

# **CHAPTER 1. PROFILE, CURRENT MANAGEMENT, AND MANAGEMENT OPPORTUNITIES**

## **1.A. Tribal Rights and Interests**

The United States has a unique legal relationship with American Indian Tribal governments as set forth in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. Since the formation of the Union, the United States has recognized Native American Tribes as domestic dependent nations under its protection. The Federal Government has enacted numerous regulations and policies that establish and define a trust relationship with Indian Tribes.

All Federally recognized Tribes have off-reservation interests in public lands, and many retain pre-existing rights reserved through treaty or Executive Order language. The legal basis of these Tribal rights and interests are founded in the inherent sovereignty of Tribes, continuing aboriginal rights, pre-existing rights reserved in treaties, executive order, agreements, and Federal statutes.

The relationship between Federal agencies and sovereign Tribes is defined by numerous laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American Tribes, or otherwise consider their rights and interests when planning and implementing Federal undertakings. Pertinent laws, regulations, executive orders, and policy statements are listed in the Planning Criteria section of this report.

The planning area is the homeland of three culturally and linguistically related tribes: the Northern Shoshone, the Bannock, and the Northern Paiute. In the latter half of the 19<sup>th</sup> century, reservations were established at Fort Hall near Blackfoot in eastern Idaho and at Duck Valley on the Nevada/Idaho border west of the Bruneau River. The composite Tribes residing on these reservations today actively practice their culture and retain treaty and aboriginal rights and/or interests in the planning area.

The US government has a trust responsibility to Federally recognized Native American Tribes that covers lands, natural resources, money, or other assets held by the Federal government in trust or restricted against alienation for Native American Tribes and Native American individuals. Additionally, BLM must consider and protect off-reservation treaty-reserved fishing, hunting, gathering, and similar rights of access and resource use on the public lands it administers. Within the planning area, the Shoshone-Bannock Tribes of the Fort Hall Reservation have rights, reserved in the Fort Bridger Treaty of 1868, to hunt, fish, and gather on the unoccupied lands of the United States. The Shoshone-Paiute Tribes claim aboriginal rights to their traditional homelands as their treaties with the United States, the Boise Valley Treaty of 1864 and the Bruneau Valley Treaty of 1866, which would have extinguished aboriginal title to the lands now Federally administered, were never ratified.

BLM is responsible under statute, regulation, and Executive Orders (Appendix 1) to consult with those Federally recognized Tribes whose rights and/or interests might be affected by land management decisions and actions.

Consultation with the Shoshone-Paiute Tribes of the Duck Valley Reservation and the Shoshone-Bannock Tribes of the Fort Hall Reservation over the years indicates a wide range of Tribal rights and/or interests are present in the planning area. These include potential impacts to resources associated with practices like hunting; trapping; fishing; gathering food, medicinal plants, and other natural products; the availability of clean water and healthy plant and animal populations; as well as potential impacts to aboriginal archaeological sites, sacred sites, and traditional cultural properties.

The identification of lands for retention or disposal is of great interest to the Tribes. The natural and cultural resources associated with a particular parcel of public land identified for exchange may not exist on an incoming parcel. This is of particular concern in a Federal land sale or transfer, where there are no incoming lands to potentially replace the acreage and associated cultural and natural resource values going out of Federal ownership. As a result, the practice of the treaty-reserved right and/or traditional use associated with these foregone resources would likely be negatively impacted.

The 1987 RMP did not make management decisions that specifically addressed tribal rights or interests in the planning area. Decisions and actions, tied to the 1987 RMP, that might affect tribal rights or interests are implemented in consultation with Tribal governments.

Current management direction requires consultation with affected Tribes during planning and subsequent plan implementation to ensure the rights or interests of the Tribes are addressed. Consultation is particularly important when considering decisions regarding the allocation of lands for special designations, such as Areas of Critical Environmental Concern (ACECs), for land tenure adjustments (disposal or retention of lands), and for decisions affecting access, travel management, cultural resources, or other use allocations.

## **1.B. Resources**

### ***1.B.1. Regional Context***

#### **Description of Region**

The planning area is located in the northern part of the Basin and Range Province of the Great Basin in Nevada and in the Snake River Plain, which lies in the southern portion of the Columbia River Basin in Idaho. The Columbia River Basin is the primary drainage basin in the Northwestern United States and has a total drainage area of approximately 214,000 square miles (mi<sup>2</sup>) (FWS, 1995). In July 1993, President Bill Clinton requested land management agencies to develop a scientifically sound, ecosystem-based strategy for forest and rangelands east of the Cascade Mountains. The resulting Interior Columbia Basin Ecosystem Management Project (ICBEMP) increased the scientific understanding of ecosystem processes and functions in the basin and led to a better awareness that many forest, range, riparian, and aquatic ecosystems are becoming less resilient and, as a result, some plant and animal species dependant on these ecosystems are declining (Quigley & Arbelbide, 1997; Wisdom et al., 2000). ICBEMP provides a regional framework for public lands management throughout the Columbia River Basin and is being used as a reference in the revision of the Jarbidge RMP.

#### **Planning Area Description**

The Jarbidge planning area is known for its unique geology of broad, gently rolling plateau lands with deeply incised rivers, which provide a variety of scenic values and habitats used by numerous fish, plant, and wildlife species. Water availability influences the distribution of plant communities and is based on the rain shadow effect, distribution of soil types, slope, and aspect. Dry lowland areas support salt desert shrub communities, which change to sagebrush steppe with increasing elevation and moisture. At higher elevations, juniper, aspen, and mountain mahogany are present. A few areas contain limber pine and subalpine fir. Surface water is generally limited to scattered perennial springs and creeks. Creeks are typically located in the deeper draws and canyons.

#### **Terrestrial Ecosystems**

There is very little information on population trends for the majority of wildlife species found in the region, often limited to species presence or absence. The majority of wildlife is considered non-game. For some hunted species, primarily big game, there is limited long-term population trend data.

In southern Idaho, numbers of pheasant, California quail, and gray partridge are generally lower than 40 years ago. This is due in large part to changes in agriculture (e.g., field leveling, increased field size, use of center pivots) that reduced nesting and winter habitat for these game birds (Hayden, Spicer, Crenshaw, Rachael et al., 2006). Long-term Breeding Bird Survey routes also show declines in some bird species (Rich et al., 2004).

Greater sage-grouse numbers have declined in the region due in part to the conversion and fragmentation of sagebrush steppe habitat in the Snake River Plain and portions of Nevada from the 1940s into the 1980s. Numerous large wildfires since the 1970s, and subsequent rehabilitation, resulted in millions of acres of sagebrush steppe converted into grasslands in both

southern Idaho and northern Nevada, which has reduced the suitability of winter habitat for a variety of wildlife species (Paige & Ritter, 1999). Approximately 46% of the acreage in the planning area is no longer vegetated by sagebrush steppe. In adjacent BLM planning areas, fires removed sagebrush from 23% of the Bruneau FO (McCoy, 2007), just over 50% of the vegetated portion of Craters of the Moon National Monument (BLM & NPS, 2004), and nearly 68% of the acreage of the Snake River Birds of Prey National Conservation Area (BLM, 2006). Fires burned about 37% of the sage-grouse habitat in the BLM Elko FO north of Interstate 80 in the past 9 years (Welch, 2007). These habitat changes contributed to long-term declines in numbers of active greater sage-grouse leks and populations. In addition, West Nile Virus recently arrived in southwestern Idaho. Idaho Department of Fish and Game (IDFG) closed the greater sage-grouse hunting season in western Owyhee County in 2006, and several landowners in the area reported dozens of dead sage-grouse near private meadowlands.

Bighorn sheep and elk were extirpated from the region by the 1950s, but through transplant efforts in Idaho and Nevada by IDFG and Nevada Division of Wildlife (NDOW), elk are present in northern Nevada and bighorn sheep populations are established with controlled hunting allowed in Idaho. As the elk herd increases, elk are immigrating into southern Idaho. NDOW's current management plan targets a population of 2,500 elk; IDFG has yet to set a population target for elk in this part of the state. Pronghorn and mule deer numbers are down from levels observed in the late 1980s as a result of wildfires that burned a substantial acreage of winter range in the region.

