Creek WSA and have few developments. The others have moderate amounts of roads and small-scale developments; however, due to their visual variety they maintain a high scenic quality.

Water Resources

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Define desired future conditions and stream habitat goals for each perennial and intermittent stream system.
2. Determine where watershed management plans are needed due to high levels of activity.
3. Identify priority watersheds based on resource conditions and stabilization needs. Define management criteria for actions allowed.
4. Develop drought management strategies.
5. Reevaluate planning designations (i.e., oil and gas leasing stipulations and OHV travel designations) to better manage for sedimentation control.
6. Amend grazing management to include seasonal rotation, spring rest, and exclusion from critical areas (e.g., saline soils, fragile soils with high erosion potential, and riparian areas) .
7. Follow new federal stormwater regulations (every project with more than 1 acre of surface disturbance needs a stormwater permit from the UDEQ).
8. Develop BMPs to reduce nonpoint source salinity and sedimentation. BMPs could include protecting sensitive soils, stabilizing actively down-cutting channels, improving watershed health with documented water quality issues, and protecting floodplains and riparian areas.
9. Identify areas of current or potential accelerated erosion.
10. Identify instream flow needs and pursue them.
11. Recognize sole source aquifer designations and water source protection zones (municipal watersheds), and identify drinking water sources without protection zones.
12. Identify measures to ensure water availability for multiple use management and functioning healthy riparian and upland systems.
13. Identify areas that need additional water developments for wildlife and livestock. These would primarily be guzzlers or wells (via windmill or solar power). Additional water supplies could replace or augment existing water supplies in critical areas such as riparian zones and areas with unstable soils or highly saline soils.
14. File for water rights in unadjudicated areas as needed and if possible.
15. Compile a comprehensive list of public water reserves.

Areas of Relative Ecological Importance

Current areas of most concern are Pine, Wah Wah, and Hamlin-Snake valleys. Water quality is particularly important in relation to Section 303(d) listed waters, currently Minersville Reservoir/Beaver River and New Castle Reservoir.

Wild Horses

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Adjust HA boundaries to natural or man-made boundaries. HAs are limited to areas of the public lands identified as being habitat used by wild horses and burros at the time of the passage of the Wild Free-Roaming Horses and Burros Act, as amended (16 U.S.C. 1331-1340). HA boundaries may only be changed when it is determined that the HA boundary does not correctly portray where wild horses and burros were found in 1971. All the HA boundaries in the Planning Area need to be adjusted to match natural or man-

- made boundaries that restrict the movement of wild horses. The current HA boundaries do not match where wild horses were found in 1971.
2. The three HMAPs (Bible, Four Mile, and Tilly Creek) could be combined into one HMAP, and the Blawn Wash HMAP changed to a HA. HMAPs are established only in HAs, within which wild horses and/or burros can be managed over the long term.
 3. For HMAPs, identify the following:
 - a) Initial and estimated herd size that could be managed while still preserving and maintaining a thriving natural ecological balance and multiple use relationships for that area.
 - b) Guidelines and criteria for adjusting herd size.
 4. Where appropriate, the LUP could include decisions to remove horses from all or part of an HA. Examples include intermingled and unfenced lands in HAs where private landowners do not want to make them available for wild horse or burro use, or essential habitat components are not available for wild horse or burro use in an HA (Blawn Wash HA).
 5. Area-wide restrictions are needed to achieve objectives. For example, if domestic horses in HMAPs are not compatible with wild horse management policies, then domestic horse grazing must not be permitted in HMAPs or adjacent to HMAPs if domestic and wild horses are likely to intermingle (Lund Allotment).

Areas of Relative Ecological Importance

HAs that were established with passage of the 1971 Wild Free-Roaming Horses and Burros Act are the key areas of ecological importance. Through the land use planning process these boundaries can be adjusted to actual physical boundaries where wild horses were present at the time the Act was passed. HMAPs can be established in HAs to manage for wild horses while still preserving and maintaining a thriving natural ecological balance and multiple use relationships for that area.

Wilderness Characteristics

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Incorporate management criteria for areas with wilderness characteristics.
2. Establish VRM class objectives to guide the placement of roads, trails, and other facilities
3. Establish conditions of use to be attached to permits, leases, and other authorizations.
4. Designate lands as open, closed, or limited to OHVs to achieve a desired visitor experience.
5. Determine where wilderness characteristics will be a priority over other uses in an area.

Areas of Relative Ecological Importance

Areas of importance are any lands outside WSAs that meet the criteria and are determined to have wilderness characteristics

Wildland Fire Ecology

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Follow the existing Fire Management Plan.
2. Identify additional wildland fire projects to improve rangeland health and wildlife habitat.

Areas of Relative Ecological Importance

Areas of particular importance include WUI areas and special management areas within the FMUs. Special management areas include ACECs, WSAs, WSRs, communications sites, and special status plant habitats (see Table 2-36).

RESOURCE USES

Forestry and Woodland Products

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Personal-use products should continue to be made available to the public.
2. Commercial wood products should be made available where the removal of biomass, sawlogs, and the like can help promote specific project objectives and contribute to local economies, both through the products themselves and through the employment generated in the harvesting, transportation, processing, and utilization of commercial products.

Areas of Relative Ecological Importance

See the Vegetation section.

Lands and Realty

Management Opportunities to be Considered in Land Use Plan Alternatives

Communications Sites, Corridors, and Land Use Authorizations

1. Determine where and under what circumstances authorizations for use, occupancy, and development may be granted.
2. Evaluate designated corridors and carry through the corridors that would be preferred for developing ROWs, and terms and conditions for these corridors that would minimize environmental impacts and limitations.
3. Evaluate and, if necessary, designate areas for communications sites
4. Designate ROW avoidance and exclusion areas.
5. ROW corridors will conform to the PEIS for the Designation of Energy Corridors on Federal Land in 11 Western States.
6. Develop standard terms and conditions, including BMPs for ROWs.
7. Reevaluate utility corridor widths to valid existing ROW widths or the accumulation of ROW widths where a particular utility corridor is bordered on both sides by special management areas.
8. Where impacts to sensitive resources cannot be mitigated, corridors will not be designated. A comprehensive conflict analysis would determine where there are sensitive environmental concerns.

Trespass Resolution

1. Intentional trespass resolution will be limited to removal and/or restoration as appropriate.

Unintentional trespass resolution may include:

- Authorization under an ROW grant, commercial/agricultural lease, or permit
- Disposal of the affected land through sale or exchange
- Removal, depending on the nature of the trespass

Land Tenure

1. Reevaluate selected lands and possible additional lands for disposal. Additional lands need to be a separate list from the original disposal list that qualifies under the Federal Land Transaction Facilitation Act of 2000.
2. Identify for disposal lands that are difficult/uneconomical to manage.
3. Identify lands for retention and lands for acquisition.
4. Identify community expansion and open-space needs of local communities.
5. Do not classify, open, or make available any BLM-administered public lands in the Planning Area under Desert Land Entry, Indian Allotment, and Carey Act Grants for one or more of the following reasons: rugged topography, presence of sensitive resources, lack of water or access, small parcel size, and unsuitable soils.

Withdrawals

1. Current BLM policy is to minimize the acreage of public land withdrawn from mining and mineral leasing and, where applicable, to replace existing withdrawals with ROWs, leases, permits, or cooperative agreements. Now that the FLMPA review process is complete, when Congress decides on the recommendations from the field offices, actions can occur to manage the lands according to the current LUP. The planning process will allow the BLM and public to determine management of these lands if they come back under BLM jurisdiction.

Areas of Relative Importance

Lands of greatest importance to lands and realty include the existing main transmission corridors, particularly those identified in the West-Wide Energy Corridor EIS; areas around urban zones needed for ROWs and land tenure adjustments; priority land tenure adjustments identified during scoping; and areas near existing communications site facilities. Isolated parcels will be analyzed by the Interdisciplinary Team during alternatives development.

Livestock Grazing

Management Opportunities to be Considered in Land Use Plan Alternatives

As previously discussed, 135 of the 159 allotments currently being grazed by livestock have been fully processed through the NEPA/Finding of No Significant Impact/Decision process since 2004. Grazing permit renewals (AMP equivalents) would continue to be modified if it is determined to be necessary to ensure that Rangeland Health Standards and Guidelines are being maintained/attained. Opportunities for management under a grazing permit renewal include (1) change in kinds of livestock, (2) adjustments in permitted numbers, (3) change in seasons of use, (4) initiation and/or change in the grazing system, (5) land treatments such as chaining and prescribed burning, and (6) construction of range improvement projects, including fences, water developments, mechanical treatment (e.g., Dixie harrow, Ely or smooth chain, rotobearer, and rotary mower), chemical treatment, and prescribed fire. AMPs would continue to be developed and refined, and livestock management decisions would be based on

vegetative monitoring data and assessments, including nested frequency, utilization (key management area utilization and use-pattern mapping), point cover, line intercept, photo trend, PFC, MIM, and Rangeland Health Assessment.

To continue to improve livestock grazing management in the Decision Area, the following management opportunities should be considered:

1. Achieve an upward trend on areas that are in a static or have a downward trend.
2. Improve habitat condition and trend with vegetative treatments or prescription grazing management.
3. Revise and change livestock grazing systems to stabilize downward vegetation trends where applicable.
4. Adjust forage use for livestock during drought conditions.
5. Remove or decrease cattle during droughts longer than 1 year until drought conditions subside.
6. Reduce or eliminate rangeland resource problems on all allotments identified for I category management while maintaining a production goal of livestock forage over the long term.
7. Maintain or improve current resource conditions on all allotments identified for M category management while permitting livestock grazing use over the long term.
8. Continue current management on all allotments identified for C category management while preventing further resource deterioration.
9. Re-treat existing vegetative treatments that have been invaded by pinyon-juniper, sagebrush, and the like to provide forage for livestock, wildlife, and wild horses to ensure that adequate forage is available, ecological diversity is promoted, and healthy vegetative communities are sustainable.
10. Identify vegetative treatment areas that have been invaded by such species as pinyon-juniper, sagebrush, and cheatgrass for vegetative treatment to provide forage for livestock, wildlife, and wild horses to ensure that adequate forage is available, ecological diversity is promoted, and healthy vegetative communities are sustainable.
11. Provide for fuels reduction treatments that reduce overstory fuels and canopy species, and establish and restore grass and forb components in the understory to the degree necessary to protect and restore sagebrush habitat, rangeland and watershed health, and wildlife habitat. Fuels treatments aimed toward preventing large-scale, catastrophic fires, and promoting rangeland health by restoring ecosystem function.
12. Create additional forage via vegetative treatments to reset the seral stage of crucial areas and reseed areas with favorable plant species.
13. Rest allotments or pastures on grazing allotments for a minimum of 2 years after a vegetative treatment project is completed to provide for project success, which could disrupt livestock grazing operations.
14. Rest allotments or pastures on grazing allotments for a minimum of 2 years following a wildfire and subsequent ESR efforts to provide for project success, which could disrupt livestock grazing operations.
15. As needed to promote/attain the Rangeland Health Standards and Guidelines and other resource objectives, implement livestock management actions to change the seasons of use and grazing management systems, identify the kinds of livestock and grazing use levels through formal grazing agreements, and make grazing permit

- renewal decisions or development AMPs. These actions would be based on the collection and analysis of all available vegetative monitoring data.
16. Allow for changes in kinds of livestock to eliminate resource conflicts or to provide for more effective livestock management.
 17. The consolidation of public lands through exchanges and land sales would create a more manageable range program. The efficiencies gained from such actions would allow better, more intensive management of the larger blocks of public lands in the Planning Area.
 18. To facilitate livestock management and help improve forage condition in areas where burning has been designated as a method of land treatment, initiate a fire action modification plan incorporating modified fire suppression procedures.
 19. Support Iron and Beaver county ordinances in so far as they supports livestock trailing by county claimed roads that cross public lands. Incorporate trailing routes into grazing permits as terms and conditions.
 20. Allow a temporary change in kinds of livestock for bio-control of weeds, invasive species, and cheatgrass to meet management objectives.
 21. Allow study plot/restoration of disturbed areas (i.e., sheep bedding grounds).
 22. Allow for fence modifications (design and specifications) to improve wildlife and wild horse movement
 23. Install wildlife escape ramps in all new water troughs.
 24. Utilize livestock as a management tool to thin shrub-dominated areas with limited perennial understory.
 25. Allow for the construction of reference area exclosures in undisturbed areas to provide the ability for long-term monitoring comparison.
 26. Allow for the construction of riparian exclosures or changes to seasons of use to limit hot-season grazing in riparian areas as needed.
 27. Implement Utah prairie dog terms and conditions on all grazing allotments with Utah Prairie Dog habitat in accordance with the USFWS-issued biological opinion (08-F-0248) issued on October 8, 2008, to ensure consistency across all grazing allotments that are in Utah prairie dog habitat.
 28. In the event the USFWS lists additional species as threatened or endangered, provide for the implementation of guidelines/management actions on affected grazing allotments that would provide for recovery of the species.
 29. Allow for the increase of AUMs on grazing allotments where excess forage has become available as a result of successful ESR treatments, fuels treatments, vegetative enhancement projects, and the like where supported by vegetative monitoring data.
 30. Allocate livestock AUMs identified in Appendix D to appropriate non-livestock grazing, including watershed protection and wildlife.
 31. Special status plants are typically isolated and located in small areas in the Planning Area. If it is determined that livestock are adversely affecting special status plants, eliminate sheep bedding, water hauling, and salting in the immediate area where the plant is present.
 32. Allow for Range Improvement Project design specifications and BMPs through survey and design to minimize impacts to wildlife.
 33. Allow for design specifications and BMPs through survey and design to ensure that the free-roaming nature of wild horses is not impeded and vegetative resources are improved.
 34. Allow for re-categorization of grazing allotments in the Decision Area throughout the life of the RMP without a Plan Amendment. Updates to the categorization of allotments will ensure the best use of limited personnel resources to effectively

- monitor/manage livestock grazing allotments. Triggers for re-categorization could include successful/unsuccessful ESR efforts and upward/downward vegetative trend through the evaluation of allotment(s) by an interdisciplinary team of specialists.
35. Identify opportunities to reallocate AUMs to wild horses to either increase herd management areas or herd size.
 36. Identify threatened and Endangered Species habitat areas that might need restrictions to livestock use.
 37. Identify areas that could be suitable for the reintroduction of such species as bighorn sheep and greater sage-grouse, and implications to livestock grazing.
 38. Update MOUs between the CCFO and the surrounding BLM Field Offices (Caliente, Kanab, Fillmore, and St. George) where there are overlapping administrative responsibilities.

Areas of Relative Ecological Importance

Areas of relative ecological importance include all grazing allotments across the Decision Area. However, allotments where there are resource conflicts between livestock and other resources would be more crucial.

Minerals

See Appendix H for more information.

Management Opportunities to be Considered in Land Use Plan Alternatives

Current management direction for mineral and nonrenewable energy resources, with some exceptions, relies on addressing site-specific resource conflicts and concerns through the NEPA analysis process at the time operations or activities are proposed by outside parties. The management direction under the current plans maximizes access to the federal mineral estate through the applicable mining laws. Although no major new discoveries of mineral resources have been made in the Planning Area on federally managed lands since the implementation of the existing LUPs, much has been learned regarding some of the known mineral resources, and the western half of the Planning Area remains a medium to high potential area for locatable mineral resource exploration. An approximately 20-mile-wide band straddling the Utah Hingeline and roughly centered along the Interstate 15 corridor remains the best exploration terrain for oil and gas discoveries in the Planning Area, but exploration results to date have been disappointing. Short of major new discoveries of any mineral resource, the location and size of which are impossible to predict, the current general direction – to maximize exploration access - remains the most viable option to continue with, subject to identifying areas that need specific restrictions due to known conflicting or incompatible surface resource uses.

Solid Minerals

1. Adopt uniform standard conditions of approval (COAs) and BMPs that apply to all mineral resource activities. Any uniform standard conditions need to be qualified for locatable minerals as subject to claimant rights under the mining laws.
2. For the areas with medium to high potential for development of the salable minerals and solid leasable mineral estates, identify specific timing and controlled surface use/occupancy stipulations. Identify areas that need to be closed to mineral materials disposal or solid minerals leasing due to conflicts with competing sensitive resources. This review needs to include split-estate lands.

