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Analysis of Management Situation (AMS)

FOR THE
Winnemucca Field Office
Northern Nevada

Sunset on Knott Creek Reservoir in the Pine Forest Mountains, 2004. Courtesy Matthew Varner

MISSION STATEMENT

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, wilderness, air and scenic, scientific and cultural values.

TABLE OF CONTENTS

Section Page

TABLE OF CONTENTS *(continued)*

Section Page

TABLE OF CONTENTS *(continued)*

Section Page

LIST OF FIGURES

Figure Page

LIST OF TABLES

Table Page

LIST OF TABLES *(continued)*

Section Page

LIST OF TABLES *(continued)*

Section Page

LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
ACEC	area of critical environmental concern
AML	appropriate management level
AMP	adaptive management plan
AMS	analysis of management situation
ARARs	applicable or relevant and appropriate requirements
ATV	all-terrain vehicle
AUM	animal unit month
BEA	Bureau of Economic Analysis
BIA	US Department of the Interior, Bureau of Indian Affairs
BLM	US Department of the Interior, Bureau of Land Management
BMPs	best management practice
BOR	United States Department of the Interior, Bureau of Reclamation
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNIDC	Central Nevada Interagency Dispatching Center
CRMP	cultural resources management plan
CUA	common use area
CWA	Clean Water Act
CWMA	Cooperative Weed Management Area
dbh	diameter breast height
EA	environmental assessment
EIS	environmental impact statement
EO	Executive Order
EPA	US Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ERMA	extensive recreation management area
ESA	Endangered Species Act of 1973
FHWA-DOT	Federal Highways Administration-Department of Transportation
FLPMA	Federal Land Policy and Management Act
FLTFA	Federal Land Transaction Facilitation Act
Forest Service	US Department of Agriculture, National Forest Service
GIS	geographical information system
HA	herd area
HMA	herd management area
HMP	habitat management plan
HUA	herd use area
IDT	interdisciplinary team
IMP	interim management policy
ISA	instant study area
IWA	integrated weed management
KGRA	known geothermal resource area
LAC	limits of acceptable change
LCT	Lahontan cutthroat trout
MFP	management framework plan
MOA	memorandum of agreement
MOU	memorandum of understanding
MSL	mean sea level

LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
µg/m3	microgram per cubic meter
g/m3	gram per cubic meter
NAAQS	National Ambient Air Quality Standards
NCA	National Conservation Area
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NDSL	Nevada Division of State Lands
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NOI	notice of intent
NRCS	US Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSO	no surface occupancy
NV	Nevada
NWSRS	National Wild and Scenic Rivers System
NWI	Nationwide Rivers Inventory
OHV	off-highway vehicle
O&G	oil and gas
ORV	**outstandingly remarkable value
PFC	proper functioning class
PL	public law
planning area	Winnemucca Field Office boundary and scope for the RMP
PILT	payment in lieu of taxes
$PM_{2.5}$	particulate matter smaller than 2.5 microns in diameter
PM_{10}	particulate matter smaller than 10 microns in diameter
PMU	population management unit
Pb	lead
ppm	part per million
PVWCD	**Paradise Valley Water Conservation District (weeds)
R&PP	Recreation and Public Purposes Act
RAC	resource advisory council
RMIS	Recreation Management Information System
RMP	resource management plan
RNA	research natural area
ROD	record of decision
ROI	region of influence
ROS	recreation opportunity spectrum
ROW	right-of-way
SCORP	statewide comprehensive outdoor recreation plan
SHPO	State Historic Preservation Office
SNPLMA	Southern Nevada Public Land Management Act
SRMA	special recreation management area
SRP	special recreation permit
SSURGO	soil survey geographic database
TES	threatened and endangered species (ref. in special status species as T&E)
TMDL	total maximum daily load
TMP	travel management plan
TNR	temporary nonrenewable

LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
US	United States
USC	United States Code
USFS	United States Department of Agriculture, Forest Service USFWSUS Department of the Interior, Fish and Wildlife Service
USGS	US Geological Survey
VRM	visual resource management
VCF	visitor capacity framework
WA	wilderness area
WAFWA	Western Association for Fish and Wildlife Species
WFO	Winnemucca Field Office
WH&B	wild horse and burro
WSA	wilderness study area
WSR Act	Wild and Scenic Rivers Act of 1968 (Public Law 90-542, as amended; 16 United States Code 1271-2287)

CHAPTER 2
AREA PROFILE

This chapter describes the area profile, which is the existing condition of resources, resource uses, and other features in the Planning Area. The information will become the basis for the Affected Environment chapter of the RMP/EIS.

2.1 RESOURCES

2.1.1 Air Quality

Indicators

Air quality refers to the quantity of air pollutants contained in the air. The primary indicator for air quality is the concentration of specific air pollutants in the atmosphere. Pollutants can generally be divided into two categories: criteria pollutants and noncriteria pollutants. Criteria pollutants are the air pollutants for which the EPA has established National Ambient Air Quality Standards: carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, and particulate matter. In addition, the State of Nevada has established an ambient air quality standard for hydrogen sulfide, which may also be considered a criteria pollutant in Nevada. Ambient air quality standards are important because they provide a means for evaluating ambient concentrations and provide indicators for air quality.

There are thousands of other air pollutants in the atmosphere that generally fall into the category of noncriteria pollutants, but their use as an indicator involves a case-by-case evaluation of the pollutant and its impact on the human and natural environment of the area. Their use in resource planning is very limited due to the absence of specific details on individual projects within the planning area. Other indicators for air quality that describe the resource condition include visual observations and general expectations of air quality based on the presence or absence of known sources of air pollution. For example, the presence of a heavily used dirt road implies the presence of localized high concentrations of particulate matter in the form of fugitive dust. Even in the absence of specific data to confirm

the dust concentrations, the visual observation of the dirt road can be viewed as a positive indicator, suggesting degraded air quality close to the road. Less valuable indicators of air quality include the presence of deposited dust in an area. Although dust deposition is a positive indication of suspended particulate matter in the air, it generally does not indicate the quantity or degree of air quality degradation.

Current Conditions

Climate and Meteorology

The arid to semiarid climate of the area results from a rain shadow effect of the Sierra Nevada Mountain Range, which lies between the Pacific Ocean and Nevada. The Sierra Nevada absorbs most storm-front moisture moving east across the area. Annual precipitation varies from 5 to 7 inches at lower elevations and up to 15 inches in the mountains. Seventy percent of the precipitation occurs in the late fall, winter, and spring. Summer precipitation is light and infrequent. Average monthly temperatures vary from highs of about 40°F in January, to 95°F in July, and lows from around 20°F in December and January to about 60°F in July.

Prevailing wind from the west is strongest April through June. Wind gusts often reach 30 miles per hour and occasionally get higher. During other seasons, the wind is light and variable, occurring when weather fronts pass through the area, or as a result of daily heating and cooling of land surfaces. During the summer air quality is adversely affected by dust storms and wildfire.

Air Quality

The general belief is that overall air quality would be above average, considering the rural location. The State of Nevada, Division of Environmental Protection, maintains several air quality monitoring sites to monitor and track air quality. The state no longer maintains a station within the planning area but previously operated a station at the Lovelock Post Office from 1992 through 1997. The only pollutant measured at this site was suspended particulate matter, using the designation of particles smaller than 10 micrometers, or PM_{10}. Measured concentrations were low during this monitoring period, supporting the likelihood of good air quality.

Currently, the state maintains a monitoring site just outside the planning area at Fernley. Both particulate matter and ozone are measured at this station and concentrations have been low, suggesting good air quality. The absence of major industrial sources of air pollution in the vicinity further supports this declaration. And although significant sources of fugitive dust (e.g., unpaved roads and various agricultural operations) create suspended particulate matter, the sparse population of the area and general nature of dust to be highly localized result in particulate matter being confined to only small areas.

Trends

Based on qualitative information, the trend for air quality could seemingly move away from desired conditions due to the increases in commercial sites, recreation activities (including OHV use), and wildland fires, but these considerations lack supporting data. The measured air quality from 1992 through 1997 at the Lovelock site shows no discernable trend in air quality, and although monitoring was discontinued in 1997, the concentrations of particulate matter in 1997 were no higher than in 1992 when monitoring began. Monitoring of particulate and ozone at the Fernley sites has shown the same pattern of air quality; that is, no discernable degradation in air quality. Accordingly, although it is reasonable to expect some degradation to air quality in portions of the planning area that have recently been exposed to human activity, no widespread degradation of air quality is expected in the area.

Forecast

While no discernable trend towards degradation of air quality is present, degradation of air quality could emerge over time due to increases in pollutants from commercial operations, recreational use, and rangeland wildfires. However, these impacts are typically localized and seasonal, minimizing the overall amount of expected degradation. Mitigating factors may also play a key role; for example, paving roadways that are currently unpaved, replacing older motor vehicles and industrial equipment with newer cleaner ones, and improving our ability to permit, monitor, and control sources of air pollution may ultimately prevent such degradation from occurring. The likelihood is that the planning area will continue to remain rural, and expected growth is anticipated to slow. It is unlikely that future high density commercial operations would occur.

Key Features

The State of Nevada, Division of Environmental Protection, requires air quality permits for all major facilities emitting air pollutants. These permits should be viewed as the critical vehicle for controlling the degradation of air quality in the state. Of particular concern in permitting major industrial facilities is the impact on Class I areas under the Federal Prevention of Significant Deterioration regulations. Although there are no Class I areas in the planning area, the South Warner Wilderness to the west of the planning area in northern California is close enough so that any major emitting facility in the planning area would need to consider its impacts on the sensitive wilderness area.

2.1.2 Soils

Indicators

Indicators of soil resource condition include both visual and nonvisual factors. Some indicators are indirect. Erosion hazard is a measure of the susceptibility of soil to erosion. Erosion hazard is the probability that erosion damage may occur as a result of management implementation. Actual erosion rates vary due to a wide

range of factors, including geology, parent material, elevation, slope, aspect, vegetation cover, local microclimate, land use, and landscape history.

Fragile soils are defined as soils having an erosion rate of greater than three tons per acre per year (USDA 1996). Soil fragility may increase due to a number of factors, including changes in vegetation or surface cover and wildfire.

Sources of data include soil survey data, field observations, vegetation monitoring, grazing allotment evaluations, and baseline data provided from previous NEPA analysis of commercial projects.

Visual indicators include evidence of soil loss (wind and water erosion) or transport (mass movement, slope failure, deposition), changes in soil profile (thickness, structure), changes in vegetation (species, abundance, fire), changes in drainage or ponding, land use (grazing, cultivation, development), and seral stage (a reversion to an earlier stage may indicate change in the underlying condition of the soil or may result from a catastrophic event, such as wild fire). Changes outside the normal range are identified by comparison to historical observations or to similar (control) areas.

Nonvisual indicators of soil condition include soil chemistry (organic matter, concentrations of heavy metals, herbicides, salinity), physical properties (permeability and infiltration rates, moisture retention), and yield or productivity.

In addition to vegetation condition, other indirect indicators of soil condition include surface water quality and sediment deposition in water bodies.

Current Conditions

Overall resource condition for soils is good, with some areas demonstrating diminished, unstable, or eroded soils due to rangeland wildfires, overgrazing, and commercial operations. These areas are further identified and discussed in Section 4B.

Trends

Erosion from Wildfire. Soils within the planning area are gradually moving away from desired conditions. Increased fire hazard can directly affect vegetation cover and soil erosion.

Erosion from Overgrazing. Implementation of Standards for Rangeland Health guidelines has reduced soil erosion potential in areas of overgrazing.

Damage to soils due to mineral development. Acreage under mineral development reflects macroeconomic cycles. It is anticipated that mining expansions would continue due to stability of gold and silver commodity prices. Similarly, a cycle of geothermal energy development is underway. Requirements for commercial operations to reclaim and restore damaged soils have slowed or reversed soil

degradation. It is too early to identify trends (10 to 15 years of monitoring of vegetation) that would indicate whether current management is adequate or will ultimately be successful in achieving the desired long-term stability.

Non-mineral commercial and urban development. A general long-term trend of urban expansion and associated non-mining commercial development has resulted in a gradual loss of undisturbed soil acreage, increases in roads, and alteration of drainages. Nonpoint source requirements under the Clean Water Act are designed to minimize the erosion impacts of new development. Impacts on soils are primarily due to loss of acreage of natural soils.

Recreation and Off-road vehicle use. The WFO has seen an increase in demand for recreation, including an increase in demand for off-road vehicle-related recreation, resulting in an increasing trend in soil damage due to erosion and compaction. These activities are controlled through permit requirements and public education. This system has worked fairly well to limit damage to sensitive soils, but off-road vehicle use remains a significant cause of soil damage.

Cultivated Farmland. The historic trend has been stable in irrigated acreage. Most basins are closed to agricultural irrigation. Cultivated acreage has increased in Dutch Flat, because increased efficiency of water use has enabled irrigation of more acres with the same amount of water.

Forecast

Erosion from Wildfire. Wildfires are expected to result in continued degradation of soils. The ability to reduce impacts of wildfires under current management is dependent on funding for fire prevention, suppression, and revegetation activities.

Erosion from Overgrazing. Continued implementation of Standards for Rangeland Health guidelines is expected to further stabilize soils in areas of overgrazing, as specific areas are identified and targeted for focused management. Better coordination with lessees have resulted in measurable improvements, and this trend is expected to continue.

Damage to soils due to mineral development. There has been an increase in mineral development in recent years, resulting from higher prices for gold and silver. Mining operations have local impacts on soils within the footprint of the developed area and along access roads. Implementing new requirements to reclaim soils with high erosion potential is expected to deter damage to soils and limit the extent of damage during active operations, and to restore damaged soils to acceptable condition after closure.

Mining is an important factor influencing population and economic growth, which indirectly affects soils by increasing the intensity of land use overall. Future growth in commercial operations increases the potential for soil damage through surface disturbance.

Non-mineral commercial and urban development. The trend in increased urban and associated commercial development is expected to continue, with a continued gradual loss of natural soils near urban areas.

Recreation and Off-road vehicle use. Increased local and nonlocal population, and associated increased demand for access of land for recreation, is expected to continue and to result in increased off-road use and damage to soils.

Cultivated Farmland. Little change in cultivated acreage is expected due to limits on local water availability. No large projects are currently identified.

Key Features

Erosion hazard is an indicator of the susceptibility of soils to erosion. Estimates of the amount of land area susceptible to erosion are based on soil survey data. Within the region, soils have been mapped at different scales. The broadest coverage is provided at the level of the soil association, which is a grouping of several soil series related in occurrence. The NRCS map data at this level of soil classification is contained in the national SSURGO database. The estimates below are based on SSURGO data. These data are the primary tool for identifying regional priorities for soil management. Within a soil association a wide range of characteristics may be represented, including a wide range of susceptibility to erosion. Therefore, while the SSURGO database provides a starting point, more detailed resolution may be needed to manage soils within targeted areas.

Soil Erosion by Water

Water erosion is a function of many factors, including rainfall amount, duration, and intensity; soil erodibility; length of slope; percent slope; and vegetation cover. The water erosion hazard for base soil is estimated by using the formula: Water Erosion Hazard = K factor x Slope (USDA NRCS 2001). For soils eroded by water, the general erosion hazard can be divided into three classes: slight, moderate, and high. The ranges in the erosion hazard corresponding to these three hazard classes are shown in Table 2-1.

Table 2-1
Erosion Hazard Values (Water)

Erosion Hazard	Value	Acreage	Percentage of Planning Area
Slight	< 4		
Moderate	4-8		
High	> 8		

Erosion Hazard: Slight

Soils of all soil texture classes found on slopes of less than 4 percent have a slight water erosion hazard.

Soils formed on slopes of less than 15 percent and having textures of sand, fine sand, loamy sands, and coarse sandy loams have a slight water erosion hazard.

Erosion Hazard: Moderate

Soils formed on slopes of 4 to 15 percent and having soil textures of loam, silt loam, very fine sandy loam, sandy clay loam, clay loam, and clay have a moderate water erosion hazard.

Soils formed on slopes of 15 to 30 percent and having textures of sand, fine sand, loamy sands, and course sandy loams have a moderate water erosion hazard.

Erosion Hazard: High

Soils formed on slopes of 15 to 30 percent and having textures of loam, silt loam, very fine sandy loam, sandy clay loam, and clay, and soils of all other textures formed on slopes greater than 30 percent, have a high water erosion hazard.

Soils with surface textures that are highly susceptible to water erosion generally have a high proportion of fine sands, very fine sands, or silts with little binding material such as clay or organic matter.

Soil Erosion by Wind

The soil surveys rate each mapping unit as slight, moderate, or high wind erosion hazard. These ratings are based on the Wind Erodibility Index as defined in the National Soil Survey Handbook (USDA NRCS 2001). Wind erosion is a critical issue following the removal of protective vegetation.

In arid regions such as the planning area, wind erosion is most likely to occur at lower elevations. When vegetative cover is removed, soils high in fine-textured material are easily transported by wind. This results in the displacement or loss of topsoil in some areas, increased sediment deposition in other areas, and impacts to ambient air quality from elevated dust levels.

The wind erosion hazard for bare soil is estimated by the formula: Wind Erosion Hazard = 1 (wind erodibility index) x C (climatic factor). The erosion hazard can be described as slight, moderate, or high, based on the numerical ranges shown in Table 2-2.

Table 2-2
Erosion Hazard Values (Wind)

Erosion Hazard	Value	Acreage	Percentage of Planning Area
Slight	< 40		
Moderate	40-80		
High	> 80		

Erosion Hazard: Slight

Soils having texture classes with greater than 35 percent rock fragment have a slight wind erosion hazard; this includes soils formed on slopes that are greater than 35 percent.

Erosion Hazard: Moderate

Soils having textures of clay, silty clay, silty clay loams, clay loams, silt loam, loam, very fine sandy loam, and sandy loam have a moderate wind erosion hazard.

Erosion Hazard: High

Soils having textures of loamy fine sand, fine sand, and sand have a high wind erosion hazard.

Soil Erosion Related to Landform Type

The general erosion hazard classes above are broadly correlated with certain landscape features, providing an additional means of prioritizing areas for soils management. While these correlations are useful at the regional level, local erosion hazard conditions may be highly variable within the major landform classes. The major landforms present in the region, and the erosion hazard typically associated with them, are shown in Table 2-3.

Table 2-3
Associations of Landform Type and Estimated Erosion Hazards Related to Water and Wind

Landform	Erosion Hazard	
	Water	Wind
Playa/Lake Plain	Slight	Moderate
Beach Plain (lake bars)	Slight to Moderate	Slight to Moderate
Sand Sheet	Slight	High
Fan Piedmont	Moderate	Slight
Mountains	High	Slight

Soils "Unsuitable" For Use in Reclamation

Soils of the planning area represent a source of cover material for the reclamation of disturbed areas. The potential for each soil series to be used as cover soil in reclamation is limited by chemical constituents that restrict plant growth, such as sodium, sulfur, boron, and arsenic; extreme acidity or alkalinity; erodibility; unfavorable soil texture; excessive rock fragments; and thickness.

Other Key Features. Other key features include saline soils, areas affected by recent or repeated wildfires, poorly drained soils, areas with steep slopes, and areas with high concentrations of heavy metals or other chemical constituents of concern.

2.1.3 Geology

Indicators

Under the heading of geology are included mineral resources, abandoned mines, unique landforms and geomorphologic features, geologic hazards, karst, and paleontological resources.

Mineral resources

Indicators of mineral resources include the following:

- Tons of ore produced;
- Number of acres of restricted mineral development;
- Number of acres closed to mineral development;
- Number of acres closed to locatables, fluid leasable minerals, solid leasable minerals, and salable minerals; and
- Number of acres of restrictions;

  NSO acres – areas with moderate O&G potential

  NSO acres – areas with high O&G potential.

Sources of data include the following

- BLM Mineral Potential Reports;
- LR 2000 data and reports on numbers of mining notices, plans of operations, geothermal and oil and gas leases and lease applications, and mineral material sales;
- BLM field compliance inspections reports and observations;
- BLM WFO mineral activity log books;
- Professional geologic papers and published geologic reports and maps;
- USGS mineral and technical reports;
- US Bureau of Mines reports;
- Nevada Bureau of Mines reports;
- Specific mine and exploration data; and
- Social and economic indicators, including market values for precious metals, energy, gravel and rock products, and other commodities.

Unique landforms. Indicators include subjective criteria, such as public interest, educational value, visitors, and ability to inspire awe.

Geological hazards. Indicators include recorded or estimated magnitudes and frequencies of events, geotechnical models, and engineering studies.

Karst resources. Indicators include occurrence of favorable conditions and known karst and karst-like features.

Paleontological resources. For management purposes, lands fall within three classification conditions according to their potential to contain fossils. Condition 1 includes areas known to contain vertebrate fossils, or noteworthy occurrences of invertebrate or plant fossils; Condition 2 includes areas with exposures of geologic units that have high potential to contain these resources; and Condition 3 includes areas that are very unlikely to contain these resources. Sources of data that may be used to identify these resources include BLM surveys, geologic maps of favorable formations, exploration and quarrying sites, and research reports. Paleontological resources are further discussed under Cultural Resources.

Current condition

The WFO lies within the western part of the Basin and Range physiographic province (west of longitude 117 degrees W; Barker et al. 1995). The Basin and Range province extends west to the Sierra Nevada and Cascade Ranges in California and Oregon, and east to the Wasatch Mountains in Utah.

From Paleozoic to Middle Jurassic time, this area of Nevada was dominated by marine deposition, varying between broad open seaways and relatively restricted basins.

The Paleozoic sequences are thought to have been deposited in western Nevada and subsequently transported to the east, first on the Roberts Mountain thrust during the Antler orogeny of Late Devonian/Early Mississippian age, then on the Golconda thrust during the Sonoma orogeny of Early Triassic age. The lithologic and structural complexity of the formations involved precludes any detailed mapping of the structural features in most areas.

Another deformation during Jurassic and Cretaceous time is considered to be part of the Nevadan orogeny, an episode of low-grade metamorphism, variably directed folding, and thrust faulting. Thrust faults mapped in the Sonoma Range indicate overriding from east to west, and folds are overturned to the west.

Basaltic flows and rhyolitic lavas and ash flows were extruded during Tertiary and Quaternary time. Concurrent with the volcanism, Cenozoic normal (basin and range) faulting has been intermittently active from about 16 million years ago until the present, resulting in maximum uplifts of probably several thousand feet. During regional extension thick sequences of Tertiary sediments were deposited in the basins. Some of the highly extended basins are as deep as 10,000 feet to bedrock. The sedimentary rocks in these basins are primarily of lacustrine and fluvial-lacustrine origin and were deposited contemporaneously with volcanism.

Thick sequences of lake sediments were also deposited in the basins in Pleistocene time, when pluvial Lake Lahontan inundated large areas of western Nevada. The interbedding of alluvium and colluvium with the lacustrine deposits records the history of high-stand and low-stand cycles of the lake.

Among the youngest regional deposits of Quaternary age are assemblages of fluvial, aeolian, lacustrine, and alluvial deposits primarily associated with Pleistocene Lake Lahontan and local tributaries. These younger sediments cover large portions of the planning area, and are sources for many of the mineral material sources in the planning area. These basin-fill deposits locally have hydrocarbon generation potential, resulting mainly from hydrothermal alteration of algal organic matter in lacustrine marls and humic coals or coaly rocks, but no commercial hydrocarbon production has been established in the region (Barker et al. 1995).

Regional tectonic, igneous, and volcanic events accompanying regional extension have fractured the upper crust. This region of Nevada exhibits high heat flow, which, combined with the fractures and deep basins, provides conduits for thermal fluids to migrate through permeable zones to create ore deposits. The basins are reservoirs for geothermal resources.

Throughout geologic time there have been granitic intrusions accompanying the major tectonic events. Many of the granitic events are sources of fluids that create ore deposits. The granites also provide mineral material sources, such as decorative boulders and decomposed granite.

The Paleozoic and Mesozoic rocks include high quality limestone that is mined in the planning area. It is considered possible, although no exploration has been done to confirm the hypothesis, that Permian-Triassic rocks may have potential for petroleum generation where traps are created by faulting and hydrothermal or contact metamorphism has altered organic matter contained in marine shales. Evidence includes oil or gas shows in the Augusta and Clan Alpine Ranges and in Buena Vista Valley. Figure 2-1 presents representative stratigraphic columns from the region.

Trends

Minerals. Long term projections on the commodity price for precious metals suggest stabilization of the market. It is anticipated that gold would remain over $400.00/ounce. Based on these estimates, permitting demands for both hard rock exploration and mining will increase.

Based on the President's Energy policy and State of Nevada Renewable portfolio, increased demand for geothermal exploration and development, and wind power development will increase.

Unique landforms. Identification of unique landforms or geologic features is a subjective process, and there are currently no standard criteria. The BLM started the Geologic Heritage Initiative in response to a perceived need for a national strategy to manage geological heritage resources, consistent with Section 102 of Federal Land Policy and Management Act (BLM 1998).

Geological hazards. Geologic hazards occur as a result of the siting or design of structures or human activities. The potential for harm can usually be reduced through appropriate engineering or by siting the activity in a less hazard-prone location. The planning area is relatively quiet seismically, compared to some other regions of Nevada. The US Geological Survey Earthquake Hazards Program estimates that bedrock accelerations of greater than 15 to 20 percent of gravity have only a 10 percent probability of occurring in the next 50 years in the planning area (USGS 2005). However, because the area is experiencing both increased commercial development and population growth, the potential for exposure to seismic and other geologic hazards in the region is increasing.

Karst resources. Karst features can occur in carbonate rock formations; however, no significant karst features have been identified in the WFO.

Paleontological resources. Trends are discussed in Section 2.1.13.

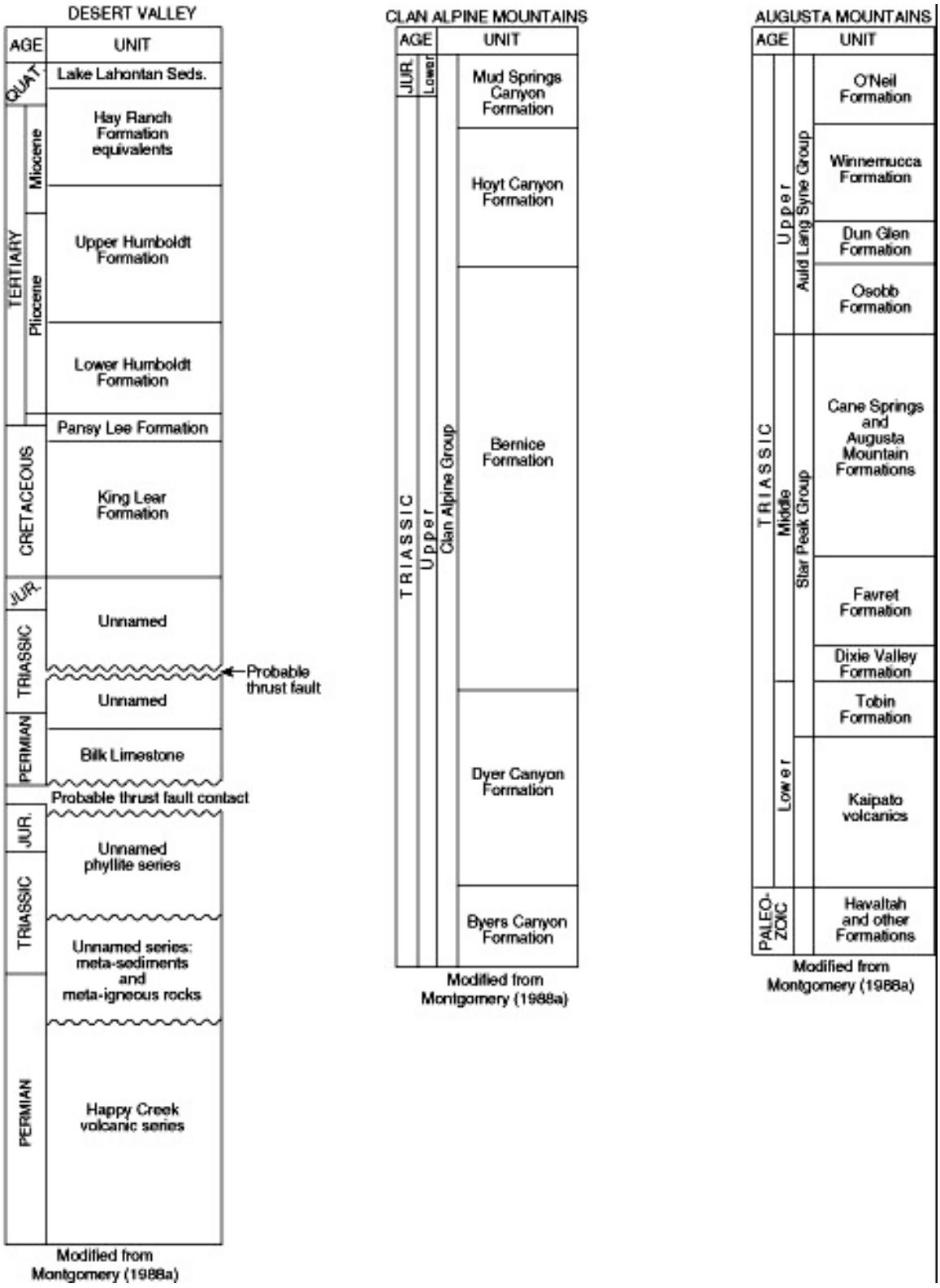


Figure 2-1. Stratigraphic units present in the planning area (from Barker et al 1995).

Forecast

Minerals. Forecasts of mineral exploration and development are discussed in Section 2.3.4

Unique landforms. Identification of unique geological features requiring some degree of protection may occur during the course of NEPA evaluation of future projects.

Geological hazards. Geologic hazards will continue to be evaluated during planning and review of specific projects.

Karst resources. Karst features can occur in carbonate rock formations, but no significant karst features have been identified in the WFO.

Paleontological resources. Paleontological resources are expected to get greater attention and protection as commercial and recreational uses expand.

Key Features

Minerals. Minerals are further discussed in Chapter 2D.

Unique landforms and geologic features. Unusual geomorphologic features or other geologic features include features with unusual aesthetic or scientific value. The following features have been identified as potential candidates for consideration in a geologic heritage program:

Geological hazards. Geologic hazards include active faults, landslides, and soils or deposits with hazardous chemical or engineering characteristics.

Karst resources. No significant Karst Features have been identified in the WFO.

Paleontological resources. Key features are discussed in section 2.1.13.

2.1.4 Water Resources

Water in the planning area is used for agricultural (mainly stock watering, with significant irrigation in some basins), potable (including municipal, small public water systems, and individual domestic wells), and industrial (mainly mining and milling) purposes. Geothermal groundwater production is significant, but geothermal waters are typically saline and nonpotable. Recreation and fish and wildlife uses are also important but, as a rule, do not consume appreciable quantities of water and are generally incidental to other uses. Stock watering is an important use on public lands. If water for livestock is not otherwise available, it is developed by various means on grazing ranges and other places of need, but quantities are not great.

Indicators

Indicators of the condition of water resources include both direct and indirect indicators, which may be either qualitative or quantitative. The two major categories of interest are water supply—the quantity of water available for beneficial use—and water quality, which describes its suitability for beneficial uses. In addition, the location of the water relative to intended beneficial uses and existing infrastructure can be an important consideration.

Surface water and groundwater are not necessarily distinct or independent. Surface water infiltrates permeable media and recharges groundwater, which is defined simply as water that exists below the ground surface. Surface water may be in contact with groundwater. Streams may have both losing and gaining reaches, depending on whether water is moving from the stream to groundwater or from groundwater to the stream. Springs represent locations at which groundwater flow intercepts the surface.

Both surface water and groundwater quantity and abundance are intimately tied to water quality because the potential beneficial uses of the water are usually limited to certain ranges of quality. Nevada's surface water quality standards, in NAC 445A, include minimum standards applicable to all waters, additional standards applicable to the four classes of waters (A, B, C, and D), and standards applicable to specific reaches of selected streams.

The Nevada Administrative Code Chapter 445A identifies class waters, which generally include smaller perennial streams that are tributaries to the large rivers in the state. The classification process is ongoing, and not all water bodies have been classified. Water bodies are classified according to their quality and potential beneficial uses. The classification is one criterion used in defining the water quality standards and protections that apply to the streams. The classes range from A (highest quality) to D (lowest quality). The waters are also identified as trout or non-trout waters. Class designations are assigned to specific segments. The classifications of the streams are currently being revised by NDEP. Table 2-4 identifies the classes of the major water bodies within the planning area.

Nevada's groundwater quality standards are based on the assumption that groundwater should be maintained suitable for use as a drinking water source, unless the natural water quality prevents this. The state adopts the federal primary and secondary drinking water standards (maximum contaminant limits, or MCLs) for groundwater resources.

Indicators are used to evaluate the current condition of water resources and to compare current conditions to the range of recorded and inferred past conditions.

Indicators of surface water quantity or abundance include the following:

- Stream or lake hydrographs;

- Precipitation, runoff, and evaporation records and estimates;
- Occurrence and discharge of springs;
- Flood magnitude and frequency records;

Table 2-4
Class Waters in the WFO Planning Area

Water Body	Description	Current Class	Trout/Non-Trout
Bilk Creek	Origin to Section 35, T45N, R32E	A	T
Bilk Creek	To Bilk Creek Reservoir	B	T
Bilk Creek Reservoir	All	B	T
Blue Lakes	All	A	T
Bottle Creek	Origin to first point of diversion	A	
Knott Creek Reservoir	All	B	T
Humboldt River	Woolsey to Rodgers Dam	C	N
Little Humboldt River, from National Forest	To confluence with South Fork	B	T
Little Humboldt River, South Fork	Humboldt County line to confluence with North Fork	B	T (proposed change to N)
Little Humboldt River	All	C	N
Mahogany Creek	Above Summit Lake	A	T
Martin Creek	Origin to National Forest boundary	A	T
Martin Creek	To first diversion in T42N, R40E	B	T
Negro Creek	Origin to first irrigation diversion	A	
Onion Valley Reservoir	All	B	T
Pole Creek	Above diversion of Golconda water supply	A	T
Quinn River	Above confluence of East and South Forks	A	T
Quinn River	To Ft. McDermitt reservation diversion dam	B	T
Quinn River	Idaho-Nevada line to confluence with main tributary Quinn River	D	N
Squaw Creek Reservoir	All	B	T
Star Creek	Above first point of diversion	A	T
Summit Lake	All	B	T
Water Canyon Creek	Above Winnemucca water supply diversion	A	T

- Water rights allocations;
- Water consumption records;
- Storage and conveyance system operation records;
- Hydrologic simulation modeling results;
- Infrared aerial photo analysis; and
- Vegetation survey data.

Indicators of surface water quality include the following:

- Measurement of chemical, biological, and physical parameters;
- Presence of target aquatic species; and
- Diversity and abundance of aquatic species.

Indicators of groundwater quantity include the following:

- Depth to (or elevation of) groundwater;
- Changes in hydraulic head; and
- Estimates of aquifer storage capacity and storage volume.

Indicators of groundwater quality include the following:

- Chemical, biological, and physical parameters and
- Comparison to federal drinking water standards.

Indicators of watershed condition include the following:

- Road density;
- Number of stream crossings;
- Riparian vegetation condition;
- Peak/base flow;
- Water yield;
- Sediment yield; and
- Degree of disturbance.

Indicators of channel and floodplain condition include the following:

- Channel geometry (width/depth ratio);
- Sinuosity and stream gradient;
- Stream bank stability;
- Floodplain connectivity; and
- Sediment deposition.

Sources of data include the following

- Watershed and stream surveys;
- Published and unpublished hydrologic data reports; and
- Compliance reports.

Current Condition

Surface Water

Most of the land administered by the WFO receives low rainfall, due to the shadow effect created by the Sierra Nevada Mountains. Average annual precipitation in the planning area varies between 5 and 15 inches, with most occurring as snow from November through March. Numerous small mountain streams flow within the area, many of which are perennial within their respective headwaters. Many of the streams are in terminal basins. Many basins contain deposits of salts remaining from evaporated Pleistocene lakes. In addition, because evaporation greatly exceeds rainfall in the valleys, salts tend to be transported from the higher elevations to the valleys, where they accumulate. Therefore, water quality tends to decline as it moves downstream within the basin.

Most stream flow occurs during the spring in direct response to the melting of the snow pack. Typical stream flow originates at the upper elevations and enters the stream by way of overland flow and shallow groundwater discharge (interflow). As this flow exits the mountain block and moves onto the alluvial fan, the surface expression is quickly lost as it infiltrates into the alluvium. Riparian vegetation exists in the mountainous areas prior to the water being lost as recharge to the alluvial aquifer.

There are approximately 850 miles of perennial streams on lands administered by the WFO featuring three primary drainage features that have helped shape the landscape. These are the Quinn, Owyhee, and Humboldt Rivers.

Humans have had a significant influence on water resources in the planning area, mainly by consuming freshwater resources for irrigation, which reduces stream flows and recharge. Biological diversity, water quantity, and water quality in many surface water bodies diverge significantly from their historic ranges of variability as a result of these influences. Where this occurs, it is usually downstream of the first point of diversion for irrigation.

Surface Water Quality

The chemical character and quality of a natural water source is determined by mineral content of the rock that water flows across or through and the ease with which the rock minerals dissolve into the water. Among the variables that influence the concentrations of dissolved constituents in water are contact time between water and rock minerals, evaporation (which reduces the volume of water and causes salts to concentrate), temperature (which influences solubility), and the concentration and character of the mineral constituents in the rock or sediment.

Precipitation, because it has not yet come in contact with geologic materials, typically has very low concentrations of dissolved minerals and is considered very good quality. The contact time between precipitation runoff and rock minerals is

short for water in streams and lakes at higher elevations where precipitation is most common. Generally, these waters also have low concentrations of dissolved minerals and are considered good quality. Groundwater moves relatively slowly through rocks that comprise an aquifer and therefore has greater potential to dissolve minerals. Greater distance from the recharge area implies greater contact time between groundwater and the aquifer rocks. As a result, groundwater chemistry at discharge areas generally exhibits somewhat higher concentrations of dissolved minerals and is of somewhat lesser quality than water in the recharge area. However, these variations may be masked by other influences in complicated flow systems.

Evaporation and evapotranspiration can have a significant impact on water quality. Because these processes remove water molecules from the source but leave dissolved minerals, the concentration of dissolved minerals increases in the water that remains. In some circumstances, lakes or ponds that do not have a consistent supply of freshwater and are subject to evaporation would exhibit a decrease in water quality owing to the increase in dissolved minerals.

This condition also occurs in groundwater that rises to near ground surface and is subject to evaporation and evapotranspiration. For these reasons, groundwater resources near the center of hydrographic basins often may be somewhat saline.

Temperature also has the potential to affect water chemistry and quality. Most rock minerals dissolve more easily under higher temperatures. Thus, groundwater that has been heated in geothermal systems typically contains higher levels of dissolved minerals than do low temperature groundwater resources. Additionally, thermal water may dissolve minerals that have potential to affect the pH (acidity) of the water.

In a typical hydrographic basin, water quality would be best in the mountains where precipitation is most frequent and abundant. Surface water flowing from the mountains and groundwater near the mountain front would generally be of good quality. However, near the basin center or in discharge areas water quality would be less due to evapotranspiration.

Perhaps the two most important physical water quality indicators are temperature and turbidity. (Turbidity is the opposite of clarity, and results from suspension of particles, such as fine sediment, in the water column. This causes the water to appear cloudy or muddy). Temperature is important because many species are adapted to a specific range of temperatures. Temperature also affects water chemistry, especially the concentration of oxygen that can be dissolved in the water. Elevated water temperatures can result from both natural and human-related causes. For example, removal of shade vegetation along streams can increase the amount of solar energy that reaches the stream. Shallow water tends to heat faster than deep water, so sediment deposition in a stream channel, which can cause a stream to become wider and shallower, can lead to increased water

temperature. Slower stream velocity allows more time for water to equilibrate to ambient temperature and increases heat from solar radiation, so anything that causes a reduction in flow can also result in increased water temperatures. On the other hand, high flows can prevent sediment deposition and cause scouring of the channel. Bedrock tends to heat faster than sediment and stores more solar energy.

One of the functions of a stream is to move sediment down slope. The amount of sediment that can be carried by a stream depends on the volume and velocity of the water, which in turn are dependent on factors such as climate and topography. The amount of sediment actually carried by a stream depends on these, as well as on the nature of the geologic materials drained by the stream. Fine particles, such as clay, silt, and fine sand, are more easily suspended in the water column, while large particles, such as coarse sand, gravel, and cobbles, tend to be dragged along the bottom of the stream. In arid climates, streams tend to be unable to remove sediment at the rate it is generated, and streams terminate in closed basins. A few infrequent large flow events are responsible for moving most of the sediment, and over time streams become clogged with sediment and sediment accumulates in the basins. As a result, the turbidity of desert streams can vary over a wide range. At higher elevations, where there is more precipitation, steeper slopes, and smaller channels, streams convey a larger percentage of the sediment carried to them by runoff, but as the streams reach lower elevations, the energy of the stream decreases and the sediment load is deposited, forming broad alluvial fans on the basin margins.