Numbers of designated BLM Sensitive wildlife species have increased in the planning area and throughout the West. There is little information regarding the population trends of the majority of species presently designated by BLM as Sensitive. Partners in Flight identifies 14 Watch species and 16 Stewardship species in the region (Rich et al., 2004). Many of the species are found in riparian, sagebrush steppe, and juniper habitats.

## **Riparian and Aquatic Ecosystems**

The Snake River aquifer, one of the largest groundwater systems in Idaho, underlies the Snake River Plain from St. Anthony, Idaho, to the western end of the Snake River on the northern boundary of the planning area (FWS, 1995). The physical characteristics of the rocks in the Snake River Plain provide a highly reliable and productive source of groundwater. Spring discharges of groundwater between Milner Reservoir and King Hill equal approximately two-thirds of the total groundwater released from the aquifer (IWRB, 1993). Thousands of claims to surface and groundwater in the Snake River Plain exist for agriculture and other purposes under Idaho water law. These claims are filed with the Idaho Department of Water Resources (IDWR) and documented as part of the Snake River Basin Adjudication.

The Snake River has a total drainage area of approximately 110,000 mi<sup>2</sup> and is the largest tributary in the Columbia River Basin (FWS, 1995). The Snake River Plain stretches west to the Owyhee Mountains near the Oregon border, north to the southern edge of the Lemhi Mountain Range, east to the foothills of the Rocky Mountains and south to the Great Basin uplift in southern Idaho. The relatively flat surface of the plain generally slopes westward and makes the Snake River one of North America's highest gradient large rivers (60 FR 49819). Prior to the development of hydroelectric dams and impoundments and the regulation of flows, the Snake

River fauna included large migrations of chinook salmon, steelhead trout, anadromous sturgeon, and Pacific lamprey. Today, several of these fish in the middle Snake River are extinct or considered Sensitive by the BLM and IDFG. Native Sensitive fish species in this river reach currently include white sturgeon, redband trout, and Shoshone sculpin. Population data for these species of fish are managed by IDFG and the Idaho Conservation Data Center (CDC).

The Jarbidge River in southwest Idaho and northern Nevada is a tributary to the Snake River and contains the southernmost population of bull trout in North America (FWS, 2004). Genetic analysis of bull trout in the Columbia River Basin indicates Jarbidge River bull trout have a shared evolutionary history with populations in the upper Columbia River and Snake River. For over 100 years, Jarbidge River bull trout have been geographically isolated from other populations in the Snake River by more than 150 miles of unsuitable habitat and several impassable hydroelectric dams on the Snake River and lower Bruneau River (FWS, 2004). Bull trout in the Jarbidge River are considered important because they occupy a unique and unusual ecological setting and their loss would result in a substantial modification of the species' range. These bull trout are the only species of fish within the planning area Federally listed as Threatened under the Endangered Species Act of 1973 (ESA). An interagency recovery plan is being developed for the long-term protection and recovery of this species in Idaho and northern Nevada.

## **Cultural and Paleontological Context**

Cultural resources in the planning area are typical of south central Idaho and north central Nevada in terms of cultural themes and the density, distribution, and types of sites. For approximately 12,000 years, human use of the planning area revolved around hunting, gathering, and fishing pursuits, with short-term adjustments and long-term adaptations to climatic changes. Since the 1880s, cattle, horse, and sheep ranching and farming have been the dominant cultural themes. Native American populations in the area include the Northern Shoshone, Bannock, and Northern Paiute Tribes. Tribal members, now concentrated at the Duck Valley and Fort Hall Reservations, maintain a close spiritual connection to the land.

Paleontological resources in the region, including several concentrations of major scientific importance, are primarily associated with the ancient Pliocene and Pleistocene lake sediments that form the Snake River Plain across southern Idaho.

## *1.B.2. Air Resources*

### **Profile**

#### *Indicators*

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere, expressed in units of parts per million (ppm) or micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the airshed, and meteorological conditions related to the prevailing winds, which are normally from the northwest for the Jarbidge FO. The significance of a pollutant concentration is determined by comparison with Federal and/or State air quality standards, which represent the maximum allowable concentrations of various pollutants necessary to protect public health and welfare with reasonable margin of safety. Federal standards were established by the Environmental Protection Agency (EPA) and are referred to as the National Ambient Air Quality Standards (NAAQS).

The EPA Office of Air Quality Planning and Standards set NAAQS for six specific pollutants, called “critical” pollutants: carbon monoxide, lead, nitrogen dioxide, particulate matter ( $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ ), ozone, and sulfur oxides (EPA, 2007). Within the planning area, the Idaho Department of Environmental Quality (DEQ) adopted the NAAQS to regulate these pollutants at these particular levels.

According to EPA regulations, an area with air quality better than the NAAQS is designated as an attainment area, while an area with air quality worse than the NAAQS is classified as a non-attainment area. An unclassifiable area is one in which insufficient air quality monitoring data has been collected to justify formal classification. Many rural areas of Idaho, including the three Idaho counties of the planning area, are designated unclassifiable and generally accepted by the EPA as being in attainment of the NAAQS.

DEQ operates a real-time, continuous  $\text{PM}_{2.5}$  monitoring station on the roof of Smith’s Food and Drug Center on Addison Avenue in Twin Falls, Idaho. An air quality index is developed from the data and posted on the DEQ website each business day. If air quality deteriorates or is predicted to deteriorate to a point that public health could be negatively affected, the DEQ issues an Air Quality Advisory and can request the limitation of open burning and, in extreme cases, industrial activity.

#### *Current Condition*

The two main factors affecting air quality in the planning area are particulate matter, such as dust and pollen, and smoke. These are a result of wind effects on open, exposed soils, dirt roads, and small disturbed areas; vehicle emissions; and BLM’s wildland fire management activities. Few outside influences on the air resources of the planning area exist except for adjacent private farming operations, which may contribute to a decline in air quality on a periodic basis as soils are tilled, plowed, and planted. The amount of particulate matter and smoke present depends on the time of year. Generally, the highest levels occur during the summer and early fall, when soils are dry and wildfire activity is high. Other times of the year are typically wetter, helping to keep soils and particulate matter in place with weather conditions less suitable for wildfire. Periodic air inversions make high levels of these pollutants worse, especially during the winter months.

There are few, if any, other activities, such as major industrial, mining or commercial activities, that degrade the air quality of the area. The only exceptions would be jet noise and emissions from United States Air Force (USAF) use of the training ranges in the planning area. The planning area's lack of developments and relative remoteness makes it free from other recognized or "critical" national ambient air quality pollutants such as carbon monoxide, lead, nitrogen dioxide, ozone, and sulfur oxides. None of these pollutants are known to occur in significant quantities or contribute to any air quality problems in the planning area. According to DEQ, this region of the state and country is known to have relatively clean air (VanZandt, 2006).

The only monitored pollutant in the area is PM<sub>2.5</sub>. Monitoring data from DEQ's Twin Falls monitoring station between 1999 and 2005 showed this pollutant to be below the national standard of 15 µg/m<sup>3</sup>, with a weighted annual average of 7.5 µg/m<sup>3</sup> over the past six years (www.epa.gov/). Limited monitoring occurred within the actual planning area; some data were collected by DEQ at the House Creek Ranch near Three Creek, Idaho, from 1999 to 2001. This particular sampling, done for background purposes, found PM<sub>2.5</sub> concentrations were 3.3, 3.3, and 3.1 µg/m<sup>3</sup> respectively, well below the standard of 15 µg/m<sup>3</sup>. The House Creek Ranch numbers are very low, the lowest in the state, and therefore, the air quality is considered "very good to excellent" (VanZandt, 2006).

Air quality impacts from wildland fire are more significant than from other sources within the planning area. These air quality impacts include not only immediate impacts from smoke, but also impacts from the movement of soil particles from high winds after the fire and fire rehabilitation treatments.