Fluid Minerals

1. The current management of oil and gas and geothermal leasing requires modification to further protect other resource values through redistribution of leasing category designations throughout the Planning Area.
2. Adjustments to stipulations, BMPs, and procedures are needed to mitigate potential impacts from fluid minerals operations.
3. Management strategies aimed at controlling impacts from geophysical exploration should not be limited to leasing controls such as categorizations and lease stipulations. Geophysical exploration for fluid minerals resources often consists of seismic testing, which involves considerable cross-country travel to produce data transects that are meaningful at the scale of large geologic subsurface features. Seismic exploration projects are temporary, like well drilling, but they tend to impact much larger areas than well drilling. Crushing or cutting woody vegetation like sage, along with the predictable use of seismic transect trails for future unauthorized travel, presents reclamation challenges and can leave visible scars on the landscape for decades. While the CCFO has been successful with full and partial reclamation of well drilling projects, further consideration needs to be given to the unique challenges posed by geophysical exploration.

Areas of Relative Importance

Locatable Minerals

Current locatable minerals development in the Planning Area is dominant in two areas, one in Iron County and one in Beaver County. The area in Iron County is the iron resources in the Iron Mountain portion of the Iron Springs District west of Cedar City. Historic and ongoing development in the Iron Mountain area has been concentrated on private land, but there is a possibility that future development, specifically associated with the Rex Deposit, could significantly impact federal lands west and southwest of Iron Mountain. The area in Beaver County centers on known copper resources in the area northwest and west of Milford, in a broad band stretching from the Rocky Range on the east to the San Francisco Mountains on the west. Without new locatable minerals resource discoveries, these general areas are likely to see the most concentrated impacts from locatable minerals and will be the most economically important areas of locatable minerals development. Exploration efforts are likely to continue to expand in response to international public demand for goods.

Outside of these two principal areas, locatable minerals development is much smaller in scale and widely dispersed throughout the Planning Area. The smaller scale of the development considerably lessens the likelihood of critical surface resource impacts, and practical mitigation measures are likely to be available to allow development to continue. The minerals report will likely conclude that most of the western half of the Planning Area has moderate to high potential, with a high certainty for locatable mineral resources, and the critical issue to exploring and developing these resources is not restricting the opportunities for such mineral activities.

Mineral Materials

Mineral materials are predominately low-unit-value materials. The value and utility of many mineral materials are closely linked to the transportation distance to their point of use. Maintaining availability to the mineral materials on public lands close to principal roadways, highways, and cities is a predominant concern.

Oil and Gas

Current authorized leases are roughly concentrated in a corridor bounded by Interstate 15 on the east and the Union Pacific Railroad on the west Appendix A, Figure 2-8). Interest in this corridor is likely to continue, based on similar geologic setting to recent exploration and development in the Sevier Frontal play in Sevier County. Other plays based on other geologic settings, such as the Permian-Triassic Unconformity and Paleozoic carbonates, might also be targets for exploration and subject to leasing.

Plant and Seed Collection

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Meet public needs for commodity and non-commodity benefits and uses to the extent possible.
2. Promote the development and availability of native plant materials for use in restoration and revegetation efforts.
3. Manage resources to maintain desired ecosystems and to improve the health of the land.
4. Receive fair market value for the products sold while recognizing the validity of free use on a limited basis.
5. Properly time seed harvest to eliminate conflicts with livestock, wild horses, and wildlife demand.
6. Prevent unauthorized use of public lands and resources.
7. Meet objectives and goals as outlined in land management and activity-level plans and guidance documents.
8. Identify mitigation measures in the form of stipulations to attach to the permit/contract.
9. Educate the public about the social and economic value of natural renewable resources.

Areas of Relative Importance

Areas of relative ecological importance include the Milford Flat (Hanson, Milford Bench, and Whitaker allotments) area northeast of Milford, Utah. This area is an important Forage Kochia seed collection area. In addition, the Horse Hollow and Water Hollow allotments are important needle-and-thread seed collection areas.

Recreation

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Identify criteria for reducing conflicts between recreation users and other uses on public lands.
2. Identify priority actions and recreation site improvements.
3. Identify areas for using permits or R&PP leases to address recreation-related opportunities.
4. Allow for management improvements through designations such as SRMAs, ERMAs, and other zoning frameworks to address recreation uses and impacts on recreation destinations.
5. Designate areas for specific recreation purposes throughout the Decision Area.
6. Complete a Recreation Opportunity Spectrum inventory and develop objectives throughout the Decision Area. Recent application of other recreation management philosophies, such as a Benefit-Based Recreation framework, could be considered for application in the RMP/EIS alternatives.

7. Determine areas appropriate for designation as SRMAs. Special areas (congressional or secretarial designation or areas that require special management), either in existing SRMAs or ERMAs, could also be designated through this planning effort.
8. Determine areas appropriate for designation as ERMAs. To alleviate conflict between users, focus areas could be implemented. A focus area would concentrate on a single primary use, while allowing other non-interfering uses.
9. Develop management actions for lands not designated as SRMAs or ERMAs to address visitor health and safety; use and user conflicts; the type(s), activities, and locations where special recreation permits would be issued or not issued; and mitigation of recreation impacts on cultural and natural resources.
10. Develop a permit classification system for SRPs to assess permit requests, and where feasible, authorize and administer compatible permit proposals. Areas could be allocated based on large-scale permitted activities, including but not limited to, competitive recreation activities and commercial guiding services. Activities authorized under an SRP would be consistent with objectives of the recreation program and recreation management plans.
11. Collaborate with or maintain partnerships with interest groups, communities, and federal, state, and local agencies to enhance or contribute to achieving desired recreation outcomes.
12. Focus on recreation needs along travel corridors and at developed sites.
13. Identify conditions, stipulations, and the like for the SRP process in WSAs.
14. In response to increased visitor use, identify an adaptive framework to provide recreation facilities that reduce resource conflict, provide for recreation experience, and provide for the health and safety of public land users.
15. Identify appropriate stipulations and criteria for organized recreation activities in conflict areas to reduce resource conflicts.

Areas of Relative Importance

Areas of particular importance include the Mineral Mountains, where local communities are sledding and snow-mobiling; Spring Creek and Kanarra Creek Canyons in the Spring Creek WSA; the C Trail, Parowan Gap, Three Peaks SRMA, and other developed recreation sites; the Wah Wah Mountains WSA and the White Rocks WSA; and lands immediately surrounding communities that are heavily used by residents in the area and provide destinations for multiple recreational opportunities.

Renewable Energy

See Appendix K for more information.

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Determine where and under what circumstances authorizations for use, occupancy, and development can be granted.
2. Evaluate designated corridors and carry through the corridors that would be preferred for developing ROWs, and terms and conditions for these corridors that would minimize environmental impacts and limitations.
3. Evaluate and, if necessary designate, areas for communications sites and/or wind energy/solar projects.
4. Designate ROW avoidance and exclusion areas.

5. All areas not identified as avoidance or exclusion areas will be available for ROWs and could be subject to multiple use terms on a case-by-case basis.
6. Management of geothermal resource leasing requires designating lands as open to such exploration and development with consideration of mitigation measures through leasing categories to protect other resource values.
7. For land treatments and other management activities, include collection and use of woody species for biomass energy production.

Areas of Relative Importance

Geothermal leasing, exploration, and use in the Planning Area are most likely to occur in a corridor of 1,311,170 acres of federal, private, and state lands that trends northeast to southwest through Beaver and Iron counties. This area was delineated in the Utah Renewable Energy Zone Task Force Phase I Report, published in 2009 by the Utah Geological Survey. Key areas of development potential in this corridor are in the areas of Roosevelt Hot Springs (PacifiCorp's Blundell plant), Cove Fort/Sulphurdale, Thermo Hot Springs, and Newcastle. Other areas for solar, wind, and biomass are identified in Appendix K.

Transportation

Management Opportunities to be Considered in Land Use Plan Alternatives

1. The new RMP will identify how motorized travel will be managed in the Decision Area. Areas will be identified as either open to cross-country travel, limited to existing routes and/or other limitations, and closed to motorized travel. The RMP will identify the process for transitioning areas designated as limited to existing routes, to then be designated as limited to designated routes.
2. The RMP will identify how over-snow travel will be managed in the Decision Area.
3. The RMP will identify the process necessary to move areas from a limited to existing routes designation to a limited to designated routes designation upon completion of a TMP for that area.
4. The RMP will identify how travel will be managed in the Planning Area until an implementation-level TMP can be completed.

Areas of Relative Ecological Importance

If possible, the RMP will make actual route designations in the portion of the Decision Area east of Interstate 15, south of Paragonah, and at Parowan Gap.

Wilderness Characteristics

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Incorporate management criteria for areas found to have wilderness characteristics.
2. Establishing VRM class objectives to guide the placement of roads, trails, and other facilities.
3. Establish conditions of use to be attached to permits, leases, and other authorizations.
4. Designate lands as open, closed, or limited to OHVs to achieve a desired visitor experience.
5. Determine where wilderness characteristics will be a priority over other uses in an area.

Areas of Relative Importance

Any lands outside WSAs that meet the criteria and are determined to have wilderness characteristics

Special Designations**Management Opportunities to be Considered in Land Use Plan Alternatives*****Areas of Critical Environmental Concern***

Consider areas for designation as ACECs.

Wild and Scenic Rivers

Consider areas for inclusion in the NWSRS.

National Trails

Consider management prescriptions for the Old Spanish National Historic Trail.

Wilderness and Wilderness Study Areas

1. Designate all WSAs as Class I areas for VRM.
2. Close all WSAs to OHV use except for administrative and emergency use.

Other Special Designations

1. Identify resource prescriptions to align lands surrounding National Scenic Byways with the designated area.
2. Consider routes to be designated as Back Country Byways.

Areas of Relative Importance***Areas of Critical Environmental Concern***

These areas will be determined by the BLM interdisciplinary team.

Wild and Scenic Rivers

These designations will be determined by the BLM interdisciplinary team.

National Trails

The only National Trail in the Decision Area is the Old Spanish National Historic Trail.

Wilderness and Wilderness Study Areas

North Wah Wah, White Rocks, and Spring Creek WSAs.

Other Special Designations

Highway 143, the Markagunt High Plateau Byway, the Dry Lakes/High Mountain Backway, and the Kolob Reservoir Scenic Backway.

SOCIAL AND ECONOMIC FEATURES

Hazardous Materials and Public Safety

Management Opportunities to be Considered in Land Use Plan Alternatives

1. Continue to work with the Division of Oil, Gas, and Mining, Abandoned Mined Land Remediation Group, to rehabilitate dangerous abandoned mined land in the Decision Area.
2. Develop guidelines for cleaning up areas of illegal dumping in the Decision Area.

Areas of Relative Importance

Any areas identified by the Division of Oil and Mining as needing remediation.

Native American Religious Concerns

Management Opportunities to be Considered in Land Use Plan Alternatives

Recent trends include a greater awareness of Tribal Government interests, and the importance of working collaboratively with tribes. The following should be integrated into the current planning effort:

1. Engage in proactive Native American consultation to ensure concerns are identified and considered early in the planning process.
2. Emphasize consistency of BLM plans and projects with tribal programs for the protection and enhancement of natural and cultural resources.
3. In consultation with tribes, identify TCPs and important cultural plant locations for management.

Areas of Relative Importance

Any cultural properties of interest to the tribes are of particular importance.

Socioeconomic Conditions

The BLM does not have jurisdiction over socioeconomic conditions in the Planning Area. While this important feature of the human environment will be considered in development of the new RMP, no management decisions for socioeconomic conditions will be made in the plan.

5.0 CONSISTENCY/COORDINATION WITH OTHER PLANS

Guided by national policy and law, the BLM is committed to continuing consultation and cooperative management whenever possible. BLM RMPs and amendments must be consistent, to the extent practical, with officially approved or adopted resource-related plans of other federal, state, local, and tribal governments so long as the guidance and RMPs are also consistent (43 CFR 1610).

The Planning Area includes almost all of Iron and Beaver counties. The Planning Area also includes a small portion of Washington County. Due to the very small and isolated nature of Washington County portions of the Decision Area, the Washington County plan was not considered in this planning effort.

COUNTY PLANS

Iron County General Plan

The Iron County RMP was completed in June 2009, and has since been adopted into the Iron County General Plan. According to the Iron County Web site, the goal of the Iron County RMP is to “facilitate cooperation and collaboration between the County and federal & state land management agencies in planning for natural resources in Iron County. The plan was developed jointly with land management agencies and serves as the basis for future site and resource specific natural resources planning.” This plan does not include specific goals and objectives for most resources, but separate plans are being created to address each resource of interest to the county. One plan has been completed to address wilderness issues. These resource plans will be reviewed as they become available and every attempt will be made to be consistent with the plans when they do not conflict with federal laws, regulations, and policies.

Beaver County General Plan

The Beaver County General Plan was completed in April 1992 and amended in 1999, and has received a few alterations since that time. The role of the general plan is to have it used as “a yardstick against which all planning decisions are measured, including those by Federal and State Officials.” This resource plan will be reviewed and every attempt will be made to be consistent with the plan when it does not conflict with federal laws, regulations, and policies.

STATE PLANS

State of Utah Natural Resources, Division of Parks and Outdoor Recreation Plan

This document provides information about high-quality outdoor recreation opportunities in Utah. It contains information regarding policies and expenditures on outdoor recreation and development. This document will be considered in the planning effort.

Utah’s Water Resources: Planning for the Future

The Utah State Water Plan estimates Utah’s available water supply, makes projections of water need, explores how these needs will most efficiently be met, and discusses other important values, including water quality and the environment. The plan is intended to be a useful guide and reference to local water planners and managers as they strive to meet the many water

challenges facing Utah. The BLM will consider the Utah State Water Plan and its guidance, including subsequent Basin River Plans, in the RMP process.

OTHER FEDERAL AGENCY PLANS

The Planning Area is adjacent to the Fishlake and Dixie National Forests and the Kolob section of Zion National Park.

Dixie National Forest Land and Resource Management Plan

This plan was completed in 1986, and has been amended as recently as April 2009. According to the Forest's Web site, the Forest Plan, as amended, serves "as a guide for all natural resource management activities and establishes management standards and guidelines for the Dixie National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management." The direction and proposals for adjacent land uses outlined in this general management plan will be considered in the new RMP.

Fishlake National Forest Land and Resource Management Plan

This plan was completed in 1986, and has been amended as recently as November 2008. The direction and proposals for adjacent land uses outlined in this general management plan will be considered in the new RMP.

Zion National Park General Management Plan

This document was completed in August 2001. The plan will "provide a framework for proactive decision making on such issues as visitor use, natural and cultural resource management, and park development, which allow park managers to effectively address future problems and opportunities" (p. iii). The direction and proposals for adjacent land uses outlined in this general management plan will be considered in the new RMP.

NEIGHBORING AGENCY CONSULTATION AND COORDINATION

The CCFO will collaborate with other federal, state, and local agencies and governmental entities throughout the RMP process. Beaver and Iron counties and the State of Utah will operate as Cooperating Agencies in the planning process. The USFWS, Dixie and Fishlake National Forests, and Zion National Park will also be invited to take an active role in RMP development.

TRIBAL INTERESTS

The BLM has a responsibility to provide federally recognized Tribal Governments and individuals sufficient opportunities to contribute to land use decisions and to give proper consideration to those concerns or issues related to cultural/religious and natural resources. Cooperating agency status was offered to both the Paiute Indian Tribe of Utah and the Hopi Tribe. Both tribes have interests in the planning process and the Planning Area, and wish to be informed of the status of the RMP. However, both tribes declined the invitation to participate as a Cooperating Agency in the CCFO RMP development process.

6.0 SPECIFIC MANDATES AND AUTHORITIES

The foundations of public land management are in the mandates and authorities provided in laws, regulations, and Executive Orders. These statements of federal policy direct the BLM concerning management of public lands and resources. The United States Congress has acknowledged that the appropriate use of these resources requires proper planning. The BLM planning process (as described at 43 CFR 1600) is authorized and mandated through two important laws.