Human activities or grazing livestock can disturb the ground and accelerate erosion. Concentrated runoff, such as in roadside ditches, can also accelerate erosion. Vegetation tends to hold soils in place, absorbs the impacts of raindrops, and slows overland flow of runoff, so erosion can also be accelerated in areas where vegetation cover is removed, because of fires, grazing, or other activities.

Erosion rates in a watershed are reflected in channel geometry and streambed characteristics (the drainage condition). Stable channels tend to have well-vegetated banks that are neither steep nor deeply incised and with graded streambeds. Unstable drainages show evidence of recent down cutting and gullying.

Biological indicators of water quality are of two types: those that are used as a direct measure of water quality, such as pathogens; and those that indirectly reflect the quality of the water, such as excessive algae production, which may be an indicator of elevated nutrient concentrations, or presence and abundance of indicator species or populations, such as trout or amphibians. Pathogens include a large variety of organisms that are present in the digestive systems of birds and mammals and are harmful to human health when present in drinking water, including fecal coliform bacteria, giardia, and cryptosporidia. Although pathogens may be present under natural conditions, elevated concentrations of pathogens

suggest a human-caused condition, such as improper discharge or disposal of human or animal waste, or livestock watering at a stream or spring.

Riparian areas and wetlands are those areas that support vegetation that requires free water and saturated soil conditions to survive. An estimated 891 miles of perennial streams and 934 acres of wetlands are on public land in the planning area. Table 2-5 presents a summary of the riparian function condition for lotic (streams) and lentic (wetlands) riparian areas within the WFO.

Table 2-5
Riparian Functioning Condition Summary

	Functioning-at-Risk						
	Trend						
PFC	Up	Down	Not Apparent	Total	Nonfunctional	Unknown	Total
Lotic (Stream)/Miles							
339	154	98	247	838	53	0	53
Lentic (Wetlands)/Acres							
694	110	441	821	2066	37	897	934

Groundwater

The hydrographic basin is the basic management unit used by the Nevada Division of Water Resources (NDWR). Generally, a hydrographic basin is defined by the topographic divide, or ridgeline, that separates adjacent basins. Most basins in the Basin and Range Physiographic Province are closed; surface waters in the basin originate in adjacent mountains and remain in the valley. In some cases, the boundary between basins may be arbitrarily defined at low divides covered by alluvial sediments. Surface drainage channels link a few of the hydrographic basins within the planning area. Because of the fault-bounded basin and range geology of the region, the boundaries of groundwater basins generally correlate well with surface water hydrographic units (watersheds). Table 2-6 identifies the groundwater hydrographic basins of the planning area.

Summary of Groundwater Resource Conditions in the Planning Area

Below is a summary of current understanding of groundwater conditions in each of the groundwater regions identified by Rush (1968) and used by Garcia and Jacobini (1991).

Northwest Region

The planning area overlies the eastern third of the Northwest Region. As of 1998, where water rights to an estimated 28,832 AFY had been committed. Of this, 28,625 AFY was for irrigation and stock watering, and 207 AFY was for other uses (NDWR 1999). The total estimated perennial yield for the region was estimated by the state at 55,500 acre-feet.

Existing data are inadequate to characterize conditions in the basins of the Northwest Region that lie within the planning area. Some groundwater in the Pueblo Valley-Continental Lake area is apparently satisfactory for irrigation and domestic use because these uses are currently present. However, central areas of the basins are likely underlain by saline water (Sinclair 1963). The region includes volcanic rock aquifers in addition to the basin-fill aquifers. Pumping for irrigation and stock watering exceeds inflow in the Pueblo Valley, but the basin has not been designated.

Black Rock Desert Region

The WFO overlies approximately the eastern two-thirds of the Black Rock Desert Region. About one-third of the portion inside the WFO is in the NCA and is therefore

Table 2-6
Groundwater Use by Hydrographic Basins (USGS 2002)

Regions/Basins	Total Pumpage (2002) (AFY)	Principal Groundwater Uses	Natural Recharge + Interbasin Flow (AFY)	Artificial Recharge (AFY)	Net Inflow (AFY)
Northwest Region (1)					
1. Pueblo Valley	2,320	I/S	1,000	-	-1,330
2. Continental Lake Valley	10	D	11,000	-	-
3. Gridley Lake Valley	10	D	4,500	-	-
4. Virgin Valley	30	D	7,000	-	-
Black Rock Desert Region (2)					
21. Smoke Creek Desert	920	I/S	18,680	-	17,760
22. San Emidio Desert	11,430	G>I/S>>M>D	1,800	5,630	-4,000
23. Granite Basin	-	-	-	-	-
24. Hualapai Flat	8,850	I/S	6,600	-	-2,250
25. High Rock Lake Valley	10	D	-	-	-
26. Mud Meadow	30	D	-	-	-
27. Summit Lake Valley	0		-	-	-
28. Black Rock Desert	410	M>D	17,760	-	17,350
29. Pine Forest Valley	20,340	I/S>>D	8,000	-	-12,340
30. Kings River Valley	44,570	I/S	14,750	-	-29,820
31. Desert Valley	24,790	I/S>>M>D	6,490	-	-18,300
32. Silver State Valley	14,170	I/S>>D	1,300	-	-12,870
33. Quinn River Valley	52,140	I/S>> D>W	61,700	-	9,560
Humboldt River Basin (4)					
64. Clovers Area	18,170	M>I/S>W	23,700	0	23,540
65. Pumpernickel Valley	94,820	M>>I/S>>D	9,000?	1,490	-
66. Kelly Creek Area	14,560	M>I/S>>D	11,000	350	-
67. Little Humboldt Valley	7,660	I/S>>D	23,700	-	16,040
68. Hardscrabble Area	20	D	9,000?	-	-
69. Paradise Valley	51,310	I/S>>D>W	6,800	-	-44,510

70. Winnemucca Segment	9,440	W > I/S > M	-3,000	-	-
71. Grass Valley	16,360	I/S > > D	6,000	-	-10,360
72. Imlay Area	2,660	I/S > M > > M > D	6,000	-	3,340
73. Lovelock Valley	1,330	W > > I/S	2,140	-	810
74. White Plains	90	D	43	-	-47

Table 2-6
Groundwater Use by Hydrographic Basins (USGS 2002) *(continued)*

Regions/Basins	Total Pumpage (2002) (AFY)	Principal Groundwater Uses	Natural Recharge + Interbasin Flow (AFY)	Artificial Recharge (AFY)	Net Inflow (AFY)
West Central Region (5)					
75. Brady Hot Springs Area	190	D	1,360	-	1,170
77. Fireball Valley	30	D	-	-	-30
78. Granite Springs Valley	230	D	4,500	-	4,270
79. Kumiva Valley	30	D	-	-	-30
Truckee Basin (6)					
80. Winnemucca Lake Valley	100	D	3,300	-	3,200
Carson River Basin (8)					
101A. Packard Valley (Carson Desert)					
101. Carson Desert (Packard V)	46,530	G > > W > D > M > I/S	4,830	30,460	-11,240
Central Region (10)					
128. Dixie Valley	20,460	G > > I/S > D > M	19,700	14,010	13,250
129. Buena Vista Valley	6,530	I/S > > M > D	10,000	-	-
130. Pleasant Valley	50	D	2,200	-	2,150
131. Buffalo Valley	80	D	-	-	-
132. Jersey Valley	20	D	300	-	280

Source: Nevada Division of Water Resources 1999
Notes: I/S = irrigation/stock watering; M = mining; W = municipal; G = geothermal; D = domestic; AFY = acre feet per year

not in the planning area. The State of Nevada estimated the perennial yield of the region at 178,825 AFY in 1998 (NDWR 1999). A total of 277,825 acre-feet of water rights were committed in the region, with over 215,000 AFY to irrigation and stock watering and approximately 59,000 AFY to mining and milling.

Generally, groundwater of quality suitable for irrigation, domestic, and stock uses is available in all basins of the Black Rock Desert Hydrographic Region (Visher 1957; Sinclair 1962a, 1962b, 1962c, 1963a; Malmberg and Worts 1966; Glancy and Rush 1968). In those basins where groundwater flows toward a central basin playa or lakebed, the water quality deteriorates toward the valley center.

Most of the Black Rock Desert and Mud Meadow hydrographic areas are in the NCA and are not part of the study area. The NCA contains many thermal springs or springs affected by geothermal waters, which also adversely affect water quality.

South of Gerlach, the San Emidio Desert area around Empire is a center of geothermal production. The US Geological Survey (USGS 2002; see Table 2-6 above) estimates that losses resulting from operating geothermal production facilities account for a net annual decrease in groundwater storage of more than 4,000 acre-feet. The USGS also calculates that groundwater extraction (primarily for stock watering) exceeds inflows by more than 73,000 AFY for the combined Pine Forest Valley, Kings River Valley, Desert Valley, and Silver State Valley basins. Of the basins upstream of the Black Rock Desert, only the Quinn River Valley does not have decrease in storage in years when natural recharge rates are above average. Over time, declines in water levels may result in higher pumping costs, deterioration of water quality, and possible land subsidence.

Humboldt River Basin

The Humboldt Basin is the largest hydrologic basin in the state, encompassing approximately 16,840 square miles. The basin can be divided into the Lower, the Middle, and the Upper Basins. The planning area contains nearly all of the lower Humboldt River Basin, including basins underlying the watershed of the Little Humboldt River, and it overlies a portion of the middle Humboldt River Basin west of Battle Mountain. In the basin overall, the perennial yield has been estimated by the State of Nevada at 463,900 AFY (NDWR 1999). A total of 842,312 AFY has been committed, with more than half to irrigation and stock watering, and over 141,000 AFY to mining and milling.

Since 1995, the USGS has been conducting a regional groundwater study of the Humboldt Basin, including constructing numerical hydrologic models to simulate flow and evaluate the effects of various activities on water quality.

In the Middle Humboldt River Basin, including the Clovers Area, Pumpernickel Valley, and the Kelly Creek Area, most of the extracted groundwater is used in mining. In the Clovers Area, groundwater extraction exceeds the natural recharge

rate, but inflow from the adjacent basin to the east more than offsets the difference. In the Kelly Creek Area, groundwater recharge approximately balances groundwater pumping. But In the Pumpernickel Valley groundwater pumping greatly exceeds recharge by more than 80,000 AFY. The net result is a decline in the quantity of groundwater moving from the Middle Humboldt River Basin to the Lower Humboldt River Basin through the narrow gap at the south end of the Osgood Mountains.

In the basins underlying tributaries of the main stem of the Humboldt River, including the Little Humboldt Valley, Hardscrabble Area, and Paradise Valley northeast of Winnemucca, and Grass Valley to the south, the principal water use is for stock watering. A few wells in the south end of Paradise Valley produce waters with high salinity, and with sodium concentrations exceeding drinking water standards, which makes them hazardous for irrigation use and marginal for potable use, but in general the water quality is adequate (Harrill and Moore 1970). Groundwater samples collected in Grass Valley, in the upper portion of the basin, indicated that the water is generally suitable for irrigation and domestic use, although about ten percent of samples showed somewhat elevated salinity or trace elements, which would require special handling or would prevent use of the water for irrigation and domestic use (Cohen 1964). The US Geological Survey (2002) calculates that groundwater withdrawals exceed inflows by more than 25,000 AFY in these basins even in periods of high recharge.

In the Winnemucca segment of the basin, underlying the main stem of the Humboldt River near Winnemucca, groundwater use is about evenly distributed between irrigation/stock watering and municipal use, with mining consuming somewhat less. Total groundwater use is a little more than 9,000 AFY, and there is a net loss to the adjacent basins. As a result, groundwater levels in the Winnemucca segment are expected to decline over time. Further down the Humboldt River, in the Imlay Area, which contains the Rye Patch Reservoir, natural recharge and interbasin inflows exceed the total rate of groundwater pumping. Irrigation/stock watering, and mining account for most of the approximately 2,500 AFY of groundwater consumed. In the Lovelock Valley, most of the groundwater use is for municipal supplies, and pumping does not exceed inflows, but the total amount of groundwater use is small, only a little more than 1,000 AFY.

Groundwater south of Lovelock, at the lower end of the basin, is of poor quality and unsuitable for agricultural or domestic use (Everett and Rush 1965).

West Central Region

Most of the West Central Region is within the planning area. The total perennial yield of the region has been estimated by the state at 8,200 AFY (NDWR 1999). A total of 40,017 AFY is committed to various uses, including over 28,000 AFY to commercial and industrial uses, of which geothermal power production is the most prominent. Nearly 9,000 AFY has been committed to municipal use.

Water quality in Kumiva and Granite Springs Valleys is suitable for irrigation or domestic use, though the quality tends to deteriorate near the playa. In Brady Hot Springs area samples indicate unsuitable quality for domestic use. High salinity levels would limit use for irrigation (Harrill 1970). The amount of groundwater use in these basins is small and limited to isolated domestic wells with low production (USGS 2002).

Truckee Basin

The planning area overlies most of the Winnemucca Lake Basin, which is in the northeast corner of the Truckee Basin Region. Conditions in the Winnemucca Lake Basin are not representative of the Truckee Basin Region overall, which is dominated by the urban area surrounding Reno and Sparks, extends into California, and includes Lake Tahoe.

The largest groundwater uses in the Truckee Basin are municipal water supply and commercial and industrial uses. However, very little groundwater is used in the Winnemucca Lake Basin. Van Denburgh and others (1973) describe the quality of groundwater in the Winnemucca Lake basin as generally poor in quality, especially in the central and eastern parts of the basin. The water is unsuitable for domestic use, and its suitability for agricultural use varies locally. As in the West Central Region, current water use is limited to scattered domestic wells with low production (USGS 2002).

Carson Desert Region

Only a small part of the north end of the Carson Desert Region lies within the Winnemucca Field Office, and it extends to the southwest into California.

Relatively little groundwater is used in the planning area, although water quality on the upper margins of the basin is sufficiently good to supply some domestic and stock watering uses. Water quality information is reported for only one well in the Packard Valley (Glancy and Katzer 1975). This sample would be considered unsuitable for domestic use due to high total dissolved solids content and would be marginal for irrigation use.

The USGS reports that pumping in the Carson Desert basin is primarily for geothermal energy production. These operations reinject the geothermal fluids, with losses to evaporation accounting for about twenty percent of the extracted water. Geothermal plants extract about 36,000 AFY, with consumptive use of about 6,000 AFY. Municipal uses account for about 4,000 AFY, while mining, stock watering, and isolated domestic wells account for approximately another 6,000 AFY. Most of this use occurs outside the WFO. The net annual decrease in storage for the Carson Desert Region is more than 11,000 AFY.

Central Region

The Central Region covers nearly one-third of the area of the state, extending south almost to the Colorado River, west into California, and eastward to near

the border with Utah. Only part of the northwest arm of the region is in the planning area, including part of Dixie Valley and all of Jersey Valley, Pleasant Valley, and Buffalo Valley.

The principal groundwater use in the Dixie Valley is geothermal energy production, which consumes about 3,000 AFY of geothermal groundwater, of approximately 18,000 AFY that is extracted. Irrigation and stock watering account for the next largest consumption, approximately 3,000 AFY. Recharge and inflow from adjacent basins supplies nearly 20,000 AFY, so there is a net surplus of inflow to the basin.

Buena Vista Valley is a separate terminal basin north of the Carson Desert. Water quality in the Buena Vista Valley is reported for eight samples (Garcia and Jaconobi 1991). All but two of these well samples appear to have TDS concentrations in excess of drinking water standards. The principal water use in the Buena Vista Valley is irrigation/stock watering, with a small amount used in mining or for scattered domestic wells. Inflows exceed pumping, and the excess inflows are lost to evaporation on the playa floor.

Trends

Municipal and industrial water use accounts for only a small portion of total use. Total demand for water for municipal use has increased over time as populations within cities and towns have increased. Most surface waters available to agriculture have been appropriated. Therefore, future agricultural water use could increase only if additional water sources are identified that could be appropriated and developed at a cost economical for irrigation.

The future ability to appropriate and develop water economically is highly dependent on both state water law and water development subsidies. Neither of these use-determining factors can be projected.

Few conflicts have arisen between commercial users within municipal watersheds. In general, though, continued drought has increasingly affected municipal watersheds, depleting recharge to municipal well fields.

In some cases active mining has affected water resources through large consumptive requirements for processing, dust suppression, and dewatering. Post mining water concerns involve evaporative losses from pit lakes, fluid management at reclaimed heaps, and pit lake water quality.

Although actual consumptive use is typically much less than the amount of allocated water rights, in some basins, water rights have been allocated in excess of the estimated perennial yield. In many basins the perennial yield is not well understood and may have been either overestimated or underestimated. Nevada law gives the State Engineer authority to adjudicate water rights, designate the water rights within a basin, and make determinations of the amount of water that

may be extracted for beneficial use in basins that he determines are being depleted to the detriment of the public good. These tools are increasingly required to settle conflicts between holders of water rights and to protect the public good. Most of the basins in the planning area have been designated. Irrigation rights have been restricted in several basins, including Pine Valley, Kings River Valley, most of Paradise Valley, and the northeast corner of the Lovelock Valley (NDWR 2002).

Most communities in the planning area rely on groundwater for their potable water supplies (US EPA 2005). Winnemucca operates the largest water system in the planning area, serving a population of 10,000. The Lovelock Meadows Water District serves a population of less than 6,000, including water provided to the Lovelock Correctional Center. No other water systems in the planning area serve more than 1,000, and most serve fewer than 200.

Nevada and the US EPA recognize the importance of watersheds as a source of high quality recharge to groundwater aquifers that supply drinking water. To protect the sources of this water, community drinking water systems were required to prepare Source Water Assessments by 2003 under provisions of the Safe Drinking Water Act (NHD 2005).

Forecast

If current trends continue, there will be a gradual increase in urban development and in municipal and industrial water demand. Overall, future urban and commercial development will put more pressure on groundwater resources, requiring continued tradeoffs between water uses. Water resources could be adversely affected by prolonged extraction of groundwater at rates that exceed the long-term rate of recharge. The State Engineer, who has the sole discretion to allocate the available water resources among holders of water rights, will be able to rely on increasingly accurate estimates of the available resources as more hydrologic data and better forecasting tools are developed. An example of one such tool is the regional hydrologic model for the Humboldt River Basin under preparation by the USGS.

Historical meteorological data, as well as evidence from the geologic record, suggest that climate conditions have been highly variable in the region, and that prolonged cycles of drought or high rainfall are possible. With urban development and increased demand for water, greater reliance by municipalities on surface water that can be obtained from upper watersheds is likely. One of the most readily implementable options is to capture and store excess or seasonal runoff by using it to recharge groundwater.

BLM's ability to optimally manage water resources is constrained by the requirement to manage public lands for multiple uses. BLM anticipates expansion of geothermal resource development, and continued development of locatable minerals on public lands. With increased demand for water, the BLM will focus greater attention on applicants' plans and assurances relating to both the

consumptive use requirements of the projects, and to the potential impacts on water quality. Continued coordination with state agencies will help to ensure that the impacts of mineral development on water resources are minimized. These projects are required to undergo an environmental review process in which the BLM acts as the lead agency for evaluating the project impacts. In this role, the BLM has a substantial role in ensuring that future projects are consistent with environmental protection objectives.

Mining activities are expected to continue to use water at about the current rate, although the point of use may change as some mines close and others start up.

Increased public demand for recreation may result in a small increased demand for water resources. Current development of potable water facilities for recreational use is negligible due to the high maintenance cost and monitoring requirements.

The process of identifying impaired water bodies and determining TMDLs will continue, with one result likely to be improved resolution of the causes of the impairment. Among the possible outcomes of better identification of the causes of the impairments may be increased requirements for land owners and managers to monitor and account for nonpoint pollutant loadings.

The BLM has increasingly focused efforts on data collection relating to the effects of management actions on soil, vegetation, stream geomorphology, and water quality conditions in watersheds. Evaluation of these data is expected to result in better and earlier identification of the effects of changes in management and to enable management strategies to be better adapted to specific objectives. Improved adaptive management of watersheds is expected to lead to gradual and widespread improvements in water quality and watershed condition. Strategies for managing water resources involve multidisciplinary approaches. Thus, for example, water quality is expected to improve as impacts of grazing on vegetation cover are reduced through such means as hot season restrictions on grazing in riparian areas.

Key Features

Designated beneficial uses for class water bodies include municipal or domestic supply, aquatic life, propagation of wildlife, irrigation, watering of livestock, recreation (contact or noncontact), and industrial supply. Water must meet the standards in order to be used for the beneficial uses designated for the water. Water that does not meet these standards is considered impaired.

The State of Nevada is required to identify impaired surface water bodies under Section 303(d) of the Clean Water Act. A list of these impaired water bodies and a discussion of the status of each stream is presented in the most recent 303(d) report (NDEP 2004). The list is not yet final, and has not been approved by the US EPA. The impaired water bodies currently identified within the planning area are presented in Table 2-7. In addition to the list of impaired streams, the report identifies water bodies warranting further investigation, which are also included in

Table 2-8 below. Note that most water bodies within the planning area have not yet been evaluated. Preliminary data collected by the BLM for some streams suggests that additional streams qualify as impaired based on temperature, suspended sediment, fecal coliform, or other parameters.

Table 2-7
Impaired Water Bodies in Planning Area, from 303(d) List (NDEP 2004)

Hydrologic Unit/watershed	Water Body	Reach	Size	Existing TMDLs	Pollutant or Stressor of Concern
16040105	Humboldt River	Battle Mountain to Comus	81.36 miles	Total phosphorus, TDS, TSS	Boron, iron, TDS, total phosphorus, TSS, turbidity
16040108	Humboldt River	Comus to Imlay	114.09 miles	Total phosphorus, TDS, TSS	Iron, molybdenum TDS, total phosphorus, TSS, turbidity
16040108	Humboldt River	Imlay to Woolsey	44.43 miles	None	Molybdenum
16040108	Humboldt River	Woolsey to Rodgers Dam	13.22 miles	None	TDS
16040108	Humboldt River	Rodgers Dam to Humboldt Sink	22.77 miles	None	Boron, iron, molybdenum
16040109	Little Humboldt River	Entire length	53.52 miles	None	Total phosphorus

Table 2-8
Waterbodies Warranting Further Investigation (NDEP 2004)

Hydrologic Unit/watershed	Water Body	Reach	Size	Existing TMDLs	Pollutant or Stressor of Concern
16040109	N Fork Little Humboldt River	Below Buckskin Mine to forest boundary		None	Metals, pH
16040109	Little Humboldt River	Entire length		None	Dissolved oxygen, iron, temperature
16040108	Rochester Canyon Creek	Below historic mine site		None	Metals

2.1.5 Vegetation

Indicators

Indicators of vegetation condition include acres affected by grazing, wildland fire, and infestation of noxious–weeds and other invasive nonnative plant species. Indicators of noxious weed conditions in the decision area include the extent and density of occurrence. The diversity of noxious weed species may indicate the effectiveness of current management efforts or may reflect new pressures on the land. Indicators of potential infestation areas include significant site disturbance, such as wildfire, road construction, and overgrazing, as many noxious weeds are early successional species that colonize recently disturbed sites (Baker 1986). Human caused disturbances are generally responsible for most weed infestations.

These indicators are derived from the following sources of information on vegetation resource management: field observations, allotment evaluations, vegetation monitoring, stream surveys, noxious weed surveys, wild horse and burro herd management area documents, fire rehabilitation plans, and associated data provided by commercial project proponents.

Current Condition

The WFO management area includes portions of the Northern Great Basin and Columbia Basin. Within these provinces, precipitation and other climatic factors, availability of water, soils, elevation, and exposure all contribute to the diversity of vegetation. Six primary vegetation types have been described in the management area: desert sink scrub, saltbush scrub, sagebrush scrub, riparian, meadow, and woodland. The BLM acreage of each of these major plant communities is shown below in Table 2-9, subdivided into plant associations within each.

Desert sink scrub covers 270,059.01 acres of BLM land. Within the Planning Area, this habitat type is dominated by greasewood *(Sarcobatus vermiculatus),* with other species such as iodine bush *(Allenrolfea occidentalis),* yellow rabbitbrush *(Chrysothamnus viscidilforus),* big sagebrush *(Artemisia tridentate),* and shadscale *(Atriplex confertifolia).* Species are generally distributed throughout this habitat type based on aspect, soil type, and past grazing pressure.

Saltbush scrub covers 537,938.24 acres of BLM land. Saltbush scrubs occur in soils that are less salty than those of alkali sinks. Dominant species can include shadscale, hop-sage *(Grayia spinosa),* and mixed saltbush *(Atriplex* spp.). This habitat type may be found in valleys, washes, lower slopes, and moderately drained flats.

Sagebrush scrub covers 3,987,491.57 BLM acres in the WFO planning area, based on the vegetation GIS coverage presented in Table 2-9 (BLM 2005). The species of

sagebrush are generally distributed according to elevation, precipitation, slope, and salinity. Kuchler (1970) divided areas supporting sagebrush into two major vegetation types: sagebrush steppe, where sagebrush can co-dominate with native bunchgrasses, and Great Basin sagebrush, where sagebrush can be the sole dominant. These two major types come into contact with each other in the WFO, with sagebrush steppe predominant in the north and Great Basin sagebrush predominant in the south. The percent cover of sagebrush at any specific site is a product of soils, climate, topography, and disturbance history.

Riparian areas and meadows will be discussed in detail in the riparian and wetland resource section of this AMS. Woodlands will be discussed in detail in the forestry and woodland products resource uses section.

Table 2-9
Plant Communities/Associations in the WFO Planning Area

Plant Community/Association	Scientific Name	Acres on BLM Land	BLM Acres affected by Fire	BLM Acres Affected by Grazing Allotments	BLMAcres Affected by Wild Horse and Burro HMAs
A. Desert sink scrub		**270059.01**	**15,071.19**	**259,175.42**	**44,613.67**
1—Iodine bush	*Allenrolfea occidentalis*	7,794.24	849.28	7,745.56	765.58
2—Alkali sacaton/inland saltgrass/alkali bluegrass	*Sporobolus airoides/Distichlis spicata/Poa juncifolia*	1,944.85	0.00	1,944.85	108.10
3—Black greasewood	*Sarcobatus vermiculatus*	219,139.67	7,067.52	209,693.24	37,301.04
4—Black greasewood/basin big sagebrush	*S. vermiculatus/Artemisia tridentata*	41,180.25	7,154.39	39,791.77	6,438.95
B. Saltbush scrub		**2,537,938.24**	**285,262.40**	**2,497,472.20**	**1,004,029.66**
1-Shadscale	*Atriplex confertifolia*	7,837.80	0.00	0.00	1,084.14
2—Shadscale/black greasewood	*A. confertifolia/S. vermiculatus*	482,644.56	15,956.74	460,546.30	68,698.67
3—Shadscale/bud sagebrush	*A. confertifolia/Artemisia spinescens*	1,486,094.40	223,719.29	1,482,299.29	753,769.83
4- Shadscale/Bailey greasewood	*A. confertifolia/S. vermiculatus* var. *baileyi*	404,853.87	31,749.58	404,443.33	149,581.55
5—Shadscale/Cooper wolfberry	*A. confertifolia/Lycium cooperi*	2,409.80	0.00	2,409.80	0.00
6—Sickle saltbush	*A. falcata*	2,012.01	430.80	2,012.01	579.50
7- Fourwing saltbush	*A. canescens* var. *canescens*	87,448.46	7,310.71	87,442.65	17,915.43
8—Torrey's quailbush	*A. torreyi*	36,832.99	1,005.11	36,210.14	2,393.69

9—Spiny hopsage	*Grayia spinosa*	3,570.74	2,164.06	3,570.74	290.28
10—Winterfat	*Krascheninnikovia lanata*	18,572.80	2,926.14	18,537.94	8,824.69
11-Fourpart horsebrush/fourwing saltbush	*Tetradymia tetrameres/Atriplex canescens*	5,660.81	0.00	0.00	891.88
C. Sagebrush scrub		**3,987,491.57**	**962,545.20**	**3,957,609.14**	**2,238,912.97**
1—Wyoming big sagebrush	*Artemisia tridentata* var. *wyomingensis*	2,104,788.50	612,819.92	2,091,307.21	1,127,786.39
2—Mountain big sagebrush	*A. tridentata* ssp. *vaseyana*	510,519.63	139,539.65	509,193.43	311,960.81
3—Low gray sagebrush	*A. arbuscula* ssp. *arbuscula*	407,691.86	52,886.56	404,543.05	160,601.59
4—Lahontan sagebrush	*A. arbuscula* ssp. *longicaulis*	605,488.26	80,545.07	605,027.00	445,554.08
5—Basin big sagebrush	*A. tridentata*	50,405.65	11,055.43	48,246.93	10,875.18

Table 2-9
Plant Communities/Associations in the WFO Planning Area *(continued)*

Plant Community/Association	Scientific Name	Acres on BLM Land	BLM Acres affected by Fire	BLM Acres Affected by Grazing Allotments	BLMAcres Affected by Wild Horse and Burro HMAs
6—Big sagebrush	*A. tridentata*	170,151.58	51,641.17	167,894.47	78,036.02
7—Three-tip sagebrush	*A. tripartita*	2,152.17	61.44	2,149.92	0.00
8—Black sagebrush	*A. nova*	120,678.91	13,995.96	120,678.91	96,621.91
9—Rabbitbrush	*Chrysothamnus* spp.	8,568.22	0.00	8,568.22	2,724.67
10-Inland Saltgrass	*Distichlis spicata*	6,653.67	0.00	0.00	4,359.20
11-Silver Sagebrush	*Artemisia cana*	393.12	0.00	0.00	393.12
D. Riparian		**3928.42**	**201.75**	**2,523.64**	**171.57**
1—Willows	*Salix* spp.	3,476.69	201.75	2,519.15	171.57
2—Silver buffaloberry	*Shepherdia argentea*	221.64	0.00	4.49	0.00
3-Cattails	*Typha angustifolia*	230.09	0.00	0.00	0.00
1—Tufted hairgrass	*Deschampsia cespitosa* ssp. *cespitosa*	339.49	51.15	339.49	0.55
2-Bluegrass	*Poa secunda*	274.06	9.73	269.49	98.26
3—Nevada bluegrass	*P. nevadensis*	217.94	0.00	217.94	0.00
4—Creeping wildrye/ Beardless wildrye	*Leymus triticoides*	283.28	0.00	283.28	283.28
F. Woodland		**123,937.75**	**7,675.24**	**114,010.33**	**108,012.96**
1—Pinyon/Utah juniper	*Pinus monophylla/Juniperus osteosperma*	42,793.96	1,020.26	42,791.74	42,557.36
2—Utah juniper	*J. osteosperma*	69,687.24	6,654.98	69,682.04	65,455.60
3—Mountain mahogany	*Cercocarpus ledifolius*	9,920	0.00	0.00	0.00
4—Whitebark pine	*Pinus albicaulis*	1,536.55	0.00	1,536.55	0.00
G. Barren		**294,485.16**	**4,531.27**	197,807.16	10,172.88
H. Water		**247.41**	**10.48**	231.05	46.26
I. No Data		**44,743.65**	**5,175.98**	43,073.97	20,921.64

Source: BLM 2005

Aspen stands are a minor vegetation type that is not reflected in the table of vegetation because of the small acreage that is involved. Aspens provide habitat for cavity-dependent species of forest-dwelling birds and mammals, many of which require snags for their reproduction. The size, age classes, and stocking levels of trees influence the value of an aspen stand as wildlife habitat for game and nongame species. Dead and downed material supplies structure for a variety of purposes and plays an important role in overall ecological processes, such as recycling nutrients in forest and woodland.

Primary impacts on vegetative communities are caused by continued drought, wildland fire, heavy recreation use, commercial activities, OHV travel, grazing (by livestock or wild horses and burros), and invasive species.

The overall effect of fire in vegetative communities is to reduce the cover of shrubs and to increase the abundance of herbaceous plants. Where adequate seed source is present, fire may result in an increase in noxious weeds and other invasive nonnative species, particularly cheatgrass and medusahead. The increased cover and more continuous fuel load of grass cover in turn may increase the frequency and intensity of wildland fire, and thus over time intensify the loss of native vegetation. Because sagebrush may be killed outright by fire and does not resprout, it may return only very slowly to burned areas. Cheatgrass is a dominant factor in the fire regime and potentially influences fire dynamics across nearly half of the sagebrush distribution (Connelly et al. 2004).

Recreational use, including OHV travel, causes localized ground disturbance and habitat for weeds and is a vector for distribution of seed.

Grazing by both domestic livestock and by wild horses and burros can cause localized ground disturbance and a corresponding increase in habitat for invasive nonnative species and increased cover of shrubs because of preferential grazing by livestock.

Weeds

Weeds can be native or nonnative, invasive or noninvasive, and noxious or not noxious. Legally, a noxious weed is any plant designated as undesirable by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property. As such, noxious weeds typically require control. A noxious weed is defined as any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind that is of foreign origin, is new to or not widely prevalent in the US, and can directly or indirectly injure crops, other useful plants, livestock, poultry, or other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health (Federal Noxious Weed Act of 1974).

Invasive plants and noxious weeds are not the same. Invasive plants not only include noxious weeds, but also include other plants that are not native to the US.

The BLM considers plants invasive if they have been introduced into an environment where they did not evolve. As a result, they usually have no natural enemies to limit their reproduction and spread (Westbrooks 1998). Some invasive plants can produce significant changes to vegetation, composition, structure, or ecosystem function (Cronk and Fuller 1995).

Many state and county governments in the west have designated noxious weed lists. The Nevada Department of Agriculture maintains the Nevada State Noxious Weed List, which includes 42 different species of weeds that are designated noxious by state law.

Weed species affect all resources that depend to some degree on vegetation. Weeds have degraded rangeland health and diversity by changing fire regimes. The primary invasive plant in the planning area, cheatgrass *(Bromus tectorum),* has led to an increase in continuous fine fuel and an earlier fire season than what occurred historically. Management emphasis is directed toward areas of the planning area where cooperative management strategies are already in place and for which data exists though studies or GIS compilations. In addition to the species that are well documented in the planning area, new species are appearing there and may be even more disruptive to the native plant community than species that have existed in the planning area for a greater period of time.

Nevada has listed 42 nonnative invasive plant species that require control. Of these 42 species, 13 are commonly found on lands administered by the WFO (Table 2-10).

Table 2-10
Nonnative Invasive Plant Species in the WFO Planning Area

Common Name	Scientific Name
Black henbane	*Hysocyamus niger*
Poison hemlock	*Conium maculatum*
Hoary cress	*Cardaria draba*
Houndstongue	*Cynoglossum officinale*
Russian knapweed	*Acroptilon repens*
Spotted knapweed	*Centauria maculosa*
Leafy spurge	*Euphorbia elsua*
Mayweed	*Anthemis cotula*
Medusahead	*Taeniatherum caput-medusae*
Perennial pepperweed	*Lepidium latifolium*
Puncturevine	*Tribulus terrestris*
Purple loosestrife	*Lythrum salicaria*
Salt cedar (tamarisk)	*Tamarix ramosissima*
Canada thistle	*Cirsium avense*
Musk thistle	*Taeniatherum caput-medusae*
Scotch thistle	*Onopordum acanthium*

Plants that are considered weeds in other areas and that are actively managed elsewhere, but which do not show up on Nevada's invasive plant list, have been found within the WFO. Weed inventory data have been collected at numerous locations in the decision area and compiled in a database maintained by the Natural Resources Conservation Service (NRCS). Control efforts have been conducted in the following locations in the WFO:

- Pine Forest Range, Big, Pass, Granite, and Alta Creeks—Scotch thistle;
- Deer Creek Reservoir and Ranch area—tall whitetop *(Lepidium latifolium)* and Russian knapweed*;*
- Negro Creek—hoary cress and Russian knapweed;
- Leadville Canyon—tall whitetop, hoary cress, and Russian knapweed;
- Flowing Well—tall whitetop and Russian knapweed;
- Hycroft Mine vicinity and west side of Jackson Mountains—Tamarisk;
- Silver State Valley—tamarisk and hoary cress;
- Coal Canyon—Tall whitetop and yellow starthistle *(Centaurea solstitialis)*;
- Crutcher Canyon—Medusahead;
- Thomas Canyon—Leafy spurge;
- Elbow Canyon—Yellow starthistle;
- Asa Moore Canyon—Scotch thistle;
- Buckskin Canyon—Tall whitetop, hoary cress, and Scotch thistle;
- Lamance, Cottonwood, Mullinix, Solid Silver, and Indian Creeks—Leafy spurge;
- Little Owyhee BLM system road—Russian knapweed and hoary cress;
- Bartlett Creek—hoary cress;
- Leonard Creek roads (with Humboldt County Roads Department)—Tall white top, hoary cress;
- Leadville Canyon (with Washoe County Roads Department, Gerlach CWMA, Nevada Department of Agriculture, Cedarville BLM)—Russian knapweed and leafy spurge; and
- McDermitt Reservation (with Humboldt County Weed Task Force)—Russian knapweed and leafy spurge.

The WFO is planning a weed inventory for 2005 that will cover approximately 250,000 acres, assuming funds are available. Currently, the most widespread species are tall whitetop, hoary cress, and Scotch thistle. Noxious weeds have been found in a variety of locations and habitat types, with transportation systems being a major vector for their spread. Other dissemination vehicles includes OHV use, wind, water, wildlife, livestock, and humans.

Trends

Since the early 1980s vegetation diversity has continued to be affected by wildfire, drought, invasive species, increased recreation use, grazing and commercial operations. This is especially true within the sagebrush scrub vegetation community.

Estimates of woodland expansion throughout the Intermountain West are 60 to 90 percent (Connelly at al. 2004). Pinyon and juniper woodlands are not as widespread on the WFO as in other areas of Nevada, but this vegetation type is expanding in some areas (BLM 2003).

Established weed populations in many areas continue to expand and new weed species, such as yellow starthistle and medusahead, appear within the planning area. Some species, including halogeton, cheatgrass, and Russian thistle, have become so ubiquitous throughout the planning area and the Great Basin that it is considered economically infeasible to attempt to control them and they have become considered part of the vegetative landscape, despite their negative effects on other vegetation. Medusahead, while not currently widespread in the planning area, has the potential to replace cheatgrass in sagebrush and greasewood communities. Tall whitetop has shown the pattern of becoming established in riparian zones and then expanding its range to drier sites. Leafy spurge, Scotch thistle, and hoary cress continue to colonize new areas.

There have been some successes in control of certain species in specific areas, and if such efforts are expanded, a certain amount of control over noxious invaders may be realized. For example, spotted knapweed *(Centaurea maculosa)* was identified and treated in the in the Kings River Valley and has since been eradicated.

Forecast

Based on wildland fires and associated increases in invasive nonnative plant species, vegetation diversity and cover of native species is likely to continue to decline. Watershed management actions to rehabilitate burned areas and areas affected by commercial activities are planned. Successful implementation of these plans may slow or gradually reverse the loss of native vegetation.

Under current management, medusahead will gradually displace cheatgrass as the primary weed species throughout much of the rangeland in the WFO. Tamarisk will gain a greater foothold in riparian areas, particularly along the Humboldt

River. Other weed populations will expand, encouraged by fire, grazing, and drought.

Key Features

Communities or areas within communities that are relatively intact (unfragmented) and those that have been fragmented or otherwise degraded but have restoration potential.

Thacker Pass (Nevada Natural Heritage Program 2000).

The Montana Range, which includes large blocks of relatively intact sagebrush habitat.

2.1.6 Fish and Wildlife

Indicators

Fish and wildlife indicators reflect the types, composition, structure, diversity, and relative abundance of fish and wildlife within the planning area, as well as distribution, patterns, and connectivity of fish and wildlife populations.

The indicators are used to assess the functioning and sustainability of planning area ecosystems by considering species occurrences, population trends, habitat quality, and habitat trends. The integrity and quantity of sagebrush habitats is a critical indicator for the status and prospects of sagebrush obligates, such as the sage sparrow *(Amphispiza belli),* desert bighorn sheep *(Ovis canadensis),* and sagebrush lizards *(Sceloporus graciosus).*

These indicators are assessed through allotment evaluations, stream and vegetation monitoring, NDOW population surveys, and field observations.