Public Law 95-95 requires compliance with Federal, State, and local air quality regulations, as well as coordination with State and local air quality authorities. In order to ensure compliance with this law, the Twin Falls District BLM participates in the Montana/Idaho Airshed Group (Montana/Idaho Airshed Group, 2006). The Idaho State Smoke Management program is approved by DEQ, has been reviewed and approved by EPA, and acts as a State Implementation Plan for Idaho. The intent of this program is to minimize or prevent smoke impacts while using wildland fire as a tool to accomplish land management objectives. Prescribed fire projects are coordinated with the Montana/Idaho Airshed Group using the online Airshed Management System, which allows for interagency cooperation to determine appropriate burn windows and potential smoke impacts from burning.

DEQ has two advisory programs related to fire and open burning. One program primarily addresses woodstove and fireplace emissions in the winter, but can be activated at any time. When air quality reaches critical levels due to air stagnation or other reasons, burn bans may apply to the area. Another program addresses open burning and some permitted stationary sources are required to stop when a NAAQS violation is possible or taking place. By State law, Idaho cannot regulate agricultural burning but can encourage and support voluntary programs. The State also prefers voluntary rather than mandatory programs for forest and rangeland burning. A process for agencies to share information and develop a voluntary smoke management program is under development in southern Idaho.

Odors and fugitive dust are concerns in the planning area. DEQ developed policies for

determining if odor emissions for facilities under its regulatory jurisdiction are excessive. If a violation is identified, DEQ requests a written Odor Management Plan from the source. Currently, the Idaho State Department of Agriculture has jurisdiction for the control of odors originating from dairies and feedlots lying to the north and east of the planning area.

DEQ has standards for the control of fugitive dust and can request Fugitive Dust Management Plans from facilities or operations allowing particulates to escape from their property boundaries (VanZandt, 2006). Fugitive dust may be a concern at the two USAF training ranges and on farmlands along the north and east sides of the planning area near the Roseworth, Magic Waters, and Bell Rapids areas.

Under the Clean Air Act, all BLM-administered lands were designated as Class II airsheds, allowing moderate deterioration associated with moderate, well-controlled industrial and population growth. Though no areas in the Jarbidge planning unit are designated as Class I airsheds, air quality concerns and abatement measures are applicable to areas with special designations including the three Wilderness Study Areas (WSAs), the three Areas of Critical Environmental Concern (ACECs), and the Hagerman Fossils Beds National Monument.

Other activities that may affect air quality within the planning area are small-scale sand and gravel extraction operations. The sand and gravel activities create dust and noise from road use and crushing and blasting operations, but are very short-lived and infrequent (once in 10 years per site). During these activities, operators are required to comply with the air quality stipulation of their current permits, stating the site and haul roads shall be sprayed as necessary with water or other suitable material to hold down the dust created by these activities. If these activities ever become large-scale and exceed current dust levels, operators would need to apply for the proper permits with the appropriate State agency.

### *Trends*

Since 1987, air quality in the planning area has remained unchanged and is estimated to be in the “good to excellent” category based on limited localized monitoring by DEQ for a few pollutants.

Although there is no quantitative information showing air quality has decreased within the planning area as a result of wildland fire, a correlation could be made between an increase in the average number of acres burned increased from 1987 to the present and the impact on air quality.

### *Forecast*

The forecast for air quality in the planning area includes some minor degradation and decreases in air quality due to drivers such as population growth, urbanization of surrounding areas, and climate change. For the most part, the main air quality impacts should remain consistent with the past; particulate matter and smoke should continue to be the major pollutants of concern.

Increases of smog, carbon monoxide, and other air particulates from the Boise metropolitan area can seasonally impact the air quality of the planning area. Another region that may impact the planning area’s future air quality is northern Nevada, where past and present gold mining operations occur. Water quality monitoring in the Salmon Falls Reservoir by DEQ in the fall of 2005 detected higher than normal mercury levels, 180% of normal.

Another concern is regional haze resulting from the growth of Twin Falls, Idaho, and surrounding areas. Suspected sources in the area are major factories and stationary facilities, open burning, field burning, wood stoves, mobile sources, fugitive dust from agriculture, construction, roads, and gas emissions from large confined animal feeding operations which can react in the atmosphere and create particulate matter. There are positive developments in the management of field burning by DEQ, including an increase in outreach and education programs to address illegal open burning, a significant contributor to regional haze (VanZandt, 2006).

Climate change may cause the region to become drier and less vegetated in the foreseeable future, leaving soils more exposed to wind erosion and resulting in an increase in particulate matter. As conditions get drier and more acres within the planning area are converted to non-native annual grasses, wildfires are likely to increase in frequency and size. This would further increase impacts from particulate matter and smoke. As population increases near the planning area, smoke originating from the planning area may begin to have more of an impact on communities such as Glenns Ferry, Castleford, and Rogerson.

As interest in returning areas dominated by annual grasses to perennial vegetation increases, the amount of prescribed fire within the planning area will likely increase. This would result in short term impacts on air quality. If successful restoration results in a shift from an accelerated fire regime to a regime closer to historical return intervals, air quality impacts should decrease in the long term across the planning area.

Air quality reclassification is the prerogative of the States, and must follow a process mandated by the Clean Air Act Amendments of 1977 and 1990. BLM will continue to manage WSAs within the planning area as Class II airsheds, as the Department of the Interior (DOI) will not recommend a change in air quality classification as part of Wilderness recommendations (BLM Handbook H-8550-1).

### *Key Features*

The Jarbidge Wilderness in Nevada is the only Class I airshed near the planning area. Class I airsheds are the most restrictive, receive the highest level of protection, and have strict numerical thresholds for pollutants. Air quality in these areas is cleaner than required; this designation is established to prevent air quality deterioration. The US Forest Service (USFS) Humboldt-Toiyabe National Forest and the National Park Service (NPS) are monitoring the air quality characteristics of this Wilderness Area to ensure air quality requirements are being met.

### **Current Management**

The 1987 Jarbidge RMP did not address any goals, objectives, or management actions for air quality. Under the Clean Air Act, BLM lands are given Class II classification, which allows moderate deterioration. BLM manages all public lands as Class II unless they are reclassified by the State. The 2005 Fire Management Plan, the Prescribed Fire Handbook (H-9214), and the 2001 Smoke Management Guide for Prescribed and Wildland Fire contain guidance for air quality as it relates to fire management. Administrative actions comply with the air quality classifications for the planning area.

## **Management Opportunities**

There will be many opportunities to maintain the good to excellent air quality conditions across the planning area and region. Except for conditions or events beyond BLM's control, such as wildfires, the BLM should have reasonable techniques and mitigation measures to limit and control any air quality impacts.

Smoke management is necessary to minimize air quality and visibility impacts from prescribed fires in smoke-sensitive areas. The use of prescribed fires should be planned, coordinated, and conducted to minimize the impacts of smoke by combining favorable atmospheric transport and dispersion conditions with prescribed fire management techniques. These methods may include the size of the burn, season of burn, time of day, moisture content of the fuel, fuel treatment, ignition method, and topography of the site.

Management direction in the revised RMP could reflect the decisions and recommendations outlined in the 2005 Fire Management Plan, the Prescribed Fire Handbook (H-9214), and the 2001 Smoke Management Guide for Prescribed and Wildland Fire, such as minimizing the amount of smoke entering populated areas to prevent public health and safety hazards and problems at sensitive sites, avoiding significant deterioration of air quality and NAAQS violations, and eliminating human-caused visibility impacts in Class I areas.

BLM activities located within 20 to 25 miles of the Jarbidge Wilderness and in areas with special designations should be managed to prevent any air quality deteriorations and impacts.

The BLM will comply with all State air quality regulations and standards as directed and required by DEQ. Other options include dust abatement practices for mineral/mining and road building activities.