Federal, State, and Local laws, Regulations, and Policies that Apply to All Resources and Resource Uses

Federal Laws, Regulations, Statutes, and Orders

- The **Federal Land Policy and Management Act of 1976** states that the BLM “shall, with public involvement...develop, maintain, and when appropriate, revise land use plans” (43 U.S.C. 35 Section 1712 (a)). In addition to federal direction for planning, FLPMA declares the policy of the United States concerning the management of federally owned BLM-administered lands. Key to this management policy is the direction that the BLM “shall manage the public lands under principles of multiple use and sustained yield, in accordance with the [developed] land use plans” (43 U.S.C. 35 section 1732 (a)). The commitment to multiple-use will not mean that all land will be open for all uses. Some uses could be excluded on some lands to protect specific resource values or uses, as directed by FLPMA (43 U.S.C. 35 sections 1712 (c) (3)). Any such exclusion, however, will be based on laws or regulations or be determined through a planning process subject to public involvement. In writing and revising LUPs, FLPMA also directs the BLM to coordinate land use activities with the planning and management of other federal departments and agencies, state and local governments, and Native American tribes. This coordination, however, is limited “to the extent [the planning and management of other organizations remains] consistent with the laws governing the administration of the public lands” (43 U.S.C. 35 section 1712 (c) (9)).
- In the **National Environmental Policy Act of 1969**, Congress directs “all agencies of the Federal Government...[to]...utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment” (42 U.S.C. 55 section 4332 (2A)). Because the development of a new RMP could cause impacts to the environment, NEPA regulations require the analysis and disclosure of potential environmental impacts in the form of an EIS. The EIS will examine a range of alternatives, including a No Action Alternative, to resolve the issues in question. Alternatives should represent complete, but alternative means of satisfying the identified purpose and need of the EIS and of resolving the issues. The Cedar City RMP/EIS is being prepared using the best available information.
- Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528-531).
- 43 CFR Chapter 2 Parts 1000–9999 contains the federal regulations for the BLM.
- BLM Manual 1600 contains planning guidance.
- BLM Handbook H-1601-1 contains planning guidance.

- Department of the Interior NEPA Manual (516 DM 11) contains NEPA guidance.
- BLM NEPA Handbook H-1790-1 provides NEPA guidance.
- Council on Environmental Quality regulations of 40 CFR 1500-1508, provides NEPA regulations.

State Laws and Regulations

- Utah Code Sections 63-38d-401 (establishes state planning policies in relation to management of federal land)

MOUs

- Master MOU with the USFWS, December 1986
- State Protocol Agreement Between the Utah State Director of BLM and the Utah SHPO and the Programmatic Agreement Among BLM, the Advisory Council on Historic Preservation, and the National Conference of SHPOs
- Interagency MOU between the DOI-BLM and the USDA in 1995 (60F26045-48, 5/16/95)
- Supplement No. 1 to an MOU between the Utah State Offices of the National Park Service (NPS) and the BLM dated September 26, 1973

Federal, State, and Local laws, Regulations, and Policies that Apply to Specific Resources and Resource Uses

Management of public land and resources is authorized and directed through several resource and resource use specific laws, regulations, and Executive Orders. The direction from these sources is refined and made department- and bureau-specific through agency documents such as IMs, Information Bulletins (IB), and manuals and handbooks. **IMs and Information Bulletins are not included in this list, because they might expire before completion of the new RMP.** Following are some of the documents that direct the management of public land and resources.

Air Quality

The BLM currently does not have direct authority to regulate air resources in the Planning Area. The U.S. Congress designated the EPA as the regulatory entity for air resources under a framework of environmental laws. The EPA may also delegate regulatory authority to states, tribes, and local agencies. As a federal agency, the BLM is required to work cooperatively with the EPA and the delegated state agency in planning resource development to ensure that applicable air quality standards and regulations are met on public lands.

Federal Laws, Regulations, Statutes, and Orders

- The Clean Air Act, as amended (1990), 42 U.S.C. 7418, requires federal agencies to comply with all federal, state, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of State Implementation Plans. The following sections of the Act apply to this planning process:
 - Applicable NAAQS (Section 109)
 - State Implementation Plans (Section 110)
 - Control of Pollution from Federal Facilities (Section 118)
 - Prevention of Significant Deterioration, including visibility impacts to mandatory federal Class I Areas (Section 160 et. seq.)
 - Conformity Analyses and Determinations (Section 176(c))
- Executive Order 12088 (*Federal Compliance with Pollution Control Standards*)

- National Emission Standards for Hazardous Air Pollutants (40 CFR 61)
- Regional Haze Rule (40 CFR 51)
- Regional Haze Regulation (64 *Federal Register* 35714, July 1, 1999)

Policies

- United States Department of Interior Manual (910 DM 1.3)
- 1995 Federal Wildland Fire Management Policy
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy update)
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures
- Interagency Standards for Fire and Fire Aviation Operations: As amended annually, describes policy and operations for all fire-related activities in the DOI and the USDA.
- BLM Manual Section 9214, Prescribed Fire Management (1988), and BLM Handbook 9214 (2000): Describe the authority and policy for prescribed fire use on BLM-administered public lands

State Laws and Regulations

- Utah Code, Title 19, Chapter 2, Air Conservation Act
- Utah Air Conservation Rule R307-204, Smoke Management
- Utah Air Conservation Rule R307-406, Visibility
- Utah Air Conservation Rule R307-401-6 (Conditions for Ordering and Approval Order)
- Utah Air Conservation Rule R307-405-4 (Prevention of Significant Deterioration [PSD] Increments and Ceilings)
- Utah Air Conservation Rule R307-405-6 (PSD Areas--New Sources and Modifications)
- Utah Air Conservation Rule R307-410-3 (Modeling of Criteria Pollutants in Attainment Areas)
- Utah Air Conservation Rule R307-410-4 (Documentation of Ambient Air Impacts for Hazardous Air Pollutants)
- Utah Air Conservation Rule R307-205-3 (Emission Standards for Fugitive Dust)
- Utah Air Conservation Rule R307-205-4 (Emission Standards for Roads)

Areas of Critical Environmental Concern

Federal Laws, Regulations, Statutes, and Orders

- FLPMA section 202 (43 U.S.C. 1712[c][3])
- 43 CFR 1610.7-2.

Policies

- BLM Manual Section 1613 (BLM 1988a) requires the BLM to give priority to the designation and protection of ACECs during the land use planning process.

Byways and Backways

Federal Laws, Regulations, Statutes, and Orders

- The **National Scenic Byways Program** was established under the Intermodal Surface Transportation Efficiency Act of 1991, and reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, and scenic qualities. All-American Roads must exhibit multiple intrinsic qualities. For a highway to

be considered for inclusion in the National Scenic Byways Program, it must provide safe passage for passenger cars year-round, it must be designated a State Scenic Byway, and it must have a current corridor management plan in place. Installation of offsite outdoor advertising (e.g., billboards) is not allowed along byways.

State Laws and Regulations

- **Utah Scenic Byways** are similar to National Scenic Byways. Utah State Scenic Byways are paved highways that have been designated by official state declaration for their scenic, historic, recreational, cultural, archeological, or natural qualities. The byways are paved roads that are generally safe year-round for passenger cars. Installation of offsite outdoor advertising (e.g., billboards) is not allowed along byways.
- **Utah Scenic Backways** do not generally meet federal safety standards for safe year-round travel by passenger cars that have been designated by official state declaration for their scenic, historic, and recreational qualities. Backways often require four-wheel drive, and road conditions can vary due to such factors as season and weather.

Cultural Resources

Federal Laws, Regulations, Statutes, and Orders

- The Antiquities Act of 1906, 16 U.S.C. 431433, provides guidance for protecting cultural resources on federal lands and authorizes the President to designate national monuments on federal lands.
- The Historic Sites Act of 1935 established a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States.
- The National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470, directs agencies to consider the effects of proposed actions on properties eligible for or included on the NRHP. An “historic property” is any district, building, structure, site, or object that is eligible for listing on the NRHP because the property is significant at the national, state, or local level in American history, in its architecture, archeology, engineering, or culture. In some cases, such properties can be eligible because of historical importance to Native Americans, including traditional religious and cultural importance. NHPA section 110 requires each federal agency to establish an affirmative program to identify, evaluate, protect, and preserve historic properties in consultation with others.
- The American Indian Religious Freedom Act of 1978, 42 U.S.C. 1996, establishes a national policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices including, but not limited to, access to religious sites. Agencies are to avoid unnecessary interference with traditional tribal spiritual practices. In addition, compliance requires consultation with tribes when land uses might conflict with Indian religious beliefs or practices.
- The Archaeological Resources Protection Act of 1979, 16 USC 470, as amended, defines and provides for the protection of archeological resources on federal lands, irrespective of eligibility for list on the NRHP, establishes a permit system for resources more than 100 years old, and requires agencies to provide for public education and continuing inventory of federal lands.
- Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. 3001, establishes rights to Indian tribes and Native Hawaiians to claim ownership for the repatriation of human remains, and also funerary, sacred, and other objects, controlled by federal agencies and museums. Agency discoveries of such human remains and associated cultural items during land use activities require consultation with appropriate tribes to determine ownership and disposition.

- National Trails System Act of 1968 (Public Law 90-543; 16 U.S.C. 1241 et. seq., as amended through Public Law 107-325, December 4, 2002) established a National Trails System to promote preservation of, public access to, travel within, and enjoyment of the open-air, outdoor areas and historic resources of the Nation. The Act designated initial trail system components and established methods and standards for adding additional components.
- Executive Order 11593 of 1971, directs federal agencies to inventory public lands and to nominate eligible properties to the NRHP.
- Executive Order 13007 of 1996 (*Indian Sacred Sites*; 61 *Federal Register* 104), explicitly does not create any new right for Indian tribes, but does require federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; avoid adversely affecting the physical integrity of such sacred sites; and maintain the confidentiality of sacred sites.
- Executive Order 13175 of 2000 (*Consultation and Coordination with Indian Tribal Governments*) provides, in part, that each federal agency shall establish regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices on federal matters that significantly or uniquely affect their communities.
- Old Spanish Trail Recognition Act of 2002 (Public Law 107-325, December 4, 2002)
- Executive Order 13287 of 2003 (*Preserve America*), directs federal agencies to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of historic properties managed by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties, and establishing agency accountability for inventory and stewardship.
- Secretarial Order 3206 (*American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act*)
- 36 CFR 60 and 63 discuss the NRHP and eligibility criteria for listing properties.
- 36 CFR 68 describes the Secretary of the Interior's standards for the treatment of historic properties.
- 36 CFR 800 outlines the NHPA Section 106 process for protecting historic properties.
- 43 CFR 3 and 7 discuss the preservation of American antiquities and archeological sites.
- 43 CFR 10 discusses requirements for implementing the Native American Graves Protection and Repatriation Act.

Policies

- BLM Manuals – 8100 Series: Cultural Resources Management: The manual is a reference source that provides basic information and general summary guidance for the BLM cultural resource management program. The series includes 8110, Identifying Cultural Resources; 8120, Tribal Consultation under Cultural Resource Authorities; 8130, Planning for Uses of Cultural Resources; 8140, Protecting Cultural Resources; and H-8120-1, Guidelines for Conducting Tribal Consultation.
- IM 2005-003 (Cultural Resources and Tribal Consultation for Fluid Minerals Leasing)

MOUs

The rangeland programmatic Memorandum of Agreement (MOA) among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers

Fish and Wildlife Habitat

Federal Laws, Regulations, Statutes, and Orders

- Sikes Act of 1974, Title II (16 U.S.C. 670g et seq.), as amended: This Act directs the Secretaries of Interior and Agriculture to, in cooperation with the state agencies, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game species. Such conservation and rehabilitation programs shall include, but are not limited to, specific habitat improvement projects and related activities, and adequate protection for species considered threatened or endangered.
- The Migratory Bird Act of 1929, as amended: This Act establishes federal responsibility to protect international migratory birds and authorizes the Secretary of the Interior, through the USFWS, to regulate hunting of migratory birds.
- Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.)
- International Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711)
- Migratory Bird Conservation Act of 1979 (16 U.S.C. 715)
- Executive Order 13186 (*Migratory Birds*)
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668d), as amended
- Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended
- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701-1785)
- Fish and Wildlife Act of 1956 (16 U.S.C. 742a et seq.)
- Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911)
- Migratory Bird Conservation Act of 1934 (16 U.S.C. 715 et seq.)
- Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)
- Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528-531)
- Public Rangeland Improvement Act of 1978 (43 U.S.C. 1901-1908)
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (January 17, 2001)

Policies

- Wind Energy Development PEIS (2006): This PEIS evaluates the potential impacts associated with the proposed action to develop a Wind Energy Development Program, including the adoption of policies and BMPs and the amendment of 52 BLM LUPs to address wind energy development.
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy Guidance for the Management of Sagebrush Plant Communities for Sage-Grouse Conservation, DOI, November 2004.

MOUs

- The USFWS and the BLM signed an MOU in April 2010 that outlines a collaborative approach to promote the conservation of migratory bird populations.

Forestry and Woodland Products

Federal Laws, Regulations, Statutes, and Orders

- The Healthy Forests Initiative
- The Healthy Forests Restoration Act of 2003
- Omnibus Appropriations Bill of 2003 (Public Law 108-7 section 323) (Stewardship Contracting)
- Tribal Forest Protection Act, Public Law 108-27

State Laws and Regulations

- Utah Code 78-38-4.5 through 4.8, Forest Products Transportation Act (1983) requires proof of ownership to harvest or transport forest products or native vegetation.

MOUs

- Forest Restoration and Community Capacity Building Partnership (2004, amended 2005) was established to jointly identify priority forest restoration needs, to build community capacity to accomplish these needs, and to expand the use of stewardship contracting on publically owned lands (all ownerships) in the Great Basin and Colorado Plateau of Utah and Arizona.

Hazardous Materials and Public Safety

Federal Laws, Regulations, Statutes, and Orders

- Resource Conservation and Recovery Act (Public Law 94-580), as amended: In 1976, this Act established a system for managing nonhazardous and hazardous solid wastes in an environmentally sound manner. Specifically, it provides for the management of hazardous wastes from the point of origin to the point of final disposal (i.e., “cradle to grave”). The Act also promotes resource recovery and waste minimization.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. 9600)
- Solid Waste Disposal Act, as amended (42 U.S.C. 6900)
- Superfund Amendments Reauthorization Act
- Toxic Substances Control Act
- Clean Water Act
- 29 CFR 1910
- 49 CFR 100-185
- 40 CFR 100-400

Lands and Realty

Federal Laws, Regulations, Statutes, and Orders

- Energy Policy Act of 2005, Public Law 109-58
- Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.)
- Recreation and Public Purposes Act of 1926, as amended (43 USC 869 et seq.)
- Federal Highway Act of 1958 (23 U.S.C. 317)
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1971
- Land and Water Conservation Fund Act of 1965, as amended
- Federal Land Transaction Facilitation Act of 2000
- The Federal Power Act of 1920, as amended
- 43 CFR 2100 (Acquisitions)
- 43 CFR 2200 (Exchanges)
- 43 CFR 2300 (Withdrawals)
- 43 CFR 2400 (Land Classification)
- 43 CFR 2500 (Disposition: Occupancy and Use)
- 43 CFR 2600 (Disposition: Grants)
- 43 CFR 2700 (Disposition: Sales)
- 43 CFR 2800 (Use: Rights-of-Way)

- 43 CFR 2900 (Uses: Leases and Permits)
- 43 CFR 9230 (Trespass)

Policies

- BLM-H-2100-1 (Acquisition Handbook)
- BLM-H-2740-1 (Recreation and Public Purposes)
- BLM-MS-2200 (Land Exchange Handbook)
- BLM-MS-2880 (MLA ROW)
- BLM-MS-2800 (FLPMA ROW)
- DOI 603 DM (Land Withdrawals)

Other

- Wind Energy Development PEIS and Associated Land Use Plan Amendments (BLM, 2005)
- PEIS, Designation of Energy Corridors on Federal Land In the 11 Western States (DOE/EIS-0386) (Draft October 2007)

Livestock Grazing

Federal Laws, Regulations, Statutes, and Orders

- The Taylor Grazing Act of June 28, 1934, as amended (42 USC 315, 315a through 315r), provides direction to protect rangelands by preventing overgrazing and soil deterioration while providing for managed use and improvement, and to stabilize the livestock industry dependent upon public lands.
- The Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) recognizes livestock grazing as one of the “principal or major uses” of the public lands. It directs that the public lands be managed on the basis of multiple use and sustained yield in a manner that will provide food and habitat for fish and wildlife and domestic animals while protecting the quality of other values (i.e., scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological).
- Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.) provides policy to manage, maintain, and improve the condition of public rangelands to increase productivity in accordance with management objectives and the land use planning process.
- 43 CFR 4100, Grazing Administration, exclusive of Alaska, provides uniform guidance for administration of grazing on the public lands. The objectives for grazing administration regulations are to “promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands” (43 CFR 4100.0-2).
- Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration (43 CFR 4180 et seq.) defines the minimum resource conditions that must be achieved and maintained and the acceptable management practices to be applied to achieve those conditions.