Current Conditions

The planning area falls within the greater Great Basin ecosystem. The assortment of topography, vegetation, and climate occurring in the planning area provides habitats for a variety of wildlife species. The presence of any species may be seasonal or year-round based on individual species requirements. Fish and wildlife found within this area are representative of those species found within Great Basin ecosystems, including sagebrush, saltbush, woodland, and riparian habitats. Sagebrush habitats provide perennial habitat for mule deer, sage-grouse, and pronghorn antelope. Aspen, juniper, and mountain mahogany woodlands provide nesting sites for a variety of bird species commonly found in more heavily timbered areas. Riparian and wetland habitats are used extensively by wildlife, including neotropical() migrant birds (species that breed in North America and over-winter in Central and South America) , such as hummingbirds, finches, warblers, thrushes, and orioles in the spring and fall. Rock complexes are utilized by roosting and nesting swallows, swifts, golden eagles, and prairie falcons, along with many other bird species. These rocks also provide important cover for large

mammals, such as bighorn sheep, mountain lions, and bobcats, and for small mammals, such as ground squirrels, wood rats, rabbits, and marmots. The vegetative description in the vegetation and riparian sections provides additional vegetation and habitat types.

Aquatic habitats, such as streams, rivers, and creeks, contain a range of aquatic mollusk, fish, and insect species. Many game species are found in northern Nevada, including largemouth bass *(Micropterus salmoides),* rainbow trout *(Oncorhynchus mykiss),* common carp *(Cyprinus carpio),* brown trout *(Salmo trutta),* brook trout *(Salvelinus confluentus),* and the Lahontan cutthroat trout (*Oncorhynchus clarki henshawi),* which is the lone native of the region.

The following are descriptions of priority species, based on regulatory status, population levels, and estimated value to the area.

Upland game bird species

Upland game bird habitat preferences and general abundances are outlined in Table 2-11.

Table 2-11
Upland Game Bird Species and Habitat Preferences

Species	Notes and Habitat Preference
Chukar partridge *(Alectoris graeca)*	Associated with rocky canyons in mountainous terrain; widespread throughout the planning area.
Valley quail *(Lophortyx californicus)*	Associated with riparian areas; moderately abundant on public land.
Mourning dove *(Zenaidura macroura)*	Occupy a wide variety of habitats in the planning area, where they are widespread.
Sage-grouse *(Centrocercus urophasianus)*	Foothills, plains, and mountain slopes where sagebrush is present in a mixture of sagebrush, meadows, and aspen, in a variety of sagebrush mosaic habitats (Nature Serve 2005).

The quality of upland game bird habitat depends on the availability of mixed shrubby and herbaceous vegetation types for nesting, brood rearing, foraging, and thermal cover. Riparian habitat plays an important role as a source of food, water, and shelter for most species.

Mule deer

Mule deer are widespread, typically associated with complex middle to upper elevation landforms that support a wide variety of sagebrush, mountain shrubs, quaking aspen, juniper, and herbaceous vegetation. Mule deer also use lower elevations during years when deep snow forces them to move. Mule deer are frequently associated with meadow and riparian habitat and tend to be present yearlong where public land adjoins cultivated farmland.

Based on NDOW survey data, mule deer numbers are currently low, relative to historic numbers and state management objectives. Severe winters, drought, and

loss of winter habitat due to wildfire and other biological factors have contributed to these low numbers.

Deer are generally classified as browsers, and forbs and shrubs make up the bulk of their annual diet. However, the diet of mule deer is quite varied, and the importance of various classes of forage plants varies by season. For example, in late fall and early spring, new grass may constitute an important part of their diet in some areas because it is highly palatable, nutritious, and abundant. In winter, especially when grasses and forbs are covered with snow, the entire diet may consist of shrubby species. Tall shrubs and trees are very important for food and cover.

Woodland and rangeland management actions all have the potential to influence mule deer cover and forage. Healthy quaking aspen, juniper, mountain shrub, and sagebrush communities are all important tall cover habitats for mule deer. Meadows and riparian areas provide succulent forage and water, especially during the fall and summer.

All of the spring fawn data indicate an overall healthy and viable mule deer population for the planning area.

Pronghorn antelope

Pronghorn antelope are distributed throughout much of the planning area. NDOW has not established population management objectives for pronghorn, but they do currently manage for benchmark population characteristics. During the summer, pronghorn antelope are widely distributed throughout valleys, mountain foothill habitats, and mountaintops. This species has been known to pioneer new populations into previously unoccupied habitats. They are associated with low and black sagebrush and shadscale habitats with short vertical structure.

Rangelands with a mixture of grasses, forbs, and shrubs provide the best habitat (Yoakum 1972). The sagebrush community is used for both thermal cover and forage. Competition for forage with cattle and wild horses is variable due to forage preferences. Lack of water at natural or developed sites can be a serious problem during droughts. BLM fence construction specifications allow for freedom of movement for pronghorn by having smooth bottom wires spaced at least 16 inches from the ground.

Elk (Cervus elaphus)

There are no known populations of elk within the WFO; however, there are established populations in Oregon to the north and the Elko Field Office to the east, as well as in southern Nevada. Pioneering elk have been observed within the WFO (Detweiler 2005) and have the potential to become more abundant in the Planning Area over the coming years.

Elk summer in alpine meadows and wooded hillsides and winter in valleys and open grasslands (Nature Serve 2005). Calving is not limited to a specific area or habitat (Nature Serve 2005). In spring, male elk known as bulls will form small bachelor herds in the high country, until the rut in late summer (NDOW 2004). Elk are primarily grazers but are opportunistic consumers of forbs and browsers of willow, aspen, and other tree vegetation (Nature Serve 2005).

Bighorn sheep (Ovis Canadensis)

Desert bighorn historically occupied the central and southern portions of Nevada (NDOW 2002). Hunting the animals was prohibited from 1901 to 1952, and transplanting programs have been successful: between 1968 and 1988 more than 800 desert bighorn were transplanted (McCutchen No date). Since 1960 bighorn have increased in numbers, but their population levels are still low when compared with the estimates of pre-European numbers and the amount of available unoccupied habitat (McCutchen No date). More information specific to the desert bighorn sheep is discussed in the special status species section.

Cougar

Cougar *(Felis concolor)* are present throughout the planning area. NDOW data indicate that cougar populations are maintaining within the planning area. A healthy cougar population is indicative of a healthy ecosystem.

Raptors

Raptors (predatory birds such as hawks, eagles, owls, and falcons) can be found throughout much of the planning area. Common breeding species include the red-tailed Hawk *(Buteo jamaicensis)*, prairie falcon *(Falco mexicanus)*, American kestrel *(Falco sparverius)*, golden eagle *(Aquila chrysaetos)*, northern harrier *(Circus cyaneus)*, great horned owl *(Bubo virginianus)*, and long-eared owl *(Asio otus)*. Other less common breeders that may be found locally include the ferruginous hawk *(Buteo regalis)* and burrowing owl *(Speotyto cunicularia)*. Nesting habitats are found in Utah juniper, quaking aspen, and volcanic ledges and buttes. Prey species are more likely to be available for a wide range of raptors when plant communities are structurally diverse and support mixtures of grasses, forbs, and shrubs.

Most of the breeding species also winter within the planning area; however, the rough-legged hawk *(Buteo lagopus)* only uses the Planning Area for its wintering grounds.

Waterfowl, shorebirds, and wading birds

Approximately 70 species of birds use the area's few wetlands during migration and as breeding habitat when surface water is present.

Representative breeding species include the Canada goose *(Branta canadensis)*, cinnamon teal *(Anas crecca)*, mallard *(A. platyrhynchos)*, gadwall *(A. strepera)*, American avocet *(Recurvirostra americana)*, Wilson's phalarope *(Steganopus tricolor)*, and spotted sandpiper *(Actitis macularia)*. Vegetation cover for nest

concealment from predators and for protection from other disturbances is important during the breeding season.

Neotropical migrant birds

The planning area supports a wide variety of neotropical migrant bird species (more than 240 species).

Populations of some of these species are declining as a consequence of land use practices, an increase in cowbirds *(Molothrus ater)* (which as brood parasites lower the reproductive success of other passerines), as well as other factors. Neotropical migrants exhibit quite variable habitat requirements and are found in most habitat types. Most birds found in the planning area are or have the potential to be neotropical migrant birds, except such birds as quail, grouse, and partridge.

Invertebrates

Limited information is available on invertebrates, and more is known about aquatic than terrestrial species. The presence of invertebrates that are found only in clean water, such as certain stoneflies, indicates good stream conditions.

Springs are a source of unique, often endemic, assemblages of invertebrates that are adapted to the constant temperatures and distinctive geothermal environments that springs provide. Thermal springs, because of their high temperatures and concentrations of dissolved minerals, subject invertebrates to a rigorous environment that precludes high diversity or abundance. Nevertheless, some species of nematodes, mites, beetles, flies, amphipods, and snails are adapted to hot springs. Several rare snails have been collected from thermal springs in the planning area and have been described as species.

Trends

Wildlife diversity and abundance is directly tied to maintaining habitat diversity and quality. Historic wildlife population levels and trends were a reflection of historic high vegetation diversity. For a variety of reasons, vegetation and wildlife habitats are less diverse than historic conditions. Such reasons include increases in fires, livestock grazing, conversion of native vegetation to agriculture, noxious weed infestations, and increased recreational use of public lands.

Trends have varied according to particular fish and wildlife species. Mule deer populations increased dramatically in the 1900s up until the late 1980s (NDOW 2004). In 1989 the mule deer population was observed to decline and has continued to decline up until present day (NDOW 2004a). This trend is based on quantitative information from NDOW, USFWS, and other assorted surveys and data sources. NDOW management has changed to better regulate the hunting and management of this species, with the intent of ending the present decline in mule deer within the planning area.

Sagebrush habitats have been substantially reduced in area and quality due to detrimental land uses and undesirable ecological processes (Wisdom et al. 2003). Both sagebrush and other native Great Basin habitats, such as salt desert scrub, are highly at risk due to loss by fire and cheatgrass invasion and to a lesser degree pinyon-juniper conversions. Wildlife that depend on these habitats for forage and cover or breeding have decreased in abundance and in range. Many of these species, such as the greater sage-grouse, are addressed in the Special Status Species section of this AMS.

The quantity and quality of riparian and aquatic habitat have declined, along with the increase in livestock grazing in their proximity, water diversions, development, and pollution. Native fish and birds have declined in numbers, along with the loss and degradation of riparian and aquatic habitat.

Forecast

The decline in native fish and wildlife populations is likely to continue unless specific and comprehensive measures are undertaken to restore habitat quality, quantity, and important migratory corridors. State and federal agencies are attempting to reverse the present trends that threaten native biodiversity and abundance within the planning area. This includes the Greater Sage-Grouse Conservation Plan for Nevada and Eastern California (NDOW 2004b) and Winnemucca Fire Management Plan (BLM 2004a). However, it has not yet been determined whether these management actions will be sufficient to stave off this decline when countered by the predicted increase in population, development, recreational activities, and energy extraction in the planning area.

Key Features

Priority habitat areas that have been identified for restoration and protection include sagebrush habitats, caves supporting bat species, riparian and wetland areas, and aquatic habitats, including springs. These habitats are critical to the integrity of the Great Basin ecosystem and in supporting fish and wildlife species native to the planning area.

2.1.7 Fish and Aquatic Habitat

Indicators

Water quality is a key indicator of environmental conditions for fish and aquatic habitats. Other elements critical to aquatic habitat and suitable fish habitat, including riparian habitat, sufficient water volume, and temperature and limited presence of nonnative competitors and predators, are identified in the Lahontan Cutthroat Recovery Plan (USFWS 1995). River bottom composition, in-water and over water vegetation coverage, as well as water temperature, composition, and flow are key indicators of aquatic habitat quality. The BLM uses its surveys and those done by NDOW staff to assess the abundance, distribution, and health of fish population and aquatic habitat within the planning area.

Current Conditions

Fisheries habitat includes perennial and intermittent streams that have the capability to support fish. There are approximately 1,550 miles of perennial streams on lands administered by the WFO.

Also found within the planning area are springs, which are aquatic habitats of less than 40 acres, where deep or shallow groundwater flows naturally from bedrock or natural fill onto the land surface and forms a body of water (NDOW 2002). These springs are isolated from other surface waters and as a result commonly support a diversity of endemic species (NDOW 2002)

Table 2-12 lists the sport fish found within these streams, most of which were and continue to be introduced into the system for recreational purposes.

Table 2-12
Sport Fish in the Planning Area

Common Name	Scientific Name
Black bullhead	*Ictalurus melas*
Largemouth bass	*Micropterus salmoides*
Black crappie	*Pomoxis nigromaculatus*
Northern pike	*Esox lucus*
Bluegill	*Lepomis macrochirus*
Rainbow trout	*Oncorhynchus mykiss*
Brook trout	*Salvelinus confluentus*
Redear sunfish	*Lepomis. microlophus*
Brown bullhead	*Ictalurus nebulous*
Sacramento perch	*Archoplites interruptus*
Brown trout	*Salmo trutta*
Smallmouth bass	*Micropterus dolomieui*
Channel catfish	*Ictalurus punctatus*
Walleye	*Stizostedion vitreum*
Common carp	*Cyprinus carpio*
White catfish	*Ictalurus catus*
Green sunfish	*Lepomis cynellus*
White crappie	*Pomoxis annularis*
Lahontan cutthroat trout	*Oncorhynchus clarki henshawi*
Yellow perch	*Perca flavescens*

Source: BLM 2002a

The condition of fisheries habitat is intrinsically linked to the condition of the adjacent riparian habitat and also the stream channel characteristics. Riparian vegetation moderates water temperatures, adds structure to the banks to reduce erosion, and provides overhead cover for fish.

Intact vegetated floodplains dissipate stream energy, store water for later release, and provide rearing areas for juvenile fish. Water quality, especially in regard to factors such as temperature, sediment, and dissolved oxygen, also greatly affects fisheries habitat.

Public land within the planning area provides habitat for at least one federally listed native fish species, Lahontan cutthroat trout *(Oncorhyncus clarki henshawi).* Amphibians and aquatic invertebrates are integral components of the fish community. Several springsnail species are known to occur within the planning area and are generally associated with springs and springbrooks; however, they are also found within perennial stream reaches that are strongly influenced by groundwater. At least six of these species are on the BLM's sensitive species list for Nevada.

Trends

Fisheries and aquatic habitat has gradually declined over the last century due to a combination of human influences. These include increased wildfire due to the spread of invasive plant species, such as cheatgrass, overgrazing and spread of nonnative and invasive wildlife, prolonged drought and water diversion from natural waterways increased recreational activities, and commercial activities. Poor management of aquatic habitat throughout much of the twentieth century, amidst increasing human occupancy and recreation within the planning area, resulted in decreased water quality and loss of natural aquatic habitats.

Livestock, including wild horses, and diversions, many for livestock watering, were the predominant disturbances found in one study of 511 northern Nevada springs (NDOW 2002)

Forecast

Drought and wildfire will continue to contribute to declines in wildlife habitat quality. Resource management decisions to reestablish fisheries and aquatic habitat, implement grazing strategies that improve riparian resources, and protect key habitats within the planning area should reduce the degree of decline. Reductions in the occurrence of annual hot season livestock grazing is critical to protecting fish and aquatic habitats and to meeting the established BLM management goals and obligation to protect jurisdictional wetlands and waters.

Key Features

The key features for fish and aquatic habitat are the priority watershed areas identified in the Lahontan Cutthroat Trout Recovery Plan (USFWS 1995) and NDOW's LCT Species Management Plan for the Blackrock and Quinn Basins (1999). These watersheds have been deemed critical for this species' recovery. Also critical to health and abundance of fishery resources are wetlands, riparian habitats, perennial streams, and springs, which are hot spots of wildlife biodiversity.

2.1.8 Riparian Habitat and Wetlands

Indicators

- Percentage of lotic riparian areas (those with flowing water) determined to be at proper functioning condition (PFC);
- Percentage of lentic riparian areas (those without flowing water) determined to be at PFC ;
- Distribution of birds relative to riparian area condition;
- Chemical and temperature characteristics;
- Distribution and abundance of stream macroinvertebrates compared to reference streams ; and
- Distribution of spring snail species.

Current Condition

The term riparian is used here to include both lotic systems and lentic systems. Wetlands may occur in both lotic and lentic systems and typically provide wildlife with green forage, insects, and drinking water. Green forage is especially important for many wildlife species during the summer and fall when upland vegetation has dried out. The structure, food, and water provided by these communities make them the single most diverse and productive wildlife habitat in the planning area.

Riparian communities occur along the major watercourses in most intermountain valleys of the Planning Area and in association with isolated springs, seeps, and smaller streams. In the Great Basin, riparian communities are dominated by various mixtures of cottonwood, aspen, and willow species. Although riparian zones account for a very small proportion of the total acreage of the Planning Area, they play a critical role as habitat for wildlife. More than 75 percent of the wildlife species of the Great Basin are strongly associated with riparian areas (Dobkin 1998, Brussard and Austin 1993). Riparian areas are highly favored by grazing livestock, a feature that has led to extreme disturbance of this habitat type in many areas. Where site potential allows, vegetation may develop multiple canopies, including trees, shrubs, grasses, forbs, sedges, and rushes. This complex vegetation structure is the goal of riparian management, and it can provide exceptionally valuable habitat for a wide array of wildlife species. PFC is a standardized gauge of whether a riparian system has adequate vegetation, landforms, or large woody debris to perform essential flood control, water quality, erosion control, and habitat functions. PFC can be reached at a lower level of vegetation development than the management goal of Desired Future Condition.

Even riparian areas dominated by herbaceous communities and lacking complex structure are important as sources of water and food for wildlife.

As Table 2-9 in the vegetation section indicates, riparian areas include approximately 3,928 acres of the FO. Although this is a small percentage of the land area, the importance of these areas as wildlife habitat far exceeds their area.

Riparian functionality was intensely studied in over thirty watersheds in 1999 (Jensen et al. 1999). The average condition of the evaluated streams was determined to be in only "fair" condition, based on stream potential for riparian and stream habitats. Field data from studies throughout the WFO indicate that approximately 34 percent of the lotic riparian habitats are in PFC, and 18 percent are improving in the direction of PFC. The remaining 48 percent are neither in PFC nor making significant progress toward this condition.

Because the riparian functionality data from the watersheds that were studied in 1999 nearly matched the percentage of streams not in PFC or making significant progress toward that condition, it can be assumed that watersheds within the planning area overall are also in fair condition. However, the intensely studied watersheds were those that had been the location of Lahontan cutthroat trout recovery efforts, and therefore they may have benefited by management efforts. The other watersheds, in the absence of this intense management, may be in only fair to poor condition.

Lentic systems include other permanently wet or seasonally wet areas and includes lakes, reservoirs, vegetated playas, meadows, springs, and seeps. These areas are commonly found independently of a defined stream channel and can occur at various elevations and in diverse landscape settings. This is particularly true for meadows, springs, and seeps, which may be present within very arid areas and at low elevations. Lentic systems are typically small, and while they are extremely important ecologically, springs and seeps within the planning area typically average less than 0.2 acre in size. Over 100 of these may occur in a grazing allotment, making management very difficult.

Meadow habitats are vulnerable to grazing and other surface-disturbing uses that affect soil stability, water-holding capacity, and plant composition. All meadows are important watershed components that may be functionally impaired by gullies, sagebrush encroachment, and dominance by such species as iris *(Iris* sp.), which provides greatly diminished wildlife habitat values and indicates poor habitat health.

Where adequate site potential exists, vegetation associated with reservoirs or lakes commonly provides valuable nesting and brood-rearing habitat for waterfowl and shorebirds. Common vegetation associated with these types of wetlands includes inland saltgrass *(Distichlis spicata* var. *stricta),* Baltic rush *(Juncus balticus),* spikerush *(Eleocharis* spp.), alkali bulrush *(Scirpus robustus),* and cattail *(Typha angustifolia).* Some species of amphibians, birds, and reptiles tend to associate with these areas.

Springs and seeps occur where water from underground aquifers reaches the surface. Many springs flow directly into streams, but others form small isolated ponds or marshy areas. Springs and seeps may also form channels to flowing streams, or they may lose their surface expression and recharge alluvial fill material or permeable strata.

Springs and seeps are also important to lotic habitat because of the perennial base flow they provide to streams. In winter, especially in small streams, this base flow prevents formation of anchor ice, which has been found to be detrimental to the survival of salmonids and other aquatic species. In summer, inflow from springs not only provides volume but also helps to lower maximum daily water temperatures and the magnitude of diurnal temperature change.

Depending on soil and topography, extensive riparian areas may be associated with spring sources. Because of the continuous flow and constant temperature of most springs, riparian communities frequently remain permanently green, providing habitat, thermal and escape cover, and forage for wildlife throughout the year.

Springs can also be a source of unique, often endemic assemblages of invertebrates. Because these habitats are uncommon and isolated, a particular species may be found only at that site and may have little opportunity for dispersal or migration to other areas. Several rare snail species are restricted to springs and are vulnerable to impacts on the surrounding riparian vegetation and on the spring system's morphology and substrate composition.

Some springs are warm or hot because their aquifers are near a geothermal heat source. In addition to their high temperatures (above 95°F) hot springs are often characterized by large quantities of dissolved salts, carbon dioxide, carbon sulfide, or sulfur dioxide. Animals are never abundant at hot springs. In general, 77 to 86°F appears to be the dividing line between a diverse fauna at low temperatures and a poor fauna at high temperatures.

Because the thermal death-point of most freshwater invertebrates is between 86 and 104°F, many unique species of beetles, flies, amphipods, and snails are adapted to hot springs. These invertebrate communities generally rely on shallow rills of hot water and algae and cannot survive where dams or barriers form deep pools.

An extensive inventory of springs, their condition, and water yield to streams has not been conducted. It is estimated that 36 percent of the lentic systems are at PFC. The condition of lentic systems is typically linked to its spatial location on the landscape, site characteristics, the surrounding topography, and the type/season of grazing that is occurring.

Trends

Since the 1990 Wetland Riparian Initiative, the overall trend in the condition of lotic riparian areas in the management area is static. This overall assessment considers both continuing degradation due to invasive nonnative species, spring system development to facilitate water capture/removal, and slight improvement due to changes in land management. Improvements in riparian condition have resulted from reducing wild horse and burro populations and from reducing the season and duration of livestock grazing. Some areas continue to decline in condition, while others are improving. Some areas are declining with respect to invasive species but improving with respect to other indicators.

The data on lentic riparian areas is only partial, but it appears from the partial information that the overall trend in condition of these systems is downward. Horses have more impact in perched lentic wetland systems but are not as likely to have major effects on areas with woody vegetation. The lentic systems that are currently meeting the standard are typically inaccessible by livestock or wild horses/burros or the livestock grazing system in place focuses on improvement of riparian habitats.

Livestock typically congregate on riparian areas during the summer, which is the hot season. The degree of impact livestock have on a riparian habitat directly relates to the type of riparian vegetation present, gradient of the riparian area and adjacent slopes, type of livestock, substrate composition, and morphology. Impacts are greatest on systems with lower gradient, dominated by herbaceous vegetation, entrenched channels, and finer substrates. Conversely, systems occurring in higher gradient areas, dominated by woody riparian vegetation and coarse substrate or bedrock, are more resilient to livestock grazing impacts.

Forecast

Overall the current trend of very gradual improvement overall is likely to continue, provided that two management practices continue: reduction of hot season grazing by livestock in riparian areas and reduction/maintenance of appropriate management levels for wild horse (and burro) populations. The trend of increased distribution and abundance of invasive nonnative plant species is likely to continue but to be moderated by control efforts.

Key Features

Lahontan cutthroat trout recovery waters, springs and all other lentic wetland systems, Knott Creek reservoir, Blue Lake, and other salmonid sport fisheries.

2.1.9 Special Status Species

Indicators

Special status species indicators reflect population levels, distribution, and quantity and quality of preferred and suitable habitat and the prey needed to support them. This includes critical breeding, wintering grounds, and corridors needed to

support migrations and a healthy genetic pool needed to for adaptability to future circumstances and conditions. Indicators are detected through allotment evaluations, stream and vegetation monitoring, the NDOW population surveys, the Natural Heritage Program data base, field observations, the Governor's sage-grouse conservation strategy, local sage-grouse conservation groups, and the USFWS Region 1 data.

Indicators for aquatic species, such as the LCT, include the following elements outlined in the LCT Recovery Plan (USFWS 1995):

- Availability of clear cold water with an average maximum summer temperature of less than 72°F (22°C), and relatively stable summer temperatures averaging about 55°F (13°C) ± 7°F (4°C);
- Pools in proximity to cover and velocity breaks to provide cover and spawning areas;
- Well-vegetated, stable stream banks;
- 50 percent or more of stream area providing cover; and
- A relatively silt free rocky substrate in riffle-run areas for spawning.

Current Condition

Sage-grouse (BLM sensitive)

Historic records, which are mostly anecdotal and lack systematic survey data, indicate that sage-grouse populations have fluctuated widely in Nevada. The NDOW has indicated that although the current population is relatively moderate, it is considered to be declining (Willis et al. 1993).

In much of the popular and scientific literature, sage-grouse are considered an indicator species, or "icon" of the sagebrush steppe. The Partners in Flight Western Working Group (Altman and Holmes 2000) consider sage-grouse a species of focus. This document highlights sage-grouse as a species that occupies habitats that have declined substantially within the interior Great Basin since historical times. Sage-grouse are wide ranging and occupy upland, meadows, and riparian habitats. It is for this reason that sage-grouse are identified as the primary indicator or umbrella species for sagebrush habitats in this plan.

This species is highly dependent on the presence of several species and subspecies of shrubs, notably Wyoming, mountain, and great basin sagebrush. Low sagebrush is also important. Sage-grouse nest at mid-elevation habitats that support adequate shrubby and herbaceous plant cover (Connelly et al. 2000). Nesting habitats are typically associated with big sage/low sagebrush habitat complexes. Spring, summer, and fall ranges with a good complement of native grasses and forbs are associated with productive sage-grouse habitat. During the winter, sage-

grouse forage almost exclusively on either big sagebrush or low sagebrush, depending on severity the of snowfall and on the migratory habits of populations.

Mountain meadows, riparian areas, and moist upland range sites all provide succulent green forage and insects that are important food for grouse during the spring, summer, and fall. Sage-grouse habitat and breeding complex monitoring is an ongoing effort that NDOW and BLM have participated in jointly for several years.

Because leks (areas of display and courtship) are typically positioned within proximity of nesting and brood-rearing habitat, they are often considered an excellent reference point for monitoring and habitat protection measures.

Desert bighorn sheep (BLM sensitive)

Due to a number of factors, bighorn sheep were eliminated from northern Nevada by 1915. Existing populations are the result of numerous NDOW-initiated reintroductions and supplemental releases that began as early as 1963.

Bighorn sheep typically prefer remote and complex mountainous terrain where adequate water is available. Artificial water sources (guzzlers) have been installed and more are proposed to be installed within the planning area so that marginally suitable habitat areas can support a larger number and greater distribution of bighorn sheep.

Because of separation in habitat preferences among deer, pronghorn, wild horses and burros, cattle, and bighorn sheep, forage competition in this planning area is generally limited (Ganskopp 1983). Known areas of overlapping cattle and bighorn sheep use have not presented issues of forage availability or disease transmission requiring resolution. Domestic sheep grazing/trailing permits occur within currently occupied bighorn sheep and potential range, so there is a risk of disease transmission between domestic sheep and bighorn sheep.

Stray domestic sheep or wandering bighorn sheep that have shown up in unexpected areas occasionally require NDOW action to avoid conflicts. Disease transmission between bighorn sheep and domestic sheep can result in massive bighorn sheep lossesand the potential for intense public controversy.

Although populations within the analysis area have recently increased, according to the Nevada Division of Wildlife's Bighorn Sheep Management Plan (Crawforth 2001), the current distribution in Nevada still represents a small percentage of the former historic range.

Lahontan cutthroat trout

LCT are a threatened species native to lakes and streams throughout the physiographic Lahontan Basin of northern Nevada, eastern California, and southern Oregon.

Current populations exist in approximately 155 streams and six lakes in the region. The principal threats to the subspecies include livestock grazing, urban and mining development, water diversions, poor water quality, hybridization with nonnative trout, and competition with other species of nonnative trout.

Historically, LCT populations occurred in a wide variety of cold water habitats, such as alpine lakes, low and moderate gradient rivers, and small headwater tributary streams. Stream-dwelling LCT are generally less than five years old, while in lakes LCT may live as long as nine years. LCT feed on a variety of terrestrial and aquatic insects, and larger LCT may feed on fish. LCT populations in the planning area have been reduce by lessening and altering stream discharge, altering stream channels and morphology, degrading water quality, degraded riparian habitats, drought, increasing chemical concentrations, and introducing nonnative fish. These changes are largely due to human activity.

The population recovery strategy for LCT includes managing populations for genetic variation, establishing metapopulations, and increasing distribution and abundance through reproduction and reintroductions.

The strategy also includes habitat management that involves many BLM land uses and management strategies. Habitat provision strategies include providing adequate water, water quality, and cover for spawning and rearing through streamside management, monitoring, and research.

Western burrowing owl

Colonies of western burrowing owls have been observed in the planning area, but a survey of the area has not been completed. These owls require open terrain with low vegetation, burrows created by mammals, and an adequate prey base.

Pygmy rabbit

The pygmy rabbit is the smallest North American rabbit and is found only in sagebrush habitat. The rabbit uses tall dense stands of big sagebrush, primarily basin big sagebrush, with deep friable soils typically loamy in texture. The pygmy rabbit mates in early spring and summer. Its primary food is sagebrush, which makes up as much as 98 percent of its winter diet. Grasses are important during the summer, comprising as much as 30 to 40 percent of its diet. No inventories for pygmy rabbits have been completed in the WFO, though high quality habitat sites are considered rare. High quality habitat is considered to include the edges of floodplains in the upper portions of watersheds and degraded floodplains at lower elevations where channel downcutting has allowed for the invasion of Basin big sagebrush into sites that were formerly occupied by wet and semi-wet meadows.

Trends

The habitat for many of the sensitive species listed in Table 2-13 has been identified as at risk from high-intensity fires and conversion to cheatgrass, as well as displacement by pinyon-juniper woodland (Wisdom et al. 2000) (Table 2-14).

Over the past century some Nevada native species and their habitat have declined due to grazing, droughts, and wildfire, leading to their eventual identification as special status species and habitats. This trend has become more dramatic since the 1980s when fire intensity and frequency increased, along with increased pressure from human occupancy and recreation within the planning area. Sage-grouse is one such species that has experienced dramatic declines in certain populations due to habitat degradation. There is a trend away from desired conditions for sage-grouse as wildfire continues to adversely affect the sagebrush-scrub habitat. LCT population declines in the late twentieth century corresponded with the extensive long-term livestock grazing of riparian habitats and introductions of nonnative rainbow *(Oncorhynchus mykiss)* and brook trout *(Salvelinus fontinalis)* for recreational fishing (BLM 2004a). Intermittent drought conditions from 1987 through 1994 and again in 2000 have caused significant declines in many populations within the Great Basin, and at least 12 to 15 populations have been lost rangewide since 1985 (BLM 2004a).

Table 2-13
Special Status Species That May Occur within the WFO

Common Name	Scientific Name	Federal and State Status	Global and State Rank
	BIRDS		
Bald eagle	*Haliaeetus leucocephalus*	• Federal threatened • State protected • NNHP sensitive	G4 S1B
Western yellow-billed cuckoo	*Coccyzus americanus*	• Federal candidate • State protected • NNHP sensitive	G5T3 S1B
Western snowy plover	*Charadrius alexandrinus nivosus*	• BLM sensitive • State protected • NNHP sensitive	G4T3 S1B
American white pelican	*Pelecanus erythrorhynchos*	• State protected • NNHP watch list	G3 S2B
Western burrowing owl	*Athene cunicularia hypugaea*	• BLM sensitive • State protected • NNHP sensitive	G4TU S3B
Greater sage-grouse	*Centrocercus urophasianus*	• BLM sensitive • State protected • NNHP sensitive	G4 S3S4B
Black tern	*Chlidonias niger*	• BLM sensitive • State protected • NNHP sensitive	G4 S2S3B
Least bittern	*Ixobrychus exilis hesperis*	• BLM sensitive • State protected • NNHP sensitive	G5T2T# S2N

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Northern goshawk	*Accipiter gentiles*	• State protected • NNHP sensitive • BLM Sensitive	G5 S3
White-faced ibis	*Plegadis chihi*	• BLM sensitive • State protected	G5 S3B
Golden eagle	*Aquila chrysaetos*	• BLM sensitive • NNHP watch list	G5 S4
Long-billed curlew	*Numenius americanus*	• BLM Sensitive • State protected • NNHP watch list	G5 S3?B
Short-eared owl	*Asio flammeus*	• BLM sensitive • State protected	G5 S4
Long-eared owl	*A. otus*	• BLM sensitive • State protected	G5 S4
Juniper titmouse	*Baeolophus griseus*	• BLM sensitive • State protected	G5 S5B
Ferruginous hawk	*Buteo regalis*	• BLM sensitive • State protected • Federal delisted; species of concern	G4 S3
Swainson's hawk	*B. swainsoni*	• BLM sensitive • State protected	G5 S2B
Bobolink	*Dolichonyx oryzivorus*	• BLM sensitive • State protected	G5 S3?B
Prairie falcon	*Falco mexicanus*	• BLM sensitive • State protected	G5 S4

Table 2-13
Special Status Species That May Occur within the WFO *(continued)*

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Sandhill crane	*Grus canadensis tabida*	• BLM sensitive • State protected	T4G5 S3B
Pinyon jay	*Gymnorhinus cyanocephalus*	• BLM sensitive • State protected	G5 S4
Yellow-breasted chat	*Icteria virens*	• BLM sensitive • State protected	G5 S3B
Loggerhead shrike	*Lanius ludovicianus*	• BLM sensitive • State protected • Federal delisted; species of concern	G4 S3
Lewis's woodpecker	*Melanerpes lewis*	• BLM sensitive • State protected	G4 S4

Table 2-13
Special Status Species That May Occur within the WFO *(continued)*

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Mountain quail	*Oreortyx pictus*	• BLM sensitive • State protected	G5 S3
Flammulated owl	*Otus flammeolus*	• BLM sensitive • State protected	G4 S4?B
Vesper sparrow	*Pooecetes gramineus*	• BLM sensitive • State protected	G5 S4B
Red-naped sapsucker	*Sphyrapicus nuchalis*	• BLM sensitive • State protected	G5 S4S5B
AMPHIBIANS			
Columbia spotted frog	*Rana luteiventris* (Great Basin population)	• federal candidate • NNHP sensitive	G4T?Q S2S3
REPTILES			
Short-horned lizard	*Phrynosoma douglasii*	• BLM sensitive	G5 S?
MOLLUSKS			
Sada's pryg	*Pyrgulopsis sadai*	• NNHP sensitive (E)	G1G2 S1S2
Western Lahontan springsnail	*P. longiglans*	• NNHP sensitive (E)	G2G3 S2S3
Dixie Valley springsnail	*P. dixensis*	• BLM sensitive • NNHP sensitive (E)	G1 S1
Pleasant Valley springsnail	*P. aurata*	• NNHP sensitive (E)	G1 S1
King's River springsnail	*P. imperialis*	• NNHP sensitive (E)	G1 S1
Fly Ranch pyrg	*P. bruesi*	• BLM sensitive • NNHP sensitive	G1 S1
MAMMALS			
Pygmy rabbit	*Brachylagus idahoensis*	• BLM sensitive • State protected • NNHP sensitive	G4 S3?
Townsend's big-eared bat	*Corynorhinus townsendii*	• BLM sensitive • NNHP sensitive	G4 S3B
Spotted bat	*Euderma maculatum*	• BLM sensitive • State protected • NNHP rare	G4 S1S2
Small-footed myotis	*Myotis ciliolabrum*	• BLM sensitive • NNHP sensitive	G5 S3B
Long-eared myotis	*M. evotis*	• BLM sensitive • NNHP watch list	G5 S4B
Fringed myotis	*M. thysanodes*	• BLM sensitive • NNHP sensitive	G4G5 S2B

Table 2-13
Special Status Species That May Occur within the WFO *(continued)*

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Long-legged myotis	*M. volans*	• BLM sensitive • NNHP watch list	G5 S4B
Pallid bat	*Antrozous pallidus*	• BLM sensitive • NNHP watch list	G5 S3B
Silver-haired bat	*Lasionycteris noctivagans*	• BLM sensitive • NNHP watch list	G5S3
Desert bighorn sheep	*Ovis canadensis nelsoni*	• BLM sensitive • State protected • NNHP watch list	G4T4 S4
Big brown bat	*Eptesicus fuscus*	• ? BLM watch list?	G5 S5
Greater western mastiff bat	*Eumops perotis californicus*	• BLM sensitive • Federal delisted; species of concern	T4G5 S1
Allen's lappet-browed (big-eared) bat	*Idionycteris phyllotis*	• BLM sensitive	G3G4 S1
Hoary bat	*Lasiurus cinereus*	• BLM sensitive	G5 S3?
California leaf nosed bat	*Macrotus californicus*	• BLM sensitive • Federal delisted; species of concern	G4 S2
California myotis	*M. californicus*	• BLM sensitive	G5 S3B
Little brown myotis	*M. lucifugus*	• BLM sensitive	G5 S1S2
Fringed myotis	*M. thysanodes*	• BLM sensitive	G4G5 S2B
Cave myotis	*M. velifer*	• BLM sensitive	G5 S1
Big free-tailed bat	*Nyctinomops macrotis*	• BLM sensitive • Federal delisted; species of concern	G5 S1N
Western pipistrelle bat	*Pipistrellus hesperus*	• State protected	G5 S4
Brazilian free-tailed bat	*Tadarida brasiliensis*	• BLM sensitive	G5 S4B
American pika	*Ochotona princeps*	• State protected	G5 S3
	PLANTS		
Tiehm milkvetch	*Astragalus tiehmii*	• BLM sensitive • NNHP sensitive (E)	G3 S3
Schoolcraft catseye	*Cryptantha schoolcraftii*	• BLM sensitive • NNHP sensitive (PE)	G3Q S3
Windloving buckwheat	*Eriogonum anemophilum*	• BLM sensitive • NNHP sensitive (E)	G2G3 S2S3
Crosby buckwheat	*E. crosbyae*	• BLM sensitive • NNHP sensitive	G3 S3

Table 2-13
Special Status Species That May Occur within the WFO *(continued)*

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Grimy ivesia	*Ivesia rhypara* var. *rhypara*	• BLM sensitive • NNHP sensitive	G2T2 S2
Smooth stickleaf	*Mentzelia mollis*	• BLM sensitive • NNHP sensitive	G2 S1
Cordelia beardtonque	*Penstemon floribundus*	• BLM sensitive • NNHP sensitive (E)	G1 S1
Rattlesnake stickseed	*Hackelia ophiobia*	• NNHP watch list	G2G3 S2
Pueblo Valley peppergrass	*Lepidium montanum* var. *nevadense*	• BLM sensitive • NNHP sensitive	G5?T1? S1?
Lonesome milkvetch	*Astraguulos solitaries*	• BLM sensitive	G3 S1
Casick hyssop	*Agastache cusikii*	• NNHP watch list (E)	G3G4 S2
Succor Creek parsley	*Lomatium packardiae*	• NNHP sensitive	G2? S1?
Barneby stemflower	*Caulanthus barnebyi*	• NNHP sensitive (E)	G2 S2
Owyhee prickly phlox	*Leptodactylon glabrum*	• BLM sensitive • NNHP watch list	G2 S1
Lahontan indigo bush	*Psorothamis kingii*	• NNHP sensitive (E)	G3 S3
Sand cholla	*Opantia pulchella*	• State protected (CY) • NNHP sensitive	G4 S2S3
Winged milkvetch	*Astragalus pterocarpus*	• NNHP watch list (E)	G3 S3
Lahontan milkvetch	*A. porrectus*	• NNHP watch list (E)	G3? S3?
Oryctes	*Oryctes nevadensis*	• BLM sensitive • NNHP sensitive	G2G3 S2S3
Ravendale skullcap	*Scutellaria holmgreniorum*	• NNHP watch list	G3Q S2
Lahontan beardtongue	*Penstemon palmeri* var. *macranthus*	• BLM sensitive • NNHP sensitive (E)	G4G5T2? S2?
Holmgren snelowskia	*Sneloskia holgrenii*	• NNHP sensitive (E)	G2G3 S2S3
Goodrich biscuitroot	*Cynopterus goodrichii*	• NNHP sensitive (E)	G1 S1
Reese River phacelia	*Phacelia glaberrium*	• NNHP watch list (E)	G3? S3?
Candelaria blazingstar	*Mentcelia candelariae*	• NNHP watch list	G3?Q S3?
Lahontan Basin buckwheat	*Eriogonum rubricaule*	• NNHP watch list (E)	G3 S3

Table 2-13
Special Status Species That May Occur within the WFO *(continued)*

Common Name	Scientific Name	Federal and State Status	Global and State Rank
Nevada dune beardtongue	*Penstemon arenarius*	• BLM sensitive • NNHP sensitive (E)	G2G3 S2S3
Lemmon buckwheat	*Eriogonum lemmonii*	• NNHP watch list (E)	G3? S3?
Obscure scorpionflower	*Phacelia inconspicua*	• State protected (CE) • NNHP sensitive	G2 S1
Osgood Mountain milkvetch	*Astragalus yoder-williamsii*	• State protected (CE) • NNHP sensitive	G3 S1
Sucksdorf milkvetch	*A. pulsiferae* var. *sucksdorfii*	-	G4T3? S1
	FISH		
Lahontan cutthroat trout	*Oncorhynchus clarki henshawi*	• Federal threatened • State protected	G4T3 S3
Alvord chub	*Gila alvordensis*	• NNHP sensitive	G2 S2
Dixie Valley tui chub	*G. bicolor* ssp.	• NNHP sensitive (E)	G4G1Q S1
	INSECTS		
Dune honey ant	*Myrmecocystus arenarius*	• NNHP sensitive (E)	G2? S2?
Nevada viceroy	*Limenitus archippus lahontani*	• NNHP sensitive (E)	G5T1T2 S1S2
Denio sandhill skipper	*Polites sabuleti sinemaculata*	• BLM sensitive • NNHP sensitive (E)	G5T1 S1
Alkaline sandhill skipper	*P. sabuleti alkaliensis*	• NNHP sensitive (E)	G5T3T4 S?
Humboldt sericum scarab	*Serica humboldti*	• BLM sensitive • NNHP sensitive	G1 S1

Status:

[2]**Federal: (ESA) and State:**
E = Endangered
T = Threatened
C = Candidate species for listing

State

State protected = NRS 501

CE = Critically endangered - species threatened with extinction, whose survival requires assistance because of

[4]**Nevada Natural Heritage Program Global and State Ranks:**
G = Global rank indicator, based on worldwide distribution at the species level

T = Global trinomial rank indicator, based on worldwide distribution at the infraspecific level

S = State rank indicator, based on distribution within the state at the lowest taxonomic level
_1 = Critically imperiled due to extreme rarity, imminent threats, or and/or biological factors
_2 = Imperiled due to rarity and /or other demonstrable factors

overexploitation, disease or other factors or because their habitat is threatened with destruction, drastic modification or severe curtailment (N.R.S. 527.260-.300)

_3 = Rare and local throughout its range, or with very restricted range, or otherwise vulnerable to extinction

_4 = Apparently secure, though frequently quite rare in parts of its range, especially at its periphery

Table 2-14
Habitat Descriptions of Special Status Species

Common name and Brief notes about the species and habitat issues of concern
Lahontan cutthroat trout
Threatened species that inhabits numerous creeks throughout the planning area. Though fairly temperature tolerant, benefits from intact riparian cover and meadows; subject to habitat impacts from wildfires and grazing from livestock and/or wild horses.
Western yellow-billed cuckoo
Not found in the planning area. Requires a multistory cottonwood floodplain. The closest population is located along the Carson River to the south.
Pygmy rabbit
Great Basin sagebrush habitats with deep soils. Brush control in Great Basin sagebrush habitats.
Pale Townsend's big-eared bat
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Pacific Townsend's big-eared bat
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Spotted bat
Found in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, open pasture, and hayfields. Roosts in caves and in cracks and crevices in cliffs and canyons The closest known sighting was at the Sheldon National Wildlife Refuge, Nevada.
Small-footed myotis
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Long-eared myotis
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Fringed myotis
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Potentially present in a variety of habitats. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Long-legged myotis
Uses natural caves and cracks in rimrock and mines for breeding, rearing, and hibernating habitat. Potentially present in a variety of habitats. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.