## 1.B.3. Geologic Resources

### Profile

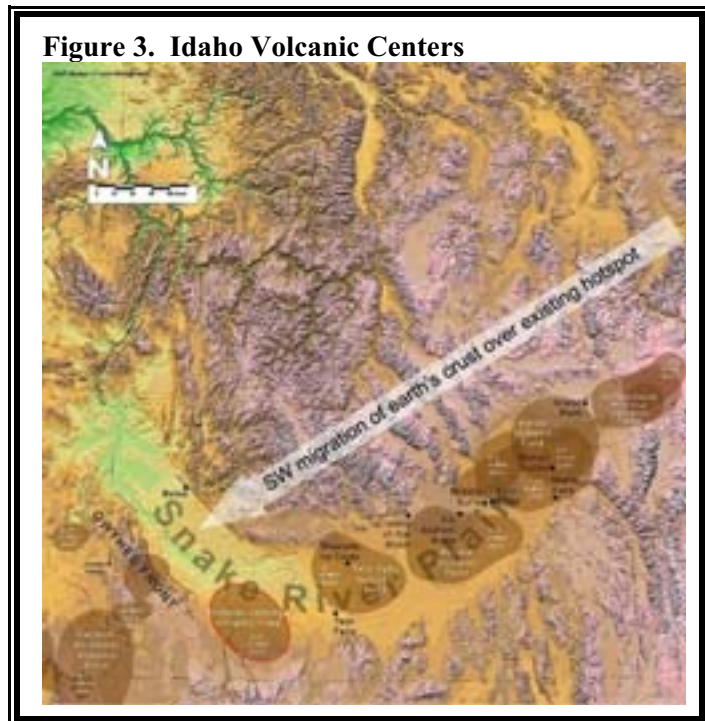
#### *Indicators*

There are no indicators for geologic resources in Jarbidge FO.

#### *Current Condition*

Geologic features in the Jarbidge FO vary from deep river canyons of the Bruneau and Jarbidge Rivers, to the foothills of the Jarbidge Mountains, to the broad plateaus of the Snake River Plain. These features reflect a violent geologic history (Gillerman & Bonnicksen, 1990). The Snake River Plain is the result of unusual geologic conditions over the last 15 million years (McLeod & Welhan, 1991). A significant groundwater system, the Snake River Aquifer, lies below the Snake River Plain.

About 12.5 million years ago, the area experienced enormous and intense volcanic explosions in the Bruneau-Jarbidge Volcanic Field (Figure 3). Voluminous and extensive rhyolitic ash-flow tuffs resulted from these eruptions. Subsequent volcanic activity produced widespread rhyolite lava flows. Withdrawal of rhyolitic magma from this area produced a 30-by-60 mile depression, or caldera. Faults and fractures formed on the perimeter of the caldera and small streams and lakes evolved in the valleys along the fault zones. Volcanism continued to alter the landscape as more than 40 basaltic shield volcanoes were erupted from deep-seated sources through the rhyolite in the eruptive center (Gillerman & Bonnicksen, 1990). The Bruneau-Jarbidge Volcanic Field is one of a series of calderas produced on the Snake River Plain over a distance of 230 miles.



Eight million years ago, Lake Idaho stretched from Twin Falls, Idaho, to Baker, Oregon. Thick layers of white and tan ash, clay, silt, sand, limestone, and gravel were deposited in the lake. Basalt that erupted into the lake produced distinct features that preserve compelling evidence of the former elevation of the Lake Idaho shoreline (Gillerman & Bonnicksen, 1990).

Extreme downcutting of streams into the volcanic terrain led to the creation of the Jarbidge Canyon. During the past 1.6 million years, Lake Idaho was drained by the Snake River and, as the waters lowered, the tributary streams to Lake Idaho, including the Bruneau-Jarbidge system, eroded the canyons and carved their deep gorges. When the Jarbidge Canyon was cut to its

present depth, the top of the fault zone was exposed and allowed waters heated at depth to form Murphy Hot Springs (Bonnichsen, 1991).

The Snake River Plain covers an area of more than 10,000 mi<sup>2</sup> and the underlying aquifer is estimated to contain over twice the volume of water in Lake Erie (McLeod & Welhan, 1991). The groundwater resources of the Snake River Plain are a valuable resource asset. The plain is divided into eastern and western segments. The Jarbidge FO contains portions of the western segment.

The results of the area's geologic forces can be found in the mineral resources left behind. Bruneau jasper, rhyolite, and even gravel are evidence of the extreme geologic forces that created the landscape.

Lava flows are also present in the area, a result of past volcanism. The largest and most widespread rhyolite lava flow is the Dorsey Creek flow. It is about 8.1 million years old and extends 28 miles from Murphy Hot Springs to the Jarbidge River's confluence with the Bruneau River. Beneath the Dorsey Creek flow, the Poison Creek flow is exposed near Poison Creek, and the Long Draw flow is present at the confluence of the Bruneau and Jarbidge Rivers. About a mile north of the Bruneau-Jarbidge confluence, the Long Draw flow disappears beneath the cliffs at the southern edge of the Bruneau Jasper rhyolite flow. The Bruneau Jasper flow runs northward in the bottom of Bruneau Canyon for about 5 miles, until it disappears beneath the Sheep Creek flow. The Sheep Creek flow is the largest rhyolite lava flow in the Bruneau-Jarbidge area, containing at least 48 cubic miles (mi<sup>3</sup>) of lava and covering more than 300 mi<sup>2</sup>.

The Glens Ferry Formation, a Plio-Pleistocene body of lake and stream deposits several thousand feet thick, lies in the northern part of the planning wall (Malde, 1987).

### *Trends*

Geologic processes are long-term and continue to operate in the area.

### *Forecast*

BLM management actions are not likely to affect large-scale geologic processes in the future.

### *Key Features*

The erosion of the Bruneau and Jarbidge Rivers not only formed some of the most spectacular canyon views, it also exposed the volcanic history of the region in spectacular fashion. These exposures allow for unprecedented opportunity to study the eruptive materials and processes that started approximately 17 million years ago. Several rock layers are exposed in the walls of the Jarbidge Canyon: Jarbidge Rhyolite, Cougar Point Tuff, Dorsey Creek Rhyolite, lake and stream sediments, and the Diamond A Desert and Big Flat basalt flows (Bonnichsen, 1991). Evidence of several eruptive periods covering nearly 7 million years is found in the rhyolites and basalts exposed in the canyons.

## **Current Management**

The 1987 Jarbidge RMP did not address any goals, objectives, or management actions for

geologic resources. Geologic resources are managed according to BLM policy.

### **Management Opportunities**

Management of geologic resources could concentrate on preserving the unique record of volcanic activity that has shaped the land forms found in the planning area. The unprecedented access to the records of eruptions contained within the canyon walls is an aid to the scientific study of eruptions and a remarkable visual asset.

## ***1.B.4. Paleontological Resources***

### **Profile**

#### *Indicators*

Paleontological resources, or fossils, constitute a fragile and non-renewable scientific record of the history of life on earth and represent an important and critical component of America's natural heritage. BLM manages paleontological resources for their scientific, educational, and recreational values, to mitigate adverse effects as necessary, and to vigorously pursue the protection of fossil resources from theft, destruction, and other illegal or unauthorized uses (BLM Manual 8270). Paleontological resources are not locatable, therefore, they cannot be prospected, explored, or developed under the General Mining Law of 1872.

The term "fossil" refers to the remains or traces of an organism preserved by natural forces in the earth's crust. It does not include what are commonly known as "fossil fuels" such as coal, oil and gas, bitumen, lignite, or tar sands. Fossils are integrally associated with specific geologic formations and may occur throughout those formations. For this reason, the condition of paleontological resources is directly linked to soil and landform stability.

Indicators of conditions that favor paleontological resources may include the following:

- The amount and distribution of organic ground cover such as plants, plant litter, and biological crusts at fossil localities are sufficient to support soil stability;
- Evidence of accelerated erosion at fossil localities in the form of rills, gullies, erosional pedestals, and terrace sloughing along stream channels is minimal for the soil type and landform; and
- Monitoring detects no evidence of illegal or unauthorized damage to fossil bearing deposits.