Minerals

Federal Laws, Regulations, Statutes, and Orders

- The Onshore Oil and Gas Leasing Reform Act, 30 U.S.C. 181 et seq., provides that Potential oil and gas resources be adequately addressed in planning documents; the social, economic, and environmental consequences of exploration and development of oil and gas resources be determined; and any stipulations to be applied to oil and gas leases be clearly identified.
- Onshore Oil and Gas Orders Nos. 1, 2, and 7
- The General Mining Law, as amended, 30 U.S.C. 21 et seq., allows the location, use, and patenting of mining claims on sites on public domain lands of the United States. Amendments established a policy of fostering development of economically stable mining and minerals industries, their orderly and economical development, and studying methods for disposal of waste and reclamation.
- Combined Hydrocarbon Leasing Act of 1981
- Energy Policy and Conservation Act, as amended (42 U.S.C. 6201)
- Federal Coal Leasing Amendments Act of 1976 (30 U.S.C. 201)
- Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.)
- Mining and Mineral Policy Act of 1970 (30 U.S.C. 21a)
- Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.)

MOUs

- The federal coal management programmatic MOA among the BLM, Office of Surface Mining, DOI, U.S. Geological Survey, and the Advisory Council on Historic Preservation
- National BLM/USFS MOU *Concerning Oil and Gas Leasing and Operations*, FS Agreement No. 06-SU-11132428-052

National Trails

Federal Laws, Regulations, Statutes, and Orders

- National Trails System Act, as amended (16 U.S.C. 1241)

Native American Religious Concerns

Federal Laws, Regulations, Statutes, and Orders

- The National Environmental Policy Act of 1969 establishes national policy for protection and enhancement of the human environment. Part of the function of the Federal Government, as stated in the Act, is to “preserve important ... cultural ... aspects of our national heritage and maintain whenever possible an environment which supports diversity and variety of individual choice.”
- The Federal Land Policy and Management Act of 1976 requires coordination with Indian tribes, and with other federal agencies and state and local governments, in the preparation and maintenance of an inventory of the public lands and their various resource and other values, in the development and maintenance of long- range plans providing for use management of the public lands.
- The American Indian Religious Freedom Act of 1978 resolves that it shall be the policy of the United States to protect and preserve for the American Indian, Eskimo, Aleut, and Native Hawaiian the inherent right of freedom to believe, express, and exercise their traditional religions, including but not limited to access to religious sites, use and

possession of sacred objects, and freedom to worship through ceremonials and traditional rites. Federal agencies are directed to evaluate their policies and procedures to determine if changes are needed to ensure that such rights and freedoms are not disrupted by agency practices. The Act, a specific expression of First Amendment guarantees of religious freedom, is not implemented by regulations.

- The National Historic Preservation Act of 1966, as amended, addresses preservation of historic properties, including historical, archeological, and architectural districts, sites, buildings, structures, and objects that are eligible for listing on the NRHP. In some cases, such properties might be eligible because of historical importance to Native Americans, including traditional religious and cultural importance. Federal agencies must take into account effects of their undertakings on eligible properties.
- The Archaeological Resources Protection Act of 1979 provides for the protection and management of archeological resources, and specifically requires notification of the affected Indian tribe if archeological investigations proposed in a permit application would result in harm to or destruction of any location considered by the tribe to have religious or cultural importance.
- The Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. 3001, establishes rights to Indian tribes and Native Hawaiians to claim ownership and repatriate human remains, and also funerary, sacred, and other objects, controlled by federal agencies and museums. Agency discoveries of human remains and associated cultural items during land use activities require consultation with appropriate tribes to determine ownership and disposition.
- Executive Order 13007, *Indian Sacred Sites* (61 Federal Register 104) explicitly does not create any new right for Indian tribes, but does require federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; avoid adversely affecting the physical integrity of such sacred sites; and maintain the confidentiality of sacred sites.
- Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* provides, in part, that each federal agency shall establish regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices on federal matters that significantly or uniquely affect their communities.
- Secretarial Order 3206, *American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act*, requires DOI agencies to consult with Indian Tribes when agency actions to protect a listed species, as a result of compliance with the ESA, affect or could affect Indian lands, tribal trust resources, or the exercise of American Indian tribal rights.
- The Tribal Forest Protection Act of 2004 provides a tool for tribes to propose work and enter into contracts and agreement with the USFS or the BLM to reduce threats from catastrophic events that originate on federal lands adjacent to Indian trust land and Indian communities.

Paleontology

Federal Laws, Regulations, Statutes, and Orders

- The Federal Land Policy and Management Act of 1976 (Public Law 94-579) requires that the public lands be managed in a manner that protects the “. . . quality of scientific . . . ” and other values. The Act also requires the public lands to be inventoried and provides

that permits may be required for the use, occupancy, and development of the public lands.

- National Environmental Policy Act of 1969 (Public Law 91-190) requires that “. . . important historic, cultural and natural aspects of our national heritage . . . ” be protected, and that “. . . a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences . . . in planning and decision making . . .” be followed.
- Omnibus Public Land Management Act of 2009, Public Law 111-011, Title VI, Subtitle D on Paleontological Resources Preservation (123 Stat. 1172; 16 U.S.C. 470aaa), requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise.
- 43 CFR subpart 8365 addresses the collection of invertebrate fossils and, by administrative extension, fossil plants.
- 43 CFR subpart 3622 addresses the free use collection of petrified wood as a mineral material for non-commercial purposes.
- 43 CFR subpart 3621 addresses collection of petrified wood for specimens exceeding 250 pounds in weight.
- 43 CFR subpart 3610 addresses the sale of petrified wood as a mineral material for commercial purposes.
- 43 CFR subparts 3802 and 3809 address protection of paleontological resources from operations authorized under the mining laws.
- 43 CFR subpart 8200 addresses procedures and practices for the management of lands that have outstanding natural history values, such as fossils, that are of scientific interest.
- 43 CFR subpart 1610.7-2 addresses the establishment of ACECs for the management and protection of significant natural resources, such as paleontological localities.
- 43 CFR subpart 8364 addresses the use of closure or restriction of public lands to protect resources. Such closures or restrictions may be used to protect important fossil localities.
- 43 CFR subpart 8365.1-5 addresses the willful disturbance, removal, and destruction of scientific resources or natural objects, and subpart 8360.0-7 identifies the penalties for such violations.
- 36 CFR subpart 62 addresses procedures to identify, designate, and recognize national natural landmarks, which includes fossil areas.
- 18 U.S.C. section 641 addresses the unauthorized collection of fossils as a type of government property.
- Secretarial Order 3104 grants to the BLM the authority to issue paleontological resource use permits for lands under its jurisdiction.
- Onshore Oil and Gas Order No. 1 and 43 CFR 3162 provide for the protection of natural resources and other environmental concerns, and is used to protect paleontological resources where appropriate.
- Federal Cave Resources Protection Act of 1988 (Public Law 100-691) and 43 CFR subpart 37 address protection of significant caves and cave resources, including paleontological resources.

Policies

- BLM Manual and Handbook 8270, Paleontological Resource Management Program, and Handbook 8270-1 provide uniform policy and direction for the BLM Paleontological Resource Management Program. The objective of the program is to provide a consistent and comprehensive approach in all aspects relating to the management of paleontological resources, including identification, evaluation, protection, and use.

Plant and Seed Collection

MOUs

- Seed Collection Policy and Pricing IM No. UT 2008-045

Recreation

Federal Laws, Regulations, Statutes, and Orders

- The Recreation and Public Purposes Act, as amended (43 U.S.C. 869 et seq.), authorizes the Secretary of the Interior to lease or convey BLM-administered lands for recreational and public purposes under specified conditions.
- Executive Order 11644 (37 *Federal Register* 2877), February 8, 1972, provided that OHV use will be controlled and managed to protect resource values, promote public safety, and minimize conflicts with uses of public lands. This Executive Order directed federal agencies to designate specific areas and trails on public lands where OHV use may be permitted and areas where OHV use may not be permitted.
- On May 24, 1977, President Carter amended Executive Order 11644 with Executive Order 11989. This Executive Order further defined OHV administrative use exemptions, and directed agencies to immediately close areas and trails whenever the agency determines that the use of OHVs will cause or is causing considerable adverse effects on the soil, wildlife and wildlife habitat, or cultural or historic resources (42 U.S.C. 4321).
- The BLM National Management Strategy for Motorized OHV Use on Public Lands (2001) provides agency guidance and offers recommendations for future actions to improve motorized vehicle management.

State Laws and Regulations

- State Comprehensive Outdoor Recreation Plan – 2003

Renewable Energy

Federal Laws, Regulations, Statutes, and Orders

- Executive Order 13212 states that “[i]t is the policy of this Administration that executive departments and agencies (agencies) shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.”
- Energy Policy Act of 2005 (August 2005) recommended that the DOI strive to approve at least 10,000 MW of renewable energy projects on public lands by 2015.
- Energy Independence and Security Act of 2007 (December 2007) requires DOE to assess methods to integrate electric power generated at utility-scale solar facilities into regional electricity transmission systems and to identify transmission system expansions and upgrades needed to move solar-generated electricity to growing electricity demand centers throughout the United States. In addition, this Act requires DOE to consider methods to reduce the amount of water consumed by concentrating solar power systems.
- Secretarial Order 3283 (January 2009) clarifies DOI roles and responsibilities to accomplish the goals for renewable energy development established in Section 211 of the Energy Policy Act of 2005.

- Executive Order 13514 (October 2009) requires that federal agencies take efforts to align their policies to advance local planning efforts for energy development, including renewable energy, and states that agencies shall “advance regional and local integrated planning by...aligning Federal policies to increase the effectiveness of local planning for energy choices such as locally generated renewable energy.”
- Secretarial Order 3285A1 (March 2009) set a goal of identifying and prioritizing specific locations best suited for large-scale production of solar energy on public lands. It requires DOI agencies and bureaus to work collaboratively to encourage development of renewable energy and associated transmission while protecting the environment, and to establish clear policy direction for authorizing the development of solar energy on public lands. On February 22, 2010, Secretarial Order 3285 was amended to clarify Departmental roles and responsibilities in prioritizing development of renewable energy. The amended order is referred to as Secretarial Order 3285A1.
- Executive Order 13134, *Developing and Promoting Biobased Products and Bioenergy* (1999), called for a comprehensive strategy to stimulate technologies to make biobased products and bioenergy cost-competitive in national and international markets.
- The Biomass Research and Development Act of 2000 established mechanisms for interagency coordination on biomass technologies including the Biomass Research and Development Technical Advisory Committee and the Biomass Research and Development Board.
- Farm Bill 2002 included a number of authorizations related to renewable energy development and bioenergy.
- The Healthy Forests Restoration Act of 2003 encouraged biomass energy production through grants and assistance to local communities, creating market incentives for removal of otherwise valueless forest material.
- The Food Conservation and Energy Act of 2008 provided grants and financial incentives for investment in renewable technologies to use agricultural and forestry crops for bioenergy.
- The Mineral Leasing Act of 1920 (as amended) contains the statutes that provide overall guidance to the BLM on mineral leasing, including geothermal development.
- The Mining and Mineral Policy Act of 1970 requires federal agencies to encourage the development of mineral resources, including geothermal resources, on federal lands.
- The Geothermal Steam Act of 1970, which was amended and supplemented by the Energy Policy Act of 2005, provides statutory guidance for geothermal leasing by the BLM.
- The Advanced Geothermal Energy Research and Development Act of 2007 called for programs of research, development, demonstration, and commercial application to expand the use of geothermal energy production.

Policies

- Bureau of Land Management Energy and Mineral Policy (August 2008) sets BLM policy for management of energy and mineral resources on public lands as part of the agency’s multiple-use mission, including environmentally sound energy and minerals development.
- BLM Right-of-Way Management Manual 2801 and Handbook H-2801-1 were both amended by the new Wind Energy Development Policy contained in IM 2009-043.
- BLM Manual 2881, Mineral Leasing Act, provides overall guidance to the BLM on mineral leasing procedures.
- BLM Manual 3031, Energy and Mineral Resource Assessment (1985), provides guidance and sets standards for gathering and analyzing information on energy and mineral resources, including geothermal resources, for land use decisions.

- BLM Manual 3060, Mineral Reports Preparation and Review (1994), provides guidelines for preparation and review of energy and mineral resources reports.

MOUs

- Wind Energy Protocol Between the Department of Defense and BLM Concerning Consultation on Development of Wind Energy Projects (July 2008) is an interagency agreement between the Department of Defense and BLM intended to improve communications and coordination between the two agencies in the review of ROW applications for wind energy projects that could have an adverse effect on adjacent or nearby Department of Defense Military Operational Areas or Airspace. For the CCFO Planning Area, this protocol would apply to the Utah Test and Training Range.
- Memorandum of Understanding on Policy Principles for Woody Biomass Utilization for Restoration and Fuel Treatments on Forests, Woodlands, and Rangelands (2003) was signed by the departments of Agriculture, Energy, and the Interior and encouraged opportunities to provide a reliable sustainable supply of wood biomass and the sustainable development and stabilization of woody biomass markets.
- Memorandum of Understanding, Implementation of Section 225 of the Energy Policy Act of 2005 Regarding Geothermal Leasing and Permitting (2006) established procedures for processing geothermal lease applications, a program to reduce the backlog of pending geothermal lease applications, and a data retrieval system for tracking lease and permit applications.

Other

- Record of Decision, Final PEIS on Wind Energy Development on BLM-Administered Lands in the Western United States (December 2005) adopted a comprehensive Wind Energy Development Program on BLM-administered lands in 11 western states, including Utah. The Record of Decision also established policies and BMPs to mitigate the impacts of wind energy projects. In addition, it amended 52 BLM land use plans to include the Wind Energy Development Program policies and BMPs. The amended plans included the CBGA RMP.

Riparian and Wetlands

Federal Laws, Regulations, Statutes, and Orders

- Emergency Wetlands Resources Act of 1986 (16 U.S.C 3900)
- Executive Order 11990 (*Protection of Wetlands*)

Policies

- IM UT-2005-091 provides specific guidance to Utah BLM for the management of riparian lands while supporting all BLM national guidance directives.

State Laws and Regulations

- Utah Strategic Riparian Plan

Social and Economic Conditions

Federal Laws, Regulations, Statutes, and Orders

- Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*) (49 *Federal Register* 7629) requires that each federal agency consider the impacts of its programs on minority populations and low-income populations.

Special Status Species

Federal Laws, Regulations, Statutes, and Orders

- The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended, directs the BLM to (1) conserve threatened and endangered species and the ecosystems upon which they depend, and (2) not contribute to the need to list a species. Provisions of the ESA, as amended, apply to plants and animals that have been listed as endangered or threatened, those proposed for being listed, and designated and proposed critical habitat.
- The Bald and Golden Eagle Protection Act of 1940, as amended, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Act provides for criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

Policies

- BLM Special Status Species Policy. It is BLM policy to (1) conserve federally listed and proposed threatened or endangered species and the habitats on which they depend and (2) ensure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of the ESA or other provisions of this policy.
- BLM Manual 6840.06 - BLM Sensitive Species Policy. It is BLM policy to provide sensitive species with the same level of protection as provided for candidate species in BLM Manual 6840.06 C; that is, to “ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed.” The sensitive species designation is normally used for species that occur on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management.
- BLM Manual 6840, Special Status Species Management, Greater Sage-Grouse. Policy guidance for greater sage-grouse habitat conservation is summarized in this manual. It provides national level policy direction, consistent with appropriate laws, for the conservation of special status species of animals and plants and the ecosystems on which they depend. Conservation in this strategy, and consistent with Manual 6840 policy, means the use of all methods and procedures necessary to improve the condition of special status species.
- BLM National Sage-Grouse Habitat Conservation Strategy (June 2004). The objective of this strategy is to manage public land in a manner that will maintain, enhance, and restore sage-grouse habitats while providing for multiple uses on public lands. The following five goals will guide BLM implementation of the national strategy: (1) develop a consistent and effective management framework for addressing conservation needs of sage-grouse on public lands, (2) increase our understanding of resource conditions and priorities for maintaining and restoring habitat, (3) expand available research and information that supports effective management of sage-grouse habitat, (4) develop partnerships to enhance effective management of sage-grouse habitats, and (5) ensure leadership and resources are adequate to implement national and state-level sage-grouse habitat conservation strategies.