Common name and Brief notes about the species and habitat issues of concern
Yuma myotis
Potentially present in a variety of habitats. Impacts from caving activity; very susceptible to human disturbances, forest practices, livestock grazing.
Desert bighorn sheep
Present in a variety of canyon lands and scattered mountain ranges in the planning area. Avoidance of contact with domestic sheep, human recreation, and activity.

Table 2-14
Habitat Descriptions of Special Status Species *(continued)*

Common name and Brief notes about the species and habitat issues of concern
Preble's shrew
Utilizes riparian habitats, herbaceous wetlands, and sagebrush-grass associations.
Northern goshawk
Breeding species in Mahogany Creek watershed aspen stands. Found in a variety of dense mature or old growth aspen habitat. Requires large area, healthy multistory aspen stands. Wildfires and grazing are main issues.
Western burrowing owl
Typically breeds in deep soil, often in early succession rangeland supporting cheatgrass and other weedy annual species at lower elevations. (Note: Has been seen occasionally in good quality rangeland also.) Human disturbances during nesting season.
Sage-grouse
Fairly common as a breeder in preferred habitat supporting a variety of tall and short sagebrush varieties interspersed with meadow complexes. Populations are low in contrast to historical records, according to NDOW. Sagebrush cover for forage and shelter, healthy meadows for succulent forage and insect food sources, herbaceous cover for nesting.
Black tern
Associated with open water wetlands. Potentially a breeder and migratory visitor. Nests on floating marsh vegetation. Habitat is freshwater marshes and lakes. Heavy grazing on emergent vegetation.
Least bittern
Potential breeder. Nest is a flimsy platform among tules and reeds. Habitat is freshwater marshes and reedy ponds.
White-faced ibis
In planning area present as a breeder, which may use BLM land. They are seen occasionally as migrants throughout the country in the fall. Nests in marshes (mainly hardstem bulrush); feeds in marshes and meadows. Nesting areas sensitive to drought; species is susceptible to organochloride pesticides.
Nevada viceroy
A butterfly in the adult stage. Preferred host plants are willows and aspen stands. Major threats: Habitat-riparian areas, meadows, and aspen wood edges.

Although little information is known about the pygmy rabbit, populations depend on stands of tall sagebrush with herbaceous understories and deep soils. These habitats remain susceptible to drought and wildfire.

Sage-grouse habitat and populations may stabilize, once recommendations from local sage-grouse conservation groups are implemented. Management actions to protect certain sensitive species habitat and reduce habitat fragmentation would improve trends toward desired habitat conditions. However the continuing threat of intense and frequent wildfires and sagebrush conversion to cheatgrass threatens the viability of future populations and limits the effectiveness of the identified sage-grouse conservation measures.

Implementing the Recovery Plan for Lahontan Cutthroat Trout (USFWS 1995) has improved the outlook for LCT populations in the planning area, but certain populations remain at risk due to continued drought and livestock grazing.

Forecast

Drought, fire, increasing recreational use, OHV use, and commercial activities will continue the trend away from desired habitat conditions for sage-grouse and pygmy rabbit.

Key Features

The Great Basin sagebrush habitat is a critical habitat to sage-grouse and other sagebrush-dependent species. Areas identified for study and concern, such as the Osgood Mountain Milkvetch Area of Critical Environmental Concern, offer important habitat supporting sensitive species within the planning area.

Sagebrush communities throughout the planning area, and in particular lek locations and brood-rearing habitats and population management units identified in the Greater Sage-grouse Conservation Plan in Nevada and Eastern California, are critical to sage-grouse within the planning area (NDOW 2004b). Protecting desert bighorn sheep relocation areas is essential to reestablishing desert bighorn sheep in historic areas and to sustainable population levels. Caves and rock areas provide day and night roosting habitat for bat species and are important elements needed to support the sensitive species known to the planning area. The Humboldt Mountains, Mopung Hills, and Fish Creek Mountains are known to support maternity and hibernating colonies of Townsend's big-eared and long-legged myotis bats (BLM 2004b). Priority watershed areas that provide important habitat for the Lahontan cutthroat trout are identified for maintaining and restoring, based on special status species needs. These watersheds and other riparian and wetland areas are also key habitats that support migratory birds.

2.1.10 Wild Horse and Burros

Indicators

Indicators include allotment evaluations, stream and vegetation monitoring, wild horse and burro inventory data, applicable research studies, data from horse gathers, and other field observations.

Current Conditions

Wild horse and burro populations are managed within herd management areas (HMAs). There are approximately 3,013 wild horses and 291 burros currently found on 20 HMAs (Figure 2-2) and 15 herd areas (HAs). Appropriate management levels (AMLs) for wild horses and burros are established in accordance with the land use plan and objectives and management actions through Multiple Use Decisions. Multiple Use Decisions establish the minimum and maximum (AML) number of wild horses and burros to be managed within each grazing allotment contained within an HMA. Annual monitoring data are collected to evaluate progress toward meeting management objectives. AMLs

2-2 Wild Horse and Burros HMAs

are established based on "an intensive monitoring program involving studies of grazing utilization, trend in range condition, actual use, and climatic factors" (109 IBLA 120). The AML, objectives, and management actions may be modified in future Multiple Use Decisions for the grazing allotments contained within an HMA. Wild horses and burros that establish home ranges beyond boundaries of an HMA are removed. Wild horses and burros are removed from private lands at the request of the landowner and after reasonable efforts to keep the animals off private lands have failed. Table 2-15 lists HMAs and HAs within the Winnemucca Field Office boundary.

Table 2-15
Herd Management Areas and Herd Areas

Herd Management Area and Herd Areas	Total Acres	Population Estimate (2/28/05)	AML # for HMAs
Antelope Range (NV211)	131,585	56	0
Augusta Mountains (NV311)	38,581	222	TBD
Black Rock Range East (NV209)	93,438	56	56-93
Black Rock Range West (NV227)	93,199	57	56-93
Bloody Runs (NV204)	74,095	0	0
Blue Wing Mountains (NV217)	17,913	17 H/20 B	22-36 H/17-28 B
Buffalo Hills (NV220)	132,410	306	188-314
Calico Mountains (NV222)	157,166	200	200-333
East Range (NV225)	451,864	7	0
Eugene Mountains (NV207)	86,091	0	0
Fox & Lake Range (NV228)	177,263	122	122-204
Granite Range (NV221)	101,650	157	155-258
Hot Springs (NV203)	68,195	0	0
Humboldt Range (NV224)	431,557	35	0
Jackson Mountains (NV208)	283,000	228	130-217
Kamma Mountains (NV214)	57,445	117	46-77
Krum Hills (NV206)	64,190	0	0
Lava Beds (NV215)	39,952	133 H/2 B	TBD
Little Owyhee (NV200)	460,128	234	194-298
Lower Paradise Valley (NV233)	44,892	0	0
McGee Mountain (NV210)	26,542	83	41
Nightingale Mountains (NV219)	76,019	55	38-63
North Stillwater (NV229)	132,428	294 H/1 B	TBD
Osgoods (NV202)	142,120	0	0
Selenite Range (NV212)	125,296	93 H/126 B	0
Seven Troughs (NV216)	147,910	159 H/142 B	94-156 H/28-46 B
Shawave Mountains (NV218)	107,141	64	44-73
Slumbering Hills (NV205)	46,453	0	0

Snowstorm Mountains (NV201)	145,538	90	90-140
Sonoma Range (NV223)	212,584	0	0
South Slumbering Hills (NV230)	30,094	0	0
Tobin Range (NV231)	195,136	116	TBD
Trinity Range (NV232)	161,462	7	0
Truckee Range (NV213)	171,210	0	0
Warm Springs Canyon (NV226)	83,136	105	105-175 H/ 15-24 B

Source: BLM 2005

Trends

Current conditions within the WFO planning area show that wild horse and burro populations continue to grow, with a number of HMAs exceeding AMLs. Continued drought, overgrazing, wildfires, and population growth have adversely affected habitat and in some instances herd health. The trend for wild horses and burros, however, is moving towards a desired condition as wild horse and burro management efforts, including horse gathers to attain AMLs and fertility control methods, have moderated population growth and habitat degradation. Meeting standards for rangeland health have also improved habitat in most areas.

Forecast

Based on the assumption that funding for future wild horse and burro gathers is sufficient, management actions to reach AMLs for the HMAs would be achieved. This would stabilize populations and habitat degradation, achieving desired future conditions.

Key Features

Water quality and soil types dictate the type of vegetation within each HMA. In turn, the type of vegetation within each HMA dictates the success of foraging and grazing. Table 2-16 lists the percent of vegetation per HA and HMA in the Winnemucca planning area. The vegetation section identifies complete vegetation acreages for the entire field office and management levels and opportunities.

Table 2-16
Types of Vegetation per HMA/HA

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
ANTELOPE RANGE HA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	918.44
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	23,088.90
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	10,465.75
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	21,844.70
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	16,111.60
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,748.88
	BARREN		205.21
	Krascheninnikovia lanata	Winterfat	18.85
AUGUSTA MTNS HMA	*Artemisia nova*	Black sagebrush	6,280.47
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	550.69
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,903.73
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	15,789.05
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,649.02

	Atriplex confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	4,343.96
	A. torreyi	Torrey's quailbush	458.83
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	3,556.83

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	Sarcobatus vermiculatus	Black greasewood	4,725.62
BLACK ROCK RANGE EAST HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	13,241.15
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	21,679.35
	A. tridentata	Big sagebrush	1,758.86
	A. tridentata ssp. *tridentata*	Basin big sagebrush	2,029.43
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	20,544.05
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,078.85
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	298.70
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	221.14
	Sarcobatus vermiculatus	Black greasewood	7.53
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	28.62
BLACK ROCK RANGE WEST HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	416.04
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	559.82
	A. tridentata	Big sagebrush	724.62
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	9,359.32
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	289.45
	Poa secunda	Bluegrass	34.12
BLOODY RUNS HA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,656.48
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	1,093.02
	A. tridentata	Big sagebrush	554.93
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1,014.82
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	2,545.77
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	31,722.95
	Atriplex canescens var. *canescens*	Fourwing saltbush	9.41
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,261.48
	BARREN		2,016.55
BLUE WING MTNS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	10,637.72
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	20.61
	Atriplex confertifolia/Artemisia	Shadscale/bud sagebrush	2,057.68

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	spinescens		
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,144.66
	BARREN		13.57
BUFFALO HILLS HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	30,422.07
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	38,288.92
	A. tridentata	Big sagebrush	1,578.92
	A. tridentata ssp. *tridentata*	Basin big sagebrush	123.25
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	22,401.81
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,151.22
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	10,699.04
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	7,610.77
	Atriplex torreyi	Torrey's quailbush	106.21
	BARREN		486.58
	Chrysothamnus spp.	Rabbitbrush	2,724.67
	NO DATA		221.63
	Sarcobatus vermiculatus	Black greasewood	4,059.31
CALICO MTNS HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,829.93
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	13,442.63
	A. tridentata	Big sagebrush	831.98
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	5,034.82
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	624.26
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,144.11
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	150.10
	NO DATA		10,768.17
EAST RANGE HA	*Allenrolfea occidentalis*	Iodine bush	37.69
	Artemisia nova	Black sagebrush	6,923.55
	A. tridentata	Big sagebrush	250.74
	A. tridentata ssp. *tridentata*	Basin big sagebrush	445.95
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	24,187.38
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	163,642.78
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	95,253.44
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	3,487.47
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	17,932.34

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	A. torreyi	Torrey's quailbush	183.60
	BARREN		54.94
	Krascheninnikovia lanata	Winterfat	455.62
	Juniperus osteosperma	Utah juniper	762.74
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	6,142.86
	Sarcobatus vermiculatus	Black greasewood	1,516.04
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	222.01
	Sporobolus airoides/Distichlis spicata/Poa juncifolia	Alkali sacaton/inland saltgrass/alkali bluegrass	108.10
EUGENE MTNS HA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	3,969.87
	A. nova	Black sagebrush	2,874.24
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1.49
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	5,176.37
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,647.40
	Atriplex canescens var. *canescens*	Fourwing saltbush	659.08
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	25,414.05
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	5,029.52
	BARREN		428.03
FOX-LAKE RANGE HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	43,161.16
	A. tridentata	Big sagebrush	31,479.70
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	15,740.09
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	45,648.43
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	5,986.65
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	1,080.27
	BARREN		2,353.10
	Distichlis spicata	Inland saltgrass	4,359.20
	Krascheninnikovia lanata	Winterfat	2,582.45
	Juniperus osteosperma	Utah juniper	14,732.16
	Sarcobatus vermiculatus	Black greasewood	5,256.06
GRANITE RANGE HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	29,502.21
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	17,788.09
	A. nova	Black sagebrush	3,966.40
	A. tridentata	Big sagebrush	9,877.79

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	A. tridentata ssp. *tridentata*	Basin big sagebrush	191.70
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	17,492.81
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	46.08
	Atriplex canescens var. *canescens*	Fourwing saltbush	0.09
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,296.86
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,525.41
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	207.38
	Juniperus osteosperma	Utah juniper	1,053.02
	NO DATA		5,611.53
	WATER		33.02
HOT SPRINGS MTNS HA	*Artemisia tridentata*	Big sagebrush	0.39
	A. tridentata ssp. *tridentata*	Basin big sagebrush	0.73
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	46,130.04
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,351.55
	Krascheninnikovia lanata	Winterfat	388.69
	Sarcobatus vermiculatus	Black greasewood	20.37
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	0.12
HUMBOLDT HA	*Allenrolfea occidentalis*	Iodine bush	727.89
	Artemisia nova	Black sagebrush	33,107.97
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	30,549.56
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	43,451.35
	Atriplex canescens var. *canescens*	Fourwing saltbush	452.58
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	83,025.06
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	16,677.40
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	1,751.15
	A. torreyi	Torrey's quailbush	759.52
	BARREN		829.12
	Juniperus osteosperma	Utah juniper	3,463.21
	NO DATA		7.82
	Sarcobatus vermiculatus	Black greasewood	2,229.65
	WATER		1.02
JACKSON MTNS HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	907.49

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	42,086.02
	A. tridentata	Big sagebrush	939.95
	A. tridentata ssp. *tridentata*	Basin big sagebrush	234.03
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	14,835.25
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	9,729.15
	Atriplex confertifolia	Shadscale	34.77
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	59,957.98
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	11,230.86
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	615.96
	BARREN		559.12
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	0.55
	Krascheninnikovia lanata	Winterfat	26.12
	Juniperus osteosperma	Utah juniper	44,610.20
	Sarcobatus vermiculatus	Black greasewood	9,418.24
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	99.38
KAMMA MTNS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	21,340.95
	A. nova	Black sagebrush	147.40
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	167.60
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	6,124.49
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	14,072.97
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,700.85
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,587.86
	BARREN		278.72
	Krascheninnikovia lanata	Winterfat	132.56
	Sarcobatus vermiculatus	Black greasewood	19.03
KRUM HILLS HA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	1,904.40
	A. nova	Black sagebrush	2,181.67
	A. tridentata	Big sagebrush	851.08
	A. tridentata ssp. *tridentata*	Basin big sagebrush	125.75
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	21,670.61
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	7,402.48
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	9.25
	Krascheninnikovia lanata	Winterfat	418.36

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	Grayia spinosa	Spiny hopsage	229.52
LAVA BEDS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	23,828.22
	A. nova	Black sagebrush	4,596.30
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	289.81
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	123,936.49
	Atriplex canescens var. *canescens*	Fourwing saltbush	4,979.55
	A. confertifolia	Shadscale	1,049.37
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	27,547.58
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,373.21
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	35,794.10
	BARREN		64.38
	Krascheninnikovia lanata	Winterfat	3,822.05
	Sarcobatus vermiculatus	Black greasewood	1,194.62
LITTLE OWYHEE HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	28,308.93
	A. cana	Silver sagebrush	393.12
	A. tridentata	Big sagebrush	405.86
	A. tridentata ssp. *tridentata*	Basin big sagebrush	271.15
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	196,667.17
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	19.68
	A. falcata	Sickle saltbush	197.56
	Leymus triticoides	Beardless wildrye	283.28
	Krascheninnikovia lanata	Winterfat	83.57
	Sarcobatus vermiculatus	Black greasewood	518.33
	WATER		4.52
LOWER PARADISE VALLEY HA	*Artemisia tridentata*	Big sagebrush	810.63
	A. tridentata ssp. *tridentata*	Basin big sagebrush	4,358.06
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	2,029.65
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,956.31
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,923.49
	BARREN		42.23
	Krascheninnikovia lanata	Winterfat	248.49
	Salix spp.	Willows	94.11
	Sarcobatus vermiculatus	Black greasewood	153.30
	Sarcobatus vermiculatus/Artemisia	Black greasewood/basin big	5,711.19

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	tridentata	sagebrush	
	WATER		0.00
MCGEE MTN HMA	*Artemisia tridentata*	Big sagebrush	13,102.76
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,962.14
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,064.93
	NO DATA		4.89
NIGHTINGALE MTNS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	35,712.32
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	13,082.61
	Atriplex canescens var. *canescens*	Fourwing saltbush	1,188.50
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	10,031.82
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	502.32
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,809.91
	BARREN		176.23
	Sarcobatus vermiculatus	Black greasewood	6,247.19
NORTH STILLWATER HMA	*Artemisia nova*	Black sagebrush	7,011.03
	A. tridentata	Big sagebrush	702.06
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	4,835.53
	Atriplex canescens var. *canescens*	Fourwing saltbush	113.67
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	83,930.92
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,093.74
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	2,239.36
	A. torreyi	Torrey's quailbush	256.32
	BARREN		21.34
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	31,320.39
	Sarcobatus vermiculatus	Black greasewood	101.92
OSGOOD MTNS HA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,865.67
	A. nova	Black sagebrush	3,392.02
	A. tridentata	Big sagebrush	514.69
	A. tridentata ssp. *tridentata*	Basin big sagebrush	111.66
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	8,465.14
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	61,836.24
	Atriplex confertifolia/Artemisia	Shadscale/bud sagebrush	8,507.86

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	spinescens		
	BARREN		247.14
	Krascheninnikovia lanata	Winterfat	12.96
	Grayia spinosa	Spiny hopsage	60.76
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	377.63
	WATER		2.65
SELENITE RANGE HA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	6,463.98
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	19,019.84
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	17,358.17
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	45,201.70
	Atriplex canescens var. *canescens*	Fourwing saltbush	398.52
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	23,969.53
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,604.44
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,884.72
	BARREN		259.50
	Krascheninnikovia lanata	Winterfat	127.92
	Sarcobatus vermiculatus	Black greasewood	1,335.35
SEVEN TROUGHS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	42,509.09
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	13,264.20
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	24,988.27
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	42,497.00
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	7,464.24
	BARREN		663.14
	Krascheninnikovia lanata	Winterfat	0.07
	Sarcobatus vermiculatus	Black greasewood	22.58
SHAWAVE MTNS HMA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	19,335.10
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	9,943.69
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	53,556.05
	Atriplex canescens var. *canescens*	Fourwing saltbush	80.07
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	911.25
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	3,309.28

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	BARREN		158.93
	Krascheninnikovia lanata	Winterfat	500.49
SLUMBERING HILLS HA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	12,517.46
	A. tridentata	Big sagebrush	4,079.89
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	17,196.16
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	11,029.24
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	33.21
	BARREN		1,145.72
	Krascheninnikovia lanata	Winterfat	6.48
SNOWSTORM MTNS HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	7,112.19
	A. tridentata	Big sagebrush	4,911.60
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	30,958.39
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,498.89
	Sarcobatus vermiculatus	Black greasewood	56.19
SONOMA RANGE HA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	9,215.40
	A. nova	Black sagebrush	5,070.14
	A. tridentata ssp. *tridentata*	Basin big sagebrush	120.43
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	39,008.12
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	67,289.21
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	28,500.07
	Juniperus osteosperma	Utah juniper	834.27
	Salix spp.	Willows	56.36
	Sarcobatus vermiculatus	Black greasewood	3.45
SOUTH SLUMBERING HILLS HA	*Artemisia tridentata*	Big sagebrush	2,664.54
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	10,172.19
	Atriplex canescens var. *canescens*	Fourwing saltbush	1,055.30
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	246.81
	BARREN		1,658.13
TOBIN RANGE HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	9,171.55
	A. nova	Black sagebrush	21,070.72
	A. tridentata ssp. *tridentata*	Basin big sagebrush	24.31
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	32,891.37
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	47,479.30
	Atriplex confertifolia/Artemisia	Shadscale/bud sagebrush	68,549.16

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	spinescens		
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,626.76
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	4,127.47
	A. torreyi	Torrey's quailbush	629.21
	BARREN		55.83
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	1,537.28
TRINITY RANGE HA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	38,797.53
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	791.38
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	14,346.87
	Atriplex canescens var. *canescens*	Fourwing saltbush	132.81
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	29,528.40
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,676.47
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	17,992.69
	Atriplex falcata	Sickle saltbush	381.94
	BARREN		597.20
	NO DATA		99.16
	Salix spp.	Willows	21.11
	Sarcobatus vermiculatus	Black greasewood	387.56
	WATER		5.04
TRUCKEE RANGE HA	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	12,751.43
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	12,052.29
	Atriplex canescens var. *canescens*	Fourwing saltbush	8,845.84
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	29,215.60
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	938.13
	A. confertifolia/Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	24,176.08
	BARREN		211.27
	NO DATA		4,208.45
	Sarcobatus vermiculatus	Black greasewood	28.71
	Tetradymia tetrameres/Atriplex canescens	Fourpart horsebrush/fourwing saltbush	891.88
WARM SPRINGS CANYON HMA	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	13,570.05

Table 2-16
Types of Vegetation per HMA/HA *(continued)*

Herd Area/Herd Management Area	Vegetation - Scientific Name	Vegetation - Common Name	Acres
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	2,042.23
	A. tridentate	Big sagebrush	1,995.06
	A. tridentata ssp. *tridentate*	Basin big sagebrush	1,822.43
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	26,637.76
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,378.39
	Poa secunda	Bluegrass	64.14

Source: BLM 2005

2.1.11 Wildland Fire Ecology and Management

Indicators

Wildland fire management within the WFO planning area incorporates goals and objectives from several resource categories that determine how wildfire is allowed to assume its natural role in the ecosystem (BLM 2005a). These goals and objectives and the current management considerations associated with air quality, watershed health, vegetation, special status species, fish and wildlife, and cultural resources, as well as such resource uses as livestock grazing and forestry and woodland products, all result in a variety of management considerations associated with wildland fire management. Indicators include watershed health considerations associated with acres of key components (e.g., soil, water, vegetation) affected by wildland fire, acres of vegetation lost or modified by wildland fire, acres of noxious and invasive non-native weed species, acres of special status species habitat lost or modified, acres of fish and wildlife habitat lost or modified, loss of cultural resource sites and modification of use of traditional use areas, acres of allotments modified, and acres of biomass availability available to support healthy forest conditions.

These indicators are derived from resource considerations in the existing fire management plan (FMP) for the WFO planning areas (BLM 2005a), a variety of other resource policy and management considerations, field observations, allotment evaluations, and monitoring associated with past and ongoing fire rehabilitation monitoring.

Current Conditions

History

Fire occurrence in the WFO planning area has been marked by cycles of intense wildfire activity followed by periods of minimal wildfire activity. As a result of drought, noxious weed infestations, and years of human-induced vegetation manipulation, these activity cycles occur on roughly 5- to 7-year intervals. Recorded fire history of the Division of Grazing and the subsequent Grazing

Service-Winnemucca Grazing District through the establishment of the Winnemucca District of the Bureau of Land Management in 1946 indicates that there have been periods of up to 3 or 4 years that have had major multiple fires on public lands, followed by 3 to 5 years of relatively little activity.

Figure 2-3, WFO Planning Area and Fire Occurrence, identifies the occurrence and extent of wildland fires within the WFO during the last 32 years, to exhibit how much of the planning area has been modified by wildland fire. Major "fire years" have been 1917-1918, 1927-28, 1934, 1937-39, 1946, 1952, 1964, 1985-87, 1992, 1994-96, and 1999-2001. Each of these fire seasons has recorded large fires, large multiple-fire days, and several multiple-fire days in a row. Approximately 70 percent of these fires have been held to less than 500 acres. Lightning is the ignition source for approximately 60 percent of the fires on the Field Office lands, accounting for 72 percent of the burned acreage. Human-caused fires are usually from equipment use (e.g., railroad, machinery, welding/cutting), campfires, and negligence. Human-caused fires account for 40 percent of fires and the remaining 28 percent of burned acreage. Very little arson has occurred within the WFO planning area, with a rash of fires set during the mid-1980s being the only significant arson period.

Average yearly occurrence of fires within the WFO amounts to 63 fires for 112,612 acres during the period 1980-2002. This reflects changes that may vary radically during periods of high fire occurrence and large loss of acres. The years 1985, 1996, 1999, and 2001 each had totals of 100,000 acres or more burned, with more than 300,000 acres lost to fire activity in 1985. Similar losses were experienced in 1999, 2000, and to some degree, 2001. These years saw an average of 180,000 acres burned.

2-3 WFO Planning Area and Fire Occurrence

Fire Ecology

The WFO has seen an increase in acres lost since 1985 due to the significant increase of cheatgrass, as well as an accelerated fire return interval and frequency in cheatgrass-infested areas below 6,500 feet in elevation. As a result, it is estimated that 55 percent of the Field Office native sagebrush-perennial grass communities have been lost to wildfire since 1985. Fires that historically would occur in sage-perennial grass at a return interval of 50 to 85 years, and in the salt desert shrub at a return interval of 100 to 125 years have shown a trend downward to the five- to eight-year range. This has resulted in more aggressive suppression efforts by the Field Office in an attempt to keep the remaining intact communities from burning. Fire size and fire intensity on the WFO correlate directly to conditions occurring during dry thunderstorms that produce most of the Field Office wildfires. Strong, gusty winds will carry fire through cheatgrass monotypes that have spread onto past burned areas, or Wyoming big sage-cheatgrass or Great Basin Big sage-cheatgrass vegetation, at rates of up to 5.6 miles per hour.

A natural fire regime is a general classification of the role fire would play across a landscape in absence of modern human mechanical intervention but including the influence of aboriginal burning. The five natural (historical) fire regimes within the WFO planning area are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. Natural fire regimes within the WFO planning area are described in Table 2-17 and are identified in Figure 2-4.

Table 2-17
Natural Fire Regime in the WFO Planning Area

Fire Regime	Frequency (years)	Severity	Number of Acres
0	N/A	N/A	1,294,809
I	0-35	Low and Mixed	608,962
II	0-35	Replacement	4,694,532
III	35-100	Mixed	29,990
IV	35-100	Replacement	3,421,542
V	200+	All	1,055,230

Altered wildfire regimes are believed to be the single most important influence on loss of sagebrush scrub and habitat available to fish and wildlife and special status species (e.g., sage-grouse) in the WFO planning area. Most species of sagebrush are killed by fire, and repeated wildfires, fueled by the encroachment by other vegetation communities (e.g., juniper) and exotic annual cheatgrass and other exotic species, alter vast acres of sagebrush scrub in the planning area. Cheatgrass alters fire frequency from historic intervals of 35 to 100 years to shorter cycles of five years or fewer (Fire Regime II-0).

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have

been defined and mapped by Hardy et al. (2001) and Schmidt et al. (2001) and include three condition classes for each fire regime. The classification is based on a relative measure

2-4 Fire Regime within the WFO

describing the degree of departure from the natural (historical) fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (e.g., species composition, structural stages); fuel composition; fire frequency, severity and pattern; and other associated disturbance (e.g., insect-induced and diseased mortality, grazing, drought).

The three condition classes within the WFO planning area are based on barren or bare ground (FRCC 0), low (FRCC1), moderate (FRCC2), and high (FRCC3) departure from the central tendency of the natural (historical) regime. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside. FRCC within the WFO planning area is identified in Figure 2-5, FRCC within the WFO Planning Area, and Figure 2-6, WFO Planning Area FRCC Acreages on Public Lands. Currently, approximately 7.4 million acres, or 79 percent of the WFO planning area, is moderately to highly outside of the historical range of variability (FRCC 2 and 3).

Fire Management Units (FMU) are specific land management areas defined by fire management objectives, management constraints, topographic features, access, values to be protected, political boundaries, and fuel types. A general classification of FMU category types within the WFO planning area are listed as follows:

- Wildland Urban Interface (WUI);
- Special Management Areas (SMA);
- High Value Habitat (HVH);
- Cultural/Historic/Paleontological (CHP);
- Vegetation (Veg); and
- Wilderness (WLD) and Wilderness Study Areas (WSA).

Table 2-18 gives a summary of all FMUs within the WFO planning area. Figure 2-7 shows the location of FMUs in the WFO planning area by category types and management considerations.

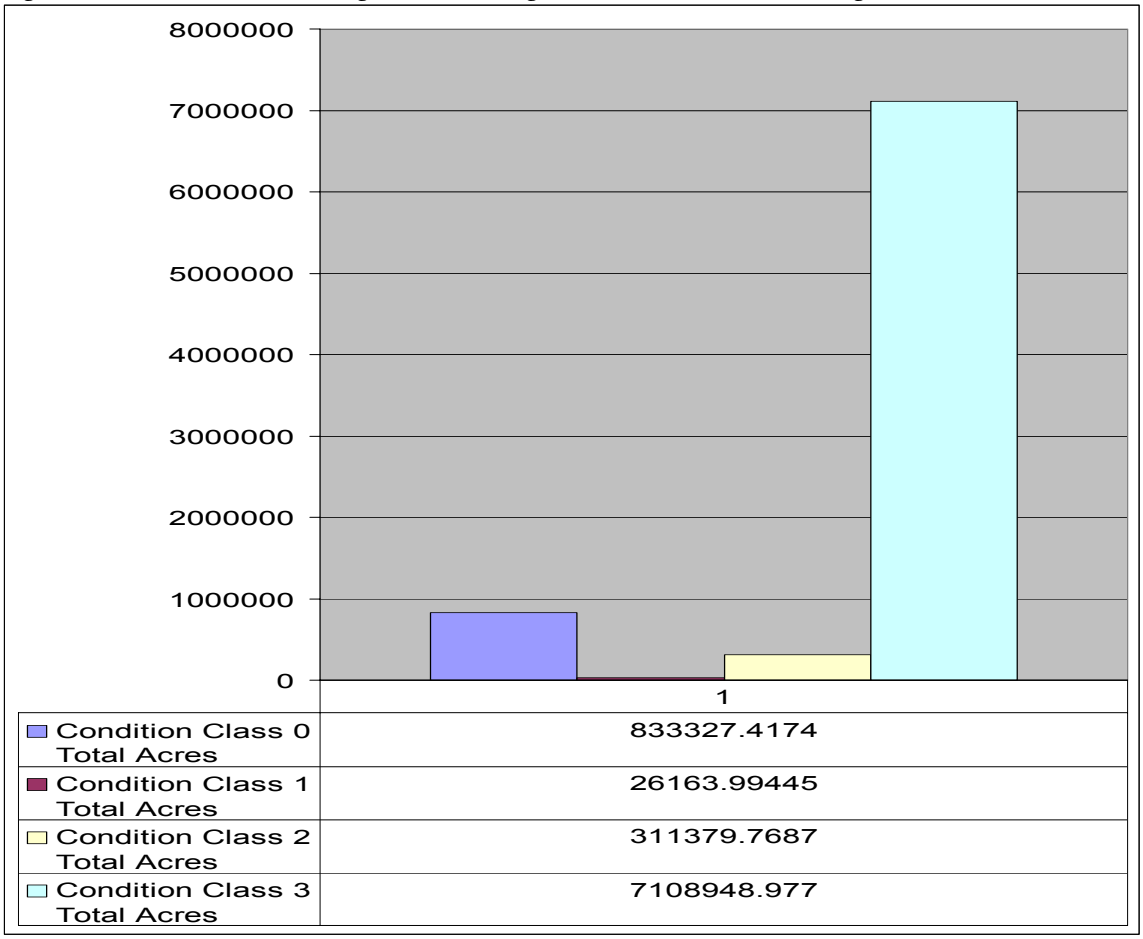
Twenty-seven FMUs were developed by an interdisciplinary team within the WFO and serve to define fire management objectives, physical characteristics, resource values, and treatment actions necessary to achieve resource management objectives, as identified in the WFO current land use plans. Management proposed for each of the individual FMUs is unique, as evidenced by strategies, objectives, and value attributes that set it apart from the management characteristics of an adjacent FMU.

These FMUs have dominant management objectives and pre-selected fire suppression strategies assigned to accomplish these objectives. The WFO FMUs will also be used in the Fire Program Analysis (FPA) planning process to define

and develop the WFO fire management program requirements, budgets, and program organization.

2-5 FRCC within the WFO Planning Area MAP

Figure 2-6: WFO Planning Area Fire Regime Condition Class Acreages on Public Lands



2-7 Fire Management Units within WFO Planning Area

Table 2-18
Summary of FMUs within the WFO Planning Area

FMU Number	FMU Name	FMU Type
NV 020-01	Hot Springs	Veg—Cheatgrass
NV 020-02	Silver State	Veg—Cheatgrass
NV 020-03	Rye Patch	Veg—Cheatgrass
NV 020-04	Valley	Veg—Cheatgrass
NV 020-05	Iron Point	Veg—Salt Shrub/Desert Sink
NV 020-06	Trinity	Veg—Salt Shrub/Desert Sink
NV 020-07	Desert Valley	Veg—Salt Shrub/Desert Sink
NV 020-08	Continental Lake	Veg—Salt Shrub/Desert Sink
NV 020-09	Black Rock/High Road NCA	SMA/National Conservation Area
NV 020-10	I-80 Corridor Communities	WUI
NV 020-11	Winnemucca/Golconda	WUI
NV 020-12	Paradise Valley	WUI
NV 020-13	Orovada/McDermitt	WUI
NV 020-14	Denio	WUI
NV 020-15	Santa Rosa	HVH
NV 020-16	Montana Mountains	HVH
NV 020-17	Pine Forest/McGee Mtn	HVH
NV 020-18	Blue Wing/Seven Troughs	HVH
NV 020-19	Jackson	HVH
NV 020-20	Humboldt	HVH
NV 020-21	East Range	HVH
NV 020-22	Sonoma	HVH
NV 020-23	Stillwater	SMA/CHP
NV 020-24	Gerlach/Empire	WUI
NV 020-25	Valmy	WUI
NV 020-26	Granite	HVH
NV 020-27	Eugenes/Slumbering Hills	HVH

FMUs in the WFO planning area include:

Hot Springs FMU-#NV-020-01—The FMU is in Fire Regime II and FRCC 2 for the higher elevation sagebrush-perennial grass sites. The valley floors and foothills are in FRCC 3 due to extensive cheatgrass establishment.

Silver State FMU—#NV-020-02—The FMU is within Fire Regime II and FRCC 2 (25%) and FRCC 3 (75%). Nearly all the valley floors are FRCC 3.

Rye Patch FMU—#NV-020-03—The FMU is within Fire Regime I-V, with 75% in Fire regime IV. The entire FMU is in FRCC 3.

Valley FMU—#NV-020-04—The FMU is a Fire Regime classification II and FRCC 3

Iron Point FMU—#NV-020-05—The FMU is in Fire Regime classes I-V, with 75.5% in Fire Regime classes IV and V. The FMU is all in FRCC 3.

Trinity FMU—#NV-020-06—The FMU is in Fire Regime II and is FRCC 3.

Desert Valley FMU—#NV-020-07—The FMU is in Fire Regime II and FRCC 3.

Continental Lake FMU—#NV-020-08—The FMU is within Fire Regime II and FRCC 3.

Black Rock Desert/High Rock Canyon Emigrant Trails NCA and Associated Wilderness FMU -#NV-020-09—The Fire Regime is II and the majority of the FMU is FRCC 3. The exception is an area of FRCC2 in the Black Rock Range around Red Mountain and Pahute Peak.

I-80 Corridor Communities FMU—#NV-020-10—The Fire Regimes are I-V with a majority (58.6%) in Fire Regime class IV. The FMU is in Condition Class 3, with a very small area in Condition Class 2 (0.6%).

Winnemucca FMU—#NV-020-11—The Fire Regime is II, and the FRCC is 3.

Paradise Valley FMU—#NV-020-12—The Fire Regime is II, and the FRCC is 3.

Orovada/McDermitt FMU—#NV-020-13—The Fire Regime is II, and the FRCC is 3.

Denio FMU—#NV-020-14—The Fire Regime is II, and the FRCC is 3.

Santa Rosa FMU—#NV-020-15—The Fire Regime is II, and the FRCC is 3.

Montana Mtns. FMU—#NV-020-16—The Fire regime is II, and the FRCC is 3.

Pine Forest/McGee Mtn. FMU—#NV-020-17 – The Fire Regime is II and FRCC is 3 for most of the FMU, with the north end of the Pine Forest Range proper being a FRCC 2.

Blue Wing/Seven Troughs FMU—#NV-020-18 – The Fire Regime is II and Condition Class is 3, except for small areas on the Selenite Range and the northwest side of the Seven Troughs Range that are FRCC2.

Jackson FMU—#NV-020-19—The Fire Regime is II and FRCC is 2 on much of the FMU (60 percent), with approximately 30 percent in FRCC 3. Ten percent of the FMU is in FRCC 1.