#### *Current Condition*

Paleontological resources within the planning area are overwhelmingly associated with the Glens Ferry Formation, a geologic unit composed of poorly consolidated lake and stream deposits, inter-bedded by occasional basalt flows and volcanic ash. The Glens Ferry Formation was deposited between the Pliocene and early Pleistocene Epochs and dates from approximately 5 million to 1.5 million years ago. The primary fossil-bearing deposits within this formation date to the Blancan land mammal age and range between three and four million years old, although some materials may be assigned to the earlier Hemphillian land mammal age of the Late Miocene Epoch. A variety of vertebrate and invertebrate species have been identified within the planning area. These include mastodon, camel, horse, llama, giant ground sloth, rhinoceros, sabre-tooth cat, many smaller mammals, suckers, minnows and other fishes, freshwater mollusks, and gastropods (snails). Plant fossils, represented primarily by petrified wood fragments, are less common but have been found at a few locations. The Glens Ferry Formation, although capped by later formations, is exposed on slopes along the Snake River and its tributaries as far south as Notch Butte in northeast Owyhee County.

The 1987 Jarbidge RMP identified several areas where paleontological resources were concentrated and deserving of special protection. Two of these areas, the Hagerman Fossil Beds and the Sand Point area near Hammett, have been recognized as world-class paleontological sites

since the early 20<sup>th</sup> century and were designated as ACECs in the RMP with the primary objective of protecting the fossil deposits. The Hagerman Fossil Beds were originally designated a National Natural Landmark in 1975. In 1988, the ACEC was designated a National Monument and was transferred to the NPS. BLM-administered lands are now located along the northern and southern borders of the Monument. The Sand Point ACEC, at the time it was established, was adversely effected by grazing, private collecting, OHV use, illegal digging, mining, and other activities (BLM, 1988). Vehicular access restrictions and construction of a range fence across the southern boundary have greatly reduced the level of surface disturbance attributable to livestock and human action in the ACEC since the mid 1990s.

The remaining known paleontological resources in the planning area generally cover small areas of less than one acre and are not well known outside professional paleontology circles. In 2003 and 2004, a paleontologist from Idaho State University recorded 13 previously known and 2 newly discovered fossil localities in the Rosevear Gulch area southeast of Glenns Ferry through a Challenge Cost Share agreement with BLM. Of the 15 sites, 2 had been damaged by roadwork and 2 by livestock trampling in wet conditions (Rapp, 2004). The remaining 11 sites were in good condition.

In addition to the Snake River corridor, the sedimentary geological deposits in the southwestern corner of the planning area have potential for paleontological resources. Although no fossil discoveries have yet been reported, this may reflect a lack of inventory data for the area. The remainder of the planning area consists of volcanic formations with very low potential for paleontological resources.

### *Trends*

The paleontological resources located within the Sand Point ACEC are stable and plentiful. The physical condition of the landscape is improving, compared to 1987, due to changes in livestock management and limitations on human access due to private ownership of adjacent lands to the west and poor roads to the south. Solid baseline data is lacking for most of the paleontological localities in the planning area, and trend is not available.

### *Forecast*

Conditions should continue to improve for paleontological resources within the Sand Point ACEC if access to the area remains limited. Improved access may lead to an increase in human-caused impacts and would likely require more intensive management to protect the fossil resources present. It is also reasonable to predict increasing human population in the region will result in increased demands for mineral materials, improved roads, and desert-based recreation. Proper planning, including inventories of paleontological resources, would help to mitigate adverse effects related to future growth. It is likely that normal geologic processes will expose new paleontological localities over time.

### *Key Features*

The 1987 RMP identified known fossil bearing localities. Fossil sites are located in Rosevear Gulch, Pasadena Valley, near Dove Springs, Deer Gulch, Pilgrim Spring, Glenns Ferry, and within Sand Point ACEC. Many of these sites need to be revisited and formally recorded. An

important new fossil locality was discovered near Notch Butte in 1996 (Akersten et al., 1999).

Paleontological resources in the planning area are most often associated with the Glens Ferry Formation geologic unit. Fossils may be found anywhere that the formation is exposed.

### **Current Management**

A Paleontological Management Plan was developed for the Sand Point Paleontologic ACEC in 1988. Protection and management of the area is ongoing and human impacts to the area have decreased. A range fence was constructed in 1997 to limit livestock access to the ACEC. Although no mining activity has occurred since the mid 1980s, the area has not been withdrawn from the mining laws making it vulnerable to mining impacts.

### **Management Opportunities**

Revision of the Sand Point Paleontologic ACEC Management Plan should be considered to reflect changes since 1988. Quantitative monitoring protocols for paleontological resources could be developed with an increase in the frequency of monitoring visits.

Some important paleontological sites have been discovered since the 1987 Jarbidge RMP, and some previously listed sites are no longer part of the planning area due to administrative and boundary changes. An updated list of fossil localities in need of protection and classification of public lands based on their potential to contain fossils could aid in implementation-level planning.

## *1.B.5. Cave Resources*

### **Profile**

A cave is defined as any naturally occurring void, cavity, recess, or system of interconnected passages occurring beneath the surface of the Earth or within a cliff or ledge large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made (FCRPA, Sec. 3(1)). In the planning area, caves are most commonly formed by the weathering of rock through water and wind erosion (erosional caves) or through the solidification of lava over and around a still flowing laval stream which results in a long, hollow channel (lava tube). Caves were often used by Native Americans as temporary living quarters, storage areas, shelter, and game traps.

Cave resources are fragile due to their association with other resources such as groundwater hydrologic systems and biological communities (Moore & Sullivan, 1997). They may also be considered non-renewable due to paleontological and archaeological deposits, speleothems (formations inside caves), and biological resources.

The Federal Cave Resources Protection Act (FCRPA) of 1988 was the first Federal legislation to recognize caves and their contents as whole, integrated ecosystems. FCRPA declares significant caves on Federal lands as an invaluable and irreplaceable part of the Nation's heritage. Improper use, increased recreational demand, urban spread, and a lack of specific statutory protection threaten caves. The purpose of FCRPA is to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people, and to foster increased cooperation and exchange of information between governmental authorities and those utilizing caves located on Federal lands for scientific, educational, or recreation purposes. DOI implementation regulations for FCRPA require Federal lands be managed in a manner that, to the extent practical, protects and maintains significant caves and cave resources (43 CFR Part 37.2).

BLM policy and guidance for managing cave resources is to protect sensitive, fragile, biological, ecological, hydrological, geological, scientific, recreational, cultural, and other cave values from damage and to ensure they are maintained for the use by the public, both now and in the future (BLM Manual 8380).

### *Indicators*

Indicators of cave condition are dependent on the resources the cave possesses, including:

- Biota – The cave serves as seasonal or yearlong habitat for organisms or animals or contains species or subspecies of flora or fauna native to caves, or are sensitive to disruption, or are found on State or Federal Sensitive, Threatened, or Endangered species lists.
- Cultural – The cave contains historic or archaeological resources included in or eligible for inclusion in the National Register of Historic Places because of its research importance for history or prehistory, its historical association, or other historical or traditional significance.
- Geological/Mineralogic/Paleontologic – The cave possesses one or more of the following features: geologic or mineralogic features that are fragile or exhibit interesting formation

processes, or are otherwise useful for study; deposits of sediments or features useful for evaluating past events; or paleontological resources with potential to contribute useful education and scientific information.

- Hydrologic – The cave is part of a hydrologic system or contains water important to humans, biota, or development of cave resources.
- Recreational: The cave provides or could provide recreational opportunities or scenic values.
- Educational or Scientific – The resource offers opportunities for educational or scientific use or is in a virtually pristine state, lacking evidence of contemporary human disturbance or impact, or the length, height, volume, total depth, or similar measurements are notable (43 CFR Part 37).

Specific indicators may include the presence of indicator species, the amount of ground disturbance, water quality, and the amount and type of recreational use.