State Laws and Regulations

- Strategic Management Plan for Sage-Grouse – 2002

Transportation

Federal Laws, Regulations, Statutes, and Orders

- Executive Order 11989 (Off-road vehicles on Public Lands)
- Executive Order 11644 (*Use of Off-Road Vehicles on the Public Lands*)

Vegetation and Rangeland Health

Federal Laws, Regulations, Statutes, and Orders

- Executive Order 13112 (*Invasive Species*) provides that no federal agency shall authorize, fund or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.
- The Carlson-Foley Act (Public Law 90-583; 43 U.S.C. 1241) establishes legal guidance and responsibility for the management of weeds on federal lands. This law authorizes federal agencies to allow states to take measures to control weeds on federal lands.
- Federal Noxious Weed Act of 1974 (7 U.S.C. 2814)
- Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901)
- Taylor Grazing Act of 1934 (43 U.S.C. 315)
- Executive Order 11987 (*Exotic Flora and Fauna*)

State Laws and Regulations

- The Utah Noxious Weed Act

MOUs

- The rangeland programmatic MOA among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers
- IM 2003-158 (MOU between the BLM and the Animal and Plant Health Inspection Service Addressing the Management of Grasshoppers and Mormon Crickets)

Visual Resources

Federal Laws, Regulations, Statutes, and Orders

- BLM Manual 8400 Series, Visual Resource Management, dictates policy and procedures for the VRM system, and outlines procedures for the inventory, evaluation, and classification of visual resources on BLM-administered lands.

Watershed and Soils

Federal Laws, Regulations, Statutes, and Orders

- Soil and Water Resources Conservation Act of 1977 (16 U.S.C. 2001)
- Soil Conservation and Domestic Allotment Act of 1935, as amended
- Executive Order 11988 as amended by Executive Order 12148 (*Floodplain Management*)

Policies

- The U.S. Water Resource Council published Floodplain Guidelines on February 10, 1978, after being directed to establish guidelines for floodplain management and preservation
- The Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management (65 *Federal Register* 62565, October 18, 2000)

Water Quality

Federal Laws, Regulations, Statutes, and Orders

- The Clean Water Act, as amended, 33 U.S.C. 1251, establishes objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's water.
- The Federal Water Pollution Control Act, 33 U.S.C. 1323, requires the federal land manager to comply with all federal, state, and local requirements regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity.
- The Safe Drinking Water Act, 42 U.S.C. 201, is designed to make the Nation's waters "drinkable" as well as "swimmable." Amendments establish a direct connection between safe drinking water, watershed protection, and management.
- Colorado River Basin Salinity Control Act of 1974
- Water Resources Development Act of 1974
- Water Resources Planning Act of 1965, as amended
- Water Resources Research Act of 1954, as amended
- Watershed Protection and Flood Control Act of 1954
- Executive Order 11507 (protect and enhance the quality of air and water resources)
- Executive Order 11752 (protect and enhance the quality of air, water, and land resources through compliance with applicable federal, state, interstate, and local pollution standards)

State Laws and Regulations

- Utah Code, Title 73, Water and Irrigation.
- Utah Administrative Rule R309-605 Drinking Water Source Protection for Ground-Water Sources
- Utah Administrative Rule R317-2. Standards of Quality for Waters of the State
- Utah Administrative Rule R317-6. Ground Water Quality Protection
- Utah Administrative Rule R317-8. Utah Pollution Discharge Elimination System
- Utah Nonpoint Source Management Plan (October 2000)
- Utah Nonpoint Source Management Plan for Hydrologic Modifications (March 1995)
- Utah Nonpoint Source Management Plan for Silviculture Activities (July 1998)

Wild and Scenic Rivers

Federal Laws, Regulations, Statutes, and Orders

- The Wild and Scenic Rivers Act of 1968, as amended, 16 U.S.C. 1271 et seq., requires federal land management agencies to identify river systems and then study them for potential designation as wild, scenic, or recreational rivers. Section 5(d)(1) of the Act requires that federal agencies make WSR considerations during planning.

MOUs

- MOU Concerning WSR Studies in Utah Among the State of Utah and Intermountain Region USFS and Utah BLM and Intermountain Region NPS (1997).

Lands with Wilderness Characteristics and Wilderness Study Areas

Federal Laws, Regulations, Statutes, and Orders

- With the passage of FLPMA in 1976, Congress directed the BLM to inventory, study, and recommend which public lands under its administration should be designated wilderness.
- The Wilderness Act of 1964 established a national system of lands for the purpose of preserving a representative sample of ecosystems in a natural condition for the benefit of future generations. Until 1976, most land considered for, and designated as, wilderness was managed by the NPS and the USFS.
- BLM Manual 6300

Wild Horses

Federal Laws, Regulations, Statutes, and Orders

- Public Law 92-195, Wild Free Roaming Horse and Burro Act of 1971 as amended.
- Public Law 95-514 (Public Rangelands Improvement Act of 1978)
- Public Law 108-447 (Fiscal Year 2005 Omnibus Appropriations Act Division E, Section 142)
- 43 CFR 4700, Protection, Management, and Control of Wild Free-Roaming Horses and Burros

MOUs

- MOU, BLM Cedar City, BLM Richfield Respective Area of Responsibility, signed January 2, 1981.
- MOU between the USDA, the State of Utah, the BLM Utah State Office, DOI, and the USFS, Region 4. Wild and Free-Roaming Horse Responsibilities.

Other

- Sulphur Wild Horse HMAP of 1987
- North Hills Wild Horse Management Plan (1977)

Wildland Fire Ecology

Federal Laws, Regulations, Statutes, and Orders

- The Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594) authorizes the Secretary of Interior to protect and preserve from fire, disease, or the ravages of beetles or other insects, timber owned by the United States upon the public lands, national parks, national monuments, Indian reservations, or other lands under the DOI jurisdiction.
- The Clark-McNary Act of 1928 (45 Stat. 221; 16 U.S.C. 487) authorized technical and financial assistance to the states for forest fire control and for production and distribution of forest tree seedlings. (Sections 1 through 4 were repealed by the Cooperative Forestry Assistance Act of 1978.)
- The Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 U.S.C. 1856, 1856a) authorizes agencies that provide fire protection for any property of the United States to

enter into reciprocal agreements with other firefighting organizations to provide mutual aid for fire protection.

- The CAA of July 14, 1955, as amended (42 U.S.C. 7401 et seq.) provides for the protection and enhancement of the Nation's air resources and applies to the application and management of prescribed fire.
- The Multiple-Use Sustained-Yield Act of June 12, 1960
- The Federal Fire Prevention and Control Act of October 29, 1974 (88 Stat. 1535; 15 U.S.C. 2201) authorizes reimbursement to state and local fire services for costs incurred in firefighting on federal property.
- The Forest and Rangeland Renewable Resources Planning Act of August 17, 1974
- The Supplemental Appropriation Act of September 10, 1982 (96 Stat. 837) authorized the Secretary of Agriculture and Secretary of the Interior to enter into contracts with state and local governmental entities, including local fire districts, for procurement of services in the preparedness, detection, and suppression of fires on any units within their jurisdiction.
- The Wildfire Suppression Assistance Act of April 7, 1989 (Public Law 100-428, as amended by Public Law 101-11, April 7, 1989; 42 U.S.C. 1856) authorizes the Secretary of Agriculture to enter into agreements with firefighting organizations of foreign countries for assistance in wildfire protection.
- The Healthy Forest Restoration Act, December 2003 (Public Law 108-148) was crafted to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes.

Policies

- DOI Manual 910 DM 1.3
- 1995 Federal Wildland Fire Management Policy
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures
- BLM Manual Section 9212, Fire Prevention (1992). It is the policy of the BLM to take all necessary actions to protect human life, the public lands, and the resources and improvements thereon through the prevention of wildfires
- BLM Manual Section 1742, Emergency Fire Rehabilitation, and BLM Handbook 1742, provide guidance for emergency fire rehabilitation, including measures to prevent accelerated soil erosion, prevent the establishment of noxious and/or invasive plant species, and implement post-fire management of restoration areas. Fireline rehabilitation would include restoration of surface contours and closure to vehicles.
- BLM Manual Section 9214, Prescribed Fire Management (1988), and BLM Handbook 9214 (2000), describe the authority and policy for prescribed fire use on BLM-administered public lands.
- Interagency Standards for Fire and Fire Aviation Operations, as amended annually, describes policy and operations for all DOI and USDA fire-related activities.
- BLM Manual 1740 and BLM Manual Handbook H-1740-1 provide guidance and procedures for management and treatment of renewable resources, including utilization of management-prescribed fire and emergency fire rehabilitation.
- The 2001 Review and Update of the 1995 Federal Wildland Fire Management Policy
- A Report to the President in Response to the Wildfires of 2000 (September 2000), "Managing the Impacts of Wildfires on Communities and the Environment."
- A Collaborative Approach for Reducing Wildland Fire Risk to Communities and the Environment: 10 Year Comprehensive Strategy (August 2001). This document provides a foundation for wildland agencies to work closely with all levels of government, tribes, and conservation, commodity, and community-based restoration groups to reduce

wildland fire risk to communities and the environment. It also provides a suite of core principles and four goals. The core principles include the concepts of collaboration, priority setting, and accountability.

- Restoring Fire Adapted Ecosystems on Federal Lands: A Cohesive Strategy for Protecting People and sustaining Natural Resources, February 2002. The primary goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health.
- Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities, August 2002. The Healthy Forest Initiative will implement core components of the National Fire Plan's 10-Year Comprehensive Strategy and Implementation Plan. This historic plan, which was adopted by federal agencies and western governors in collaboration with county commissioners, state foresters, and tribal officials, calls for protecting communities and the environment through local collaboration on thinning, planned burns, and forest restoration projects. The initiative will complement the National Fire Plan by reducing unnecessary regulatory obstacles and allowing more effective and timely actions.

State Laws and Regulations

- Utah Administrative Code R317: Utah regulations concerning water quality.
- Utah Administrative Code R307: Utah regulations concerning air quality.
- Five County Association of Governments 2004. Natural Hazard Mitigation Plan for southwestern Utah's Beaver, Garfield, Iron, Kane, and Washington Counties.

MOUs

- None

Other

- Western Governors Association: Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Strategy: Implementation Plan, August 2001. This plan outlined a comprehensive approach for the management of wildland fire, hazardous fuels, and ecosystem restoration and rehabilitation on federal and adjacent state, tribal, and private forest and rangelands in the United States, emphasizing measures to reduce the risk to communities and the environment.
- Western Governors Association: A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10-Year Comprehensive Strategy Implementation Plan, May 2002, 27p.
- National Academy of Public Administration: Federal Fire Management: Limited Progress in Restarting the Prescribed Fire Program (GAO/RCED-91-42), December 5, 1990. The report reiterated that fire is beneficial and even necessary to wildlands. Where fire has been a historic component of the environment, it is essential to continue that influence, and attempts to exclude fire from such lands could result in unnatural ecological changes and increased risks created by accumulation of fuels on the forest floor. The report supported the use of prescribed burns to achieve management objectives, when the risks of such burns have been analyzed.

7.0 SUMMARY OF SCOPING

Scoping is the process of informing the public about the planning process and requesting input regarding any issues or information they would like to see addressed in the RMP. The CCFO followed the process described below.

Public Notification

The formal scoping period began on September 10, 2010, with the publication of a Notice of Intent (NOI) in the *Federal Register*. The original scoping period established by the NOI was scheduled to last for 90 days and to end on December 9, 2010. The deadline was extended 15 days beyond the date of the last scoping meeting to December 27, 2010, for a total of 109 days. The BLM has accepted comments submitted after December 27, 2010, and will continue to accept comments throughout the RMP/EIS process.

A news release was submitted to local media on September 20, 2010, announcing plans to develop a new RMP/EIS. This information was also posted on the CCFO Web site (http://www.blm.gov/ut/st/en/fo/cedar_city.html). A second news release in November 2010 informed the public of the upcoming scoping meetings. Flyers were posted at multiple businesses and public places in several communities in and around Cedar City. Notice of the scoping meetings was sent to approximately 610 individuals, agencies, and organizations that participated in past BLM projects or asked to be on the general mailing list. The BLM hosted the scoping meetings on December 7, 8, and 9, 2010, at Cedar City, Beaver, and Salt Lake City, Utah, respectively. Attendance was as follows:

- Cedar City: 57
- Beaver: 60
- Salt Lake City: 22

Scoping Results

The BLM received a total of 468 comments related to RMP/EIS planning issues. More than 40,000 comments were received in a form letter, or altered versions of the form letter, which contained 11 unique comments regarding wild horse management. Each of these 11 issues are counted once in the total of 468 comments. The BLM also identified an additional 134 comments on topics that will not be addressed in the RMP/EIS, including requests for changes to regulations and policies; issues outside the scope of the planning process; comments too vague to be categorized; and comments on how the planning or public involvement process should work.

The BLM categorized the 468 comments into 16 planning issue categories. Table 7-1 shows the number of comments received for each category. The comment count by planning issue category in Table 7-1 provides an estimate for the number of comments based on comment topic. However, because of the unstructured nature of the comment process (i.e., commenters were not answering specific questions but rather were identifying their concerns), the BLM often received comments that touched on multiple issue categories. In these cases, the comment was placed into the category that seemed most appropriate. For example, a comment requesting protection for the Southern Wah Wah Mountains through designation as an ACEC to protect geologic, scenic, wildlife, cultural, and historical values was coded in the Special Designations issue category, even though the comment also applies to the Geologic Resources, Cultural Resources, Visual Resources, and Fish and Wildlife issue categories.

Table 7-1. Number of Comments by Planning Issue Category

Planning Issue Category	Number of Individual Comments
Air Quality and Climate Change	43
Cultural Resources	17
Wildlife and Special Status Species	28
Visual Resources	5
Vegetation (including forests and woodlands, rangelands, riparian and wetlands resources)	19
Watershed Management	25
Wild Horses and Burros	29
Lands and Realty	13
Livestock Grazing	14
Minerals and Energy Management	26
Recreation Demand and Uses	76
Transportation and Access	62
Special Designations and Wilderness	76
Social and Economic Conditions (including Public Safety)	17
Cumulative Effects	11
Alternatives Development	7

Table 7-2 shows the affiliation of each commenter. Individuals who did not identify an affiliation provided the largest number of comment documents during the scoping period. No comments were received from tribal governments.

Table 7-2. Number of Comment Documents by Affiliation

Commenter Affiliation	Number of Comment Documents
Individual (no affiliation)	45
Private Organization	14
Business	3
Federal Agency	2
State Agency	2
Local Government	2
Total	68

The Scoping Report contains detailed information about the comments and an image of each comment document. This report is available in the Cedar City Field Office or can be viewed at the project Web site: https://www.blm.gov/epl-front-office/eplanning/lup/lup_register.do

8.0 LIST OF PREPARERS

Name	Education	Title	Resources
Bureau of Land Management			
Gina Ginouves	B.S. Geology	NEPA and Planning Specialist	General document preparation and review.
Dan Fletcher	B.S. Agricultural Economics	Associate Field Office Manager for Renewable Resources	Livestock Grazing, Vegetation
Craig Egerton	B.S. Range and Forest Management	Natural Resource Specialist	Air Quality, Climate Change, Watershed and Soils, Water Resources
Nathan Thomas	B.S Anthropology, M.A. Archeology and Ancient History	Archaeologist	Cultural Resources, Native American Religious Concerns
Rebecca Bonebrake	B.S. Fisheries & Wildlife, Certified Wildlife Biologist	Wildlife Biologist	Fish and Wildlife, Special Status Wildlife Species
Ed Ginouves	B.S. Mining Engineering	Minerals Specialist	Locatable and Solid Leasable Minerals, Paleontology
Chris Hite	B.S. Geology, M.S. Hydrogeology	Fluid Minerals Geologist	Oil and Gas, Geothermal
Chad Hunter	B.S. Rangeland Management	Rangeland Management/ Wild Horse Management	Wild Horses
Elizabeth Burghard	B.A. Sociology & Anthropology M.A. Anthropology	Cedar City Field Office Manager	
Kevin Wright	B.S. Wildlife and Range Resources, M.P.A.	Rangeland Management Specialist	Riparian and Wetland, Wild and Scenic Rivers
Kent Dastrup	B.S. Computer Information Systems	GIS Specialist	GIS Support
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Paul Briggs			Wildlife Fire Ecology
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Brandon Johnson	B.S. Geology	Lands and Realty Specialist	Lands and Realty
Doug Page	B.A. Liberal Arts, Master of Forestry	Zone Forester	Forestry and Woodland Products, Biomass