Humboldt FMU—#NV-020-20—The Fire Regime is II and FRCC is 3 on approximately 60 percent of the FMU, with the remaining 40 percent at FRCC 2.

East Range FMU—#NV-020-21—The Fire Regime is II, and approximately 75 percent of the FMU is in FRCC 3. The remaining 25 percent is in FRCC 2, at the tops of the ridgelines on the East Range.

Sonoma FMU—#NV-020-22—The Fire Regime is II, and the southern portion of the FMU is in FRCC 3. The northernmost third of the FMU is FRCC 2.

Stillwater FMU—#NV-020-23—The Fire Regime is II, and the FRCC is 3.

Gerlach FMU—#NV-020-24—The Fire Regime is II, and the FRCC is 3.

Valmy FMU—#NV-020-25—The Fire Regime is II, and the FRCC is 3.

Granite FMU—#NV-020-26—The Fire Regime is II and the FRCC is 3 in approximately two-thirds of the FMU. The remainder (the bulk of the Granite Range itself) is in FRCC 2.

Eugene/Slumbering Hills FMU—#NV-020-27 – The Fire Regime is II and the FRCC is 3 for 80 percent of the FMU (all of the Slumbering Hills and the bulk of the Eugene Mountains). A small portion of the higher elevation of the Eugenes is in FRCC 2.

Trends

From 1992 to 2002, wildland fires have burned approximately 1.6 million acres of public land administered by the WFO Office, approximately 14 percent of all lands within the planning area (Table 2-19). It is estimated that during this period, fires have affected about 22 percent of the native vegetative communities within the WFO administrative boundary.

Table 2-19
WFO Fire History

Fire Year	Number of Fires	Acres
1992	66	12,046
1993	50	2,781
1994	60	34,390
1995	101	38,707
1996	145	332,362
1997	80	25,576
1998	58	26,693
1999	151	640,080
2000	83	222,276
2001	96	214,637

2002	48	14,945
TOTAL	938	1,564,493

Impacts from these occurrences include an increase in denuded and scorched landscapes, increased wind and water erosion, increased spread of invasive and noxious weeds, reduced habitat for a wide variety of plant and animal species, and loss of forage base for livestock. Associated with the impact on livestock grazing are the negative consequences associated with modification and/or closure of grazing allotments and the resulting economic impact on grazing permittees and related regional socioeconomics. Wildland fire management options for the WFO typically include wildland fire suppression and appropriate management response; prescribed fire and possible future applications of wildland fire use; non-fire fuels treatments that include mechanical, biological, chemical, and biomass removal; post-fire rehabilitation and restoration; and community protection, assistance, and rural fire assistance. In an effort to minimize the impact of wildland fire and reduce to spread of invasive and noxious weeds, the WFO has available the Emergency Stabilization and Restoration (ESR) program. Collectively, this program addresses current FRCC and impacts to other resources. It is expected that due to the fire regime conditions within the planning area and factors within the WFO planning area outside the control of fire program (e.g., invasive weed control, vegetation management issues, drought, grazing), FRCC categories would be maintained at or near their current condition.

Forecast

Based on prolonged drought conditions and establishment of invader species, it is anticipated that severe wildfires will continue under present management. Management actions to reduce fire severity, including green strips, hazardous fuel reductions, and rehabilitation, could slow the decline of resources.

Key Features

Key features include FMUs located in WUI Areas, SMAs, and HVH Areas (See Table 2-18 above, "Summary of FMUs within the WFO Planning Area").

2.1.12 Cultural Resources

Indicators

Resource condition is assessed by field observation, cultural resource inventories, and project review. The primary resource indicator is whether there is a loss of those characteristics that may qualify the property for listing on the National Register of Historic Places (NRHP) or would diminish the cultural value of areas important to Native American or other traditional communities. These characteristics can be affected by physical destruction, damage, or alteration of the resource; isolation of the resource; alteration of setting; neglect resulting in deterioration and destruction; or the transfer, sale, or lease of the resource. Specific indicators include the extent or intensity of natural weathering, erosion, wildfire, ground disturbance, grazing, recreation use, unauthorized collection,

intrusions to setting, and vandalism. This loss affects the completeness and accuracy of the scientific information that can be derived from a resource, the aesthetic, historic, or interpretive value of the resource, and/or the importance of the resource in maintaining social and cultural traditions.

Current Conditions

The vast majority of the recorded cultural resources on the land administered by the WFO area are archaeological sites. At present, approximately 500,000 acres, or about 5 percent of the land administered by the WFO, have been surveyed for cultural resources. These surveys have resulted in the documentation of approximately 6,000 prehistoric and historic archaeological sites. Only a few sites have been formally nominated for listing on the NRHP, but many more have met the eligibility criteria or have not been evaluated.

The area administered by the WFO was included in a recent ethnographic overview, which provides the contextual basis for ongoing consultations between the BLM and contemporary tribes in northern Nevada on traditional cultural properties (TCPs), sacred sites, traditional lifeway areas, and other culturally important places. The overview includes a review, analysis, and synthesis of existing ethnographic and ethnohistoric literature and archival materials (Bengston 2003).

Current conditions are consistent with MFP plan objectives, which include management for conservation and protection of cultural resources. There are no specific MFP objectives for Native American consultation.

Prehistoric Period Resources

The planning area contains archaeological evidence of habitation and use that may date to 10,000 or 12,000 years ago, corresponding to the final high stand of Lake Lahonton. The subsistence pattern of these earliest inhabitants is unclear, but there is substantial evidence for use of the grasslands and marshes that developed as the lake receded. In time, the drying became extreme, and those who remained adapted to environmental conditions by using mountain, lake, and desert resources. The marshes and lakes of the valleys were used intensively when environmental conditions became more favorable and with the adoption of bow and arrow technology. At the time of the arrival of EuroAmericans, small family groups continued to seasonally exploit widely scattered resources from upland, lake, river, and desert locations, coming together for communal game drives and cultural activities (Smith et al. 1983).

Prehistoric archaeological sites in the planning area range widely in complexity, environmental setting, location, and type. Sites include rock shelters, residential sites (with probable buried deposits), temporary camps, petroglyphs, hunting blinds, quarry sites, and surficial lithic scatters. The WFO administers some of the most important archaeological sites in the development of Great Basin archaeology. Lovelock Cave is listed on the NRHP. In addition to the vast depth

of time represented by these resources, a wide breadth of behaviors are also indicated, including hunting and gathering, tool manufacture, trade and exchange, and spirituality.

Historic Period Resources

Similarly, historic period sites indicate a considerable amount of variation reflective of activities that attracted people to the region. Mining and mining-related sites; transportation features, including historic trails and freight and stage roads; ranches and ranching-related facilities; and towns are all represented within the area managed by the WFO.

Mining

The earliest known prospecting by nonnatives in the area occurred in the mid-1800s. By the mid-1860s, the first mining districts were organized in the planning area. These historic mining districts still contain remnants of past activities, including prospects, shafts, adits, mining equipment, small structures, and foundations. Some of the better known historic mining districts include the Buckskin National District, Potosi District, Gold Run (Adelaide) District, Winnemucca District, Awakening District, Bottle Creek District, Sulphur (Rabbit Hole) District, Varyville, Rosebud, Scossa Districts, and the Warm Springs District.

Included in these districts are ghost towns and camps associated with the various "boom and bust" cycles characteristic of mining activity in the planning area. Some of the more prominent locations include Unionville, Star City, Dutch Flat, National, Red Butte, Humboldt City, Seven Troughs, Kennedy, and Dun Glen. The remains of these towns vary from multiple standing wooden structures and partial current occupancy to little more than a few stone foundations and scattered occupational debris.

Transportation

National events have helped to mold the nature of historic resources within the planning area. The California Trail, initially established in 1841, became a key transportation route along the Humboldt River for emigrants traveling to California and western Oregon. With the discovery of gold at Sutter's Mill in 1848, travel along the trail exploded. Between 1849 and 1852, approximately 175,000 emigrants bound for the California goldfields traveled along the trail.

Using maps from the earlier Fremont Expedition, the Applegate brothers blazed the Applegate Trail from Oregon through the area in 1846. Peter Lassen, in turn, incorporated the Applegate Trail into his 1848 Applegate-Lassen cutoff from the California Trail. Between 1859 and 1860, the (1856) Nobles Route was developed by F.W. Landers as part of the Honey Lake Wagon Road.

In 1992, Congress designated the California Trail as a National Historic Trail. The Applegate-Lassen Trail segments in the planning area are formally listed on the

NRHP. The National Park Service has prepared a Comprehensive Management and Use Plan/Final Environmental Impact Statement for the Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails (USDI/NPS 1999).

In addition to these trails, remnants of numerous stage and freight roads dating from the mid-1860 period are present in the planning area. Among the most important of these is the Idaho Stage Route, which was an important transportation link between the Comstock and Humboldt mines and mining operations in southern Idaho in the early Territorial Period.

The Central Pacific Railroad began laying track eastwards from Sacramento, California in 1863, and the first transcontinental rail line was completed through the planning area by late 1868. Remnants of the original grade of the transcontinental railroad can still be seen at many points along present-day Interstate 80. A second transcontinental line constructed by the Western Pacific Railroad was completed through the planning area in the 1907 to 1909 period, spawning the development of several depot towns, including Jungo, Sulphur, and Gerlach.

Ranching/Homesteading

By the 1870s, huge numbers of cattle, and later sheep, were driven throughout the region, and large ranches were established within the WFO planning area. Among these large cattle operations were the well-known Miller and Lux Company. Remnants of these and smaller operations are numerous in the planning area and include abandoned wells, corrals, fencing, line shacks, foundations, and other remains.

Homesteaders followed the development of these ranches. Some tried to farm low lands, and others were agents for large ranching operations. Their traces remain as wood and stone houses, dugouts, foundations, irrigation systems, and fences scattered throughout the planning area. Some of these are still in use by modern ranching operations.

Native Americans

The planning area lies within the traditional territory of Northern Paiute, and to a lesser extent, Western Shoshone peoples. Historically, the Northern Paiute and Western Shoshone were organized in hunting-gathering bands that generally traveled seasonal rounds subsisting on a variety of plant foods, insects, small game, and fish. Game animals available to Native Americans in the planning area included antelope, rabbits, bighorn sheep, mule deer, and a variety of small mammals, reptiles, and birds. Antelope and rabbits were often hunted communally.

Seeds and roots were the primary plant foods gathered. Plant and animal products were also used for clothing, shelter, and other functional and ceremonial articles. Medicinal plants were used for healing purposes. Lithic sources provided materials

for tool manufacture. Some minerals were also used medicinally and/or ceremonially.

Several Northern Paiute and Western Shoshone tribes are located within the WFO planning area. They include the Battle Mountain Band, Fallon Paiute-Shoshone Tribe, Fort McDermitt Tribe, Lovelock Paiute Tribe, Pyramid Lake Paiute, Winnemucca Tribe, and the Summit Lake Paiute Tribe.

Reservations within the planning area include the Summit Lake Paiute Reservation, located at Summit Lake. This reservation was established in 1913 and includes the historic site of Fort McGarry. Pyramid Lake Reservation, in the western portion of the planning area, was established in 1874. The Fort McDermitt Reservation, near the Oregon border, was a former US Army cavalry post that was converted to a reservation in 1889.

At the present time, several locations within the planning area are known to be places of traditional or religious importance to these groups. Among these are the Stillwater Range, which is an important pine-nutting area, Chocolate Butte, a feature containing medicinal minerals, Limerick Canyon Springs, a location used for medicinal, social, and spiritual purposes, Two Tips, a favored hunting area, and Squaw Butte, used for vision-questing.

In additional to these places, numerous hot springs in the planning area are important for spiritual and medicinal purposes, and some figure prominently in the mythology of these groups. Kyle and Dixie Hot Springs are among the more important of these springs.

Trends

Condition has remained stable for cultural resources identified through compliance activities associated with Section 106 of the National Historic Preservation Act and the *State Protocol Agreement between the Nevada BLM and the Nevada State Historic Preservation Office*. Energy and mineral activities continue to be developed in proximity to cultural resources, but potential impacts are avoided or mitigated under current management measures. In these cases, the trend is towards a desired condition of conservation and protection.

Qualitative observation indicates a downward trend in condition for recorded and unrecorded cultural resources that are not associated with formal surface-disturbing management proposals. Illegal removal of artifacts, ground disturbance associated with recreational activity, limited law enforcement, and intensive grazing practices all contribute to the downward trend.

Forecast

Based on current management practices, the potential for cultural resources being illegally removed or damaged will increase, due to projected increases in

recreational and commercial usage, and limited law enforcement presence. Current grazing practices will also continue to contribute to adverse impacts.

Developing management actions to identify and protect sensitive areas and TCPs will help alleviate damage to cultural resources and places of Native American concern.

Key Features

Stillwater Mountain Range

Idaho Stage Route

Double H Mountain Range

North Fork of the Little Humboldt River

Augusta Mountains

Pine Forest Mountain Range

Parman Flat

Tunnel Camp

Humboldt Sink sites

California Trail

Star City

Painted Cave

2.1.13 Paleontological Resources

Indicators

Resource condition is assessed by field observations, paleontological reports, commercial site reports, and project review. The primary resource indicator is whether there is a loss of those characteristics that make the fossil locality or feature important for scientific use. Natural weathering, decay, erosion, improper collection, and vandalism can remove or damage those characteristics that make the paleontological resource scientifically important.

Current Conditions

No systematic field survey has been conducted for paleontological resources in the planning area. However, numerous paleontological localities have been identified by independent researchers. To prepare for a Unit Resource Analysis, the BLM

contracted paleontologist David Lawler (Lawler 1978, Lawler and Roney 1978) to review the literature, summarize previously known paleontological resources, and analyze the potential for unknown resources.

Some of the most important paleontological resources in the planning area include Mesozoic icthyosaurian fossils and Triassic hybodont shark remains. The former represent some of the earliest North American members of the reptilian group, while the latter are some of the few known occurrences in North America.

Fossil mammal and fish remains in the planning area include early horse, beaver, rhinoceros, two distinct species of fossil camels, mastodon, a variety of fossil forms of rodents, and representatives of several other distinct families of mammals. The planning unit also includes a wealth of invertebrate paleontological resources, including ammonites, pelecypods, and brachiopods. Flora fossil types include rushes, willows, an abundance of fossilized wood of early conifers, and a variety of grasses, ferns, and other plant types.

Trends

Qualitative observation indicates condition has remained stable for paleontological resources protected or mitigated through the permitting process and other standard operating procedures (e.g., pre-disturbance clearance) associated with federal management actions. In these cases, trend is toward conservation.

Trend is slightly downward for resources not associated with direct management actions. The primary contributors to this trend are unauthorized collection of fossils, particularly of fossilized wood; limited law enforcement resources; and ground-disturbance associated with recreational activities.

Forecast

Projected increases in commercial and recreational use may 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

Lund Petrified Forest

Eastern Flank of the Humboldt Range

Southern Tobin Range

Humboldt Sink Area

2.1.14 Visual Resources

Indicators

The BLM VRM system consists of the visual resource inventory stage and visual resource contrast rating stage (BLM 1986). The inventory stage involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. The process 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. The process is described in detail in BLM Handbook H-8410-1, Visual Resource Inventory. The area's visual resources are then assigned to management classes with established 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 which 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. A visual contrast rating process is used 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. This process is described in BLM Handbook H-8431-1, *Visual Resource Contrast Rating*. 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 the proposal into compliance.

The underlying reason for establishing VRM objectives is to ensure the visual value or scenic quality of the landscape is retained. 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 landscapes 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 the degree to which cultural modifications

detract from or enhance the landscape. The scenic quality classes are described as follows:

- Class A: Distinctive, high degree of visual variety;
- Class B: Common or Typical, moderate degree of visual variety; and
- Class C: Minimal Value or Below Average, low degree of visual variety.

Current Condition

The current condition of visual resource management is stable. For example, reclamation management strategies required by permits for mining and mitigation measures to design structures on BLM land to blend in with the natural background are used to minimize disturbances to the visual landscape.

Class I, the most protective class, is found in Wilderness Areas and Wilderness Study Areas. Class II and III areas are generally the scenic mountain ranges near communities and along Interstate 80, State Highway 95, and State Highway 140, and the other well-traveled corridors in the planning area. Also, the NCA in the northwest portion of the WFO area is Class II. Current Nevada policy is to manage the setting of historic trails to VRM Class II. The remainder of the area is Class IV.

The scenic features of the management area are characteristic of the Great Basin area of the western United States. Gold and brown hills diffuse into steep rugged mountains (US Navy 1997). Alkali flats and low desert brush dominate the valley lowlands, allowing expansive views from the valleys to the surrounding mountains. The higher elevations support sagebrush, juniper, and pinyon pine, which provide visual diversity and contrasting darker color along ridgelines in the distant background. Vegetation grows low and evenly on the valley floor and primarily consists of monochromatic desert brush.

The planning area is within the northern Basin and Range physiographic province. Basin and Range landscapes in northern Nevada are characterized by elongated, generally north-south trending mountain ranges separated by broad open basins. This type of landscape allows for long viewing distances. Granite Springs Valley, Desert Valley, Grass Valley**,** Pleasant Valley, Buena Vista Valley, Jersey Valley, and Paradise Valley are noticeable valleys, and the Sonoma Range, Humboldt Range, West Humboldt Range, Stillwater Range, Osgood Mountains, Seven Troughs Range, Montana Mountains, Double H Mountains, Bilk Creek Mountains, Pine Forest Range, Black Rock Range, Jackson Mountains, Trinity Range, East Range, Tobin Range, and Sahwave Mountains are visible ranges in the planning area.

The planning area is drained by the Humboldt River. Rye Patch Reservoir in north-central Pershing County is another water feature visible in the planning

area. Smaller water features in the planning area include Quinn River and Kings River in the northern planning area and Humboldt Sink in the southern portion of the planning area.

Public perception of and concern for visual resources is critical in land use planning. The visual character of the planning area is valuable to a spectrum of recreation users and sightseeing travelers. Receptors sensitive to visual resources on BLM land include people recreating and areas of human settlement. Recreation on BLM land includes the Labor Day weekend Burning Man Festival, picnicking, wildlife watching, camping, biking, fishing, hunting, and photography. The primary areas of human settlement are along Interstate 80 and include Winnemucca, Golconda, Imlay, Unionville, and Lovelock. Other areas include Gerlach and Empire along State Highway 447 in the western portion of the planning area. Denio, McDermitt, Orovada, Paradise Valley, and the Fort McDermitt Indian Reservation are in the northern portion of the planning area and around State Highway 95 and State Highway 140. People recreating in the planning area represent other receptors sensitive to the quality of visual resources.

Trends

Some areas may have incorrect or inconsistent visual resource management classifications. This allows major surface-disturbing activities to occur in areas where the level of change to the characteristic landscape should be low. Anticipated future recreation and commercial growth will increase the need for additional staff and budget funding to address concerns to visual resources.

Adverse impacts to scenic vistas and natural settings, especially foreground scenes, could continue to increase throughout the plan area from OHV use and commercial activities. These activities would adversely affect scenic values in the background, middle-ground, and foreground of the viewer. The numbers of new roads would increase, and locations that are currently pristine and untouched could eventually be crisscrossed with OHV tracks. Degradation around springs and favorite camping spots due to OHV use would continue, resulting in adverse impacts on scenic quality of those landscapes.

Potential adverse impacts on visual resources from long-term commercial developments and facilities, such as power lines and communication sites, mines, wind farms, and power plants could adversely affect the visual resources of middle-ground and background landscapes.

Forecast

Assuming increasing commercial development and recreation use, greater long-term visual impacts will occur. Management actions need to be developed, changing management classes to protect sensitive visual resource values.

Key Features

Key features include areas of high public use and visibility areas, such as those along interstate highways. Other key feature areas include unique land forms, historic trails, and pristine areas.

2.1.15 Wilderness Character

Indicators

Wilderness character conditions tend to be more qualitative in nature, measuring the overall landscape and naturalness of an area as a result of changes to levels of recreational activities, development, and surrounding land use trends. Indicators that can quantitatively be measured include changes to route designations, including the number of unauthorized trails, the number of encounters with other users, and anticipated facility development.

Current Conditions

Within the Planning Area boundary, 13 WSA designations will continue to be managed by BLM under the Interim Management Policy (IMP) for Lands under Wilderness Review, until Congress either designates them into the National Wilderness Preservation System or releases them from further wilderness study. BLM will not designate additional WSAs in the planning process, nor will they complete studies or make recommendations related to wilderness suitability. The BLM will, however, consider new information on resource values and uses, including wilderness characteristics.

The public has identified five areas within the planning area as having high potential for wilderness character. Wilderness characteristics such as solitude, primitive recreation, and naturalness are a part of the land use planning process and will be addressed along with all other resource values and uses. BLM is authorized to consider this information when developing the affected environment section and the range of alternatives, or to analyze the environmental impacts to other resources. BLM may accept information generated by the public without additional review.

- Lava Beds/Dry Mountain (210,197 acres);
- Bluewing Mountains (43,134 acres);
- North Sahwave Mountains (45,694 acres);
- Fencemaker Area of the East Range; and
- Portion of the Tobin Range between the China Mountain WSA and the Mount Tobin WSA.

These five areas identified by the public were included in BLM's initial wilderness inventories. With the exception of Fencemaker, all areas went through the intensive wilderness inventory and were not designated as Wilderness Study

Areas. The BLM has not conducted any recent reviews to determine the status of any potential wilderness characteristics in these areas. Outside of WSAs, there have been no specific management actions to protect areas that have potential for high wilderness character.

Trends

The remote and rural nature of the lands within the planning area have helped to protect the potential wilderness characteristics of the areas. However, because there have not been specific management actions to protect the potential wilderness character of the areas, outside of the WSAs, the wilderness character of these lands has been reduced due to both authorized and unauthorized activities occurring in these areas.

Forecast

For areas with wilderness characteristics that lie outside established WSAs, increased commercial development and recreation use may affect naturalness, solitude, and primitive recreation values in high potential areas without management actions to preserve or protect these values.

Key features

Wilderness characteristics, such as naturalness, and areas that offer solitude and are conducive to primitive or unconfined recreational experiences should be evaluated. As described in the Wilderness Act of 1964 (PL 88-577), naturalness occurs when an area generally appears to have been affected primarily by the forces of nature with the imprint of humans work substantially unnoticeable. Human sites and sounds outside the evaluation area should not automatically lead to a conclusion that the area lacks wilderness characteristics.

Areas that offer solitude should provide "outstanding" opportunities for individuals to avoid sights, sounds, and evidence of other people. Factors influencing solitude may include natural screening, such as vegetation or topography, or the opportunity for a person to find a secluded spot.

Unconfined recreational experiences focus on undeveloped recreational activities or activities that do not require facilities or motorized equipment.

2.2 SPECIAL DESIGNATIONS

The WFO manages seven Wilderness Areas, portions of two more, 14 Wilderness Study Areas, two Areas of Critical Environmental Concern, but no Wild and Scenic Rivers. All of these special designations fall within the WFO administrative boundary, but several areas are within the planning area of the Black Rock Desert-High Rock Canyon Emigrant Trails (Black Rock) National Conservation Area (NCA) Plan, which was approved in 2004. Special designation areas addressed in the Black Rock NCA plan will not be addressed in the Winnemucca RMP or this AMS.

2.2.1 Wilderness Areas

Seven Wilderness Areas and portions of two others are within the planning boundary of the Black Rock NCA (totaling approximately 650,000 acres), which is within the WFO administrative boundary (See Table 2-20). These Wilderness Areas will not be addressed in this planning process.

Table 2-20
Wilderness Area within the NCA Boundary

Wilderness Area	Acreage in Black Rock NCA Planning Area Boundary
Black Rock Desert	314,829
Pahute Peak	56,890
North Black Rock Range	30,646
East Fork High Rock Canyon	52,616
High Rock Lake	59,093
Little High Rock Canyon	48,353
Calico Mountains	64,983
South Jackson Mountains	54,534
North Jackson Mountains	23,437

2.2.2 Wilderness Study Areas

There are 14 WSAs within the WFO administrative boundary (Table 2-21). The Lahontan Cutthroat Trout WSA (ISA) (approximately 11,949 acres) is within the planning area boundary of the Black Rock Desert High Rock Canyon Emigrant Trails NCA Plan and will not be further addressed. The remaining 13 WSAs total approximately 416,485 acres within the WFO decision area boundary. Two WSAs (Disaster Peak and Pueblo Mountain) are partially in Oregon, Poodle Mountain is partly within the BLM Eagle Lake Field Office, Augusta Mountain is partly within both the BLM Carson City and Battle Mountain Field Offices, and the North Fork Little Humboldt is partly within the BLM Elko Field Office. Detailed descriptions of the nature, condition, and features of each of the WSAs are included in the Nevada BLM Statewide Wilderness Report, 1991.

Table 2-21
Wilderness Study Areas within WFO Administrative Boundary

Wilderness Study Area	WSA Number	Total Acreage of WSA	Total Acreage of WSA within WFO Planning Area Boundary	Total Acreage of WFO BLM-administered lands within the WSA	Planning Area Boundary
Poodle Mountain	NV020-012	141,646	116,318	116,048	WFO/Eagle Lake
Fox Range	NV020-014 and 014A	75,659	75,659	75,528	WFO RMP

Augusta Mountains	NV030-108	88,287	24,266	24,266	WFO/Carson City/Battle Mountain
Mount Limbo	NV020-201	24,857	24,857	24,778	WFO RMP
North Fork Little Humboldt	NV020-827	69,591	69,474	69,305	WFO/Elko
Selenite Mountains	NV020-200	31,952	31,952	31,878	WFO RMP
Disaster Peak	NV020-859	N/A	12,736	12,736	WFO/OR
China Mountain	NV020-406P	10,296	10,296	10,192	WFO RMP
Tobin Range	NV020-406Q	13,292	13,292	13,121	WFO RMP
Blue Lakes	NV020-600	19,952	19,952	19,912	WFO RMP
Alder Creek	NV020-600D	5,179	5,179	5,143	WFO RMP
Pole Creek	NV020014A	12,959	12,959	12,959	WFO RMP
Pueblo Mountains	NV020-642	N/A	621	621	WFO/OR
Lahontan Cutthroat Trout WSA (ISA)	LCT ISA	11,949	11,949	11,949	Black Rock NCA

Conditions of the WSAs have remained largely the same since they were designated in 1980. However, there have been some impacts associated with increased OHV use in the WSAs. The following summary provides a brief description of each WSA and the BLM's recommendation based on the Nevada BLM Statewide Wilderness Report, 1991. Please refer to the wilderness report for a detailed description of the nature, condition, and features of each of the WSAs. Acreage discrepancies within WSAs are a result of changes in land status from 1991 to 2005.

Poodle Mountain: The WSA is primarily natural and has outstanding opportunities for solitude. However, due to an extensive and expansive amount of private land spread throughout the WSA, creating issues relating to access, water rights, and mineral development, the BLM determined manageability to be a concern and recommended the WSA for nonwilderness.

Fox Range: The WSA is primarily natural and has opportunities for primitive and unconfined recreational uses. Due to manageability concerns of 400 acres of private inholdings and 13,000 acres accessible to OHV use, in addition to moderate to high potential for metallic mineral and geothermal resources, the BLM has recommended the WSA for nonwilderness.

Augusta Mountains: The WSA is predominantly natural, and is home to the *Phacelia glaberrima* (smooth phacelia), which is listed as sensitive on the Nevada Native Plant Society list of January 19, 1983, and is found at the southern end of the WSA. Manageability is a great concern, however, due to pre-FLPMA claims,

and a significant amount of land leased for geothermal and oil and gas resources. The BLM recommended the WSA for nonwilderness.

Mt. Limbo: The WSA is primarily natural with a few improvements in the Selenite Range. Opportunities for solitude are considered outstanding as a whole. Manageability concerns include a 41-acre parcel of private land near the northeast boundary and 1,000 acres of OHV-accessible land and the 3.9 miles of ways. The BLM recommended 12,750 acres for wilderness (including 50 acres outside the WSA) and 11,002 for nonwilderness.

North Fork Little Humboldt: The WSA is primarily natural and offers outstanding opportunities for solitude. The BLM recommended the 8,900 acres for wilderness, primarily the river gorge with a slight setback from the cliffs. The remaining 60,783 acres, recommended for nonwilderness, includes most of the WSA outside of the river gorge. Management concerns for these acres include OHV accessibility, private inholdings, and oil and gas leases.

Selenite Mountains: The WSA is primarily natural and has opportunities for primitive and unconfined recreational uses. Due to moderate mineral potential, high geothermal potential, and significant influences from outside sights and sounds from a major gypsum mine adjacent to the WSA, the BLM recommended the 32,041 acres for nonwilderness.

Disaster Peak: Located in both Nevada and Oregon, Disaster Peak is a symmetrical butte visible throughout the region. The WSA offers outstanding scenery and a high degree of naturalness and provides outstanding opportunities for solitude and primitive recreation experiences. Native populations of the Lahontan cutthroat trout are present in the Sage Creek and Line Canyon drainages of the WSA. BLM recommended 31,170 acres for wilderness, and 2,400 acres for nonwilderness (due to conflicts with oil, gas, geothermal, mineral, and range projects). The area recommended for uses other than wilderness has a narrow configuration or falls within an Area of Critical Mining Potential.

Tobin Mountains (China Mountain): The WSA is predominantly natural with most of the WSA free of human imprints. The WSA offers outstanding opportunities for solitude and primitive and unconfined recreation. Manageability problems include private inholdings, pre-FLPMA mining claims, oil and gas leases, in addition to accessibility for OHV use and 1.8 miles of ways. The BLM recommended the WSA for nonwilderness.

Tobins: The WSA is primarily natural with virtually no development. A well-documented fault line dating from 1915 runs north and south along the base of the Tobin Range. Management concerns include pre-FLPMA mining claims, geothermal leases, and one private inholding of 120 acres. Possible disturbances from the development of these operations would create audio and visual

intrusions including dust, buildings, vehicles, digging, and day-to-day disturbances from mining operations. The BLM recommended the WSA for nonwilderness.

Blue Lakes: The WSA includes substantially natural area with minimal range improvements. The most outstanding features are the sub-alpine glacial lakes, which are a rarity in northern Nevada. BLM recommended 16,400 acres for wilderness, which is primarily closed to vehicles and withdrawn from mineral entry. The BLM recommended 4,108 acres for nonwilderness, located mostly on the periphery of the WSA to create a more identifiable boundary and reduce conflict with mining claims and private inholdings.

Blue Lakes (Alder Creek): The WSA is predominantly natural, and the most notable feature is the variety of vegetation types considered to be both scenic and botanically interesting. The relatively small size of the WSA, the proximity to Blue Lake WSA and the lack of similar landscapes in the region draw numerous recreationists, impeding solitude experiences. Boundary roads leading to the Onion Valley, Little Onion, and Knott Creek Reservoirs, the most popular recreation areas in the WFO, are also heavily used. The BLM recommended the WSA for nonwilderness.

Pole Creek: The WSA has outstanding opportunities for primitive and unconfined recreation. The BLM recommended releasing the WSA due to manageability issues relating to 100 acres of pre-FLPMA mining claims and access necessary to allow the development and operation of those claims.

Pueblo Mountains: The WSA contains distinctive geological, botanical, wildlife and scenic qualities. It has outstanding opportunities for solitude and for primitive and unconfined recreation due to its size. The BLM recommended 26,150 acres for wilderness and 46,540 acres for nonwilderness. Acreage not recommended for wilderness would be difficult to manage because roads and ways are used extensively by deer and bird hunters and ranchers.

2.2.3 Wild and Scenic Rivers

The National Park Service has compiled and maintains a Nationwide Rivers Inventory (NRI), a register of river segments that potentially qualify as national wild, scenic, or recreational river areas. The NRI includes 45 miles of the North Fork of the Little Humboldt River, which is within the Winnemucca RMP planning area. The NRI lists the outstanding scenery, the unique cliff vegetation, and unusual endemic and sensitive plant species found in the gorge area along the river as potential outstandingly remarkable values (ORVs).

2.2.4 ACECs

There are two ACECs are within the administrative boundary of the WFO; the Soldier Meadows-Desert Dace ACEC and the Osgood Mountain Milkvetch ACEC.

The Soldier Meadows-Desert Dace ACEC (approximately 2,077 acres), is home to a federally listed threatened species, the desert dace *(Eremichthys acros)* and its federally designated control habitat, as well as the basalt cinquefoil *(Potentilla basaltica),* a federally listed plant species, and the elongate mud meadow springsnail *(Pyrgulopsis notidicola)* a federally listed candidate snail. The Soldier Meadows-Desert Dace ACEC is addressed in the Black Rock NCA, outside of the WFO RMP decision area.

The Osgood Mountain Milkvetch ACEC, located within the WFO RMP decision area, is approximately 60 acres. This ACEC is habitat for the Osgood Mountain milkvetch *(Astragalus yoder-williamsii),* state listed as critically endangered.

2.3 RESOURCE USES

2.3.1 Facilities

While BLM does place an emphasis on resource-based versus facilities-based recreation activities, developed facilitates do occur within the planning area.

Level

Existing facilities include numerous capital improvements, such as fences, spring developments, windmills, trails, roads signs, or cattle guards. Recreation facilities are sited in the Pine Forest Recreation Area. Onion Valley Reservoir maintains the only organized campground and Blue Lakes has six (6) public primitive restrooms, fire rings, tables, and a number of public information kiosks. Please refer to the Recreation section for a detailed description of all recreation facilities in the WFO planning area.

BLM also manages the McDermott administrative site, established for fire suppression activities. The site is near the Oregon border within the WFO planning area and contains barracks for approximately 15 to 20 seasonal firefighters, water, and septic; one permanent full-time staff person lives on-site year round.

Forecast

Anticipated population increases, both within Nevada and neighboring states, would result in an increased demand for public lands available to recreation activities. To accommodate this increase, additional recreation facilities would be required, including but not limited to, restrooms, picnicking and camping areas, and parking/staging areas necessary for equestrian and OHV users. Continued installation and maintenance of rangeland facilities would occur to better manage livestock.

Key Features

Areas of high priority for capital improvement include Pine Forest and Water Canyon recreation areas, and to a lesser degree, the Bloody Shins and other proposed bike trails. Other key potential areas for facilities include Porter

Springs, Highway 95 sand dunes, Theodore Basin, and areas within the Sonoma Range. These areas support a variety of dispersed recreational activities; however, as demand for recreational activities on public lands increases, developed campground and day use areas could improve recreation experiences and provide necessary resource protection.

Additional administrative facilities could be located near the town of Gerlach to accommodate the expected increase of visitors to both the Black Rock NCA and the entire WFO planning area. This site would assist BLM with rangeland improvement projects, mineral development, and general mechanical needs, and it would provide visitor services.

Other possible locations include the town of Paradise Valley, where the US Forest Service maintains an administrative site; the Central Nevada Interagency Dispatch Center (CNIDC) located in Winnemucca, which is a combined effort from US Forest Service, BIA, FWS, and BLM; and the town of Fernley, located along the I-80 corridor. The Paradise Valley and CNIDC sites provide assistance with fire suppression activities, but their services could be expanded; new site development in Fernley could support additional visitor information services.

2.3.2 Forestry and Woodland Products

Current Conditions

Forest and woodland products include firewood, Christmas trees, posts, and pine nuts. Two harvest areas are designated within the WFO: the Stillwater Harvest Area, including approximately 22,000 acres designated in the Sonoma-Gerlach MFP for intense forest products management, and the Yellowstone Harvest Area, including approximately 890 acres proposed in the Forestry Plan Amendment in 2003. No commercial harvesting of woodland products is allowed.

Access to the resource areas is poor overall, and impacts are currently concentrated in the few areas with easy road access, specifically in the vicinity of Fencemaker Canyon, Fencemaker Pass, and Gamble Basin.

Juniper and pinyon pine woodlands are not as widespread as in other parts of Nevada. There is a serious mistletoe problem in the Stillwater Range. The WFO has made several requests for funding (BPS) to aerially apply a pesticide and thin the stands by removing standing dead or mistletoe-infected trees.

Pinyon pine is expanding in some areas into sagebrush and grassland. This expansion is likely due to fire suppression and climatic change (WFO 2003). The trend in harvest of firewood, posts, and Christmas trees increased from 1976 to a peak usage in 1980 (for posts and Christmas trees) and 1981 (for firewood). After their peak years, use of all of these resources has declined. Quantitative data on the levels of harvest of pinyon pine nuts are not available, but their availability in some areas, notably the areas of Fencemaker Pass, Fencemaker Canyon, and

Gamble Basin, has been reported as impacted by over-harvest of pines for Christmas trees and green firewood.

Forecast

Based on historic harvesting figures, both Christmas trees and firewood harvesting have been declining over time. This trend is anticipated to continue or stabilize. In response to changes in management proposed in the Forestry Plan Amendment (WFO 2003), it is anticipated that an overall improvement in the availability of woodland products will occur. Harvest would be more dispersed and the most heavily impacted areas would be allowed to recover from past over-harvest.

Key features

Cornish (Dave) Canyon has been determined to be a National Register-eligible Traditional Cultural Property (TCP) under criteria "a" and "b" (criterion "a" pertains to areas that are associated with events that have made a significant contribution to the broad patterns of our history; criterion "b" pertains to areas that are associated with the lives of persons significant in our past). This canyon is located within the Stillwater Harvest Area.

2.3.3 Livestock Grazing

Level

The WFO manages the livestock grazing on public lands administered by the BLM in Churchill, Storey, Washoe, Pershing, and Humboldt Counties. The WFO encompasses about 7.3 million acres of public land. There are 103 allotments (Figure 2-8), consisting of 121,930 acres of BLM land in the WFO that are used by 110 livestock operators. More than one operator can utilize a single allotment at different times of year, with 329,506 active animal unit months (AUMs). The BLM issues grazing leases for ten years and reviews them before reissuing them. Table 2-22 provides detailed information on the allotments.

Forecast

The BLM anticipates that implementing the Standards for Rangeland Health and site-specific allotment objectives will stabilize range areas. Adjusting AUMs should also stabilize range areas. Drought conditions and rangeland wildfire will continue to adversely affect rangeland conditions.

Key features

Water quality and soil types dictate the type of vegetation that comprises each allotment. In turn, the type of vegetation within each allotment dictates the success of foraging and grazing. Table 2-23 lists the approximate acreage of vegetation on BLM land per allotment in the Winnemucca planning area. The vegetation section identifies complete BLM vegetation acreages for the entire WFO.