### *Current Condition*

Cave resources in the Jarbidge FO have been largely unrecognized except by local cave enthusiasts. A quantitative inventory of caves in the Jarbidge FO compiled by the Boise District BLM in 1990 revealed the location of approximately 20 caves identified as lava or erosional caves and approximately 80 others in need of identification. Two known caves are lava tube cave formations, one of which is located on state land within the planning area. Erosional caves make up the majority of cave resources within the planning area and typically occur along the rock cliffs of canyon walls. Spotted bats (*Euderma maculata*) sightings along the rock cliff and canyon wall areas within the planning area suggest these BLM-Sensitive bats utilize caves located along them.

### *Trends*

Qualitative trend data for cave resources in the planning area are not available. Recreational cavers, or spelunkers, constitute the majority of cave users. Animal and human visitations into caves, even by competent, careful cavers, impact these resources to some degree. Caves are a target of looters in the planning area, and a few are exposed to livestock seeking shelter from the elements. A decline in the amount reports of vandalism received by the Jarbidge FO in the last twenty years suggests a downward trend in cave vandalism in the planning area.

### *Forecast*

Given the lack of condition or trend data collected for caves in the planning area, predicting changes given current management is not possible.

### *Key Features*

Should any significant caves, as defined in 43 CFR Part 37, exist in the planning area, they would be subject to cave management rules under BLM Informational Bulletin ID-99-210.

## **Current Management**

The 1987 Jarbidge RMP did not address any management actions for cave resources in the planning area. Cave resources are managed according to BLM policy. The BLM developed a

Memorandum of Understanding (MOU) with the National Speleological Society and Cave Research Foundation in 2006 to support BLM management of cave resources.

## **Management Opportunities**

Cave resource management is a relatively new and emerging field. Guidelines to be considered in addressing resource demands include, but are not limited to: a regulation of surface disturbance in regard to future renewable energy developments, the avoidance of future right-of-way (ROW) actions through any cave areas deemed to be significant, attempts to acquire resources through exchange, implementing fire suppression restrictions and geophysical exploration restrictions to comply with OHV restrictions, and management under Visual Resource Management (VRM) Class II, III, and IV guidelines as identified for each cave unit.

Cave resources could be monitored for degradation. Managers may evaluate the desirability and practicality of various monitoring strategies including, but are not limited to, photo monitoring, water quality monitoring, and a periodic census of indicator species. In order for degradation to be noted, a baseline condition should be established. Visual impact evaluations could be conducted to determine the degree of impacts based on evidence of litter in or around the resource, graffiti, trails and trampling by human or animal activity, speleothem damage, modification of passages or entrances, and disruption of any cultural resources in or around the area. If monitoring indicates degradation of the resource, the RMP should have an adaptive management element to address the particular nature of degradation as appropriate. Addressing such resource management in the Jarbidge RMP by establishing values and procedures for cave management and protection will lessen the incremental loss of caves and the degradation of other fragile resources within them.

An inventory of cave resources within the Jarbidge planning area could be conducted to identify and compile qualitative data on these resources. Determination of cave significance and classification should be a component of such an inventory.

Management policies and guidelines should be established for cave resources specific to the planning area identifying how to manage the land around the resources including policies related to travel management, gates or barricades, erosion, appropriate recreation use, and resource protection.

## ***1.B.6. Cultural Resources***

### **Profile**

Cultural resources consist of definite locations of human activity, occupation, or use identified through field inventory, historic documentation, or oral evidence. The term includes archaeological, historic, and architectural properties and sites or places of traditional cultural or religious importance to Native American Tribes or other social or cultural groups. The BLM is responsible for identifying, protecting, and managing cultural resources located on public lands and on non-Federal lands that may be affected by BLM actions.

Cultural resources in the planning area are managed in accordance with existing laws, regulations, Executive Orders, and policy guidelines. The principal Federal law addressing cultural resources is the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR 800). NHPA describes the process for identifying and evaluating historic properties, defined as cultural resources eligible for or listed in the National Register of Historic Places; assessing the effects of Federal actions on historic properties; and consulting to avoid, reduce, or minimize adverse effects. Since 1998, the Jarbidge FO has met its NHPA responsibilities through a protocol agreement with the Idaho State Historic Preservation Office, in accordance with the National BLM Programmatic Agreement. The process also requires a reasonable and good faith effort to consult with Native American Tribes that might attach cultural or religious significance to affected resources. BLM consults with the Shoshone-Paiute Tribes of Duck Valley through the Wings and Roots process (monthly, formal, face-to-face consultation) and with the Shoshone-Bannock Tribes of Fort Hall through the Fort Hall Business Council. Other important cultural resource authorities include the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, and Executive Order No. 13007, "Indian Sacred Sites." A more complete list of authorities is included in Appendix 1.

### ***Indicators***

Cultural resources are recognized as fragile, irreplaceable resources with potential scientific, public, and traditional uses. Ground-disturbing activities, both authorized and unauthorized, as well as natural forces have the potential to disturb or destroy these resources.

Indicators that reflect good physical condition of cultural resources include:

- The amount and distribution of natural ground cover such as plants, plant litter, and biological crusts in the vicinity of cultural resource localities are sufficient to support soil stability;
- Evidence of accelerated erosion at archaeological or historic sites in the form of rills, gullies, erosional pedestals, or terrace sloughing along streams is minimal for the soil type and landform; and
- Monitoring detects no evidence of illegal or unauthorized damage to cultural resources.

### ***Current Condition***

Cultural resource survey work in the planning area began in the late 1950s, but was not common until professional BLM archaeological staff were hired in the mid 1970s. Over the years, hundreds of cultural resource inventories were conducted in the area ranging from large-scale

fire stabilization and rehabilitation inventories to small-scale surveys for livestock water systems, range fences, ROWs, and land use permits. Not all inventories were associated with ground disturbing projects; a few studies have also been conducted for planning purposes and for scientific research. Notable among these is the *Class II Cultural Resource Inventory of the Boise District, BLM* (Young, 1984) which formed the basis for some of the cultural resource management actions in the 1987 RMP. At present, approximately 17% of the planning area is inventoried at the Class III level. These are intensive inventories with transect intervals no greater than 100 ft. As a result, approximately 4,100 cultural resources are recorded. These represent a wide variety of site types and chronological periods. The recorded resources include 3,100 prehistoric sites (Native American sites that predate European contact), and 1,000 historic sites (post-contact Native American, Euro-American, Chinese, or Basque sites up through World War II). Together, these resources document an almost continuous record of human occupation in the planning area for the past 12,000 years.

One category of cultural resources is the traditional cultural property. These are places eligible for inclusion in the National Register because of their association with cultural practices or beliefs of a living community rooted in the community's history. These places are important in maintaining the continuing cultural identity of the community and are identified through scoping and are consultation rather than field inventory.

Lithic scatters are the most common type of prehistoric site found in the planning area. These sites contain stone tools and/or stone flakes produced during the manufacture or maintenance of stone tools and may represent short-term hunting camps, tool manufacturing or repair locations, or butchering sites. Other prehistoric site types include streamside camps, cave and rock shelter camps, hunting blinds, rock alignments and cairns, vision quest sites, tool-stone quarries, and rock art sites.

Most of the historic sites in the planning area are related to the early livestock industry (ca. 1880 to World War II) and are represented by cow and sheep camps, herder's monuments, rock fences and corrals, and a few abandoned line shacks. Other historic period sites include failed homesteads, trash dumps, irrigation ditches, miners' cabins, and transportation systems. The latter category includes the nationally significant Oregon National Historic Trail (NHT) (see National Historic Trails) and regionally significant portions of the Kelton and Toana Freight Roads (Figure 33).

The condition of cultural resources in the planning area varies with terrain, access, and visibility, as well as past and current land use patterns. Because cultural resources are exposed on the earth's surface, they are subject to natural and human forces that can damage their integrity. Natural forces such as erosion, animal burrowing, wildfire, deterioration and decay, as well as concentrated livestock use and inadvertent and purposeful human damage, are known to have impacted sites administered by the Jarbidge FO in the past. On the other hand, not all human or natural impacts are negative. For instance, numerous sites have been protected through riparian enclosure and gap fencing projects, while natural wind and water deposition has covered exposed sites with protective sediments.