9.0 ACRONYMS AND GLOSSARY

ACRONYMS

°C	Degrees Celsius
°F	Degrees Fahrenheit
ACEC	Area of Critical Environmental Concern
AFY	Acre-feet per Year
AML	Appropriate Management Level
AMP	Allotment Management Plan
AMR	Appropriate Management Response
AMS	Analysis of the Management Situation
APD	Application for Permit to Drill (an oil or gas well)
AUM	Animal Unit Month
BDT	Bone Dry Tons
BHCA	Bird Habitat Conservation Areas
BLM	Bureau of Land Management
BMP	Best Management Practice
CAA	Clean Air Act
CBGA	Cedar/Beaver/Garfield/Antimony (Resource Management Plan)
CCFO	Cedar City Field Office
CFR	Code of Federal Regulations
CICWCD	Central Iron County Water Conservancy District
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COA	Condition of Approval
CWMA	Cooperative Weed Management Areas
CWCS	Comprehensive Wildlife Conservation Strategy
CWD	Chronic Wasting Disease
DCI	Desirable Components Index
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DPC	Desired Plant Community
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act (of 1973)
ESR	Emergency Stabilization and Rehabilitation
FERC	Federal Energy Regulatory Commission
FIA	Forest Inventory and Analysis
FLPMA	Federal Land Policy and Management Act (of 1976)
FMP	Fire Management Plan
FMU	Fire Management Unit
FRCC	Fire Regime Condition Class
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GPS	Global Positioning System
IWJV	Intermountain West Joint Venture

HA	Wild Horse Herd Area
HFRA	Healthy Forests Restoration Act
HMA	Wild Horse Herd Management Area
HMAP	Wild Horse Herd Management Area Plan
HMP	Habitat Management Plan
HFRA	Healthy Forest Restoration Act
H ₂ S	Hydrogen Sulphide
HUC	Hydrologic Unit Code
IM	Instruction Memorandum
IMPROVE	Interagency Monitoring of Protected Visual Environments
kV	Kilovolt
LUP	Land Use Plan
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
MFP	Management Framework Plan
mg/L	Micrograms per Liter
MIM	Multiple Indicator Monitoring
MLA	Mineral Leasing Act
MW	Mega Watt
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautical and Space Administration
NEPA	National Environmental Policy Act (of 1969)
NERC	North American Electric Reliability Corporation
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO _x	Nitrogen Oxides
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NVUM	National Visitation Use Monitoring
NWSRS	National Wild and Scenic Rivers System
OHV	Off-Highway Vehicle
PEIS	Programmatic Environmental Impact Statement
PFC	Proper Functioning Condition (of riparian/wetland areas)
PIF	Partners in Flight
PILT	Payment in Lieu of Taxes
PM _{2.5}	Particulate Matter (less than 2.5 microns in diameter)
PM ₁₀	Particulate Matter (less than 10 microns in diameter)
PNC	Potential Natural Community
PSD	Prevention of Significant Deterioration
PZP	Porcine Zona Pellucid
R&PP	Recreation and Public Purposes Act
REA	Rapid Ecological Assessments
RFD	Reasonably Foreseeable Development
RMIS	Recreation Management Information System
RMP	Resource Management Plan (BLM land use plan under FLPMA)

RMS	Reliability Management System
ROW	Right-of-Way
SEZ	Solar Energy Zone
SHPO	State Historic Preservation Officer
SITLA	School and Institutional Trust Lands Administration
SMP	Smoke Management Plan
SNWA	Southern Nevada Water Authority
SO _x	Sulfur Oxides
SO ₂	Sulfur Dioxide
SR	State Route
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SSF	Soil Surface Factor
SWReGAP	Southwest Regional Gap Analysis Project
TCP	Traditional Cultural Property
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TMP	Travel Management Plan
TPA	Tons per Acre
UDAQ	Utah Division of Air Quality
UDEQ	Utah Department of Environmental Quality
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
UWCS	Utah Comprehensive Wildlife Conservation Strategy
UWRI	Utah Watershed Restoration Initiative
VOC	Volatile Organic Compounds
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WECC	Western Electricity Coordinating Council
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUI	Wildland Urban Interface

GLOSSARY

Acquisition. The BLM acquires land, easements, and other real property rights when it is in the public interest and consistent with approved LUPs. The BLM land acquisition program is designed to (1) improve management of natural resources through consolidation of federal, state, and private lands, (2) increase recreational opportunities, preserve open space, and/or ensure accessibility of public lands, (3) secure key property necessary to protect habitat for threatened and endangered species, promote high-quality riparian areas, and promote biological diversity, (4) preserve archeological and historical resources, and (5) implement specific acquisitions authorized by Acts of Congress.

Activity Plan. A type of implementation plan (see Implementation Plan); an activity plan usually describes multiple projects and applies BMPs to meet LUP objectives. Examples of activity plans include interdisciplinary management plans, HMPs, recreation area management plans, and allotment management plans (from H-1601-1, *BLM Land Use Planning Handbook*).

Active Use. Livestock grazing term meaning the current authorized use, including livestock grazing and conservation use. Active use can constitute a portion, or all, of permitted use. Active use does not include temporary non-use or suspended use of forage on all or a portion of an allotment (43 CFR 4100.0-5).

Actual Use. Livestock grazing term meaning where, how many, what kinds or classes of livestock, and how long livestock graze on an allotment or on a portion or pasture of an allotment (43 CFR 4100.0-5).

Administrative Use. Official use related to management and resources of the public lands by federal, state, or local governments or non-official use sanctioned by an appropriate authorization instrument, such as an ROW grant, permit, lease, or maintenance agreement.

Administrative Route. Routes limited to administrative (official or authorized) users only

Administrative Purposes. Administrative use functions involving regular maintenance or operation of facilities or programs.

Air Quality. A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances. Refers to standards for various classes of land as designated by the Air Pollution Control Act of 1955; CAA of 1963, as amended; and Air Quality Act of 1967.

All-Terrain Vehicle. A wheeled or tracked vehicle, other than a snowmobile or work vehicle, designed primarily for recreational use or for the transportation of property or equipment exclusively on undeveloped roads, trails, marshland, open country, or other unprepared surfaces (from *BLM National Management Strategy for OHV Use on Public Lands*).

Allotment. An area of land designated and managed for livestock grazing (43 CFR 4100.0-5) (from H-4180-1, *BLM Standards for Rangeland Health*).

Allotment Management Plan (AMP). A document prepared in consultation with the grazing lessees or permittees involved that applies to livestock operations on the public lands and that (1) prescribes the manner in and extent to which livestock operations will be conducted to meet

the multiple-use, sustained-yield, economic, and other needs and objectives as determined for the lands by the Secretary concerned; (2) describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the lands to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives found by the Secretary concerned to be consistent with the provisions of this Act and other applicable law (from [FLPMA, Title 43, Chapter 35, Subchapter I 1702(k)).

Analysis of the Management Situation (AMS). Assessment of the current management direction. It includes a consolidation of existing data needed for analyzing and resolving identified issues, a description of current BLM management guidance, and a discussion of existing problems and opportunities for solving those problems.

Animal Unit Month (AUM). A standardized measurement of the amount of forage necessary for the sustenance of one cow unit or its equivalent for 1 month (approximately 800 pounds of usable air-dried forage).

Appropriate Management Response (AMR). The response to a wildland fire based on an evaluation of risks to firefighter and public safety; the circumstances under which the fire occurs, including weather and fuel conditions; natural and cultural resource management objectives; protection priorities; and values to be protected. The evaluation also must include an analysis of the context of the specific fire within the overall local area, geographic area, or national wildland fire situation.

Areas of Critical Environmental Concern (ACECs). Areas within the public lands in which special management attention is required (when such areas are developed or used or where no development 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 (from FLPMA, Title 43, Chapter 35, Subchapter I 1702(a)).

Assessment. The act of evaluating and interpreting data and information for a defined purpose (from H-1601-1, *BLM Land Use Planning Handbook*).

Authorized Officer. A federal employee who has the delegated authority to make a specific decision.

Avoidance Area. Area with sensitive resources and/or values where ROWs and Section 302 permits, leases, and easements would be strongly discouraged. Authorizations made in avoidance areas would have to be compatible with the purpose for which the area was designated and not be otherwise feasible on lands outside the avoidance area.

Back Country. A recreation setting classification characterized by a naturally appearing landscape with human modifications not readily noticeable, small areas with limited evidence of surface or vegetative disturbances, and little or no evidence of primitive roads or motorized use. Small, isolated structures might be present. Contains some primitive trails made of native materials (e.g., log bridges and carved wooden signs).

Back Country Byways. Vehicle routes that traverse scenic corridors using secondary or back country road systems. National Back Country Byways are designated by the type of road and vehicle needed to travel the byway.

Best Management Practices (BMPs). A suite of techniques that guide or may be applied to management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with LUPs, but they are not considered an LUP decision unless the LUP specifies that they are mandatory. The practices may be updated or modified without a plan amendment if they are not mandatory (from H-1601-1, *BLM Land Use Planning Handbook*).

Big Game. Indigenous ungulate wildlife species that are hunted (e.g., elk, deer, bison, bighorn sheep, and pronghorn).

Biological Opinion. The document that includes (1) the USFWS and/or National Marine Fisheries Service (NMFS) opinion as to whether or not a federal action is likely to jeopardize the continued existence of listed species or to result in the destruction or adverse modification of designated critical habitat; (2) a summary of information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. Depending on the determination of jeopardy or non-jeopardy, the biological opinion may contain reasonable and prudent alternatives, a statement of anticipated take of listed animals, and conservation recommendations for listed plants (from M-6840, *Special Status Species Manual*).

Candidate Species. Taxa for which the USFWS has sufficient information on their status and threats to support proposing the species for listing as endangered or threatened under the ESA but for which issuance of a proposed rule is currently precluded by higher priority listing actions. Separate lists for plants, vertebrate animals, and invertebrate animals are published periodically in the *Federal Register* (from M-6840, *Special Status Species Manual*).

Casual Use. Any short-term non-commercial activity ordinarily resulting in no or negligible disturbance of the public lands, resources, or improvements. Casual use generally includes surveying, marking routes, and data collection. It also includes collecting of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, and nonmotorized sluicing. It also generally includes use of metal detectors, gold spears, and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated dry-washers. Casual use excludes the use of mechanized earthmoving equipment, truck-mounted drilling equipment, suction dredges, and motorized vehicles in areas designated as closed to OHVs, chemicals, or explosives. It also excludes occupancy or operations in which the cumulative effects of the activities result in more than negligible disturbance.

Class of Livestock. Livestock grazing term meaning the ages and/or sex groups of a kind of livestock (43 CFR 4100.0-5).

Closed. Generally denotes that an area is unavailable for a particular use or uses; refers to specific definitions found in laws, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “closed” as it relates to OHV use, and 43 CFR 8364 defines “closed” as it relates to closure and restriction orders (from H-1601-1, *BLM Land Use Planning Handbook*).

Code of Federal Regulations (CFR). The official codification of the current, general, and permanent regulations of Federal Government activities.

Collaboration. A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands (from H-1601-1, *BLM Land Use Planning Handbook*).

Collaborative Partnerships or Collaborative Stewardship. Refers to people working together, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks (from H-1601-1, *BLM Land Use Planning Handbook*).

Conformance. Means that a proposed action shall be specifically provided for in the LUP or, if not specifically mentioned, shall be clearly consistent with the goals, objectives, or standards of the approved LUP (from H-1601-1, *BLM Land Use Planning Handbook*).

Conservation Agreement. A formal written document agreed to by the USFWS and/or the NMFS and another federal agency, state agency, local government, or the private sector to achieve the conservation of candidate species or other special status species through voluntary cooperation. It documents the specific actions and responsibilities for which each party agrees to be accountable. The objective of a conservation agreement is to reduce threats to a special status species or its habitat. An effective conservation agreement can lower species' listing priority or eliminate the need for listing (from M6840, *Special Status Species Manual*).

Conservation Strategy. A strategy outlining current activities or threats that are contributing to the decline of a species, along with the actions or strategies needed to reverse or eliminate such a decline or threats. Conservation strategies are generally developed for species of plants and animals that are designated as BLM-sensitive species or that the USFWS or the NMFS have determined to be federal candidates under the ESA (from H-1601-1, *BLM Land Use Planning Handbook*).

Consistency. Means that the proposed LUP does not conflict with officially approved plans, programs, and policies of tribes, other federal agencies, and state and local governments (to the extent practical within federal law, regulation, and policy) (from H-1601-1, *BLM Land Use Planning Handbook*).

Cooperating Agency. Assists the lead federal agency in developing an EA or EIS. Council on Environmental Quality NEPA implementing regulations define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency (from H-1601-1, *BLM Land Use Planning Handbook*).

Council on Environmental Quality. An advisory council to the President of the United States established by NEPA. Its members review federal programs to analyze and interpret environmental trends and information.

Critical Habitat. (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accordance with ESA, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon determination by the USFWS and/or NMFS that such areas are essential for the conservation of the species. Critical habitats are designated in 50 CFR 17 and 226. The constituent elements of critical habitat are

those physical and biological features of designated or proposed critical habitat essential to the conservation of the species (from M6840, *Special Status Species Manual*).

Crucial Value Habitat. Any particular range or habitat component that directly limits a community, population, or subpopulation to reproduce and maintain itself at a certain level over the long term. Such habitat includes sensitive use areas that, because of limited abundance and/or unique qualities, constitute irreplaceable critical requirements for high-interest wildlife. It can also include highly sensitive habitats, including fragile soils that have little or no reclamation potential. Restoration or replacement of these habitats might not be possible. Examples include the most crucial (critical) summer and/or winter range or concentration areas; critical movement corridors; breeding and rearing complexes; spawning areas; developed wetlands; Class 1 and 2 streams, lakes, ponds, and reservoirs; and riparian habitats critical to high-interest wildlife.

Crucial Winter Range. The portion of the winter range to which a wildlife species is confined during periods of heaviest snow cover.

Cultural Resource or Cultural Property. A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archeological, historic, or architectural sites, structures, or places with important public and scientific uses, and can include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and using for public benefit described in this manual series (from M-8100-1, *BLM Cultural Resources Management*).

Cultural Resource Inventory Classes. (See *BLM Manual 8110*) *Class I: Existing Data Inventory.* A study of published and unpublished documents, records, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data. Class I inventories encompass prehistoric, historic, and ethnological/sociological elements and are in large part chronicles of past land uses. They could have major relevance to current land use decisions. *Class II: Sampling Field Inventory.* A statistically based sample survey designed to help characterize the probable density, diversity, and distribution of archeological properties in a large area by interpreting the results of surveying limited and discontinuous portions of the target area. *Class III: Intensive Field Inventory.* A continuous, intensive survey of an entire target area aimed at locating and recording all archeological properties that have surface indications by walking close-interval parallel transects until the area has been thoroughly examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved (from M-8100-1, *BLM Cultural Resources Management*).

Cumulative Impact. The impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (from H-1790-1, *BLM NEPA Handbook*).

Designated Roads and Trails. Specific roads and trails identified by the BLM (or other agencies) where some type of motorized vehicle use is appropriate and allowed either seasonally or year-round (from H-1601-1, *BLM Land Use Planning Handbook*).

Dispersed or Extensive Recreation. Recreation activities of an unstructured type that are not confined to specific locations or do not depend on recreation sites. Examples of these activities are hunting, fishing, OHV use, hiking, and sightseeing.

Disposal. Transfer of public land out of federal ownership to another party through sale, exchange, the R&PP Act, Desert Land Entry, or other land law statutes.

Disruptive Activities. Activities that preclude basic life functions for a species. These activities could result in individuals leaving a currently used area; increased stress on individuals; and not breeding, young abandonment, or aberrant behavior.

Easement. An interest in land entitling the owner or holder, as a matter or right, to enter upon land owned by another party for a particular purpose.

Ecological Site. A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in their ability to produce distinctive kinds and amounts of vegetation and to respond to management. Ecological sites are defined and described with information about soil, species composition, and annual production (BLM 2001a).

Ecological Site Description. A written narrative of the description of soils, climate, vegetation, uses, and potential of a kind of land with specific physical characteristics to produce distinctive kinds and amounts of vegetation (BLM 2001a).

Ecological Site Inventory. A resource inventory that involves the use of soils information to map ecological sites and plant communities and the collection of natural resource and vegetation attributes. The sampling data from each of these soil-vegetation units, referred to as site write-up areas, become the baseline data for natural resource management and planning (BLM 2001a).

Ecological Succession. An ecosystem's gradual evolution to a stable state or climax. If through the ability of its populations and elements an ecosystem can absorb changes, it tends to persist and become stable through time.

Eligibility. Qualification of a river for inclusion into the NWSRS through the determination (professional judgment) that it is free-flowing and, with its adjacent land area, possesses at least one river-related value considered to be outstandingly remarkable (from M-8351, BLM WSR Policy and Program).

Endangered Species. Any species that is in danger of extinction throughout all or a significant portion of its range (from M6840, *Special Status Species Manual*).