2-8 Grazing Allotments

Table 2-22
WFO Grazing Allotment Information

Figure 2-8 Allotment Number	Allotment Name	Acreages of BLM Land[1]	Active AUMs	Season of Use	Livestock Type
1.	Abel Creek	11,606.79	1,954	2/1-4/10	c
2.	Alder Creek	123,142.31	5,913	4/1-8/15, 10/1-2/28	c
3.	Andorno	9,578.27	873	4/1-10/31	c
4.	Antelope	4,746.06	563	4/15-8/15	c
5.	Asa Moore	7,073.93	685	4/1-9/15	c
6.	Bilk Creek	40,998.70	3,030	4/1-10/31	c, s, h
7.	Bloody Run	37,481.99	2,193	3/1-6/30, 7/1-8/11, 11/1-2/28	c
8.	Blue Mountain	32,254.92	2,315	9/1-4/30	c
9.	Blue Wing/Seven Troughs	1,177,273.99	20,114	3/1-2/28,11/1-5/31	s
10.	Bottle Creek	132,267.89	3,434	4/1-1/31	c
11.	Buffalo	3,650.50	338	4/1-5/31	c
12.	Buffalo Hills	327,190.29	4,114	4/1-10/15	c
13.	Bullhead	85,499.27	11,003	3/1-8/31, 11/1-2/28	c
14.	Buttermilk	23,511.80	2,525	4/1-5/23	c
15.	Chimney Creek	3,090.87	460	4/15-12/31	c
16.	Clear Creek	55,702.87	1,304	4/1-6/30, 9/15-3/31	c, s
17.	Coal Canyon-Poker	97,989.94	3,144	3/1-2/28	c, s
18.	Cordero	5,374.09	189	4/1-10/31	h
19.	Coyote	34,156.49	3,051	4/1-10/30	c, s
20.	Coyote Hills	38,315.33	2,633	1/15-11/28	c, h
21.	Crowley Creek	49,983.43	3,303	4/1-12/23	c
22.	Daveytown	109,166.10	5,165	11/1-2/28	c, h
23.	Deer Creek	21,089.96	754	3/1-7/31, 10/01-12/31	c
24.	Desert Queen	140,656.71	3,355	11/30 - 4/15	c
25.	Desert Valley	56,964.54	1,596	4/1-9/30, 10/16-12/27	c
26.	Diamond S	19,085.73	1,158	4/1-9/15	c
27.	Dolly Hayden	73,347.05	1,067	12/1-1/31	c
28.	Double H	47,275.45	1,687	4/1-10/31	c, h
29.	Dyke Hot	23,331.31	1,636	3/1-2/28	c, h
30.	Eden Valley	28,222	2,629	3/1-8/15, 10/15-2/28	c
31.	Flat Creek	24,459.08	3,168	4/1-1/31	c
32.	Ft. Mcdermitt	12,795.92	1,553	4/1-6/30	c
33.	Fort Scott	2,701.73	336	4/23-5/20	c
34.	Gallager Flat	34,706.64	1,720	10/1-4/15	c, h
35.	Golconda Butte	17,596.71	1,089	8/15-2/28	c
36.	Goldbanks	37,533.45	2,347	12/1-10/31	c, s
37.	Granite	1,965.86	216	4/15-5/20	c
38.	Hanson Creek	1,663.97	151	5/4-8/3	c

Table 2-22
WFO Grazing Allotment Information *(continued)*

Figure 2-8 Allotment Number	Allotment Name	Acreages of BLM Land	Active AUMs	Season of Use	Livestock Type
39.	Happy Creek	88,819.57	3,724	4/1-8/30, 10/15-2/28	c, s
40.	Harmony	6,797.97	348	4/8-9/15	c
41.	Hole In The Wall	84,171	1,224	12/1-4/30	c
42.	Home Station Gap	10,982	934	5/1-7/31,8/1-11/30	c
43.	Horse Creek	39,165.36	4,449	4/15-9/14	c, h
44.	Hot Springs Peak	53,198.37	1,770	3/1-7/31, 11/1-2/28	c
45.	Humboldt House	22,561.09	728	10/15-4/15, 7/16-8/5	c, s
46.	Humboldt Sink	82,497.46	1,582	4/1-11/30	c
47.	Humboldt Valley	105,173.60	2,900	10/22-7/31	c
48.	Indian Creek	960.09	250	4/15-5/31	c
49.	Iron Point	20,214.34	1,240	3/1-3/31,11/1-2/28	c, h
50.	Jackson Mountain	211,748.78	8,857	3/1-2/28	c
51.	Jersey Valley	66,497.71	917	5/1-7/31, 8/1-11/30	c
52.	Jordan Meadow	104,941.58	11,720	3/1-9/30, 11/1-12/31	c
53.	Kings River	144,193.59	12,192	3/15-11/30	c
54.	Klondike	57,986.15	4,610	3/15-11/30	c
55.	Knott Creek	63,568.58	5,813	3/1-4/30	c
56.	Leadville	54,572	1,291	5/1-10/15	c
57.	Little Horse Creek	3,842.51	524	4/1-9/30	c, h
58.	Little Owyhee	333,504.96	23,700	3/1-2/28	c
59.	Long Canyon	27,024.97	1,697	4/1-9/13, 11/1-2/28	c
60.	Lower Quinn	6,787.12	464	11/1-12/31	c
61.	Majuba	177,643.59	3,325	10/15-6/30	c, s
62.	Martin Creek	6,159.70	257	4/15-6/19	c
63.	Melody	4,024.29	1,020	4/10-8/10	c
64.	Morman Dan	27,822.35	1,998	9/1-4/30	c
65.	Mullinix	1,485.02	133	4/16-5/20	c
66.	Old Gunnery Range	No Data	No Data	No Data	No Data
67.	Osgood	49,318.78	3,387	3/1-8/31, 11/1-2/28	c
68.	Paiute Meadows	86,810.58	4,299	3/1-10/6, 11/01-1/15	c
69.	Paradise Hill	21,711.45	2,191	3/1-6/25, 11/1-2/28	c
70.	Pine Forest	106,923.89	9,700	4/1-2/28	c, h
71.	Pleasant Valley	173,356.59	10,553	3/01-12/31	c
72.	Pole Canyon	13,863.45	540	6/1-9/30	c
73.	Pole Creek	34,347.73	2,988	4/1-10/31	c
74.	Prince Royal	9,961.33	97	11/1-4/15, 6/5-6/14	c, s
75.	Provo	9,878.36	2,240	3/1-5/20, 9/15-12/15	c
76.	Pueblo Mountain	25,500.08	2,137	4/1-8/30,10/1-1/8	c
77.	Pumpernickel	126,128.60	9,417	3/1-2/28	c, s
78.	Ragged Top	88,168.02	0	Exchange of Use Only	s
79.	Rawhide	122,301.03	2,740	1/01-10/31	c

Table 2-22
WFO Grazing Allotment Information *(continued)*

Figure 2-8 Allotment Number	Allotment Name	Acreages of BLM Land	Active AUMs	Season of Use	Livestock Type
80.	Rebel Creek	5,014.36	1,000	4/1-5/30, 8/20-12/15	c
81.	Rock Creek	23,277.88	2,392	4/1-10/31	
82.	Rodeo Creek	193,359.17	5,542	3/1-2/28	
NA	Rose Creek	UNKNOWN	213	5/1-7/21	c
83.	Ryepatch	40,053.95	1,981	11/1-4/15, 8/6-8/31	c, s
84.	Sand Dunes	87,623.22	3,865	3/1-8/31	c
85.	Sand Pass	20,985.25	887	3/1-7/31	c
86.	Scott Springs	23,127.51	419	3/1-6/30, 11/1-2/28	c
87.	Singus	2,774.08	350	4/5-5/20, 9/20-10/20	c
88.	Sod House	19,150.39	382	4/1-6/15, 9/15-12/31	c
89.	Soldier Meadows	68,844.19	12,168	7/15-4/30, 1/16-12/15	c
90.	Solid Silver	1,900.87	239	4/20-5/20, 10/1-10/31	c
91.	Sonoma	20,077.19	1,485	4/22-8/20	c
NA	South Buffalo	232,983.81	122	4/1-11/30	c
92.	South Rochester	170,878.54	3,186	1/1-10/31	c
93.	Spring Creek	22,790.76	2,488	4/1-8/10, 12/1-2/1	c
94.	Star Peak	83,658.66	3,075	4/1-10/31	c, s
95.	Sugar Loaf	5,567.28	602	4/1-5/31, 7/25-7/31	c
96.	Thomas Creek	11,772.38	629	4/16-8/15	c
97.	U C	45,248.31	12,902	3/1-8/31, 10/1-2/28	c
98.	Upper Quinn River	10,356.84	436	11/1-2/28	c
99.	Washburn	31,455.11	1,464	1/1-8/31	c, h
100.	White Horse	21,972.78	1,970	11/1-8/31	c
101.	Wilder-Quinn	188,623.65	14,379	3/1-9/15, 11/1-2/28	c, s
102.	William Stock	63,988.92	5,905	3/28-7/20	c
103.	Willow Creek	8,126.81	1,536	3/1-5/31, 8/16-1/30	c

Notes: c=cattle; h=horses; s=sheep

[1] Acreages represent BLM land managed by the WFO field office outside of the NCA boundary.

Table 2-23
Approximate Acreage of Vegetation on BLM Land per Allotment

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
Abel Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	4,281.70
	A. tridentate	Big sagebrush	204.50
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	7,111.19
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1.66
	Salix spp.	Willows	7.74
Alder Creek	No data		0.00
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	5,083.22
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	5,692.20
	A. tridentate	Big sagebrush	14,084.79
	A. tridentata ssp. *tridentata*	Basin big sagebrush	523.85
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	30,599.36
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	33,288.07
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	24,247.62
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,518.98
	Barren		30.12
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	109.30
	Krascheninnikovia lanata	Winterfat	622.47
	No data		0.01
	Pinus albicaulis	Whitebark pine	411.49
	Sarcobatus vermiculatus	Black greasewood	3,080.14
	S. vermiculatus/Artemisia tridentate	Black greasewood/basin big sagebrush	2,850.69
Andorno	*A. tridentate*	Big sagebrush	138.14
	A. tridentata ssp. *tridentata*	Basin big sagebrush	44.71
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	9,395.42
Antelope	*A. tridentate*	Big sagebrush	37.75
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	4,708.32
Asa Moore	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	411.58
	A. tridentata ssp. *vaseyana*	Mountain big	697.99

		sagebrush	
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,913.53

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	50.83
Bilk Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	2,309.93
	A. tridentate	Big sagebrush	10,730.77
	A. tridentata ssp. *tridentata*	Basin big sagebrush	54.10
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	21,319.63
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	6,584.27
Bloody Run	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,244.90
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	1,093.02
	A. tridentate	Big sagebrush	3,045.15
	A. tridentata ssp. *tridentata*	Basin big sagebrush	907.85
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,847.78
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	20,828.90
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	238.22
	A. canescens var. *canescens*	Fourwing saltbush	40.47
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	5,693.71
	A. confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	265.86
	Barren		246.70
	Krascheninnikovia lanata	Winterfat	2.57
	Sarcobatus vermiculatus	Black greasewood	26.86
Blue Mountain	*Artemisia tridentate*	Big sagebrush	2,145.97
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1,039.34
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	525.48
	Atriplex canescens var. *canescens*	Fourwing saltbush	10,525.78
	A. confertifolia	Shadscale	973.91

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,244.90
	A. confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	7,703.82
	A. confertifolia/S. vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	1.63
	Barren		4,348.91
	Grayia spinosa	Spiny hopsage	1,332.01
	Sarcobatus vermiculatus	Black greasewood	413.17
Blue Wing-Seven Troughs	No data		0.02
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	6,463.98
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	175,325.32
	A. nova	Black sagebrush	6,302.01
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	40,863.88
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	329,393.03
	Atriplex canescens var. *canescens*	Fourwing saltbush	30,775.70
	A. confertifolia	Fourwing saltbush	1,051.31
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	247,518.90
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	15,399.59
	A. confertifolia//S. vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	218,135.29
	A. falcata	Sickle saltbush	1,341.49
	Barren		75,855.70
	Krascheninnikovia lanata	Winterfat	5,836.67
	Sarcobatus vermiculatus	Black greasewood	17,363.78
	Tetradymia tetrameres/Atriplex canescens	Fourpart horsebrush/fourwing saltbush	5,647.34
Bottle Creek	Unknown		0.00
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	10,602.38
	A. tridentata	Big sagebrush	1,105.82
	A. tridentata ssp. *tridentata*	Basin big sagebrush	19.83
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	7,237.45

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	10,783.73
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	956.47
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	11,000.42
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	78,584.06
	Barren		1,192.69
	Grayia spinosa	Spiny hopsage	22.54
	Juniperus osteosperma	Utah juniper	192.42
	Sarcobatus vermiculatus	Black greasewood	10,198.68
	S. vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	370.81
	Water		0.60
Buffalo	*Artemisia tridentata*	Big sagebrush	99.92
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3,550.58
Buffalo Hills	No data		9.99
	Allenrolfea occidentalis	Iodine bush	213.35
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	65,185.41
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	75,641.92
	A. nova	Black sagebrush	3,966.40
	A. tridentata	Big sagebrush	18,952.63
	A. tridentata ssp. *tridentata*	Basin big sagebrush	2,610.23
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	52,211.41
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	9,579.81
	Atriplex canescens var. *canescens*	Fourwing saltbush	892.59
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	31,392.28
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	13,327.16
	A. confertifolia//S. vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	6,508.33
	Atriplex torreyi	Torrey's quailbush	113.48

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Barren		17,361.45
	Chrysothamnus spp.	Rabbitbrush	2,716.60
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	5.27
	Krascheninnikovia lanata	Winterfat	627.62
	Juniperus osteosperma	Utah juniper	4,971.23
	No data		7,398.21
	Sarcobatus vermiculatus	Black greasewood	13,466.63
	Water		38.28
Bullhead	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	7,115.04
	A. nova	Black sagebrush	2,250.15
	A. tridentata	Big sagebrush	5,234.12
	A. tridentata ssp. *tridentata*	Basin big sagebrush	993.69
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	53,641.61
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	15,933.92
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	275.26
	Sarcobatus vermiculatus	Black greasewood	55.50
Buttermilk	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,188.78
	A. tridentata	Big sagebrush	114.65
	A. tridentata ssp. *tridentata*	Basin big sagebrush	4.16
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,788.05
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	18,415.48
	Sarcobatus vermiculatus	Black greasewood	0.69
Chimney Creek	*Artemisia tridentata* ssp. *wyomingensis*	Wyoming big sagebrush	3,090.87
Clear Creek	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	178.53
	A. tridentata ssp. *tridentata*	Basin big sagebrush	118.13
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	9,785.27
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	25,610.05
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	20,010.89
Coal Canyon-Poker	No data		0.03

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	12,400.83
	A. nova	Black sagebrush	7,007.95
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,350.35
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	30,608.48
	Atriplex canescens var. *canescens*	Fourwing saltbush	854.60
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	28,724.98
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	868.11
	A. confertifolia//S. vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	12,047.95
	A. falcata	Sickle saltbush	381.94
	Barren		830.57
	Krascheninnikovia lanata	Winterfat	123.24
	No data		7.53
	Salix spp.	Willows	111.02
	Sarcobatus vermiculatus	Black greasewood	656.76
	Water		15.59
Cordero	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	360.82
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	97.97
	A. tridentata	Big sagebrush	2,166.76
	A. tridentata ssp. *tridentata*	Basin big sagebrush	7.16
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,556.42
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,115.25
	Sarcobatus vermiculatus	Black greasewood	69.73
Coyote	No data		15.98
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	8,241.34
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	6,084.67
	A. tridentata	Big sagebrush	404.83
	A. tridentata ssp. *tridentata*	Basin big sagebrush	241.90
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	7.55
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,911.28

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Chrysothamnus spp.	Rabbitbrush	5,851.62
	No data		1,397.32
Coyote Hills	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,392.29
	A. tridentata	Big sagebrush	2,743.69
	A. tridentata ssp. *tridentata*	Basin big sagebrush	432.13
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	2,772.60
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	28,159.74
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	1,174.80
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	578.98
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	428.85
	Krascheninnikovia lanata	Winterfat	632.26
Crowley Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	10,894.83
	A. tridentata	Big sagebrush	1,967.96
	A. tridentata ssp. *tridentata*	Basin big sagebrush	807.23
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,676.40
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	30,496.45
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	3,554.43
	Poa secunda	Bluegrass	269.49
	Salix spp.	Willows	65.83
	Sarcobatus vermiculatus	Black greasewood	117.87
	S. vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	132.94
Daveytown	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	12,517.46
	A. tridentata	Big sagebrush	5,200.41
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	19,772.00
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	817.12

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	37,692.62
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	20,817.13
	Atriplex torreyi	Torrey's quailbush	5,637.70
	Barren		1,806.25
	Krascheninnikovia lanata	Winterfat	253.05
	Salix spp.	Willows	6.45
	Sarcobatus vermiculatus	Black greasewood	4,645.90
Deer Creek	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	777.91
	A. tridentata	Big sagebrush	156.25
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	2,195.35
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	136.35
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,359.82
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	10,910.68
	Barren		617.26
	Juniperus osteosperma	Utah juniper	1,104.81
	Sarcobatus vermiculatus	Black greasewood	1,831.53
Desert Queen	No data		269.86
	Allenrolfea occidentalis	Iodine bush	1,298.62
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	8,599.96
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,911.29
	Atriplex canescens var. *canescens*	Fourwing saltbush	17,124.76
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	31,436.47
	A. confertifolia/Lycium cooperi	Shadscale/Cooper wolfberry	1,842.02
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,286.86
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	35,666.81
	Barren		5,757.47
	No data		18,681.89
	Sarcobatus vermiculatus	Black greasewood	6,550.60

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Typha angustifolia	Cattails	230.09
Desert Valley	No data		0.14
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	5,781.90
	A. tridentata	Big sagebrush	150.06
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	499.16
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,848.79
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	597.34
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	13,353.85
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	28,293.68
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	140.60
	Barren		432.67
	Juniperus osteosperma	Utah juniper	3,316.18
	Sarcobatus vermiculatus	Black greasewood	2,550.17
Diamond S	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,434.74
	A. tridentata ssp. *tridentata*	Basin big sagebrush	132.43
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,266.75
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,342.47
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,909.34
Dolly Hayden	*Allenrolfea occidentalis*	Iodine bush	52.85
	Artemisia nova	Black sagebrush	3,592.09
	A. tridentata	Big sagebrush	240.79
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1,260.64
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,744.44
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	39,996.44
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	21,701.72

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	387.74
	A. torreyi	Torrey's quailbush	713.48
	Juniperus osteosperma	Utah juniper	26.01
	Salix spp.	Willows	10.71
	Sarcobatus vermiculatus	Black greasewood	1,265.21
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	222.01
	Sporobolus airoides/Distichlis spicata/Poa juncifolia	Alkali sacaton/inland saltgrass/alkali bluegrass	132.92
Double H	*Allenrolfea occidentalis*	Iodine bush	110.10
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	1,846.68
	A. tridentata	Big sagebrush	2,605.41
	A. tridentata ssp. *tridentata*	Basin big sagebrush	49.84
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	28,223.20
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	241.40
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	6,773.09
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,207.57
	Salix spp.	Willows	43.17
	Sarcobatus vermiculatus	Black greasewood	4,353.69
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	821.28
Dyke Hot	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	13.94
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	6,765.51
	A. tridentata	Big sagebrush	180.94
	A. tridentata ssp. *tridentata*	Basin big sagebrush	6.64
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	4,508.75
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	2,885.49
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	684.49

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,510.01
	Sarcobatus vermiculatus	Black greasewood	1,890.46
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	3,885.07
Eden Valley	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	591.94
	A. tridentata	Big sagebrush	321.82
	A. tridentata ssp. *tridentata*	Basin big sagebrush	47.79
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,829.13
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	25,354.98
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	415.88
	Krascheninnikovia lanata	Winterfat	2,059.40
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	31.98
Flat Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	983.18
	A. tridentata	Big sagebrush	1,617.11
	A. tridentata ssp. *tridentata*	Basin big sagebrush	912.67
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	19,262.47
	Sarcobatus vermiculatus	Black greasewood	625.78
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	1,057.88
Fort Mcdermitt	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	2,638.70
	A. tridentata	Big sagebrush	29.64
	A. tridentata ssp. *tridentata*	Basin big sagebrush	103.92
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	9,843.33
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	180.33
Fort Scott	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	2,142.09
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	559.64

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
Gallagher Flat	*Allenrolfea occidentalis*	Iodine bush	300.44
	A. tridentata ssp. *tridentata*	Basin big sagebrush	799.30
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	0.29
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	4,469.03
	A. torreyi	Torrey's quailbush	565.33
	Salix spp.	Willows	155.26
	Sarcobatus vermiculatus	Black greasewood	27,755.47
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	661.52
Golconda Butte	*Artemisia tridentata*	Big sagebrush	863.66
	A. tridentata ssp. *tridentata*	Basin big sagebrush	3,340.26
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	7,042.91
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	618.10
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	759.11
	Grayia spinosa	Spiny hopsage	154.67
	Salix spp.	Willows	17.35
	Sarcobatus vermiculatus	Black greasewood	126.23
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	4,674.42
Goldbanks	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	11.22
	A. nova	Black sagebrush	248.92
	A. tridentata ssp. *tridentata*	Basin big sagebrush	352.99
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	5,142.99
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	20,304.32
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	11,362.23
	Barren		110.78
Granite	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,303.66
	A. tridentata	Big sagebrush	1.77

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	660.43
Hanson Creek	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,419.52
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	244.45
Happy Creek	No data		0.13
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	13,772.68
	A. tridentata	Big sagebrush	7,521.54
	A. tridentata ssp. *tridentata*	Basin big sagebrush	424.90
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	257.72
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,262.90
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	1,226.72
	A. canescens var. *canescens*	Fourwing saltbush	701.97
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	23,036.07
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	32,433.40
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	0.55
	Grayia spinosa	Spiny hopsage	466.42
	Juniperus osteosperma	Utah juniper	259.42
	Salix spp.	Willows	365.75
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	89.40
Harmony	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	300.68
	A. tridentata ssp. *tridentata*	Basin big sagebrush	81.36
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,130.47
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3,285.20
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	0.25
Hole In The Wall	*Artemisia tridentata* ssp. *vaseyana*	Mountain big sagebrush	3.29

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3.78
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	5.39
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	3.15
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	0.05
Home Station Gap	*Artemisia tridentata* ssp. *wyomingensis*	Wyoming big sagebrush	
Horse Creek	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	10,212.82
	A. tridentata	Big sagebrush	285.27
	A. tridentata ssp. *tridentata*	Basin big sagebrush	301.29
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	7,772.95
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	19,184.11
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	30.71
	Salix spp.	Willows	233.59
	Sarcobatus vermiculatus	Black greasewood	31.66
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	1,112.95
Hot Springs Peak	*Artemisia tridentata*	Big sagebrush	1,891.43
	A. tridentata ssp. *tridentata*	Basin big sagebrush	193.30
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	41,162.42
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	9,236.11
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	361.65
	Salix spp.	Willows	5.23
	Sarcobatus vermiculatus	Black greasewood	273.04
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	75.19
Humboldt House	*Artemisia nova*	Black sagebrush	4,229.46
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	4,648.40

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex canescens var. *canescens*	Fourwing saltbush	3,866.96
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	7,041.63
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	195.55
	Barren		957.92
	Juniperus osteosperma	Utah juniper	1,583.61
	Salix spp.	Willows	3.07
	Sarcobatus vermiculatus	Black greasewood	7.70
	Water		26.80
Humboldt Sink	No data		0.76
	Allenrolfea occidentalis	Iodine bush	1,556.59
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	54.27
	A. nova	Black sagebrush	658.66
	Atriplex canescens var. *canescens*	Fourwing saltbush	254.92
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	33,269.12
	A. confertifolia/Lycium cooperi	Shadscale/Cooper wolfberry	567.78
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,741.82
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	14,871.30
	barren		15,002.47
	No data		3,652.10
	Sarcobatus vermiculatus	Black greasewood	8,984.42
	Sporobolus airoides/Distichlis spicata/Poa juncifolia	Alkali sacaton/inland saltgrass/alkali bluegrass	1,807.80
	Water		75.47
Humboldt Valley	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	4,946.65
	A. nova	Black sagebrush	2,888.52
	A. tridentata	Big sagebrush	96.15
	A. tridentata ssp. *tridentata*	Basin big sagebrush	7,534.23
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	5,176.37
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,117.28

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	1,095.20
	A. canescens var. *canescens*	Fourwing saltbush	1,405.64
	A. confertifolia	Shadscale	1,511.16
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	45,268.17
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	21,869.87
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	118.95
	Barren		3,958.87
	Krascheninnikovia lanata	Winterfat	92.18
	Salix spp.	Willows	218.41
	Sarcobatus vermiculatus	Black greasewood	767.90
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	74.78
	Water		33.28
Indian Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	713.01
	A. tridentata	Big sagebrush	2.01
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	245.07
Iron Point	*A. arbuscula* ssp. *longicaulis*	Lahontan sagebrush	2,695.20
	A. tridentata	Big sagebrush	268.40
	A. tridentata ssp. *tridentata*	Basin big sagebrush	296.58
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,184.77
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	8,831.93
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	614.02
	Salix spp.	Willows	20.50
	Sarcobatus vermiculatus	Black greasewood	2,302.94
Jackson Mountains	No data		0.11
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	907.49
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	18,366.40
	A. tridentata	Big sagebrush	942.56
	A. tridentata ssp. *tridentata*	Basin big sagebrush	138.22

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	4,645.57
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,617.74
	Atriplex confertifolia	Shadscale	3,922.00
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	65,591.69
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	30,256.82
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	21,437.20
	Barren		2,123.74
	Krascheninnikovia lanata	Winterfat	1,192.42
	Juniperus osteosperma	Utah juniper	39,921.97
	Sarcobatus vermiculatus	Black greasewood	16,585.47
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	99.38
Jersey Valley	*Artemisia nova*	Black sagebrush	6,740.10
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	547.40
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,897.61
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	33,433.24
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	6,386.89
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	4,340.81
	A. torreyi	Torrey's quailbush	563.85
	Barren		34.77
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	5,910.57
	Sarcobatus vermiculatus	Black greasewood	6,642.48
Jordan Meadow	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	32,607.11
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	4,607.76
	A. tridentata	Big sagebrush	842.73
	A. tridentata ssp. *tridentata*	Basin big sagebrush	750.05
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,375.69

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	61,047.69
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	838.86
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	384.86
	Sarcobatus vermiculatus	Black greasewood	212.89
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	2,272.66
	Water		1.28
Kings River	No data		0.02
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	12,987.99
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	425.74
	A. tridentata	Big sagebrush	2,928.42
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1,182.85
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	33,691.77
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	46,653.01
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	8,405.49
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	8,578.58
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	20,469.81
	A. torreyi	Torrey's quailbush	3,891.10
	Krascheninnikovia lanata	Winterfat	12.83
	Salix spp.	Willows	81.83
	Sarcobatus vermiculatus	Black greasewood	2,165.95
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	2,713.56
	Shepherdia argentea	Silver buffaloberry	4.49
	Water		0.16
Klondike	*Artemisia tridentata* ssp. *vaseyana*	Mountain big sagebrush	5,022.61
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	22,854.51

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	12,683.78
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	8.57
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	16,511.90
	A. torreyi	Torrey's quailbush	119.60
	Sarcobatus vermiculatus	Black greasewood	785.19
Knott Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,843.69
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	18,365.07
	A. tridentata	Big sagebrush	456.60
	A. tridentata ssp. *tridentata*	Basin big sagebrush	162.72
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	14,723.29
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	6,158.22
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	17,922.97
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	651.66
	Barren		1.79
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	66.68
	No data		0.36
	Pinus albicaulis	Whitebark pine	638.77
	Poa secunda	Bluegrass	119.68
	Sarcobatus vermiculatus	Black greasewood	231.74
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	225.33
Leadville	No data		0.00
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	3,828.60
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	6,602.14
	A. tridentata	Big sagebrush	258.66
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	4,573.58
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	624.26
	No data		10,764.05

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
Little Horse Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,782.15
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	60.36
Little Owyhee	*A. arbuscula* ssp. *arbuscula*	Low gray sagebrush	76,201.13
	A. cana	Silver sagebrush	393.12
	A. tridentata	Big sagebrush	405.69
	A. tridentata ssp. *tridentata*	Basin big sagebrush	391.56
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	2,194.44
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	252,752.15
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	19.63
	A. falcata	Sickle saltbush	197.56
	Leymus triticoides	Beardless wildrye	283.28
	Krascheninnikovia lanata	Winterfat	83.57
	Salix spp.	Willows	52.27
	Sarcobatus vermiculatus	Black greasewood	519.36
	Water		11.20
Long Canyon	*Artemisia tridentata*	Big sagebrush	16.38
	A. tridentata ssp. *tridentata*	Basin big sagebrush	84.77
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	12,445.57
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale saltbush/black greasewood	2,035.47
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	5,815.43
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	5,235.74
	A. torreyi	Torrey's quailbush	798.40
	Barren		19.03
	Sarcobatus vermiculatus	Black greasewood	571.47
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	2.70
Lower Quinn	*Artemisia tridentata* ssp. *tridentata*	Basin big sagebrush	424.67
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3,336.99

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	530.57
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,461.04
	Sarcobatus vermiculatus	Black greasewood	246.44
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	787.41
Majuba	No data		1.07
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	918.44
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	40,357.62
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	11,308.86
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	40,562.91
	Atriplex canescens var. *canescens*	Fourwing saltbush	2,492.79
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	63,809.69
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	3,149.62
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	13,226.58
	A. falcata	Sickle saltbush	40.06
	Barren		941.46
	Krascheninnikovia lanata	Winterfat	699.96
	Salix spp.	Willows	47.33
	Sarcobatus vermiculatus	Black greasewood	76.78
	Water		10.44
Martin Creek	*Artemisia tridentata* ssp. *tridentata*	Basin big sagebrush	1.07
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	6,002.16
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	156.47
Melody	*Artemisia tridentata*	Big sagebrush	45.66
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3,978.63
Mormon Dan	*A. tridentata*	Big sagebrush	1,339.90
	A. tridentata ssp. *tridentata*	Basin big sagebrush	57.26

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex canescens var. *canescens*	Fourwing saltbush	7,943.02
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,010.21
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	4,926.32
	Barren		3,212.45
	Grayia spinosa	Spiny hopsage	875.66
	Sarcobatus vermiculatus	Black greasewood	6,457.52
Mullanix	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,275.28
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	209.73
Osgood	*Allenrolfea occidentalis*	Iodine bush	817.35
	A. arbuscula ssp. *arbuscula*	Low gray sagebrush	3,273.74
	A. nova	Black sagebrush	1,133.57
	A. tridentata	Big sagebrush	724.94
	A. tridentata ssp. *tridentata*	Basin big sagebrush	556.19
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	4,564.67
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	24,753.80
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	6,445.17
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,026.53
	Barren		247.14
	Krascheninnikovia lanata	Winterfat	265.38
	Grayia spinosa	Spiny hopsage	112.16
	Salix spp.	Willows	1.34
	Sarcobatus vermiculatus	Black greasewood	3,203.18
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	2,191.01
	Water		2.65
Paiute Meadows	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	13,305.83
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	30,678.10
	A. tridentata	Big sagebrush	1,630.08
	A. tridentata ssp. *tridentata*	Basin big sagebrush	2,045.45
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	17,078.99

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	7,873.24
	Atriplex confertifolia	Shadscale	138.42
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,854.36
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	5,438.35
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	4,628.65
	Barren		40.89
	Sarcobatus vermiculatus	Black greasewood	363.78
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	734.45
Paradise Hill	*Artemisia tridentata*	Big sagebrush	265.86
	A. tridentata ssp. *tridentata*	Basin big sagebrush	3.29
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	14,019.45
	Atriplex confertifolia	Shadscale	160.26
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	4,052.78
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,945.21
	Salix spp.	Willows	6.08
	Sarcobatus vermiculatus	Black greasewood	258.52
Pine Forest	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	9,259.62
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	40,802.72
	A. tridentata	Big sagebrush	1,881.09
	A. tridentata ssp. *tridentata*	Basin big sagebrush	37.48
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	27,962.35
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,455.25
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,802.70
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	13,850.14
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	138.17
	Pinus albicaulis	Whitebark pine	486.29
	Sarcobatus vermiculatus	Black greasewood	1,396.44

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	851.66
Pleasant Valley	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	5,564.16
	A. nova	Black sagebrush	8,771.16
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	15,690.23
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	65,933.33
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	60,688.19
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	3,955.99
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	7,976.62
	A. torreyi	Torrey's quailbush	771.09
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	4,005.83
Pole Canyon	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	149.75
	A. tridentata	Big sagebrush	4,599.98
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,904.09
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	865.01
	Barren		549.42
	Juniperus osteosperma	Utah juniper	4,632.90
	Sarcobatus vermiculatus	Black greasewood	162.31
Pole Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	7,401.74
	A. tridentata	Big sagebrush	119.52
	A. tridentata ssp. *tridentata*	Basin big sagebrush	540.08
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,352.25
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	23,029.31
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,547.79
	Salix spp.	Willows	44.76

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	312.28
Prince Royal	*Artemisia nova*	Black sagebrush	2,343.02
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,731.21
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,848.76
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,360.01
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	537.46
	A. torreyi	Torrey's quailbush	140.86
Provo	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	722.34
	A. tridentata	Big sagebrush	370.91
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,690.17
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	9.26
	Salix spp.	Willows	85.68
Pueblo Mountain	No data		7.06
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	512.14
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	1,937.35
	A. tridentata	Big sagebrush	3,329.93
	A. tripartita	Threetip sagebrush	386.20
	A. tridentata ssp. *tridentata*	Basin big sagebrush	4,697.22
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	363.82
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	9,680.98
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	827.65
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	52.32
	Sarcobatus vermiculatus	Black greasewood	1,824.03
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	1,881.37

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
Pumpernickel	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	918.55
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	1.13
	A. nova	Black sagebrush	24,196.62
	A. tridentata ssp. *tridentata*	Basin big sagebrush	87.72
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,320.08
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	36,408.11
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	47,723.70
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	6,134.01
	Sarcobatus vermiculatus	Black greasewood	7,338.68
Ragged Top	No data		0.00
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	27,091.69
	Artemisia tridentata ssp. *vaseyana*	Mountain big sagebrush	612.26
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,651.94
	Atriplex canescens var. *canescens*	Fourwing saltbush	46.08
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	28,176.10
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	3,571.66
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	24,642.58
	Barren		208.01
	No data		763.10
	Sarcobatus vermiculatus	Black greasewood	1,404.61
Rawhide	*Allenrolfea occidentalis*	Iodine bush	2,334.31
	Artemisia nova	Black sagebrush	8,557.47
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	3,606.66
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	17,136.50
	Atriplex canescens var. *canescens*	Fourwing saltbush	1,114.65
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	46,022.23

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	2,179.99
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	3,912.91
	A. torreyi	Torrey's quailbush	6,348.05
	Barren		23,538.72
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	7,176.78
	Sarcobatus vermiculatus	Black greasewood	372.76
Rebel Creek	*Artemisia tridentata* ssp. *wyomingensis*	Wyoming big sagebrush	5,014.36
South Rochester	No data		0.00
	Artemisia nova	Black sagebrush	11,787.19
	A. tridentata	Big sagebrush	38.38
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	1,874.76
	Atriplex canescens var. *canescens*	Fourwing saltbush	1,466.74
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	97,543.89
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	18,158.08
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,402.75
	Barren		14,521.65
	No data		14.19
	Pinus monophylla/Juniperus osteosperma	Singleleaf pinyon/Utah juniper	16,516.45
	Sarcobatus vermiculatus	Black greasewood	3,553.90
	Water		0.54
Rock Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	2,634.03
	A. nova	Black sagebrush	29.55
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	5,249.63
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	12,177.01
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3,129.66
	Salix spp.	Willows	56.36
	Sarcobatus vermiculatus	Black greasewood	1.65

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
Rodeo Creek	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	47,008.88
	A. tridentata	Big sagebrush	26,887.64
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	15,551.27
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	46,830.32
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	5,328.60
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	801.03
	Barren		10,263.51
	Distichlis spicata	Inland saltgrass	6,653.67
	Krascheninnikovia lanata	Winterfat	2,582.45
	Juniperus osteosperma	Utah juniper	10,096.38
	Sarcobatus vermiculatus	Black greasewood	21,355.41
Rose Creek	Unknown		Unknown
Rye Patch	*Artemisia arbuscula* ssp. *longicaulis*	Lahontan sagebrush	8,281.15
	A. nova	Black sagebrush	2,846.29
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	1,625.83
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,363.90
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	13,248.79
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	175.11
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	5,859.99
	Atriplex falcata	Sickle saltbush	50.96
	Barren		621.38
	Juniperus osteosperma	Utah juniper	1,879.60
	Salix spp.	Willows	87.91
	Water		13.08
Sand Dunes	No data		0.00
	Artemisia arbuscula ssp. *longicaulis*	Lahontan sagebrush	2,405.90
	A. nova	Black sagebrush	2,181.67
	A. tridentata	Big sagebrush	14,248.36
	A. tridentata ssp. *tridentata*	Basin big sagebrush	4,396.17

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	34,343.24
	Atriplex canescens var. *canescens*	Fourwing saltbush	6,988.59
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	12,964.81
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,526.34
	Barren		5,659.43
	Krascheninnikovia lanata	Winterfat	1,191.48
	Grayia spinosa	Spiny hopsage	607.28
	Sarcobatus vermiculatus	Black greasewood	1,051.08
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	58.90
Sand Pass	*Artemisia tridentata*	Big sagebrush	1,090.41
	A. tridentata ssp. *tridentata*	Basin big sagebrush	3,136.05
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,061.08
	Atriplex canescens var. *canescens*	Fourwing saltbush	866.92
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	1,430.95
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,191.89
	Barren		3,126.78
	Salix spp.	Willows	1.73
	Sarcobatus vermiculatus	Black greasewood	899.74
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	1,179.69
Scott Spring	*Artemisia nova*	Black sagebrush	8.30
	A. tridentata	Big sagebrush	2,220.76
	A. tridentata ssp. *tridentata*	Basin big sagebrush	136.96
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	71.35
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	17,620.69
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	2,136.56
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	845.24

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Sarcobatus vermiculatus	Black greasewood	87.66
Singus	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,916.91
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	857.18
Sod House	*A. tridentata*	Big sagebrush	107.33
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	241.79
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	3644.10
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	12,942.73
	A. torreyi	Torrey's quailbush	1,027.40
	Salix spp.	Willows	167.28
	Sarcobatus vermiculatus	Black greasewood	1,019.77
Soldier Meadows	No data		0.05
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	13,968.30
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	2,592.76
	A. tridentata	Big sagebrush	2,718.76
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1,821.88
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	35,997.78
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	11,646.38
	No data		0.03
	Poa secunda	Bluegrass	98.26
Solid Silver	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,605.16
	A. tridentata	Big sagebrush	1.73
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	293.99
,Sonoma	*Allenrolfea occidentalis*	Iodine bush	4.37
,	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	1,150.23
	A. nova	Black sagebrush	2,012.28
	A. tridentata ssp. *tridentata*	Basin big sagebrush	,0.84
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	10,381.89
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	5,277.43

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	530.48
	Juniperus osteosperma	Utah juniper	707.45
	Salix spp.	Willows	0.78
	Sarcobatus vermiculatus	Black greasewood	8.28
	Sporobolus airoides/Distichlis spicata/Poa juncifolia	Alkali sacaton/inland saltgrass/alkali bluegrass	3.17
Spring Creek	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	132.47
	A. tridentata ssp. *tridentata*	Basin big sagebrush	39.77
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	22,598.72
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	11.08
	Sarcobatus vermiculatus	Black greasewood	8.72
Star Peak	*Allenrolfea occidentalis*	Iodine bush	159.34
	Artemisia nova	Black sagebrush	1,942.00
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	21,328.84
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	34,070.77
	Atriplex canescens var. *canescens*	Fourwing saltbush	80.49
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	14,354.86
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,509.94
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	3,051.58
	A. torreyi	Torrey's quailbush	5,516.05
	Krascheninnikovia lanata	Winterfat	455.62
	Juniperus osteosperma	Utah juniper	736.73
	Sarcobatus vermiculatus	Black greasewood	451.94
	Water		0.48
Sugar Loaf	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	3,197.30
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	2,369.98
Thomas Creek	No data		10.27
	Allenrolfea occidentalis	Iodine bush	68.36

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	812.79
	A. nova	Black sagebrush	7,381.51
	A. tridentata	Big sagebrush	10,735.08
	A. tridentata ssp. *tridentata*	Basin big sagebrush	1.67
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	2,231.08
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	328.02
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	0.96
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	598.65
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	624.75
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	491.50
	Juniperus osteosperma	Utah juniper	149.38
	Salix spp.	Willows	6,235.54
	Sarcobatus vermiculatus	Black greasewood	3,521.90
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	23.83
	Sporobolus airoides/Distichlis spicata/Poa juncifolia	Alkali sacaton/inland saltgrass/alkali bluegrass	126.82
UC	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	5,310.87
	A. tridentata	Big sagebrush	518.31
	A. tridentata ssp. *tridentata*	Basin big sagebrush	763.54
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	38,645.77
	Sarcobatus vermiculatus	Black greasewood	9.80
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	0.02
Upper Quinn	*Allenrolfea occidentalis*	Iodine bush	13.46
	Artemisia tridentata	Big sagebrush	210.80
	A. tridentata ssp. *tridentata*	Basin big sagebrush	832.70
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	3,385.76

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	Atriplex confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	1,346.79
	Salix spp.	Willows	85.21
	Sarcobatus vermiculatus	Black greasewood	3,820.26
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	661.87
Washburn	No data		4.25
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	502.60
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	8,830.08
	A. tridentata	Big sagebrush	141.92
	A. tridentata ssp. *tridentata*	Basin big sagebrush	345.51
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	21,414.69
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	202.82
	Salix spp.	Willows	13.24
White Horse	*Artemisia nova*	Black sagebrush	807.91
	A. tridentata	Big sagebrush	0.94
	A. tridentata ssp. *tridentata*	Basin big sagebrush	17.71
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	657.26
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	19,599.53
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	889.44
Wilder-Quinn	No data		2.53
	Artemisia arbuscula ssp. *arbuscula*	Low gray sagebrush	1,442.17
	A. arbuscula ssp. *longicaulis*	Lahontan sagebrush	2,087.64
	A. tridentata	Big sagebrush	12,324.78
	A. tripartita	Threetip sagebrush	616.76
	A. tridentata ssp. *tridentata*	Basin big sagebrush	718.62
	A. tridentata ssp. *vaseyana*	Mountain big sagebrush	27,799.66
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	80,064.66
	Atriplex confertifolia	Shadscale	36.95

Table 2-23
Approximate Acreage of Vegetation on BLM land per Allotment *(continued)*

Allotment	Vegetation-Scientific Name	Vegetation-Common Name	Acres of BLM Land
	A. confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	31,961.75
	A. confertifolia/Sarcobatus vermiculatus	Shadscale/black greasewood	17,565.46
	A. confertifolia//Sarcobatus vermiculatus var. *baileyi*	Shadscale/Bailey greasewood	103.05
	Barren		187.17
	Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	19.52
	Krascheninnikovia lanata	Winterfat	1,804.74
	Juniperus osteosperma	Utah juniper	126.50
	No data		21.02
	Salix spp.	Willows	114.58
	Sarcobatus vermiculatus	Black greasewood	3,277.69
	Sarcobatus vermiculatus/Artemisia tridentata	Black greasewood/basin big sagebrush	8,348.39
William Stock	*Artemisia arbuscula* ssp. *arbuscula*	Low gray sagebrush	29,862.22
	A. tridentata	Big sagebrush	8.11
	A. tridentata ssp. *tridentata*	Basin big sagebrush	81.83
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	33,772.87
	Atriplex confertifolia/Artemisia spinescens	Shadscale/bud sagebrush	263.31
	Water		0.58
Willow Creek	*Artemisia tridentate*	Big sagebrush	60.66
	A. tridentata ssp. *wyomingensis*	Wyoming big sagebrush	8,066.15

2.3.4 Energy and Mineral Resources

Level

The production of locatable, leasable, and salable minerals is an important component of the local and regional economies in the planning area. Locatable mineral production is the most important of these, accounting for gross production values exceeding approximately $550 million in 1995 (USGS 1996a). The occurrence of minerals is related to a variety of complex geologic processes, with minerals resources occurring in sedimentary and igneous host and parent rocks and sediments. A minerals potential report is being prepared as a part of the land use planning process and will include a detailed discussion of the occurrence

of mineral resources within the planning area and may include updated maps of mineral potential in the planning area.