Based on a preliminary analysis of site form documentation that occurred during initial site

recording, approximately 55% of sites in the planning area were in good or excellent condition when discovered, 31% were in fair condition, and 14% were in poor condition<sup>1 2</sup>. More thorough analyses of the Jarbidge site data are being conducted.

### *Trends*

Since the 1987 RMP was approved, several broad changes have occurred that affected cultural resource site conditions, some of which may be viewed as beneficial. First, less land is leaving Federal ownership than in the past when large blocks of public land were disposed of with only cursory consideration (by current standards) of cultural resource values. Second, over the last ten years, fewer range infrastructure have been constructed, which, in the case of pipelines, means fewer new roads are created. While pipelines and roads are designed to avoid direct impacts to cultural resources, they can serve to increase access to remote areas, making previously undisturbed sites more susceptible to damage from artifact theft, vandalism, or inadvertent ground disturbance. Many projects consist of exclosures and gap fences, which directly benefit cultural resources by restricting livestock access and allowing damaged sites to recover by allowing vegetation to reestablish, thus protecting soils and associated archaeological deposits. Finally, while looting (illegal digging) of archaeological sites appears to be less prevalent than it was in past decades, it remains a serious problem. Since 1987, less than ten episodes of recent looting have been detected by or reported to BLM staff. This trend may be credited to effective public outreach efforts and successful law enforcement measures. Other changes such as the growth in motorized OHV use and river-based recreation, increased levels of livestock use, and improved access may offset the positive effects of the changes noted above.

Wildfires in the planning area continue to impact cultural resources, primarily through the effects of heat on artifacts and structures, but also through post-fire wind erosion related to the lack of soil-stabilizing vegetative cover. Wildfires have increased impacts to critical visual corridors along the Oregon NHT over the past 20 years, including the replacement of native vegetation with annual grasses and weeds and/or crested wheatgrass seedings. On the positive side, archaeological inventories for fire stabilization and rehabilitation projects have greatly increased our knowledge of aboriginal and Euro-American land use in the planning area.

### *Forecast*

Steady population growth will likely lead to increasing demands on public land resources within the planning area, including cultural resources. Under current management, adverse effects to cultural resources located in areas open to unrestricted cross-country motorized travel are anticipated to increase. As more people engage in river-based recreation, threats to cultural resources in stream-side settings are expected to increase.

### *Key Features*

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<sup>1</sup> These are qualitative assessments made by a variety of researchers over a number of years. Data collection during site recording includes a summary assessment of site condition, an estimate of the percentage of the site area that is disturbed, and identification of the impacting agents. The following criteria, taken from the Intermountain Antiquities Computer System User's Guide (University of Utah et al., 1990) define the condition classes: excellent = virtually undisturbed, good = 75% undisturbed, fair = 50-75% undisturbed, and poor = more than 50% disturbed.

<sup>2</sup> These data were not generated from a random sample of landforms, but drawn largely from fire rehabilitation surveys. The canyon lands, Diamond A area, and Jarbidge Foothills are poorly represented because they had suffered fewer fires (Figure 26) and fewer fire stabilization and rehabilitation projects.

Cultural resources, as the physical manifestation of human activity, are distributed in a non-random pattern throughout the planning area. Water sources were key terrain features for both aboriginal and Euro-American populations. Archaeological site density is normally greatest within a quarter mile of live streams and major intermittent streams, along playa shorelines, and at spring sites. Other natural attractions include cave and rock shelter locations, tool stone sources, hill tops, and high ridges. Remnants of the Oregon NHT, Kelton Road, Toana Road, and associated sites are also key features of the cultural landscape.

## Current Management

**Figure 4. Post Office**



The 1987 RMP included several management decisions aimed specifically at protecting important cultural resources and site concentrations called “complexes.” Decisions included marking and protecting remnants of the Oregon NHT, protecting eight cultural resource complexes (Dove Spring, Pot Hole, Juniper Ranch, Clover Creek, Devil

Creek, Cougar Creek, Post Office, and Dry Lakes/Bruneau River) totaling approximately 320 sites through special designation and management, nominating the Dry Lakes/Bruneau River Complex and the Devil Creek Complex to the National Register of Historic Places as archaeological districts, and developing cultural resource management plans (CRMPs) for each of the eight complexes. A CRMP was developed for Sand Point ACEC. Other plans have not been completed due to a change in management emphasis away from preparing program-specific plans. Cultural resources also form important components of the Sand Point and Bruneau-Jarbidge Rivers ACECs.

## Management Opportunities

The 1987 RMP identified eight archaeological complexes and planned separate CRMPs for each. New inventory information indicates numerous other archaeological “complexes” of equal or greater significance exist in the planning area. It would be impractical and unnecessary to prepare separate plans for each of these. Instead, land use restrictions designed to protect cultural resources that can be applied to the entire planning area could be developed. CRMPs could be prepared for specific areas if future conditions warrant.

The Bruneau River Canyon, the Post Office Complex, Arch Canyon, and Dry Lakes contain important concentrations of cultural resources that continue to be worthy of protection. Special use restrictions could be developed to protect sensitive cultural landscapes including canyons and playas. Cultural resources would be allocated to scientific, conservation, traditional, public, experimental, or discharged use (BLM Handbook H-1601-1). Quantitative monitoring protocols for cultural resources could be developed.

Placing sites or site districts on the National Register is not a unilateral BLM decision. It may be more appropriate to make cultural resource protection a primary objective for management of the Bruneau Canyon and Dry Lakes areas and the Devil Creek Complex, instead of focusing on

placing sites on the National Register.

Decisions in the revised Jarbidge RMP could include updated and strengthened measures for protecting the Oregon NHT.

## *1.B.7. Visual Resources*

### **Profile**

VRM addresses the visual quality of landscapes for views of native landscapes and unique areas with high visual quality. Through a broad range of authorities, BLM is required to manage BLM-administered lands in a manner that will preserve scenic values. The Federal Land Policy and Management Act of 1976 (FLPMA) and the National Environmental Policy Act of 1969 (NEPA) include Federal mandates for VRM, while other guidance can be found in BLM Manual 8400, BLM Handbook H-8410-1, and BLM Handbook H-1601-1. BLM's VRM classification system consists of three phases: the visual resource inventory, establishment of management classes through land use plans, and analysis of management actions to ensure compliance through Visual Resource Contrast Rating. VRM management classes are established through the RMP process, and adjustments are made to reflect resource allocation decisions made in the RMP. The intent of VRM is to minimize the visual impacts of all surface-disturbing activities regardless of the class in which they occur.

### *Indicators*

BLM categorizes visual resources into four distinctive classes, which are based on scenic quality evaluations, sensitivity level analysis, and the delineation of distance zones. The classes are as follows:

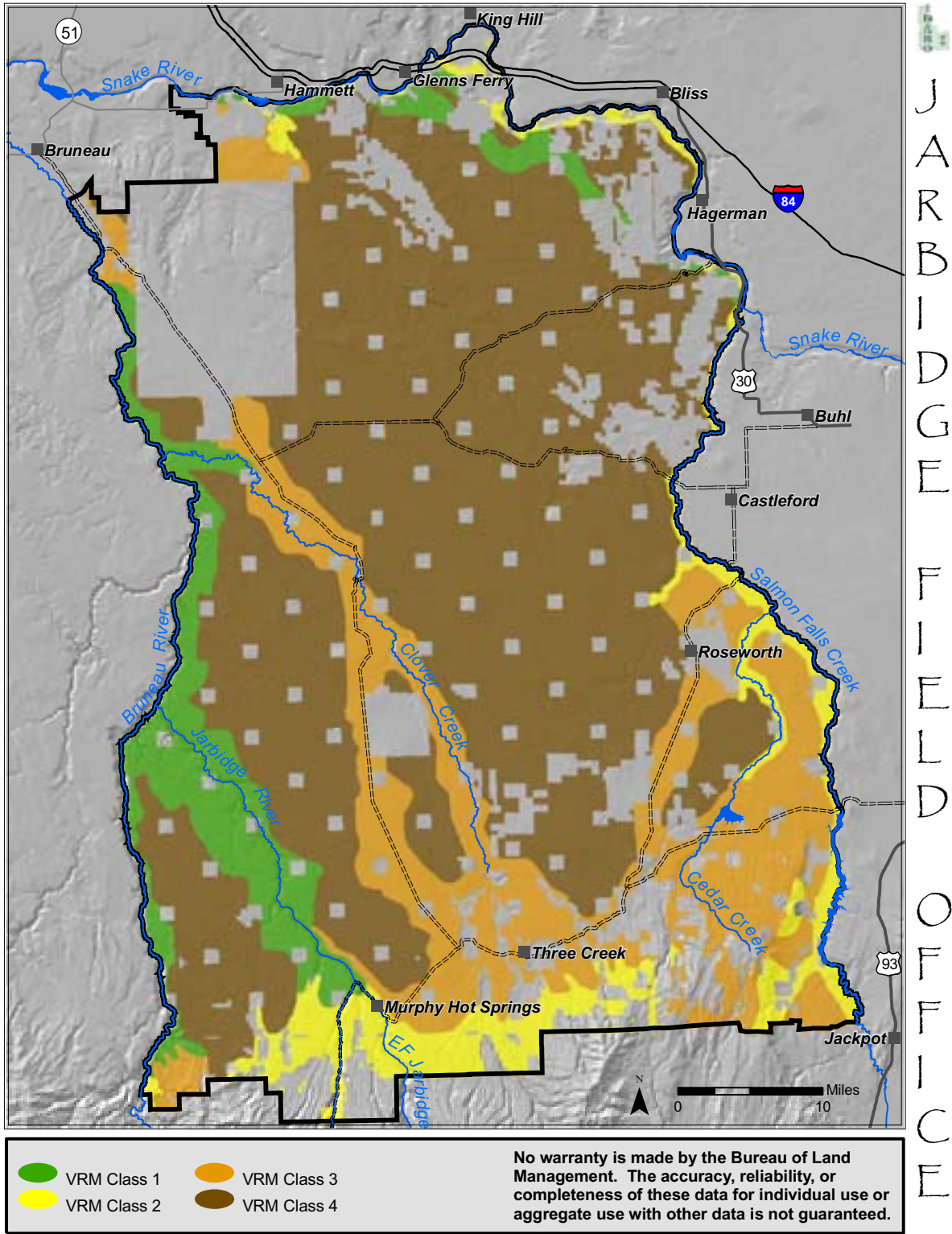
- Class I – Changes are generally not seen, do not attract attention, and do not change or modify the existing character of the landscape.
- Class II – Changes within the basic elements (form, line, color or texture) should not be evident in the characteristic landscape.
- Class III – Changes in the basic elements (form, line, color or texture) may be evident in the characteristic landscape; however, changes must remain subordinate to the visual strength of the existing character.
- Class IV – Changes may be dissimilar from the original composition and character, but must reflect what could be a natural occurrence within the characteristic landscape.

### *Current Condition*

The overall landscape of the planning area consists of lowland rolling hills and desert in the northern portion and an upland hill environment in the higher elevations to the south. Significant rock outcrops are present along many of the slopes. Canyons are found within the planning area, characterized by nearly vertical, precipitous walls exhibiting a variety of geological formations. Flowing rivers or streams generally bisect the canyon floors and are visually dominant elements within the canyons.

The VRM classes for the planning area were established with the 1987 Jarbidge RMP (Figure 5). The majority of the planning area is characterized as Classes III and IV, with WSAs and the Oregon NHT segments designated as Class I.

Figure 5. VRM Management Classes Established in the 1987 Jarbidge RMP



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R  
B  
I  
D  
G  
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O  
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F  
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C  
E

VRM management classes established in the current plan have been managed accordingly. BLM management actions in the Jarbidge FO have generally been small scale, usually involving range improvement projects such as pipelines and fences and landform modifications from road construction. Minor structure modifications involving utility work on ROWs also commonly occur.

### *Trends*

The most significant impact to existing VRM classes in the planning area has been wildland fire. Nearly 700,000 unique acres, associated with approximately 320 fires, burned since 1987. This has greatly affected the vegetation factor of the scenic quality evaluation component from an inventory standpoint. The rating criteria for vegetation give primary consideration to the variety of patterns, forms, and textures created by plant life. With the frequency and scale of wildland fire events, low diversity of vegetation types in the northern half of the planning area has produced little to no variety or contrast.

Recreational OHV use increased in the planning area, creating noticeable visual impacts in some locations. Visual impacts produced by OHVs include trails and roads most visible on steep or erosive soils. The Paradise OHV area near Glenns Ferry and localized small areas near Yahoo Gulch, Toana Gulch, Balanced Rock, and Murphy Hot Springs are known areas with impacts to scenic quality from OHV use.

### *Forecast*

Several actions could alter visual resources in the planning area. Renewable energy, specifically wind turbine facility development, would dramatically change visual resources in the planning and geographic area. Although the RMP process will allocate areas where wind energy development will be allowed, not allowed, or restricted, the demand for development of these facilities and associated infrastructure will depend on various factors beyond the scope of this planning effort such as technology and development on private property. Proposed utility corridors, including interstate transmission lines that could traverse the planning area, could also affect visual resources in the planning area. Access routes and recreational OHV use will continue to be a VRM concern in areas where decisions are made to maintain the natural landscape qualities. Road and trail designations in conjunction with a comprehensive travel planning effort could reduce or mitigate some of these impacts. Range improvement projects in support of livestock grazing, such as fences and pipeline systems, can also affect visual quality by introducing new visual elements into the landscape. The frequency of wildland fires will continue to alter vegetation components of the landscape. Depending on the size of fires, the scenic quality could be affected from one growing season to the next. Vegetation rehabilitation and other habitat improvement projects could, over time, improve the characteristic landscape of many areas of the planning area.

### *Key Features*

The main locations within the planning area possessing outstanding scenic quality include, but are not limited to:

- Jarbidge River WSA (including the Bruneau-Jarbidge River ACEC)
- Bruneau River-Sheep Creek WSA

- Lower Salmon Falls Creek WSA (including the Salmon Falls Creek ACEC)
- Oregon NHT
- Jarbidge Foothills Area
- Snake River Canyon Area (Thousands Springs to Hammett)

## **Current Management**

Visual resources are managed according to the assigned VRM class of II, III and IV, with WSAs and the Oregon NHT segments managed as Class I. Visual and scenic values are considered when physical actions are proposed on public lands.

## **Management Opportunities**

VRM objectives should be considered in all projects or actions that would affect VRM classes. Surface-disturbing activities could be designed to meet VRM objectives. When this is not possible, mitigation efforts could take place. Monitoring of visual intrusions on public land could occur and, if discovered, intrusions could be removed or impacts mitigated.

Management classes in the planning area could be revisited in perspective of other planning decisions.

## ***1.B.8. Wilderness Characteristics***

### **Profile**

Wilderness characteristics are identified as naturalness, undeveloped, and outstanding opportunities for solitude or primitive and unconfined recreation. In addition, wilderness characteristics are considered in undeveloped areas of sufficient size to be practical to manage. Data on naturalness, development, and opportunities for solitude or primitive and unconfined recreation were collected in 2006 and 2007. As of the date of this document, those data are still being analyzed.

### **Current Management**

The 1987 Jarbidge RMP did not address any management actions for wilderness characteristics in the planning area. Wilderness characteristics are managed according to BLM policy.

### **Management Opportunities**

BLM has authority under FLPMA Section 201 to inventory public land resources and other values, including wilderness characteristics. Wilderness characteristics may be considered in land use planning when BLM determines those characteristics are reasonably present, of sufficient value and need, and are practical to manage. The revised RMP could identify areas with wilderness characteristics and prescribe goals, objectives, and management actions that would maintain those characteristics.