Environmental Assessment (EA). (a) A concise public document for which a federal agency is responsible that serves to (1) briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact, (2) aid an agency's compliance with NEPA when no EIS is necessary, and (3) facilitate preparation of an EIS when one is necessary. (b) Shall include brief discussions of the need for the proposal, alternatives as required by Section 102(2)(E), environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted (from H-1790-1, *BLM NEPA Handbook*).

Environmental Impact Statement (EIS). A detailed statement prepared by the responsible official in which a major federal action that significantly affects the quality of the human

environment is described, alternatives to the proposed action provided, and effects analyzed (from *BLM National Management Strategy for OHV Use on Public Lands*).

Ephemeral Stream. A stream that flows only in direct response to precipitation and whose channel is at all times above the water table. Ephemeral streams generally do not flow continuously for more than 30 days and generally have more robust upland vegetation than that found outside of the ephemeral riparian-wetland area (DOI 1998).

Exclusion Area. Areas with sensitive resources and/or values where ROWs and Section 302 permits, leases, and easements would not be authorized.

Executive Order. An Executive Order is a presidential directive with the force of law. It does not need congressional approval. The Supreme Court has upheld Executive Orders as valid either under the general constitutional grant of executive powers to the President or if authority for it was expressly granted to the President by the Congress. Congress can repeal or modify an Executive Order by passing a new law; however, it must be signed by the President or overridden by his veto.

Extensive Recreation Management Area (ERMA). A public lands unit identified in LUPs containing all acreage not identified as an SRMA). Recreation management actions in an ERMA are limited to only those of a custodial nature.

Federal Lands. As used in this document, lands owned by the United States, without reference to how the lands were acquired or what federal agency administers the lands. The term includes mineral estates or coal estates underlying private surface, but excludes lands held by the United States in trust for Indians, Aleuts, or Eskimos (see also Public Land).

Federal Land Policy and Management Act (FLPMA) of 1976. Public Law 94-579, October 21, 1976, often referred to as the BLM “Organic Act,” which provides most of the BLM legislated authority, policy direction, and basic management guidance (from *BLM National Management Strategy for OHV Use on Public Lands*).

Federal Register. A daily publication that reports Presidential and federal agency documents (from *BLM National Management Strategy for OHV Use on Public Lands*).

Fire Management Plan (FMP). A strategic implementation-level plan that defines a program to manage wildland fire, fuel reduction, and fire rehabilitation based on an area’s approved RMP. FMPs must address a full range of fire management activities that support ecosystem sustainability, values to be protected, protection of firefighter and public safety, public health, and environmental issues. The plans must be consistent with resource management objectives and activities of the area.

Fiscal Year. The Federal Government’s annual accounting period that begins on October 1 and ends on September 30 of the following calendar year.

Fluid Minerals. Oil, gas, coalbed natural gas, and geothermal resources.

Forage. Vegetation of all forms available and of a type used for animal consumption.

Fragile Soils. Soils with intrinsic properties and in areas that make them especially susceptible to erosion. These properties include high salt concentrations, very fine textures, shallow depths, and steep slopes (more than 30 percent).

Functioning at Risk. (1) Condition in which vegetation and soil are susceptible to losing their ability to sustain naturally functioning biotic communities. Human activities, past or present, can increase the risks (Rangeland Reform Final EIS at 26). (2) Uplands or riparian-wetland areas that are properly functioning, but in which a soil, water, or vegetation attribute makes them susceptible to degradation and lessens their ability to sustain natural biotic communities. Uplands are particularly at risk if their soils are susceptible to degradation. Human activities, past or present, can increase the risks (Rangeland Reform Draft EIS Glossary). See also Properly Functioning Condition and Nonfunctioning Condition (from H-4180-1, *BLM Standards for Rangeland Health*).

Geographic Information System (GIS). A system of computer hardware, software, data, people, and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information (from H-1601-1, *BLM Land Use Planning Handbook*).

Goal. A broad statement of a desired outcome, usually not quantifiable, and might not have established time frames for achievement (from H-1601-1, *BLM Land Use Planning Handbook*).

Guideline. A practice, method, or technique determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standards. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees to achieve standards. Guidelines can be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standards becomes appropriate (from H-4180-1, *BLM Standards for Rangeland Health*).

Habitat. The place where an organism (plant or animal) lives. There are four major divisions of habitat: terrestrial, freshwater, estuarine, and marine (from M6840, *Special Status Species Manual*).

Habitat Management Plan (HMP). An officially approved activity plan for a specific geographic area of public land. An HMP identifies wildlife habitat and related objectives, defines the sequence of actions to be implemented to achieve the objectives, and outlines procedures for evaluating accomplishments.

Heritage Tourism. A form of recreation that involves experiencing the settings, activities, and people that represent the past and present experiences, stories, and peoples. It can include historic, cultural, and natural resources and can be dispersed, self-guided, or tour-guided in any recreational setting.

High-Value Habitat. Any particular habitat that sustains a community, population, or subpopulation. It includes intensive-use areas that because of relative wide distribution do not constitute crucial (UDWR critical) values but are highly important to high-interest wildlife. It can also include moderately sensitive habitats of high-interest species that have low reclamation potential. In Class 3 streams, lakes, ponds, or reservoirs, reconstruction or enhancement of might be possible, but should be avoided if not possible. Examples include less crucial (critical) but more widely distributed summer and/or winter ranges, important feeding areas, areas of

high wildlife diversity and/or density of high-interest species, natural wetlands, and all other riparian areas.

Historic Climax Plant Community. The plant community considered to best typify the potential plant community of an ecological site prior to the advent of European man (BLM 2001a).

Hydrology. The science dealing with the properties, distribution, and circulation of water.

Impacts (or Effects). Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects can be direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative (from *BLM National Management Strategy for OHV Use on Public Lands*).

Implementation Decisions. Decisions that take action to implement LUP decisions; generally appealable to the Interior Board of Land Appeals under 43 CFR 4.410 (from H-1601-1, *BLM Land Use Planning Handbook*).

Implementation Plan. A sub-geographic or site-specific plan written to implement decisions made in an LUP. Implementation plans include activity plans and project plans (they are types of implementation plans) (from H-1601-1, *BLM Land Use Planning Handbook*).

Indian Tribe (or tribe). Any Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the *Federal Register*) (from H-1601-1, *BLM Land Use Planning Handbook*).

Indicators. Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure (Interagency Technical Reference 1734-8, 2000) (from H-4180-1, *BLM Standards for Rangeland Health*).

Interdisciplinary Team. Staff specialists representing identified skill and knowledge needs working together to resolve issues and provide recommendations to an Authorized Officer (from H-4180-1, *BLM Standards for Rangeland Health*).

Intermittent or Seasonal Stream. A stream that flows only at certain times of the year when it receives water from springs or from some surface, source such as melting snow in mountainous areas. Generally, intermittent streams flow continuously for periods of at least 30 days and usually have visible vegetation or physical characteristics reflective of permanent water influences, such as the presence of cottonwoods (DOI 1998).

Land Tenure Adjustments. Ownership or jurisdictional changes. To improve the manageability of BLM-administered lands and improve their usefulness to the public, the BLM has numerous authorities for “repositioning” lands into a more consolidated pattern, disposing of lands, acquiring lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges, but also through land sales, land acquisitions, jurisdictional transfers to other agencies, and the use of cooperative management agreements and leases.

Land Use Allocation. The identification in a LUP of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the Decision Area, based on desired future conditions (from H-1601-1, *BLM Land Use Planning Handbook*).

Land Use Plan (LUP). A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of LUP-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes RMPs and MFPs (from H-1601-1, *BLM Land Use Planning Handbook*).

Land Use Plan Amendment. The process for considering or making changes in the terms, conditions, and decisions of approved RMPs or MFPs. Usually only one or two issues are considered that involve only a portion of the Decision Area (from H-1601-1, *BLM Land Use Planning Handbook*).

Land Use Plan Decision. Establishes desired outcomes and actions needed to achieve them. Decisions are reached using the planning process in 43 CFR 1600. When they are presented to the public as proposed decisions, they can be protested to the BLM Director. They are not appealable to the Interior Board of Land Appeals (from H-1601-1, *BLM Land Use Planning Handbook*).

Lease. An authorization or contract by which one party conveys the use of property to another party in return for rental payments. FLPMA section 302 provides the BLM authority to issue leases for the use, occupancy, and development of the public lands. Leases are also authorized under the R&PP Act for an established or definitely proposed project for which there is a reasonable timetable of development and satisfactory development and management plans (43 CFR 2741.5). Leases are issued for purposes such as communications sites, and parks and other recreation facilities. The regulations establishing procedures for the processing of these leases are found at 43 CFR 2920 and 2740.

Lease Stipulation. A modification of the terms and conditions on a lease form at the time of the lease sale.

Leaseable Minerals. Those minerals or materials designated as leaseable under the Mineral Leasing Act of 1920, as amended. They include coal, phosphate, asphalt, sulphur, potassium, sodium minerals, oil, and gas.

Lek. An assembly area where birds, especially greater sage-grouse, carry on display and courtship behavior.

Lentic. Refers to non-riverine or non-flowing riparian-wetland areas such as wet meadows, seeps, springs, and lakes.

Limited. An area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions can be of any type, but can generally be accommodated within the following categories: numbers of vehicles, types of vehicles, time or season of vehicle use, permitted use only, use on existing roads and trails, use on designated routes, and other restrictions (from *BLM National Management Strategy for OHV Use on Public Lands*).

Locatable Minerals. Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Lotic. Refers to riverine or flowing riparian-wetland areas such as rivers, streams, and creeks, both perennial and intermittent.

Management Decision. A decision made by the BLM to manage public lands. Management decisions include LUP decisions and implementation decisions (from H-1601-1, *BLM Land Use Planning Handbook*).

Management Opportunities. A component of the AMS and actions or management directions that could be taken to resolve issues or management concerns.

Mineral. A naturally formed chemical element or compound having a definite chemical composition and, usually, a characteristic crystal form. A mineral is generally considered to be inorganic, although organic compounds are classified as minerals by some (American Geological Institute, 1974). The term is also sometimes informally used to refer to resources such as oil, gas, coal, and stone that are derived from the earth.

Mineral Entry. The filing of a claim on public land to obtain the right to any locatable minerals it might contain.

Mineral Materials. Materials such as sand and gravel and common varieties of stone, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws, but that can be acquired under the Materials Act of 1947, as amended.

Mining Claim. A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the Mining Law and local laws and rules. A mining claim can contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, millsite, and tunnel site.

Mitigation. A method or process by which impacts from actions can be made less injurious to the environment through appropriate protective measures. Title 40 CFR 1508.20 further defines mitigation as (1) avoiding the impact altogether by not taking a certain action or parts of an action, (2) minimizing an impact by limiting the degree or magnitude of the action and its implementation, (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (4) reducing or eliminating the impact over time by preservation and maintenance, and (5) compensating for the impact by replacing or providing substitute resources or environments.

Monitoring (Plan Monitoring). The process of tracking the implementation of LUP decisions and collecting and assessing data/information necessary to evaluate the effectiveness of land use planning decisions (from H-1601-1, *BLM Land Use Planning Handbook*).

Multiple Use. The management of the public lands and their various resource values so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the

long-term needs of future generations for renewable and nonrenewable resources, including but not limited to recreation, range, timber, minerals, watershed, wildlife, fish, and natural scenic, scientific, and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output (from FLPMA, Title 43 Chapter 35, Subchapter I 1702[c]).

National Environmental Policy Act (NEPA) of 1969. NEPA establishes policy, sets goals (Section 101), and provides means (Section 102) for carrying out the policy. Section 102(2) contains “action-forcing” provisions to make sure that federal agencies act according to the letter and spirit of the Act. The President, federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of Section 101.

National Register of Historic Places (NRHP). The NRHP, expanded and maintained by the Secretary of the Interior, as authorized by Section 2(b) of the Historic Sites Act and Section 101(a)(1)(A) of the NHPA. The NRHP lists cultural properties found to qualify for inclusion because of their local, state, or national significance. Eligibility criteria and nomination procedures are found at 36 CFR 60. The Secretary’s administrative responsibility for the NRHP is delegated to the NPS (from M-8100-1, *BLM Cultural Resources Management*).

National Wild and Scenic River System (NWSRS). A system of nationally designated rivers and their immediate environments that have outstandingly remarkable values such as scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three river classifications: (1) “recreational,” rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) “scenic,” rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) “wild,” rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shorelines essentially primitive, and waters unpolluted. All rivers or river segments in these classifications must possess at least one outstandingly remarkable value that is river related.

Naturalness. Lands and resources exhibit a high degree of naturalness when affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable. The BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which taken together are an indication of an area’s naturalness. These attributes can include the presence or absence of roads and trails, fences, and other improvements; the nature and extent of landscape modifications; the presence of native vegetative communities; the resemblance to pre-European settlement condition; and the connectivity of habitats (from IM-2003-275, Change 1, Considerations of Wilderness Characteristics in LUP, Attachment 1).

No Surface Occupancy. A fluid minerals leasing constraint that prohibits occupancy or disturbance on all or part of the lease surface to protect special values or uses. Lessees may exploit the fluid mineral resources under the leases restricted by this constraint through use of directional drilling from sites outside the area.

Noxious Weed. A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a

carrier or host of serious insects or disease; or nonnative, new, or not common to the United States.

Objective. A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement (from H-1601-1, *BLM Land Use Planning Handbook*).

Off-Highway Vehicle (OHV). Any motorized vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, excluding (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the Authorized Officer or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense (from H-1601-1, *BLM Land Use Planning Handbook*).

Official Use. Use by an employee, agent, or designated representative of the Federal Government or one of its contractors in the course of his or her employment, agency responsibilities, or representation (from *BLM National Management Strategy for OHV Use on Public Lands*).

Old-Growth Forests. Ecosystems distinguished by old trees and related structural features. Old growth encompasses the later stages of stand development that typically differ from earlier stages in several ways, including tree size; accumulations of large dead, woody material; number of canopy layers; species composition; and ecosystem function (from BLM IM-2005-110).

Open. Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in laws, regulations, or policy guidance for application to individual programs (from H-1601-1, *BLM Land Use Planning Handbook*). For example, 43 CFR 8340.0-5 defines the specific meaning of “open” as it relates to OHV use as “an area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in” 43 CFR 8341 and 8342 (43 CFR 8340.0-5(f)).

Outstandingly Remarkable Values. Values among those listed in Section 1(b) of the Wild and Scenic Rivers Act: “scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values.” Other similar values that may be considered include ecological, biological or botanical, paleontological, hydrological, scientific, or research values (from M-8351, BLM WSR Policy and Program).

Perennial Stream. A stream that flows continuously. Perennial streams are generally associated with a water table in the localities through which they flow.

Permit. A short-term, revocable authorization to use public lands for specific purposes. FLPMA section 302 provides the BLM authority to issue permits for the use, occupancy, and development of the public lands. Permits are issued for purposes such as commercial or non-commercial filming, advertising displays, commercial or non-commercial croplands, apiaries, harvesting of native or introduced species, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related

to irrigation and non-irrigation facilities. The regulations establishing procedures for the processing of these permits are found at 43 CFR 2920.

Permitted Use. The forage allocated by or under the guidance of an applicable LUP for livestock grazing in an allotment under a permit or lease, and that is expressed in AUMs (43 CFR 4100.0-5) (from H-4180-1, *BLM Standards for Rangeland Health*).

Plan of Operations. A plan for mining exploration and development that an operation must submit to the BLM for approval when more than 5 acres a year will be disturbed or when an operator plans to work in an ACEC or a wilderness area. A plan of operations must be submitted for any new operation that began after January 20, 2001, and that has production, regardless of acreage disturbed. A plan of operations must document in detail all actions that the operator plans to take from exploration through reclamation.

Planning Criteria. The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision making, analyses, and data collection during planning. Planning criteria streamline and simplify the resource management planning actions (from H-1601-1, *BLM Land Use Planning Handbook*).

Potential Natural Community (PNC). The biotic community that would become established if all successional sequences were completed without interference by man under the present environmental conditions. Natural disturbances are inherent in development. PNCs can include naturalized nonnative species (BLM 2001a).

Prescribed Fire. Any fire ignited by management action to meet specific objectives. A written approved prescribed fire plan must exist, and NEPA requirements must be met prior to ignition (from H-9214-1, *BLM Prescribed Fire Management Handbook*).

Primitive. A recreation setting classification characterized by a setting that is essentially an unmodified natural environment with extremely rare evidence of surface or vegetative disturbances. Trails may be present and suited for wilderness use. Structures are small and extremely rare. Enforcement presence is very rare.