Locatable Minerals

Lands within the jurisdiction of the WFO have a long history of minerals development dating back to the 1860s. Some of the locatable minerals that have been developed and mined include gold, silver, mercury, tungsten, manganese, molybdenum, copper, barite, sulfur, gypsum, limestone, iron, diatomite, and clay, as well as precious and semiprecious gemstones. In addition, uranium, lithium, and vanadium resources have been identified.

Since 43 CFR 3809 was implemented in 1981, WFO authorized 2,183 Mining Notices, of which 1,807 have been closed and 282 are currently expired. A total of 86 plans of operation have been authorized, 38 remain active, and 48 have been closed. There are currently nine gold mines, one silver mine, two limestone mines, one diatomite mine, one gypsum mine, and several clay mines within the planning area. Some of these mines are inactive due to market conditions or are undergoing reclamation and closure. Most active mining is occurring between the Osgood Mountains and Battle Mountain, but other locations within the planning area contain significant activity.

Mine sites administered by the WFO are summarized in Table 2-24. As indicated by the number of mines, gold is the primary mineral of interest in the planning area. Approximately 1.2 million ounces of gold was produced in 1995 in the WFO-administered boundaries. Gold production in 2003 accounted for 1.52 million ounces.

Intense exploration and associated claimstaking has occurred since 1982 in response to the discovery of large gold deposits. The amount of exploration and development has fluctuated with the price of gold. The number of active claims for gold and other locatable mineral deposits in the planning area are presented in Table 2-25.

New development of mineral resources within existing claims and outside of current permitted mine boundaries at idle and active mine sites is possible as new ore deposits and extensions of existing ones are discovered. The development of these ore deposits will be largely influenced by the price of minerals in the marketplace and technological advances that lower the price to mine and process ore.

Leasable Minerals

Leasable minerals include both solid and fluid types. Solid leasables include phosphate, coal, oil shale, sodium, and nitrate. Fluid leasables include oil and gas and geothermal resources. (Geothermal resources are described in the renewable energy resources section of this chapter.) While occurrences of solid leasable

mineral are present within the planning area, no significant production of these minerals is currently underway or anticipated.

Table 2-24
WFO-Administered Mine Sites within the Planning Area

Mine Name	Mineral Occurrence	Acreage of Permitted Mine	Mine Type	Surface Ownership [1] (acres)	Current Annual Production) (oz except as noted)
Active Mines					
Trenton Canyon	Gold	633,847	Open Pit (expansion)	public; private	
Nevada Packard	Silver/Gold				
Getchell Underground	Gold	500	Open Pit		93,327
Hycroft	Gold	12,230	Open pit		644
Hycroft	Silver	12,230	Open pit		100
Lone Tree	Gold/Silver		Open pit		434,704 (gold); 80,094 (silver)
Marigold	Gold/Silver	1,831	Open pit		142,100 (gold); 2,080 (silver)
Twin Creeks	Gold/Silver	13,224	Open pit		697,607 (gold); 128,535 (silver)
Coeur Rochester	Gold		Open pit		52,363
Coeur Rochester	Silver		Open pit		5,585,385
Empire	Gypsum	20			279,474 tons
Florida Canyon	Gold/Silver	5,521	Open pit		101,811 (gold); 60,065 (silver)
W. Glen Sexton	Dolomite				*
Colado	Diatomite, perlite				*
Moltan	Diatomite				*
MIN-AD	Dolomite				*
Active Mines					
Wind Mountain	Gold/Silver				
Sleeper	Gold				
Prinson	Gold				
Prebble	Gold				
Rosebud	Gold				
Relief Canyon	Gold/Silver				
Active Mines					

Standard	Gold
Echo Canyon	Limestone

*Proprietary information, not reported.
(1) All public lands unless otherwise noted.

Table 2-25
Locatable Mineral Claims within the Planning Area

Active Claim Type	Number of Active Claims	Total Claim Acres
Lode	21,576	431,520
Mill Site	313	1,565
Placer	1,444	129,960
Tunnel Site	1	Unknown

The oil and gas program currently consists exclusively of exploratory drilling. There are two oil and gas leases in the planning area, encompassing 4,080 acres. Six oil and gas exploration wells have been drilled since 1992. Three new wells were permitted in 2004. No oil or gas production has been established to date. Figure 2-9 presents the locations of the two oil and gas leases in the planning area.

The occurrence of oil and gas in the planning area is believed to be primarily restricted to geologically young basins. Faulting has formed traps, allowing oil and gas from Tertiary-aged source rocks to migrate to reservoir formations (USGS 1996b). The discovery of an oil and water mix in the Triassic-age Favret Formation indicates the potential for local occurrence of oil in rocks of an older age in the southern portion of the planning area (BLM 1993).

Saleable Minerals

The WFO has an active mineral materials sales program. The primary commodity produced in the planning area is sand and gravel. A minor quantity of decorative stone and clay is produced. There are about 65 active sales contracts and 112 free use permits issued to state and local government entities. In addition, there are about 170 material site rights-of-way issued to the Nevada Department of Transportation (NDOT) for sand and gravel.

Forecast

With the continuation of current market projections indicating further growth (NMA 2003) and current market condition of elevated energy prices, the exploration, development, and extraction of locatable, leasable, saleable minerals is expected to increase.

Locatable Minerals

Based on mining industry projections, it appears that market conditions for gold will remain consistent, in the $400 per ounce range. Mining and exploration activity are expected also to gradually increase. Within the next 10 years, two to three currently active mines are expected to go into closure and reclamation, which may be offset by development of new projects or expansion of existing mines.

2-9 Oil,Gas and Geothermal Leases

The price of silver has also seen a gradual increase in recent years. This may affect the expansion potential of the existing silver mines and may increase exploration activities for silver in other areas.

Limestone mining will be on the increase, and WFO anticipates a large mine to go into production in the Humboldt Range. Diatomite mining is also on the increase.

Leasable Minerals

An increasing trend in the leasing, exploration, and production of geothermal resources is expected to continue in the future. Moderate to low levels of oil and gas exploration are expected to continue in existing lease areas.

New competitive oil and gas leasing opportunities are possible. The level of continued interest in exploration will depend on market conditions. The level of future production will depend on the results of this exploration. For example, there is speculation that older (Mesozoic or Paleozoic) source rocks and deeper traps may contain oil and gas resources that have not yet been explored. However, the cost of this exploration and the economic risk involved would be high, while the probability of success is relatively low, so that deep exploration programs are unlikely to occur without favorable energy market conditions.

Saleable Minerals

Mineral materials use will increase, along with increasing mining, other commodity extraction, commercial activity, recreation activities, and private property development, especially along the Interstate 80 corridor.

Key features

Locatable mineral areas identified as exhibiting a priority for use include existing metal and industrial mineral mines and exploration projects and development of existing mining claims.

Leasable mineral areas exhibiting a priority for use include the oil and gas lease area at Kyle Hot Springs and KGRAs, hot springs, existing geothermal lease, and lease application areas. The most likely geothermal development sites are expected to be in areas with adjoining power transmission facilities that have excess capacity.

Salable mineral areas exhibiting a priority for use include sand, gravel, and rock quarries located along state, county, and BLM managed roads.

2.3.5 Recreation

Level

BLM-administered lands in the WFO provide opportunities for a wide variety of outdoor recreation activities and related benefits. While most recreation users participate in dispersed recreation activities, either individually or in small groups,

others participate in organized events as participants or spectators. Many types of dispersed and organized uses provide for a diverse range of visitor needs and expectations. The BLM manages a large percentage of the landbase in the region, making BLM lands a critical resource for providing recreation opportunities to visitors.

Table 2-26 shows visitation estimates for the entire district and individual sites or areas. Estimates were derived from the Recreation Management Information System (RMIS), a BLM recreation database. Approximately 70,000 recreational users visited the WFO planning area in 2004. The Water Canyon and Pine Forest/Blue Lakes Recreation Areas accounted for over 20 percent of visitor activity in 2004. Winnemucca Mountain, which is in the Winnemucca urban interface, is increasing in popularity for area residents, accounting for more than 15 percent of total visitor activity.

Table 2-26
Local Recreation Visitation (2004)

Number	Recreation Area	Annual Visitors
1	WFO Area (includes all sites and dispersed uses)	70,000
2	Winnemucca Mountain	11,275
3	Bloody Shins Mountain Bike Trail	8,875
4	Water Canyon Recreation Area	8,050
5	Pine Forest/Blue Lakes Recreation Area	8,000
6	Lovelock Cave Backcountry Byway	3,750
7	California National Historic Trail	2,000
8	Winnemucca Dry Lakebed OHV	1,400
9	Humboldt Range	1,300
10	Various Caves	75

Source: BLM RMIS, Winnemucca Field Office (2004)

Table 2-27 shows the total visitation to the WFO planning area over a ten-year period by visits and visitor days. A visit is one person's trip, or visit, to planning area public lands. A visitor day represents one person engaging in an activity for any part of one day.

Table 2-27
Trends in Visitation (1994-2004)

	2000[1]	2001	2002	2003	2004
Visits	78,000	44,000	46,000	50,000	70,000
Visitor Days	160,000	48,000	57,000	62,000	74,000

[1]The BLM RMIS data collection was revised during 2000 and may not have produced accurate visitation figures for 2000.

Source: BLM RMIS, Winnemucca Field Office (2004).

Black Rock Desert—High Rock Canyon NCA

In 2000, approximately 1.2 million acres in the northwestern portions of the WFO were designated for protection of their scenic, cultural, biological, and recreational resources. Opportunities to participate in unique recreation activities attract visitors from across the country, through the WFO, to the Black Rock Desert Playa and surrounding wilderness. Although this RMP does not address recreation within the NCA, the location of the NCA and its popularity among residents of Nevada and surrounding states contributes to the overall recreation visitation to the WFO.

Dispersed Recreation

Dispersed recreation activities include, but are not limited to OHV use, camping, hunting and fishing, visiting interpretive and educational exhibits, touring the historic trails, sightseeing, pleasure driving, rock and mineral collecting, photography, picnicking, hiking, mountain biking, and hot spring bathing. This wide range of activities is possible because most of the lands within the WFO boundary are public and accessible and offer a variety of settings suitable for different recreation activities. The WFO began collecting recreation data in 1990. Table 2-28 summarizes the time people spent in 2004 engaging in various dispersed recreation activities while visiting the WFO planning area.

Table 2-28
Dispersed Recreational Activity (2004)

Activity	Percent of Total*
Camping	70
OHV	60
Pleasure driving	50
Photography	30
Picnicking	10
Rock hounding	5
Mountain biking	5
Environmental education	5
Hiking/walking/running	5
Nature study	5
Target practice	5
Backpacking	3
Specialized sport/Event	3
Hunting	2
Viewing cultural sites	1

*The percentage may reflect a variety of activities occurring together, which results in use totaling more than 100 percent.

Source: BLM RMIS, Winnemucca Field Office (2002).

Commercial, Competitive, and Organized Group Recreation Uses

A variety of commercial, competitive, and organized group uses occur within the WFO, all of which are administered under the special recreation permit (SRP) program. SRPs allow specified recreational uses of public lands and related waters. Many of the commercial permits, such as those issued to hunting outfitters and guides, are used throughout the district. Competitive permits, such as motorcycle races, are confined to a preapproved race track. A large percentage of the races that have occurred in the Winnemucca District have taken place in the southwest portion of the WFO. Other examples of permitted activities include OHV racing, mule racing, mountain bike races, various horse events, wagon trains, cattle drives, four-wheel drive tours, rocketry, and other miscellaneous events. Table 2-28 shows the number and type of permits, and the number of participants over a ten year period. The numbers of visitor use authorizations, used for noncommercial tours, noncompetitive activities and other uses requiring stipulations but with a smaller degree of management, are also displayed in Table 2-29.

Table 2-29
Special Recreation Permits

Year	Permit type (competitive, commercial, organized group)	Number of Permits	Number of Participants
1994	Competitive	8	3,157
	Commercial	12	
1995	Competitive	7	5,863
	Commercial	14	
1996	Competitive	4	10,024
	Commercial	11	
1997	Competitive	3	3,435
	Commercial	8	
1998	Competitive	12	15,225
	Commercial	12	
1999	Competitive	7	26,954
	Commercial	19	
	Visitor Use Authorization	1	
2000	Competitive	10	27,900
	Commercial	15	
	Visitor Use Authorization	1	
2001	Competitive	14	28,280
	Commercial	16	
	Visitor Use Authorization	1	
	Group	1	
2002	Competitive	13	28,744
	Commercial	17	
	Group	1	
2003**	Competitive	6	2,263

	Commercial	9	
2004	Competitive	5	3,244
	Commercial	12	

Source:
**In 2003 the Black Rock NCA started keeping separate records for NCA SRPs.

While only 12 permits were issued to commercial guides and outfitters from the WFO in 2004, the current state-wide permitting system allows other offices to permit use in the planning area as well. Due to the lack of coordination among BLM field offices, the actual number of guides and guided trips conducted in the WFO is unknown. Unauthorized group uses have also become an issue in recent times.

OHV Use

The Winnemucca District has outstanding opportunities for OHV recreation on system roads, thousands of miles of user-classified, unmaintained ways, and several dry lake beds that are passable by vehicle. Approximately 60 percent of visitors to the planning area use OHVs at some point during their visit. OHV use is dispersed throughout the WFO. For most visitors, OHVs are used to access recreation destinations by road and to tour remote jeep trails and historic trails. However, a certain percentage of OHV users travel cross-country (off roads or ways) as part of their recreation activity, for example to chase or retrieve game or for challenging play, which has led to resource impacts and conflicts among user groups. Past MFPs and amendments have imposed vehicle restrictions to protect high value resource areas in the Pine Forest SRMA and WSAs.

Sand dunes and playas have become popular destination areas for OHV users and may be suitable for cross-country vehicle travel. However, areas adjacent to the dune and lakebeds that appear resilient to users sometimes suffer significant degradation. Intensive OHV use has adversely affected the visual integrity of unique landscape features, important scenic landmarks, and significant cultural resources. Cross-country travel by ATVs and dirt bikes has created numerous new trails and roads, often in areas that are susceptible to erosion and are not suitable for vehicle travel.

OHV Designations

OHV designations within the WFO were established in 1983, Federal Register Notice 48, No. 176 Friday, September 1983. The RMP for the NCA included OHV designations for the entire planning area. Discretionary closures are made in emergency situations, such as imminent resource damage and areas within WSAs are limited to existing routes.

Forecast

Recreation use in the WFO is expected to increase as a result of a combination of social and environmental conditions in Nevada and neighboring states. Without

active management, natural resource conditions and the quality of the recreation experience would decline with increased recreation use.

Dispersed Recreation Use

Recreation use in the planning area is estimated to increase an average of five percent per year. The anticipated increase in use is based on a number of factors, as follows:

- A sharp increase in the population of Nevada;
- Displacement from other recreation areas due to loss of opportunity or change in management (regulations and crowding in California);
- 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 for pursuing recreation activities;
- Increasingly important natural resource-based recreation, as our population becomes increasingly urbanized;
- Increasing importance of recreation as a component of the local and regional economic base, surpassing traditional industries in many areas; and
- Increasing popularity of outdoor recreation as a family-oriented activity.

These factors taken together are expected to increase recreation usage and demands on natural resources. According to the Nevada Statewide Comprehensive Outdoor Recreation Plan (NV SCORP), Nevadans cited camping, fishing, visiting parks, hiking, and biking as the five outdoor recreation pursuits and facilities most needed outside of their local communities. There is also an increased demand for developed facilities, including campgrounds, trails, and interpretive and education opportunities.

NCA, Wilderness, and other Special Designations

The designation of the NCA and special designation areas will continue to attract recreation visitors to the region. Increased advertising and marketing for these popular destinations will contribute to an increase in recreation use across the WFO. In addition to the current designated Wilderness Areas in the NCA and WFO planning area boundary, there is an increased interest in the Wilderness Study Areas, particularly in Pershing County. The potential for wilderness designation of over a half million acres of WSAs also boosts the potential for increased recreation in the area. The completion of the Lovelock Cave Backcountry Byway interpretive trail and exhibits is also expected to draw more visitors to the site.

Commercial, Competitive, and Organized Group Recreation Uses

Demand for special recreation permits has increased over the past five years, with the largest increase stemming from competitive motorized races. Nevada has become a popular desert racing location for residents and visitors from across the nation. As described in Table 2-29 above, commercial hunting guide and outfitter services have also increased slightly in past years.

OHV Use

Recreational OHV use in particular has increased throughout the planning area. According to the NV SCORP, approximately 44 percent of respondents ranked pleasure driving as the number one recreation activity in Nevada for people 16 and over, receiving the largest percentage of all recreation activities. Trail systems, touring routes and OHV play areas are in high demand for northern Nevada as a whole. Vehicle tours of the historic trails in the WFO is another popular activity for both casual recreation users and organized groups. Increased population combined with the increasing trend toward motorized recreation on the national scale present significant issues for the future management of public lands in the WFO.

Key features

The most popular recreation destinations include areas that contain water resources, developed facilities, or trails and opportunities to experience historic and prehistoric sites (Table 2-30). Other features that attract visitors include areas with high game populations, opportunities for rock and mineral collecting, and the large, flat dry lakebeds in the district, making the areas listed on Table 2-31 a high priority for recreation use. The table lists areas that the BLM has managed by developing and implementing activity level plans. However, several of the plans are either incomplete or in need of revision to address new issues or needs.

Table 2-30
Developed and Semideveloped Recreation Areas within WFO Planning Area

Management Area/Site	Attractions and Recreation Uses	Recreation Facilities
Blue Lakes Threshold	Glacial Lakes, hiking, camping, self-guided exploration, hunting and fishing opportunities.	Rustic campsites (fire ring, picnic table), a vault toilet trailhead kiosk, hiking trails, and parking.
Onion Valley Reservoir	Perennial reservoir, camping, self-guided exploration, hunting and fishing opportunities.	No data
Little Onion Reservoir	Perennial reservoir, camping, self-guided exploration, hunting and fishing opportunities.	Rustic campsites (fire rings, picnic tables), vault toilets, and day-use picnic areas.
Knott Creek Reservoir	Perennial reservoir, camping, self-guided exploration, hunting and fishing opportunities.	No facilities
Water Canyon Recreation Area	Perennial stream, trail riding and hiking, camping, self-guided	Primitive campsites, picnic areas, and an interpretive walking trail. Upper

	exploration, and hunting opportunities.	trailhead for Bloody Shins Trail.
Bloody Shins Trail System	Multiple use trail system, trail riding, hiking, cross-country skiing, and other types of self-guided exploration.	Two trailheads, one located in Kluncy Canyon the other in Water Canyon. Multiple use trail system includes: 5.6 mi. easiest 6.9 mi. intermediate 6.9 mi. advanced
Lovelock Cave Backcountry Byway	Interpretive/picnic site	Two interpretive panels, a half-mile interpretive trail, toilets and parking area.

Table 2-31 identifies the areas and resources that represent some of the most popular destinations for dispersed uses in undeveloped areas. These sites and resources are not actively managed for recreation uses and benefits, but they significantly contribute to the overall recreation opportunities available in the WFO planning area.

Table 2-31
Undeveloped Recreation Areas within WFO Planning Area

Management Area/Resource	Attractions and Recreation Uses	Recreation Facilities
Wilderness Study Areas	Sand dunes and a user-defined road network; hiking, biking, OHV riding	Many miles of roads and trails; a paved road to the top of Winnemucca Mountain; trailhead kiosk at sand dunes and outside of town.
Hot Springs	Numerous hot springs at various temperatures and flow rates	No BLM facilities. Warning signs posted alerting visitors of dangers associated with bathing in the springs.
Historic trails	California Trail, California Trail, (Truckee Route), 1856 Nobles Route, California Trail (Carson Route), 1843-44 Fremont Exploration Route, 1852 and 1856 Nobles Route, 1852 Nobles Route, and Applegate-Lassen Trail	No BLM facilities. Historic trail segments in the WFO planning area total 420 miles.

2.3.6 Renewable Energy

Level

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

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

Approximately nine percent of BLM lands within the WFO are considered favorable for developing a solar resource of six kilowatt-hours or greater per square meter per day on a slope of less than or equal to one percent. The solar resource would be in the form of CSP systems that track the sun throughout the day, such as trough collectors or dishes. The planning ranked fourth in total land area among the top 25 BLM planning units in the US having the highest CSP potential. About four percent of BLM lands within the WFO are considered favorable (with a solar resource of six kilowatt-hours per square meter per day or greater) for PV development (BLM and DOE 2003). Areas favorable for PV are concentrated southeast of Empire. The planning area also was among the top 25 BLM planning areas in the US having the highest PV potential.

All lands within the WFO are open to geothermal resources leasing and development, with the exception of the BRD-HRC NCA, the Wilderness Areas, Wilderness Study Areas, community watersheds, the Mahogany Creek Natural Area, Pine Forest Closure Area, and critical wildlife habitat areas. Geothermal energy resource exploration and development has increased dramatically in the past four years. The WFO currently has 87 authorized geothermal leases, covering 152,141 acres, and 28 pending geothermal applications, covering 53,554 acres. The BLM WFO prepared the *Geothermal Resources Leasing Programmatic Environmental Assessment* in 2002 (BLM 2002a) to expedite processing these pending lease applications and to update the Winnemucca District Regional Geothermal EA for public lands within the assessment area. The *Geothermal Resources Leasing Programmatic Environmental Assessment,* completed in 2002, analyzed only those lands that were within the outlined potentially valuable for geothermal resource areas, the known geothermal resource areas, and the areas that had existing lease applications. About 28 percent of the land within the WFO lies within potentially valuable for geothermal resource areas, which are mainly in the southern half of the planning area. Six KGRAs are entirely within the planning area (Brady, Gerlach, Hazen, New York Canyon, Rye Patch, and San Emidio), and the portion of the Dixie Valley KGRA in Pershing County also is

within the WFO. Pending lease application sites cover about two percent of BLM WFO lands scattered throughout the planning area. The geothermal program includes three active geothermal electrical generation power plants, which generate a total of about 20 megawatts, and a power plant that was constructed and is waiting for a power purchase agreement in the Rye Patch KGRA. Two of the active plants are within the Brady KGRA and one is in the San Emidio KGRA. Another power plant is slightly south of the WFO boundary in the Dixie Valley KGRA. There are two vegetable dehydration plants in operation within the WFO planning area at Brady Hot Springs and San Emidio Desert. Current activity includes exploratory drilling and seismic survey. Figure 2-9 shows the location of geothermal resources within the WFO.

Geothermal use is broken down into two main uses, electrical generation and direct use. There are several subtypes of each. In the planning area, electrical generation is the primary geothermal resource use.

Geothermal resources occur most often in areas where there is anomalously high heat flow caused by volcanism or near-surface magma or some other exceptionally hot subsurface body. They often occur along fault or fracture zones where fracturing allows groundwater to circulate to depths for warming prior to being circulated back toward the surface. The planning area has abundant geothermal resources, including thermal springs, where warm or hot water comes to the surface naturally, and thermal wells, which must be drilled, developed, and sometimes pumped.

Wind power classes range from 1 (lowest) to 7 (highest). BLM-managed lands in portions of the planning area are Class 3 and higher, although the planning area is not in the top 25 BLM planning units in the US having the highest wind energy potential (Class 5 and higher) (BLM and DOE 2003). The Draft Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (BLM 2004d) categorizes BLM-administered lands into areas having a low, medium, or high potential for wind energy development from 2005 through 2025, on the basis of their wind power classification. Wind resources in Class 3 and higher could be developed economically with current technology over the next 20 years. Class 3 resources have medium potential; resources in Classes 4 and higher have high potential. The Draft Programmatic Environmental Impact Statement identifies scattered public land parcels in the planning area with medium or high wind resource potential that might be developed economically with current technology; these are concentrated along ridgetops near the western and southeastern WFO boundaries. There has been some interest in developing wind energy within the WFO. Current activity includes placement of meteorological towers.

The BLM/National Renewable Energy Laboratory study evaluated the long-term sustainability to support biomass plants using the monthly Normalized Difference Vegetation Index (NDVI) computed from National Aeronautics and Space

Administration's (NASA's) Advanced Very High Resolution Radiometer Land Pathfinder satellite program. The WFO is not in the top 25 BLM planning areas having the highest potential for biomass resources. For an area to have biomass development potential, it had to meet the following criteria: an NDVI of 0.4 for at least four months between April and September, a slope less than 12 percent, no more than 50 miles from a town with at least 100 people, and BLM- and USFS-compatible land use. About three percent of BLM lands within the WFO meet these criteria, along I-80 near Lovelock, Winnemucca, and Golconda, along Route 140 between Winnemucca and Denio, along US 95 near Orovada, and near Paradise Valley. The areas with the highest biomass potential are near Lovelock, slightly north of Golconda, and just south of the Disaster Peak WSA (BLM and DOE 2003).

Forecast

Additional geothermal exploration is reasonably anticipated in areas identified as having a high potential. This is particularly true in areas with adjoining power transmission facilities with excess capacity.

Various national and state incentives are in place in Nevada that encourage the development of renewable energy resources. Given these incentives to businesses and consumers, along with anticipated population increases, renewable energy development is expected to increase over the planning period, and management actions are necessary to provide for future renewable energy growth while protecting sensitive resource values.

In May 2001, the President adopted a National Energy Policy "to promote dependable, affordable, and environmentally sound production and distribution of energy for the future." The policy recommends the evaluation of current conditions surrounding access and use of public lands in order to "increase renewable energy production, such as biomass, wind, geothermal, and solar."

State incentives include property tax exemptions, tax deductions for donations to the GreenPower program, requirements that electric utilities disclose the mix or resources used to generate power, and net metering for electric utility consumers who also have wind or solar power generators (BLM and DOE 2003). In 1997, the Nevada legislature established a renewable energy portfolio standard, requiring that up to 15 percent of the total electricity sold would be derived form renewable energy resources.

Key features

The 2003 BLM/National Renewable Energy Laboratory study identified the WFO as one of the BLM planning areas with the highest potential for geothermal resources. The top sites for geothermal development were the Brady, Rye Patch, San Emidio, and Dixie Valley KGRAs. Other KGRAs within the WFO planning area include the Gerlach, Hazen, and New York Canyon KGRAs. In addition,

hot springs and existing geothermal lease and lease application areas have the highest potential for future use.

2.3.7 Transportation and Access

Level

Roads within the WFO planning area provide access for recreationists, ranchers, resource specialists, and administrators. The transportation network in the planning area consists of a combined total of approximately XX miles. Interstate Highway 80, United States 95 Veterans Memorial Highway, and State Highway 447 are the primary paved roads in the planning area. Other improved roads in the planning area include Little Owhyee, High Road, Water Canyon, Blue Lakes and Onion Reservoir. The transportation network is composed of state, county, and BLM System Roads.

Most of BLM's System Roads fit into one of three functional classifications: resource roads, local roads, and collector roads. Each BLM road is assigned a maintenance level, ranging from one to five, with one representing the lowest level of maintenance and five being the highest. Currently, routes designated as maintenance level 1 are not registered in BLM's maintenance system, and there are no maintenance level 5 classifications in the planning area. Approximately 80 percent of the roads in the planning area are classified as maintenance level 2. User cost, safety, comfort, and travel time are primary road management considerations.

BLM's System Roads inventory includes 75 roads. The bulk of these are resource roads, which receive minimum maintenance, are typically open seasonally, receive limited traffic, and are primarily for BLM administrative use only. They are frequently classified at maintenance level 2. In the planning area, resource roads account for 70 percent of the total BLM roads network. Local roads normally serve a larger resource area and connect to collector roads or to county/state highways. Collector roads normally provide access to large blocks of public land and connect to or are extensions of county/state highways. They generally receive the highest volume of traffic on all the roads in the BLM road system and require the highest standards for safety, comfort, and travel time, therefore receiving the highest amount of maintenance annually. Collector roads are commonly classified at maintenance level 4 or 5 and total five percent of the BLM's road network.

All BLM System Roads in the planning area are considered low-volume native surface roads; there are no bituminous surfaced roads, but there are numerous crushed/pit run aggregate surfaced roads within the district. Most roads have evolved into the system over the years as the public created their own access. Roads with the highest public use receive regular routine maintenance. Native surfaced roads are susceptible to seasonal damage by the users and closure due to weather conditions. Use of these roads during the wet season causes irreparable resource damage to both the resource and the road itself. Increased levels of visitor

use in the planning area are triggering the need to improve roads and upgrade maintenance levels based on that use.

Forecast

Current uses of the transportation network are expected to steadily climb. Based on population trends in and surrounding Nevada, increased recreational demands and expected recurrent use by residents, maintenance demands for access roads into and on public land will likely increase. The demand for additional routes may also increase to facilitate improved access to private and public land parcels in the planning area.

Key Features

BLM System Roads classified Maintenance Level 4 have the highest use and need for public safety. Maintenance classifications are updated through on-the-ground condition surveys and observations performed by the District Engineering staff. Little Owhyee, maintenance level 4;

- High Road, maintenance level 4;
- Water Canyon, maintenance level 4;
- Blue Lakes, maintenance level 3; and
- Onion Reservoir, maintenance level 3.

In 2003, the BLM State Office nominated approximately 460 miles of routes for increased maintenance classification and additional funding. Over 260 miles are within the WFO planning area and are listed on Table 2-32. Maintenance activities for these roads are not appropriate for the level of use they are receiving; for example, several routes being maintained at level 4 should be maintained at level 5; however, there are currently no routes designated as level 5 in the WFO planning area because current staff and budget levels could not support requirements for level 5 maintenance.

BLM is designated its authority for road maintenance through 23 U. S. Code from Federal Highways Administration through Federal Lands Highway Program. Even though no BLM roads are considered "public roads" at this time, BLM is still responsible for the safety of its employees and the public that uses BLM System Roads.

Table 2-32
State of Nevada Road Nominations

Rank	Road Name	Road #	FO	Miles	$K
1	Trego	2097	Win	2.00	150
2	Water Canyon	2095	Win	5.70	491
3	High	2048	Win	42.71	9,600
4	Sulphur Jackson	2049	Win	34.60	600

5	Sand Basin	2083	Win	5.01	600
6	Blue Lake	2014	Win	33.67	500
10	Little Owyhee	2003	Win	56.05	150
11	Soldier Meadow	20-200	Win	17.00	1,500
12	Crowley Jordan	2009	Win	27.21	350
16	Panther Canyon	2031	Win	14.78	145
18	Nine Mile	2050	Win	14.78	200
20	Stone House	2033	Win	10.65	150
				264.16	14,436
			Total	**459.77**	**17,556**

2.3.8 Lands and Realty

Level

Land Status

The WFO decision area encompasses about 7.3 million acres of public lands and includes most of the resources or resource uses on public land for which the BLM has authority and makes decisions (Figure 2-10). The BLM's decision area includes minerals of split estate (areas where the BLM administers federal subsurface minerals, but the surface is owned by a nonfederal entity, such as private land). It does not include other private lands, state Lands, Indian reservations, federal lands not administered by the BLM, and lands within the planning area of the RMP for the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness Areas and other Contiguous Lands.

The WFO Planning Area administrative boundary encompasses 11,091,545 acres in Humboldt and Pershing counties and parts of Washoe, Lyon, and Churchill counties; this acreage includes all lands within the WFO administrative boundary regardless of ownership. The WFO decision area, which is the area applicable to this planning effort, encompasses about 7.3 million acres of public lands and does not include the BLM NCA in the northwestern portion of the WFO planning area (Table 2-33). Due to the scattered land pattern and the isolated nature of many of the public land parcels, management can be difficult.

The Railroad Act of 1862 and water resources are the main influences on land ownership in the planning area. Under the Railroad Act, the government gave the railroad company ten square miles of land for each mile of track that was completed (National Park Service 2005). The Railroad Act granted to the railroad every other section (one square mile) twenty miles each side of the railroad centerline. This grant

2-10 Land Status

Table 2-33
Landownership in the WFO Planning Area

Landowner	Acres
Bureau of Land Management	8,275,196*
Bureau of Indian Affairs	22,260
US Fish and Wildlife Service	106,154
US Forest Service	275,285
State of Nevada	16,966
Private	2,360,523
Water Features	35,161
Total	**11,091,545**

*Includes NCA acres

resulted in a checkerboard pattern of public-private land parallel to the railroad right-of-way that still exists. Along with the land grants, a 400-foot right-of-way was also given to the railroad company.

Where there was water, the railroad sold the land. Where there was no water the railroad retained ownership until the 1990s. The Homestead Act of 1862 turned over vast amounts of the public domain to private citizens, who homesteaded where there was water. In the planning areas, private landownership follows the path of streams down canyons. In some places settlers claimed the land around springs.

Withdrawals

A withdrawal is a formal action that results in one or more of the following actions:

- Transfers total or partial jurisdiction of federal land between federal agencies;
- Segregates (closes) federal land to some or all of the public land laws and mineral laws; or
- Dedicates land for a specific public purpose.

The three major categories of formal withdrawals are congressional, administrative, and Federal Power Act or Federal Energy Regulatory Commission withdrawals. Congressional withdrawals are those made by Congress in the form of public laws (Acts of Congress). Administrative withdrawals are made by the President, Secretary of the Interior, or other authorized officers of the executive branch of the federal government. Federal Power Act or Federal Energy Regulatory Commission withdrawals are power project withdrawals established under the authority of the Federal Power Act of 1920.

The WFO area includes several withdrawals. Land around Rye Patch Reservoir and land in the area of Toulon and the Humboldt Sink were withdrawn for the Bureau of Reclamation. In addition, the Sheldon National Wildlife Refuge was withdrawn for the US Fish and Wildlife Service, and the Santa Rosa Ranger District was withdrawn for the US Forest Service. Also, the Fort McDermitt Indian Reservation and Summit Lake Indian Reservation are in the northern portion of the planning area. Other types of withdrawals or de facto withdrawals include land use classifications for recreation and public purposes. These withdrawn lands receive varying degrees of management, depending on the land uses and type of withdrawal.

By Executive Order, dated April 17, 1926 (Public Water Reserve 107), all public lands of the United States containing a spring or water hole needed or used for public purposes were included in a blanket withdrawal without identification of the lands affected. According to the Executive Order, the land is "withdrawn from settlement, location, sale, or entry." Lands withdrawn under PWR 107 have not all been identified on Master Title Plats, so a land transaction can occur without the knowledge that the land is withdrawn under PWR 107. This makes protection and management under this Executive Order difficult.

Land Use Authorizations

Land use authorizations are issued for a variety of purposes, both short-term and long-term. Examples of short-term uses include agricultural leases and other uses involving minimal land improvements or disturbances. Examples of long-term uses include rights-of-ways for power lines, highways, roads, communication sites, and sand and gravel sites.

Land use permits and leases. A lease is an authorization to possess and use public land for a fixed period. A lease is 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.

Permits are authorized when uses of public lands will be short-term and involve little or no land improvement, construction, or investment. Permits have been a method used to clear up unauthorized use, stipulating that the applicant remove or halt the unauthorized use and rehabilitate the land if necessary.

The Recreation and Public Purposes Act allows state and local governments, as well as qualified nonprofit organizations, the opportunity to lease (and potentially patent) public land where there is a strong public need for a particular use. The WFO has leased lands under this authority for a variety of purposes.

Rights-of-way. The WFO has designated one utility corridor on the Black Rock Playa along the Western Pacific Railroad tracks. In addition there is a utility corridor for the nationwide gas line from Owyhee across the planning area and Valmy power lines from the Valmy power plant across the planning area.

Transportation system authorizations include reservations made for state and federal highways and ROWs granted to counties and individuals for access roads. Attempts are made to group compatible facilities where possible.

The BLM has had a longstanding partnership with the Western Utilities Group concerning planning, identification, and designation of utility corridors in the western United States. The BLM endorsed the WUG's 1992 Western Regional Corridor Study and committed to using it as a primary reference in designating utility corridors through the land use planning process.

With the large number of varying ROW authorizations, it is important that all environmental resources and concerns be taken into consideration. There could be loss of resources or environmental damages that may be prevented if compatible uses are analyzed and, where possible, consolidated.

The BLM typically uses avoidance and exclusion areas to protect resources and to prevent unnecessary or undue environmental damages.

According to current BLM guidance and the President's National Energy Policy, the BLM objective is to continue to make BLM-administered land available for needed ROWs where consistent with national, state, and local plans and to use ROWs in-common to minimize environmental impacts and proliferation of separate ROWs. This guidance and policy also pertains to ROWs for alternative, renewable energy resources, such as wind, solar, geothermal, and biomass.

Communication sites. The WFO has communication sites within its boundaries. Most of the sites are occupied by more than one user.

Land Tenure Adjustment

As stated above, the WFO area contains a mixed ownership land pattern. Although the potential for resource values may be high on some public land parcels, lack of access or isolation from other resources of these parcels make it very difficult to manage. Land tenure adjustments within the planning area help to resolve split mineral estate situations, to consolidate public land (through sale, exchange, or acquisition), to acquire access, and to resolve unauthorized use cases. Land tenure adjustments are also important to the local and state governments to consolidate ownership and to make lands available for public purposes. FLPMA and other federal laws, Executive Orders, and policies suggest criteria to use when categorizing public lands for retention or disposal and for identifying acquisition priorities.

Split mineral estate. Split mineral estate situations typically involve private surface ownership and federal subsurface ownership. There is no statistical data as to the percentage of split estate lands in the planning area. Additionally, there are some split estate situations were the federal government owns the surface and the mineral estate is held by private individuals. Through various acts, the federal

government has retained mineral values, while encouraging settlement. As late as the 1980s, BLM policy concerning mineral estate was to reserve all oil and gas rights, as well as any other mineral values. Those lands which the United States reserved minerals and where they contain valuable mineral resources are generally kept in federal ownership. Many of the private surface owners have requested that the subsurface minerals be sold or transferred to their ownership. Management of the existing split estates has been and will continue to be a challenge. It is important not to split estates when completing a land tenure adjustment.

Consolidation. With the current scattered land pattern of the WFO area, the BLM continues to struggle with the management of isolated or small parcels. Many of these parcels have no resource value and would be a benefit to a private citizen and the local tax base. Large areas of land should be categorized for land tenure adjustments allowing the BLM to use the proper authority to block up land. By blocking up lands, management would be more effective. The BLM could dispose of lands with lower resource values and could acquire lands with valuable habitat, recreational value, scenic value, or opportunity for resource development. More acreage would be available for lease or conveyance under the Recreation and Public Purposes Act, allowing the state and nonprofit organizations to develop and use lands for important community recreation and public purposes.

Land disposal. BLM lands classified as being available for disposal are identified in the 1999 Lands Amendment (BLM 1999). Public lands that may be suitable for disposal through transfer to another agency, exchange, or public sale are identified as Zone 3 lands. Public lands identified in Zone 2 are evaluated on a case-by-case basis to determine if they are suitable for disposal. Public land is exchanged when parcels meet the criteria under Section 206 of FLPMA. Public land is sold when parcels meet the disposal criteria under Section 203 of FLMPA.