Primitive and Unconfined Recreation. Activities that provide dispersed, undeveloped recreation that do not require facilities or motorized equipment (from BLM Manual 8560, Section 08, Subsection A).

Project Plan. A type of implementation plan (see Implementation Plan). A project plan typically addresses individual projects or several related projects. Examples of project plans include prescribed burn plans, trail plans, and recreation site plans (from H-1601-1, *BLM Land Use Planning Handbook*).

Proper Functioning Condition (PFC). (1) An element of the Fundamentals of Rangeland Health for watersheds, and therefore a required element of state or regional standards and guidelines under 43 CFR 4180.2(b). (2) A condition in which vegetation and ground cover maintain soil conditions that can sustain natural biotic communities. For riparian areas, the process of determining function is described in BLM Technical Reference 1737-9. (3) Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bed load, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses

that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by geomorphic features, soil, water, and vegetation. (4) Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geomorphic features, soil, water, and vegetation. See also, Nonfunctioning Condition and Functioning at Risk (from H-4180-1, *BLM Standards for Rangeland Health*).

Proposed Species. Species that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior. A proposed rule has been published in the *Federal Register* (from M6840, *Special Status Species Manual*).

Public Land. Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands located on the Outer Continental Shelf and land held for the benefit of Indians, Aleuts, and Eskimos (from H-1601-1, *BLM Land Use Planning Handbook*).

Range Improvement. An authorized physical modification or treatment designed to improve production of forage; change vegetative composition; control patterns of use; provide water; stabilize soil and water conditions; and restore, protect, and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means (43 CFR 4100.0-5) (from H-4180-1, *BLM Standards for Rangeland Health*).

Rangeland. A kind of land on which the native vegetation, climax, or natural potential consists predominantly of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a non-crop plant cover that is managed like native vegetation. Rangeland may consist of natural grasslands, savannahs, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows (from H-4180-1, *BLM Standards for Rangeland Health*).

Recreation and Public Purposes (R&PP) Act. The R&PP Act provides for the lease and sale of public lands determined valuable for public purposes. The objective of the R&PP Act is to meet the needs of state and local government agencies and non-profit organizations by leasing or conveying public land required for recreation and public purpose uses. Examples of uses made of R&PP lands are parks and greenbelts, sanitary landfills, schools, religious facilities, and camps for youth groups. The Act provides substantial cost-benefits for land acquisition and provides for recreation facilities or historical monuments at no cost.

Resource Management Plan (RMP). A BLM planning document, prepared in accordance with FLPMA section 202, that presents systematic guidelines for making resource management decisions. An RMP is based on an analysis of an area's resources, its existing management, and its capability for alternative uses. RMPs are issue oriented and developed by an interdisciplinary team with public participation.

Resource Use Level. The level of use allowed in an area, based on the desired outcomes and land use allocations in the LUP. Targets or goals for resource use levels are established on an areawide or broad watershed level in the LUP. Site-specific resource use levels are normally

determined at the implementation level, based on site-specific resource conditions and needs as determined through resource monitoring and assessments (from H-1601-1, *BLM Land Use Planning Handbook*).

Right-of-Way (ROW). The public lands authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, pursuant to an ROW authorization.

Riparian Area. A form of wetland transition between permanently saturated wetlands and upland areas. A riparian area is defined as an area of land directly influenced by permanent (surface or subsurface) water. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, hanging gardens, and areas surrounding seeps and springs. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

Rural. A recreation setting classification characterized by a substantially modified natural setting with culturally modified landscapes constantly in view. The setting may include pastoral, agricultural landscapes. Surface and vegetative modifications are typical, and constructed roads and highways are present. Structures are readily apparent and may include small dominant clusters, including campgrounds, group shelters, boat launches, and exhibits.

Salable Minerals. Common-variety minerals on the public lands, such as sand and gravel, which are used mainly for construction and are disposed of by sales or special permits.

Scenic Backways. Paved or unpaved routes that have roadsides or corridors of special aesthetic, cultural, or historic value in more remote, less visited locations. The corridor might contain outstanding scenic vistas, unusual geologic features, or other intrinsic qualities such as cultural, historic, natural, recreational, and archeological values. Scenic Backways can be designated at either the state level or by the BLM during the land use planning process.

Scenic Byways. Highway routes that have roadsides or corridors of special aesthetic, cultural, or historic value. The corridor can contain outstanding scenic vistas, unusual geologic features, or other intrinsic qualities such as cultural, historic, natural, recreational, and archeological values. Scenic Byways can be designated at either the state or the federal level.

Scenic Quality. The relative worth of a landscape from a visual perception point of view.

Scenic River. A WSR Tentative Classification that applies to rivers or sections of rivers that is free of impoundments and whose shorelines are largely undeveloped but accessible in places by roads and possess at least one river-related outstandingly remarkable value.

Scoping. An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This involves the participation of affected federal, state, and local agencies and any affected Indian tribe, proponent of the action, and other interested persons unless there is a limited exception under 40 CFR 1507.3I.

Section 7 Consultation. The requirement of ESA section 7 that all federal agencies consult with the USFWS or NMFS if a proposed action might affect a federally listed species or its critical habitat.

Section 106 Compliance. The requirement of NHPA section 106 that any project funded, licensed, permitted, or assisted by the Federal Government be reviewed for impacts to significant historic properties and that the SHPO and the Advisory Council on Historic Preservation be allowed to comment on a project.

Sensitive Soils. Soils that have a high wind or water erosion hazard, are difficult to reclaim or restore due to physical and chemical properties (e.g., high salt or gypsum concentrations, high rock content, or low available water), or that are more susceptible to impacts and damage due to high water tables (hydric or wetland/riparian soils) or very fine surface textures. Information used to identify sensitive soils includes soils surveys, ecological site descriptions, local monitoring records, and research studies.

Sensitive Species. Species designated by a State Director, usually in cooperation with the state agency responsible for managing the species and state natural heritage programs, as sensitive. They are species that (1) could become endangered in or extirpated from a state or within a significant portion of its distribution, (2) are under status review by the USFWS and/or the NMFS, (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution, (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, or candidate or state listed status might become necessary, (5) typically have small and widely dispersed populations, (6) inhabit ecological refugia or other specialized or unique habitats, or (7) are state listed but might be better conserved through application of BLM sensitive species status (from M6840, Special Status Species Manual).

Significant. An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, whether beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

Special Recreation Management Area (SRMA). A public lands unit identified in LUPs to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (i.e., activity, experience, and benefit opportunities). The BLM recognizes three distinct types of SRMAs: destination, community, and undeveloped (from H-1601-1, *BLM Land Use Planning Handbook*).

Special Status Species. Includes proposed species, listed species, and candidate species under the ESA; state-listed species; and BLM State Director-designated sensitive species (see BLM Manual 6840, *Special Status Species Policy*) (from H-1601-1, *BLM Land Use Planning Handbook*).

Socioeconomic Study Area. The geographic area used for estimation and analysis of economic and social impacts, consisting of the entirety of Beaver and Iron counties.

Solitude. The state of being alone or remote from habitations; isolation; a lonely, unfrequented, or secluded place. The emphasis is on the opportunities a person has to avoid the sights, sounds, and evidence of other people within a particular area (from BLM Manual 8560, Section 08, Subsection A).

Standard. A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (e.g., Land Health Standards). To be expressed as a desired outcome (goal) (from H-1601-1, *BLM Land Use Planning Handbook*).

State Listed Species. Species listed by a state in a category implying but not limited to potential endangerment or extinction. Listing is either by legislation or regulation (from M6840, *Special Status Species Manual*).

Strutting Ground. (see Lek)

Substantial Value Habitats. Any particular habitat that is common or of intermediate importance. Existence areas are used regularly by high-interest wildlife, but at moderate levels with little or no concentrated use. These areas can also include moderately sensitive habitats of high-interest species with moderate reclamation potential. Wildlife uses can be displaced in response to development. Examples include extensive summer and/or winter ranges receiving regular use well below carrying capacity and having little potential for increase due to other limiting factors; Class 4 streams, lakes, ponds, or reservoirs; and areas of moderate habitat quality.

Succession. The progressive replacement of plant communities on a site that leads to the potential natural plant community (i.e., attaining stability). Primary succession entails simultaneous succession of soil from parent material and vegetation. Secondary succession occurs following disturbances on sites that previously supported vegetation and entails plant succession on the more mature soils (BLM 2001a).

Successional Status. The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Successional status is the expression of the relative degree to which kinds, proportions, and amounts of plants in a community resemble that of the potential natural community. The four classes of successional status ratings, expressed in terms of similarity to the potential natural community, are 0 percent to 25 percent early seral class, 26 percent to 50 percent mid seral, 51 percent to 76 percent late seral, and 76 percent to 100 percent PNC (BLM 2001a).

Suppression. All the work of extinguishing or containing a fire, beginning with its discovery.

Surface Disturbance. More than casual use actions created through mechanized or mechanical means that would cause soil mixing and result in alteration or removal of soil and vegetation, exposing the mineral soil to erosive processes to the extent that reclamation might be required. These actions can include the use of mechanized earth-moving equipment; truck-mounted drilling equipment; geophysical exploration; vehicle travel off routes in areas designated as limited or closed to OHV use; placement of surface facilities such as utilities, pipelines, structures, and oil and gas wells; new road construction; and use of pyrotechnics, explosives, and hazardous chemicals. Surface-disturbing activities would not include livestock grazing, low-impact vegetation management tools (e.g., bullhog, hand thinning, and Dixie harrow), cross-country hiking, driving on designated routes, and scientific excavation and/or mitigation of limited scope approved by the Field Office Manager.

Surface Occupancy. Placement or construction on the land surface (either temporary or permanent) for more than 14 days requiring continual service or maintenance. Casual use is not included.

Suspended Use. Temporarily withheld use that is shown on a grazing permit, but is not available for active use because of a decision issued by the Authorized Officer or by agreement.

Take. Harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. The term applies only to fish and wildlife (from M6840, *Special Status Species Manual*).

Threatened Species. Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (from M6840, *Special Status Species Manual*).

Timing Limitation (Seasonal Restriction). A fluid minerals leasing constraint that prohibits surface use during specified periods to protect identified resource values. The constraint does not apply to the operation and maintenance of production facilities unless analysis demonstrates that such constraints are needed and that less stringent, project-specific constraints would be insufficient.

Total Maximum Daily Load (TMDL). An estimate of the total quantity of pollutants (from all sources including point, non-point, and natural) that may be allowed into waters without exceeding applicable water quality criteria (from H-1601-1, *BLM Land Use Planning Handbook*).

Undertaking. A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

Unsuitability Criteria. Criteria of the federal coal management program by which lands may be assessed as unsuitable for all or certain stipulated methods of coal mining (43 CFR 3461.5).

Utility. A service provided by a public utility, such as electricity, telephone, or water.

Valid Existing Rights. Legal “rights” or interests associated with a land or mineral estate and that cannot be divested from the estate until that interest expires or is relinquished. Lands in the Decision Area are subject to various authorizations, some giving rights to the holders and some of which could be construed as providing valid but lesser interests. Valid existing rights are established by various laws, leases, and filings under federal law.

Mineral: Authorizations for activities on existing mineral leases and mining claims are governed by valid existing rights. Valid existing rights vary from case to case with respect to oil and gas leases, mineral leases, and mining claims, but generally involve rights to explore, develop, and produce within the constraints of laws, regulations, and policies at the time the lease/claim was established or authorized.

Non-Mineral: There are other situations, unrelated to minerals, in which the BLM has authorized some use of public land or has conveyed some limited interest in public land. The authorization may be valid and existing and may convey some right or interest. Many ROWs, easements, and leases granted on public land are in this category. These types vary from case to case, but the details of each one are specified in the authorizing document. Valid and existing authorizations of this type would continue to be allowed subject to the terms and conditions of the authorizing document.

Revised Statute 2477: Some government entities might have a valid existing right to an access route under Revised Statute 2477, the Act of June 26, 1866, ch. 262, Section 8, 14 Stat. 251

(codified as amended at 43 U.S.C. 932 until repealed in 1976 by FLPMA, Public Law 94-579, Section 706(a), Stat. 2744, 2793 [1976]), which granted “the ROW for the construction of highways over public lands, not reserved for public uses.”

Access: The presence of non-federal land and resources in the Decision Area has implications because owners of non-federal land or mineral rights surrounded by public land are entitled to reasonable access to their land or resources (*State of Utah v Andrus, 1979*). Reasonable access is defined as access that the Secretary of the Interior deems adequate to secure the owner reasonable use and enjoyment of the non-federal land. Such access is subject to rules and regulations governing the administration of public land. In determining reasonable access, the BLM has discretion to evaluate and would consider such things as proposed construction methods and location, reasonable alternatives, and reasonable terms and conditions as are necessary to protect the public interests and resources of the Decision Area.

Other: There are a variety of other land use authorizations that do not involve the granting of legal rights or interests. Outfitter and guide permits are an example. These permits authorize certain uses of public land for a specified time, under certain conditions, without conveying a right, title, or interest in the land or resources used. If at any time it is determined that an outfitter and guide permit, other such permit, or any activities under those permits are not consistent with the approved RMP, then the authorization would be adjusted, mitigated, or revoked where legally possible. Grazing permits are also in this category. Grazing permits or leases convey no right, title, or interest in the land or resources used. Other applicable laws and regulations govern changes to existing grazing permits and levels of livestock grazing.

Visual Resources. The visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

Visual Resource Management (VRM). The inventory and planning actions taken to identify visual values and establish objectives for managing those values, and the management actions taken to achieve the visual management objectives.

Visual Resource Management Classes. VRM classes define the degree of acceptable visual change within a characteristic landscape. A class is based on the physical and sociological characteristics of any given homogeneous area and serves as a management objective. There are four classes. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape, as described below.

Class I: The objective for VRM Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II: The objective for VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III: The objective for VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual

observer. Any changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class IV: The objective for VRM Class IV is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location; minimal disturbance; and repeating the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Visual Sensitivity Levels. Measures of public concern (e.g., high, medium, or low) for the maintenance of scenic quality.

Water Quality. The chemical, physical, and biological characteristics of water regarding its suitability for a particular use.

Watershed. The fifth level of the hydrologic unit delineation system. A watershed is coded with 10 numerical digits, and watersheds range in size from 40,000 to 250,000 acres (Subcommittee on Spatial Water Data 2000) (from H-4180-1, *BLM Standards for Rangeland Health*).

Watershed Health. Watersheds are in or making significant progress toward PFC, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow (BLM 1997a).

Wild River. A WSR Tentative Classification that applies to rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted and possess at least one river-related outstandingly remarkable value. These represent vestiges of primitive America.

Wilderness. A congressionally designated area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed to preserve its natural conditions and that (1) generally appears to have been affected mainly by the forces of nature, with human imprints substantially unnoticeable, (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation, (3) has at least 5,000 acres or is large enough to make practical its preservation and use in an unimpaired condition, and (4) might also contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Wilderness Characteristics. Features of the land associated with the concept of wilderness that specifically deal with naturalness and opportunities for solitude and primitive unconfined recreation. These characteristics may be considered in land use planning when the BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, importance) and need (trend, risk), and are practicable to manage (from IM-2003-275, Change 1, Considerations of Wilderness Characteristics in LUP, Attachment 1).

Wilderness Study Area (WSA). Areas that have been inventoried and found to have wilderness characteristics as described in FLPMA section 603 and Section 2(c) of the

Wilderness Act of 1964. These areas are under study for possible inclusion as wilderness areas in the National Wilderness Preservation System.

Wildfire. An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildland Fire. Any fire, regardless of ignition source, that is burning outside of a prescribed fire and any fire burning on public lands or threatening public land resources, where no fire prescription standards have been prepared (from H-1742-1, *BLM Emergency Fire Rehabilitation Handbook*).

Wildland Fire Use. The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in pre-defined geographic areas outlined in Fire Management Plans.

Wildland-Urban Interface (WUI). The line, area, or zone in which structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Withdrawal. Removal or withholding an area of federal land from settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of federal land, other than “property” governed by the Federal Property and Administrative Services Act, as amended (40 U.S.C. 472), from one department, bureau, or agency to another department, bureau, or agency (from FLPMA, Title 43, Chapter 35, Subchapter I 1702(j)).

Woodland. A forest community occupied primarily by non-commercial species such as juniper, pinyon pine, mountain mahogany, or quaking aspen groves; all western juniper forestlands are considered woodlands because juniper is classified as a non-commercial species.

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