Zone 3 lands are located throughout the WFO. However, no criteria are identified in the Lands Amendment defining the exact locations of boundaries separating Zone 3 lands from Zone 1 and 2 lands. As a result of having to rely on lines drawn on a map, it has been difficult identifying the boundaries of Zone 3 lands, especially around Interstate 80.

Certain lands have been excluded from disposal through the planning process or congressional action. Excluded from disposal are crucial wildlife habitat areas, as identified in the Paradise-Denio MFP and Sonoma-Gerlach MFP (BLM 1982a, 1982b). Lands that have been withdrawn from appropriation under the public land laws are also excluded from disposal. Additionally, lands within a designated wilderness or wilderness study area are required to be retained in federal ownership. On July 25, 2000, Congress passed the Federal Land Transaction Facilitation Act (FLTFA, PL 106-248). Lands identified for disposal in land use plans as of that date may be sold or exchanged under FLTFA, and the monies received from sales or exchanges could be retained in an account and used by the BLM and other federal agencies to purchase additional lands. The money is not

deposited in the General Treasury. Lands identified in the 1999 Lands Amendment would qualify under this act.

Land acquisition. Private land acquisition is authorized under section 205 of the FLPMA, primarily through land exchanges with private landowners and the state. According to the 1999 Lands Amendment, land acquisitions are considered on a case-by-case basis and must meet acquisition criteria outlined in the Lands Amendment (BLM 1999).

Land retention. According to the 1999 Lands Amendment, in general, all public lands (Zone 1, 2, and 3) administered by the WFO will be retained unless, through environmental analysis and public scoping, it is determined that the lands meet the criteria for disposal and the disposal action is in the public's interest (BLM 1999). However, all lands in Zone 1 will be retained in federal ownership.

Access

Access needs are subsequently prioritized and worked on when there are landowners willing to grant an easement to the BLM or sell land in order to provide access to public lands. In recent years private property owners have begun to close access to public lands where that access is across private lands. Usually this closing of access is due to a change in ownership of the private property. The closings pose two problems to the BLM. First, it creates problems in managing the public lands. Land managers and specialists must find alternate routes into the public lands. This can be critical in emergency situations such as fire suppression.

The second problem is that the public expects to have access to their public lands, especially when there has been a traditional route that is suddenly closed. The public then demands that the BLM acquire access through the private property.

It is anticipated that these access problems will continue as traditional properties are sold to individuals and entities that do not wish to allow the public to cross their property to access public lands.

Trespass

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

There are some documented and unresolved trespass cases in the WFO area. The BLM expects that there are trespass cases that have not been discovered or documented. Some of the trespasses include dumps, roads, and occupation. Workload priorities and limited staffing usually require that unauthorized use/occupancy cases go unresolved. There could be a public safety issue associated with unauthorized use/occupancy, as well as a potential loss of valuable resources. If the unauthorized use damages the lands or resources, taxpayer money may need to be expended to repair the damages. Resolving the unauthorized use of public lands could protect valuable resources, prevent damage to resources, protect public safety, and allow the BLM to collect money for damages, processing, monitoring, and rental.

Forecast

Based on Southern Nevada Plan Lands Acquisition and other land tenure actions (disposal based on public demand), it is anticipated that more land will be transferred from public land to private land.

Based on increasing energy demand throughout the West it is anticipated that there would be an increase in public lands allocated for utility corridor purposes.

Key Features

There are two proposed acquisitions under the Southern Nevada Public Lands Management Act. One is in Clearwater Canyon, about 20 miles south of Winnemucca. The public has recently been denied access to the canyon and Clear Creek, the main stream in the canyon. This would be a major recreation site and beneficial for wildlife and fire prevention. The acquisition would be about 5,000 acres. The second is called the Jaksick Property in Northern Washoe County. This acquisition would be for 18,000 acres and would be in the BLM's Winnemucca, Eagle Lake, and Surprise Field Offices. Recreation and wildlife are prime concerns for this acquisition.

2.4 SOCIAL AND ECONOMIC FEATURES

2.4.1 Tribal Interests

Native American tribes with interest in the planning area include the Alturas Indian Rancheria, the Battle Mountain Band, the Burns Paiute Tribe, the Cedarville Rancheria, the Confederated Tribes of Warm Springs Reservation, the Fallon Paiute-Shoshone Tribe, the Fort Bidwell Indian Community, the Fort McDermitt Tribe, the Klamath Indian Tribe, the Lovelock Paiute Tribe, the Pit River Tribe, the Pyramid Lake Paiute Tribe, the Reno-Sparks Indian Colony, the Shoshone-Bannock Tribes, the Shoshone-Paiute Tribes of the Duck Valley, the Summit Lake Paiute Tribe, the Susanville Indian Rancheria, the Washoe Tribe, and the Winnemucca Tribe. These tribes are either within or close to the planning area counties. Tribal members contribute to local and regional economies by purchasing goods and services, disbursing salaries, and providing contractual services and general operating expenses. Specifically, larger reservations within the

planning area include the Summit Lake Indian Reservation and Fort McDermitt Indian Reservation, both of which fall within the northern region of the planning area in Humboldt County. The Summit Lake Indian Reservation consists of approximately 10,098 tribal land acres and 765 allotted acres. The Fort McDermitt Indian Reservation covers approximately 16,355 tribal land acres, 145 allotted acres, and 160 acres of tribal fee land (Inter-Tribal Council of Nevada 2004).

2.4.2 Public Safety

Abandoned Mines

Sources of data include field surveys and inspections, US geological survey reports and maps, US Bureau of Mines reports, and Nevada State Bureau of Mines reports and databases.

Nevada is estimated to have approximately 165,000 abandoned mines, 50,000 of which are considered to be safety hazards (BLM 2005c). The Nevada Bureau of Minerals has identified and ranked about 8,000 abandoned mines as to the level of hazard they represent. About 6,000 of these sites have been secured. Sites are being secured at a rate of about 300 to 400 per year. Some abandoned mines also present toxic chemical hazards. The Interagency Abandoned Mined Lands Environmental Taskforce, which includes ten state and federal agencies, has identified 33 complex cleanup sites statewide. Of these, Big Mike Mine in Pershing County and Leadville Mine in Washoe County, both in the WFO area were assigned a moderate hazard ranking, and the National Mine in Humboldt County was assigned a low hazard ranking.

The Nevada Division of Minerals, a part of the Commission on Mineral Resources, is responsible for administering programs and activities to promote, advance, and protect mining and the development and production of petroleum and geothermal resources in Nevada (Durbin and Coyner 2004). In March 1999, the BLM initiated the formation of a Nevada Abandoned Mine Land Environmental Task Force to begin remediating environmental problems associated with abandoned and inactive mines. In certain mining districts, the planning areas has numerous abandoned mine workings. Structures such as shafts, adits, winzes, tunnels, and pits pose safety hazards to the public. Hazardous materials and dynamite are also safety hazards at abandoned mine sites. In addition there are numerous hot springs that represent hazards to public safety.

It is expected that identifying and sealing, fencing, and signing unsafe abandoned mine sites and openings will continue at approximately the same rate as in recent years. Contaminated site remediation will occur based on hazard ranking and available funding. Abandoned mine closure may increase with the assistance of the mining industry, particularly in areas where renewed activity in former mining areas becomes economical.

Debris Flow

Solid waste issues include illegal dumping (either in conjunction with a residence or simply at a convenient location), dumping in reclaimed gravel pits, and littering along roadsides and in areas frequented by ATV users, for example, the sand dunes. Although there is no database detailing the locations of all the solid waste sites, some sites are known. Many of the rural ranches have solid waste sites, and a few ranchers have been warned about dumping on public land. Most sites are small, generally less than five acres.

The only permitted solid waste sites on public land would be the Class III landfills operated by the mines. Many of the larger mines have Class III landfills waivers that are permitted by NDEP. A waiver is obtained from NDEP and inspected by them, and, on occasion, by BLM inspectors under BLM surface management regulations.

Most sites contain typical household garbage and debris. Any hazardous materials are household chemical products in small quantities or regulated materials, such as petroleum products. A few sites in agricultural areas may have pesticide or herbicide containers.

The number of very large discarded tires has increased since the landfill has started charging for taking them. Sites are more of a problem if they contain unknown chemicals that need characterization. There has not been a significant increase in known sites. The BLM infrequently identifies new sites and cleans up known sites at times.

Hazardous Materials

Hazardous materials sites are locations on or near public land where hazardous or regulated materials are used, stored, or disposed of. Air, soil, surface water, and groundwater contamination are typically found at hazardous materials sites.

There is no comprehensive database of hazardous materials sites, the two main types of which are where mining materials and chemicals are stored and used and where agricultural chemicals are stored and used. In both cases, most sites would be permitted by NDEP, BLM Surface Management Regulations, or realty programs.

Two other types of hazardous materials sites include occupancy-related sites and shooting ranges. Users of these do so mostly without permits. There are three such sites known, as follows:

- American Antimony abandoned mill site in Antelope Valley: lead and cadmium flue dust in an uncontained pile;
- Orovada pesticide dump, where years of pesticide containers have been buried in trenches; and

- A leaking underground storage tank (fuel) at Denio Junction that may have contaminated nearby public land.

Household dumps around ranches, burn sites, lab chemical dumps, and illegal dumps can also be hazardous materials sites.

The number of known hazardous materials sites remains the same. Known sites remain in the same condition year after year (although unseen deterioration is probably occurring).

2.4.3 Social and Economic Conditions

This section discusses the socioeconomic resources of the region of influence (ROI). The planning area encompasses about 7.3 million acres of land managed by the BLM in west-central Nevada (Figure 2-10). These lands are within portions of six northwestern Nevada counties: Churchill, Humboldt, Lyon, Pershing, and Washoe. These counties were identified as the ROI for socioeconomic analysis because most of the effects on the population and economy would occur within this local region. Data for Nevada is presented for comparison and to analyze the possible broader effects of the proposed project. Socioeconomic conditions addressed include population, housing, employment, schools, and the protection of children.

Definition

Socioeconomic resources include population, employment, income, housing, earnings, and schools. Population is the number of residents in the area and the recent change in population growth; employment data takes into account labor sectors, labor force, and statistics on unemployment; income information is provided as an annual total by county and as per capita income; housing includes numbers of units, ownership, and vacancy rate; earnings-by-industry provides a measure of the health of local business activity; and school enrollment and capacity are important considerations in assessing the effects of potential growth.

Population

Table 2-34 presents population figures for Nevada and the six planning area counties from 1990 to 2000, when the populations in all counties increased, with the exception of Lander County, whose population decreased by 7.5 percent. Lyon County experienced the largest increase (72.5 percent) in population. Washoe County was the most populous county in both 1990 and 2000, while Lander County was the least populous county within the project area in 2000, with a total population of 5,794 (US Census Bureau 2004). The population of Nevada increased by nearly 66.3 percent between 1990 and 2000, totaling close to two million people.

Table 2-34
County Population Estimates 1990-2000

County	1990	2000	% Change 1990-2000
Churchill	17,938	23,982	33.7%
Humboldt	12,844	16,106	33.7%
Lander	6,266	5,794	-7.5%
Lyon	20,001	34,501	72.5%
Pershing	4,336	6,693	54.4%
Washoe	254,667	339,486	33.3%
Nevada	1,201,833	1,998,257	66.3%

US Census Bureau 2004

Table 2-35 presents population projects for the six counties of the planning area and Nevada from 2000 to 2020. Humboldt County's population is expected to decline from 2000 to 2020 by 2,081 people (a total percent decrease of 12.9 percent), as is Lander County's population, which is projected to decline by 2,219 people (a total percent decrease of 38.2 percent). The populations of all other counties in the planning area are expected to increase, with a range of 5.5 percent to 101.4 percent by 2020. The population of Lyon County is projected to have the highest growth by 2020, growing by 34,968 people (a total percent increase of 101.4 percent), doubling its 2000 population. By 2020, the population of Nevada is expected to increase by 1,005,630 people (a total percent increase of 50.3 percent) (Nevada State Demographer's Office 2004).

Table 2-35
County Population Projections 2000-2020

County	2000	2005	2010	2015	2020	2000-2020 Change	2000-2020 Percent Change
Churchill	23,982	26,876	29,489	32,053	34,565	10,583	44.1%
Humboldt	16,106	15,943	15,212	14,286	14,025	-2,081	-12.9%
Lander	5,794	4,929	4,154	3,734	3,575	-2,219	-38.2%
Lyon	34,501	45,317	54,385	62,547	69,469	34,968	101.4%
Pershing	6,693	7,010	7,040	7,012	7,063	370	5.5%
Washoe	339,486	385,887	415,402	442,878	466,546	127,060	37.4%
Nevada	1,998,257	2,448,201	2,806,940	3,125,677	3,412,147	1,005,630	50.3%

Source: Nevada State Demographer's Office 2004

Housing

Table 2-36 presents 1990 and 2000 housing data for the six planning area counties, as well as for the state of Nevada. Humboldt County and Lyon County have had the greatest percent increases, 37.9 percent and 63.7 percent, in the number of housing units added between 1990 and 2000. Lander County had the smallest

increase (7.5 percent) in the number of housing units added during the same period. The remaining counties experienced housing unit increases from between 25.2 percent and 33.5 percent. Between 1990 and 2000, Nevada increased its housing supply by 308,599 units (US Census Bureau 2004). Despite the growth in the number of housing units in all of the planning area counties from 1990 to 2000, with the exception of Lander County, the average number of persons per household increased in all counties, as well as statewide.

Table 2-36
County Housing Estimates 1990-2000

	1990			2000			Housing Units Percent Change
County	Housing Units	Vacancy Rate	Persons per Household	Housing Units	Vacancy Rate	Persons per Household	
Churchill	7,290	1.7%	2.62	9,732	2.6%	2.64	33.5%
Humboldt	5,044	1.7%	2.76	6,954	3.9%	2.77	37.9%
Lander	2,586	.3%	2.82	2,780	4.0%	2.73	7.5%
Lyon	8,722	2.8%	2.58	14,279	3.1%	2.61	63.7%
Pershing	1,908	1.9%	2.65	2,389	3.5%	2.69	25.2%
Washoe	112,193	1.8%	2.43	143,908	2.0%	2.53	28.3%
Nevada	518,858	2.3%	2.52	827,457	2.3%	2.64	59.5%

Source: US Census Bureau 2004

Employment

Table 2-37 provides basic data on employment in the six planning area counties and Nevada. Total employment for all of the counties in 2000 was estimated at 209,223 jobs, with an average unemployment rate of 7.3 percent. Of the planning area counties, Humboldt County had the largest unemployment rate (8.3 percent), while Washoe

Table 2-37
County Employment Statistics (2000)

County	Employed	Unemployed	Unemployment Rate
Churchill	10,288	641	5.9%
Humboldt	7,017	636	8.3%
Lander	2,528	213	7.8%
Lyon	15,399	1,137	6.9%
Pershing	2,268	187	7.6%
Washoe	171,723	8,956	5.0%
Total Planning Area	209,223	11,770	7.3%
Nevada	933,280	61,920	6.2%

Source: US Census Bureau 2004

County had the lowest unemployment rate (5.0 percent). Nevada's unemployment rate of 6.2 percent was below that of the planning area's average of 7.3 percent.

Table 2-38 provides a breakdown of the planning area counties' employment by sector and average sector growth between 1990 and 2000. On average, the category with the largest number of jobs and the largest sector growth within the counties was the services sector. Other industry sectors that experienced substantial employment increases within the six counties were the government, transportation/utility/information, and finance/insurance/real estate sectors. During the same decade, employment within the planning area decreased in the agriculture/forestry/fishing/mining sector by 33.7 percent, as well as slightly in the trade sector by 2.6 percent.

Table 2-38
County Employment by Sector and Average Sector Growth (1990-2000)

Sector (Total Percent Change)	Churchill	Humboldt	Lander	Lyon	Pershing	Washoe	Planning Area Total
Agriculture/Forestry/ Fishing/Mining (-33.7%)							
1990	728	1,850	1,399	895	675	2,993	8,540
2000	632	1,726	721	777	517	1,292	5,665
Construction (33.4%)							
1990	810	620	216	898	132	9,519	12,195
2000	958	559	186	1,464	95	13,008	16,270
Manufacturing (27.9%)							
1990	492	275	89	1,271	91	10,438	12,656
2000	854	252	106	1,892	177	12,903	16,184
Transportation/ Utility/Information (28.4%)	517	384	142	466	116	11,995	13,620
1990	877	542	168	1,196	182	14,528	17,493
2000							
Trade (-2.6%)							
1990	1,341	1,193	388	1,530	359	29,364	34,175
2000	1,559	963	234	2,615	218	27,693	33,282

Table 2-38
County Employment by Sector and Average Sector Growth (1990-2000) *(continued)*

Sector (Total Percent Change)	Churchill	Humboldt	Lander	Lyon	Pershing	Washoe	Planning Area Total
Finance/Insurance/ Real Estate (20.7%)							
1990	374	162	35	274	32	8,993	9,870
2000	343	103	43	790	46	10,584	11,909
Services (41.6%)							
1990	2,244	1,501	483	2,716	411	61,645	69,000
2000	3,989	2,447	818	5,470	707	84,268	97,699
Government (39.1%)							
1990	678	415	166	533	131	5,787	7,710
2000	1,076	425	252	1,195	326	7,447	10,721

Source: US Census Bureau 2004; Bureau of Economic Analysis (BEA) 2004

Schools and Protection of Children

In April 1997, President Clinton signed Executive Order (EO) 13045, Protection of Children from Environmental Health Risks and Safety Risks. This EO requires federal agencies to identify, assess, and address disproportionate environmental health and safety risks to children from federal actions. This section identifies school and student enrollment within the planning area.

The school districts of all six counties provided K-12 education for approximately 77,917 students during the 2002-2003 academic year. Washoe County had the largest student enrollment (77.5 percent), and Pershing County had the smallest student enrollment (1.1 percent) of the planning area counties. Washoe County School District includes sixty-four elementary schools (grades kindergarten/prefirst through 6), twelve middle schools (grades 7 and 8), two junior-senior high schools, fourteen high schools (grades 9 through 12), and ten alternative/other schools (for example, charter schools [kindergarten through 6th grade], detention centers, and alternative education schools) (National Center for Education Statistics 2004). Varying concentrations of children are present within all of the planning area counties.

Environmental Justice

On February 11, 1994, President Clinton signed EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. It requires federal agencies to identify and avoid disproportionate impacts on minority or low-income communities. This section identifies any minority or low-income communities that could be affected by the proposed project.

Table 2-39 provides demographic information for the six planning area counties in 2000. According to US Census Bureau data, the white population was the

dominant race in all six planning area counties. The largest racial minority within the counties is Hispanic, followed by the Native American/Alaska Native population. The smallest

Table 2-39
Total Percentage of Population by Race/Ethnicity (2000)

County	White	Black, African American	Native American, Alaska Native	Asian, Pacific Islander	Some Other Race	Two or More Races	Latino, Hispanic, Any Race
Nevada	75.2%	6.8%	1.3%	4.9%	8.0%	3.8%	19.7%
Churchill	84.2%	1.6%	4.8%	2.9%	3.2%	3.3%	8.70%
Humboldt	83.2%	0.5%	4.0%	0.7%	8.5%	3.1%	18.9%
Lander	84.4%	0.2%	4.0%	0.3%	8.7%	2.3%	18.5%
Lyon	88.6%	0.7%	2.4%	0.7%	4.6%	2.9%	11.0%
Pershing	77.7%	5.3%	3.4%	0.8%	9.4%	3.3%	19.3%
Washoe	80.4%	2.1%	1.8%	4.8%	7.7%	3.3%	16.6%
Average Total	83.1%	1.7%	3.4%	1.7%	7.0%	3.0%	15.5%

Source: US Census Bureau 2004

Note: In combination with other races. The categorical figures/percentages may add up to more than the total population (100 percent) because individuals may report more than one race.

racial minority groups represented in the planning area are the black/African American and the Asian/Pacific Islander population, each constituting 1.7 percent of the planning area population. Note however that the 2000 census included the option to report oneself as a member of two or more ethnic groups, and this factor may affect the reporting for certain ethnic groups.

Table 2-40 provides income statistics for the planning area's six counties and for the state of Nevada in 2000. The planning area's average median household income and per capita income, $43,534 and $19,902, are both slightly lower than that of Nevada, at $44,581 and $21,989. In addition, the planning area counties have an average poverty rate of 10.5 percent, the same percentage as the statewide poverty level.

Table 2-40
Income and Poverty Statistics (2000)

County	Median Household Income	Per Capita Income	Percentage of Population Living in Poverty (2000)
Nevada	$44,581	$21,989	10.5%
Churchill	$40,808	$19,264	8.7%
Humboldt	$47,147	$19,539	9.7%
Lander	$46,067	$16,998	12.5%

Lyon	$40,699	$18,543	10.4%
Pershing	$40,670	$16,589	11.4%
Washoe	$45,815	$24,277	10.0%
Average Total	$43,534	$19,902	10.5%

Source: US Census Bureau 2004

3. CURRENT MANAGEMENT DIRECTION

CHAPTER 3
CURRENT MANAGEMENT DIRECTION

This section describes current management direction based on existing land use plans and amendments by program (and later becomes the basis for the No Action Alternative). Not all decisions are included in their entirety and some have been abbreviated to save space. All management direction documents are available at the BLM WFO.

3.1 RELEVANT PLANS AND AMENDMENTS

Table 3-1 identifies relevant plans and amendments in the WFO.

Table 3-1
Relevant Plans and Amendments

Document Title	Year	Admin Record Document Number
Sonoma-Gerlach MFP	1982	MFP III
Paradise-Denio MFP	1982	MFP III
Paradise-Denio and Sonoma-Gerlach Management Framework Plan Approved Lands Amendment and Decision Record	1999	
Pine Forest Recreation Management Plan	1992	NV-020-02-39
Water Canyon Management Plan	1997	
Winnemucca Field Office Fire Management Plan		
Land Amendment and Forestry Plan	1999	

3.2 MANAGEMENT DECISIONS

The MFPs and associated management documents detail management decisions for each resource as identified below:

3.2.1 Air Quality

Ambient Air Quality Standards

Management for air quality is not addressed in either of the Sonoma-Gerlach or the Paradise-Denio MFPs (BLM 1982b, 1982a), but standard operating procedures were established to prevent the BLM and BLM-authorized activities from degrading air quality beyond established standards specified in the Nevada Ambient Air Quality Standards. In addition, any significant source of air pollution now requires an air quality permit from the Nevada Division of Environmental Protection. A critical part of the review for such a permit is to determine whether the proposed project would cause or significantly contribute to a violation of an ambient air quality standard. Even if no major emitting sources are proposed, the Nevada Division of Environmental Protection is charged by the EPA with tracking air quality in all areas of the state to identify any possible locations where ambient standards may be exceeded. Consequently, the BLM, by tracking and monitoring the activities of the State of Nevada, can effectively participate in the management of air quality in the planning area. Table 3-2 portrays the state and national ambient air quality standards.

Table 3-2
Ambient Air Quality Standards

Nevada Standards			National Standards	
Pollutant	**Averaging Time**	**Concentration**	**Primary**	**Secondary**
Ozone	1 hour	235 μg/m³ (0.12 ppm)	1-hr = 235 μg/m³ (0.12 ppm) 8-hr = 112 μg/m³ (0.08 ppm)	Same as primary
CO < 5,000 feet above MSL	8 hours	10,000 μg/m³ (9.0 ppm)	10,000 μg/m³ (9.0 ppm)	-
CO ≥ 5,000 feet above MSL	8 hours	6,670 μg/m³ (6.0 ppm)	10,000 μg/m³ (9.0 ppm)	-
CO at any elevation	1 hour	40,000 μg/m³ (35 ppm)	40,000 μg/m³ (35 ppm)	-
Nitrogen dioxide	Annual arithmetic mean	100 μg/m³ (0.05 ppm)	100 μg/m³ (0.053 ppm)	Same as primary
Sulfur dioxide	Annual arithmetic mean	80 μg/m³ (0.03 ppm)	80 μg/m³ (0.03 ppm)	-
Sulfur dioxide	24 hours	365 μg/m³ (0.14 ppm)	365 μg/m³ (0.14 ppm)	-
Sulfur dioxide	3 hours	1,300 μg/m³ (0.5 ppm)	None	1,300 g/m3 (0.5 ppm)
PM_{10}	Annual arithmetic mean	50 μg/m³	50 μg/m³	Same as primary
PM_{10}	24 hours	150 μg/m³	150 μg/m³	Same as primary
$PM_{2.5}$	Annual arithmetic mean	-	15.0 μg/m³	Same as primary
$PM_{2.5}$	24 hours	-	65 μg/m³	Same as primary
Lead (Pb)	Quarterly arithmetic mean	1.5 μg/m³	1.5 μg/m³	Same as primary
Visibility	Observation	In sufficient amount to reduce the prevailing visibility to less than 30 miles when humidity is less than 70%	-	-
Hydrogen sulfide	1 hour	112 μg/m³ (0.08 ppm)	-	-

Note: μg/m³ = Micrograms/cubic meter of air

3.2.2 Geology

No current management decisions relating to geological resources, other than those discussed under Mineral Resources, have been identified.

3.2.3 Soils

The BLM manages the soil resource for multiple uses within the framework of applicable laws, regulations, and agencies policies. Current MFP management actions on the public lands to protect soil resources are included in Table 3-3.

Table 3-3
Current Management for Soils

Current Management Decision	Planning Decision No.	Decision Source	Status
Reduce flood and sediment damage sustained by roads and trails through an active maintenance program employing the use of redesign, blading, graveling, water barring, spur ditching, and/or installing culverts on Bureau roads and through proper stipulation requirements on non-Bureau road right-of-way applications. This will be included in the district standard operating procedures.	W3.5 W3.6	Paradise-Denio MFP Sonoma-Gerlach MFP	Ongoing BLM has developed standard operating procedures for road maintenance on BLM System Roads as an amendment to Paradise-Denio/Sonoma Gerlach RMP
Carefully consider land treatments, prohibit disturbance activities, and consider denying land disposals that would result in a significant reduction (50 percent or more) in the amount of vegetative cover in areas designated as having "high" erosion susceptibility or "high" vegetal soil factor, unless such treatments or disturbance and the potential accelerating soil loss can be adequately mitigated through proper management or application of Best Management Practices.	W3.8 W3.4	Paradise-Denio MFP Sonoma-Gerlach MFP	Ongoing

3.2.4 Water Resources

The BLM manages the water resource for multiple use within the framework of applicable laws, regulations, and agency policies. Current management decisions related to the water resources are listed in Table 3-4.

Table 3-4
Current Management for Water Resources

Current Management Decision	Planning Decision No.	Decision Source	Status
Prevent BLM and BLM-authorized activities from degrading water quality beyond established standards as specified in the Nevada Water Pollution Control Regulations of 1978 and the memorandum of understanding of December 1980 between BLM and the State of Nevada, Division of Environmental Protection, concerning diffuse source water pollution and the Nevada State 208 Water Quality Plan.	W1.1	Paradise-Denio MFP Sonoma-Gerlach MFP	Partially complete. Not attained at some mine sites.
Retain in public ownership the following lands within the municipal hydrologic basins described as follows. Non-public lands in these municipal watersheds will be given priority for acquisition. Winnemucca (hydrologic basin for Water Canyon Creek) Golconda (hydrologic basin for Pole Creek) Imlay (hydrologic basin for Prince Royal Canyon) Lovelock	W1.2	Sonoma-Gerlach MFP	Complete
Acquire or provide sufficient water on public lands through permit, adjudication, or purchase processes as provided by federal and state water law.	W2.1	Sonoma-Gerlach MFP	Complete to extent possible within limitations imposed by state law (ongoing)
Appropriate sufficient water on public lands through permit, adjudication, or purchase processes as provided by federal and state water law or other appropriate direction to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	W2.1	Paradise-Denio MFP	Complete to extent possible within limitations imposed by state law (ongoing)
Reduce flood and sediment damage, which is sustained by roads and trails through an active maintenance program employing the use of redesign, blading, graveling, water barring, spur ditching, and/or installing of culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications.	W3.6 W3.5	Sonoma-Gerlach MFP Paradise-Denio MFP	Complete (ongoing) BLM has developed standard operating procedures for road maintenance on BLM System Roads as an amendment to Paradise-Denio/Sonoma Gerlach RMP

Table 3-4
Current Management for Water Resources *(continued)*

Current Management Decision	Planning Decision No.	Decision Source	Status
As suitable big sagebrush sites are identified with the potential for vegetation manipulation designed to improve desirable watershed cover, consider the use of prescribed burning to eliminate big sagebrush over story and enhance understory vegetation.	W3.7 W3.6	Sonoma-Gerlach MFP Paradise-Denio MFP	
Carefully consider land treatments, prohibit disturbance activities, and consider denying land disposals which would result in a significant reduction (50 percent or more) in the amount of vegetative cover in areas designated as having "high" erosion susceptibility or "high" vegetal soil factor, unless such treatments or disturbance and the potential accelerating soil loss can be adequately mitigated through proper management or application of best management practices.	W3.8	Paradise-Denio MFP	
Designate 60 acres in T38N, R42E, Section 6, N1/2SW1/4NE1/4, SW1/4NW1/4NE1/4, SE1/4NW1/4NE1/4, NE1/4NW1/4NE1/4, and T39N, R42E, Section 31, SE1/4NW1/4SE1/4, as an area of critical environmental concern for the protection of the Osgood Mountains milk-vetch *(astragalus yoder-williamsii),* an endangered plant species. Pursue a mineral withdrawal for this critical area.	W4.1	Paradise-Denio MFP	

3.2.5 Vegetation

Vegetation provides forage and habitat for wildlife and domestic animals and scenic enjoyment for people. It is a key ingredient in determining the health of the public lands, as it influences the quantity and quality of water produced from watersheds and affects soil erosion and associated loss of habitat.

Vegetation management activities include seeding, reseeding, vegetation manipulation, grazing management, weed control, prescribed burning, and fish and wildlife habitat enhancement. Vegetation management also includes utilization of resources, such as pinyon pine nut harvest and firewood, Christmas tree harvest, and post cutting. Management objectives for vegetation are shown in Table 3-5.

Table 3-5
Current Management for Vegetation

Current Management Decision	Planning Decision Number	Decision Source	Status
Restore 75 percent of lotic riparian systems to PFC by 1997.		1990 Wetland Riparian Initiative	Goal was not attained
Improve and maintain a sufficient quantity, quality, and diversity of habitat for all species of wildlife in the planning area.	**WL-1**	*Paradise-Denio MFP Vegetation Objectives, Sonoma-Gerlach MFP Vegetation Objectives*	Ongoing
Preserve and enhance curlleaf mountain mahogany, aspen, cottonwood, limber pine, whitebark pine, willow, alder, and chokecherry stands as components of the natural landscape.	**F-1**	*Paradise-Denio MFP Vegetation Objectives, Sonoma-Gerlach MFP Vegetation Objectives*	Ongoing
Preserve threatened, endangered, or ecologically unique plant species and improve their habitats.	**W-4**	*Paradise-Denio MFP Vegetation Objectives, Sonoma-Gerlach MFP Vegetation Objectives*	Ongoing
Expend range betterment funds for on-the-ground rehabilitation, protection, and improvement of rangelands.		Federal Land Policy and Management Act of 1976 (FLPMA)	Ongoing
Manage forage on a sustained yield basis.		Taylor Grazing Act and Federal Land Policy and Management Act of 1976 section 102(a)(7)	Goal was not attained
Prohibit cutting green pinyon pine for firewood and posts in the Stillwater Range; create a new woodcutting area (firewood and juniper posts) in Yellowstone Canyon; expand existing woodcutting areas in the Stillwater Range from 2,900 acres to 22,000 acres; close Fencemaker Canyon, Fencemaker Pass, and Gamble Basin to Christmas tree harvest; eliminate commercial harvest; prohibit pine and juniper harvest within 100 feet of springs and other water sources; allow short-term firewood harvest in other specified areas; allow BLM management actions, such as surveying, analyzing for disease, and implementing remedial thinning, to protect harvest areas.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Allow BLM management actions, such as surveying, analyzing for disease, and implementing remedial thinning, to protect harvest areas.	IM 2003-035	Implementing the President's Healthy Forest Initiative	Ongoing
Inventory, record, and evaluate cultural resource sites in the Stillwater and Yellowstone Canyon harvest areas at a rate of at least 100 acres and/or record at least two sites per year.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing

Table 3-5
Current Management for Vegetation *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Install signage indicating that cutting green pinyon for firewood or posts is prohibited.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Allow free harvest of 25 pounds of pine nuts per household; establish a charge for harvest in excess of this level; allow Lovelock Paiute tribal members unlimited harvest; prohibit commercial harvest.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Allow noncommercial harvest of up to 100 juniper posts per year per household in the Stillwater and Yellowstone Canyon cutting areas, by permit.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Allow up to four cords of dead pinyon or dead or green juniper firewood to be cut per household, by permit, in the Stillwater Range. Allow green or dead juniper harvest in the Yellowstone Canyon area.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Allow noncommercial Christmas tree cutting by permit in the entire Stillwater Range, except for closed areas.		WFO Forestry Plan Amendment and Environmental Assessment. NV-020-02-05. September 2003.	Ongoing
Consider fir rehabilitation treatment techniques for vegetation: natural revegetation, seeding, closure, greenstripping, and nonnative weed control.		Environmental Assessment for the Normal Year Fire Rehabilitation Plan EA No. NV-020-04-21	Ongoing

3.2.6 Weeds and Invasive Species

Current management for noxious weed species is inadequate due to lack of weeds knowledge among general staff, lack of on-the-ground weed control programs, and inadequate funding.

Current priorities for vegetation management within the WFO are stated in the Vegetation Treatment on BLM Lands in Thirteen Western States Final EIS. These priorities are as follows:

- Take actions to prevent or minimize the need for vegetation control when and where feasible considering the management objectives for the site.

- Use effective nonchemical methods of vegetation control when and where feasible.
- Use herbicide considering the effectiveness of all potential methods or in combination with other methods of control. Chemicals could be used where the benefits would meet or exceed those of other control methods. The application of chemicals shall meet or exceed BLM and label requirements.

The strategy for noxious weed management will continue to be prevention and control of the spread of invasive and noxious weeds. This strategy will continue to be implemented through local and regional cooperative efforts with all partners to ensure maintenance and restoration of healthy ecosystems on BLM-managed lands. Noxious weed control is based on integrated weed management, which emphasizes prevention, education, detection, and quick control of small infestations.

Noxious weed control is implemented through the BLM Nevada Weed Management Strategy, Winnemucca Field Office Annual Operating Plan and Weed Prevention Schedule. The Winnemucca BLM Field Office also participates in the Humboldt County Weed Task Force, a multiagency group formed by a cooperative agreement signed on August 11, 1999. This is an on-the-ground weed control group composed of various federal, state, county, and local government agencies, local businesses, and private individuals.

The WFO places little emphasis on on-the-ground weed control projects. Weed infestations should be prioritized according to the extent of their spread, their ability to affect sensitive or rare resources, ability to change wildfire and hydrological patterns, and the feasibility of controlling or managing them. Weed management could be prioritized in the following manner:

- Weeds designated for **eradication** upon discovery are within contained colonies and have not yet escaped. Once identified, weeds identified for eradication will be treated with the method most likely to permanently remove the plant from the environment while protecting the integrity of the residual plant community.
- Weeds designated for **containment** are not yet widespread and can be contained to prevent them from becoming widespread problems. Some of the weeds that are designated for eradication have also been found in colonies that cannot be eradicated in the short term but can be contained with a longer-term campaign to reduce or eradicate.
- Weeds designated for **management** are widespread, established weed species that cannot easily be contained or eradicated and are targeted for localized control and alternative management efforts. The priority for these species is to slow the spread to adjacent areas and to protect the clean or sensitive areas from these invading species. Strategies to deal with established weed species are controlling the "leading edge" of widespread

weeds and focus on preventing the spread of such species beyond that point, raising landowner/manager awareness along the boundary to assist in the effort, mapping infestations to assist in coordinating with adjacent landowners, obtaining and establishing biological controls, and rehabilitating treated and susceptible areas to reduce chances for new colonies or re-infestation.

Relevant plans and amendments relating to weeds and invasive species are identified in Table 3-6. Current management decisions relating to weeds and invasive species are identified in Table 3-7.

Table 3-6
Relevant Plans and Amendments

Document Title	Other Relevant Information
BLM Manual 9011 and Handbook H-9011-1	Provides policy for conducting chemical pest control program under an integrated pest management approach.
BLM Manual 9014	Provides guidance and procedures for planning and implementing biological control in integrated pest management programs.
BLM Manual 9015	Provides policy relating to the management and coordination of noxious wed activities among BLM, organizations, and individuals.

Table 3-7
Current Management for Weeds and Invasive Species

Current Management Decision	Planning Decision Number	Decision Source	Status
Where feasible and practical, use prescribed burning, fencing, clear cutting, or herbicides to enhance deteriorated stands of aspen and cottonwood.	F 1.3	Paradise-Denio Management Decisions- Weeds and Invasive Species	This decision is complete and has provided some guidance for weeds management in the planning area.
Increase forage by artificial methods when ever appropriate. The potential for land treatment has been identified on approximately 269,000 acres. Land treatment is defined as vegetation manipulation (for example, plowing, burning, spraying).	RM 2.1	Paradise-Denio Management Decisions- Weeds and Invasive Species	This decision is complete and has provided some guidance for weeds management in the planning area.
Where feasible and practical, use prescribed burning, fencing, clear cutting, or herbicides to enhance deteriorated stands of aspen and cottonwood.	F 1.3	Sonoma-Gerlach Management Decisions, Weeds and Invasive Species	The decision is relatively recent and up to date. It is inadequate in that it does not offer a comprehensive proposal for weed management throughout the decision area.
Increase existing forage by artificial methods wherever appropriate. The potential for land treatment has been identified on approximately 245,000 acres. Land treatment is defined as vegetation manipulation (for example, plowing, burning, spraying).	RM 2.1	Sonoma-Gerlach Management Decisions, Weeds and Invasive Species	The decision is relatively recent and up to date. It is inadequate in that it does not offer a comprehensive proposal for weed management throughout the decision area.

Table 3-7
Current Management for Weeds and Invasive Species *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Noxious weed control programs on lands administered by the WFO are coordinated with other federal, state, tribal, and local agencies and other organizations, including two recently established Cooperative Weed Management Areas, Gerlach and Paradise County.		EA for the Normal Year Fire Rehabilitation Plan	Complete.
The decision is to implement an integrated vegetation treatment program for BLM-administered public lands. This decision focuses on vegetation treatment methods that include manual, mechanical, biological, prescribed burning, and chemical. The BLM will cooperate with the individual states' noxious weed management acts to the extent funding is available.		ROD, Vegetation Treatment on BLM Lands in Thirteen Western States (1991)	Complete, ROD signed in 1991.
Authorizes the Secretary of the Interior "to cooperate with other federal and state agencies and others in carrying out operation or measures to eradicate, suppress, control, prevent, or retard the spread of any noxious weed.		Federal Noxious Weed Act of 1974, as amended by Sec. 15, Management of Undesirable Plants on Federal Lands, 1990	Complete as amended.

3.2.7 Wildlife and Special Status Species

Relevant plans and amendments

Fish and wildlife habitats are managed according to the two existing management framework plans, as well as associated activity plans called habitat management plans (HMP). BLM is also required by The Endangered Species Act to protect and enhance threatened, endangered, and candidate species and their habitats. Sensitive species, a BLM designation, are managed by the BLM with the same level of protection as is provided for candidate species (BLM Manual 6840.06C).

Threatened and endangered species are managed under the authority of the ESA of 1973, as amended. In addition, the Federal Land Policy and Management Act of 1976 provides for multiple use and protection of natural resources through habitat inventory and management of public lands and habitat management for fish and wildlife. The NDOW and the USFWS also provide guidance for habitat management. The BLM has entered into a memorandum of agreement (MOA) with the USFWS and the USDA-Forest Service to improve the efficiency and effectiveness of plan-level Section 7 consultation processes under the ESA. Through this MOA, the BLM agrees to promote the conservation of candidate, proposed, and listed species and to informally and formally consult/confer on listed and proposed species and designated and proposed critical habitat during planning (BLM 2000). The BLM Nevada entered into a

consultation agreement with USFWS, Nevada, identifying a cooperative process for conducting Section 7 consultation. The consultation agreement pertains to all BLM land use plans, including RMPs and MFPs, and coordination between these agencies to improve compliance with and effectiveness of ESA as it pertains to BLM actions (BLM 2004c).

BLM has also entered into cooperative agreements with NDOW and cooperates with NDOW species management plans and state plans. NDOW maintains databases containing information that will be key to developing specific actions for big game species management, including distribution and migratory corridors, sage grouse habitat delineations, stream survey data and nongame species distribution.

Conservation management of sage grouse has been identified as a key to staving off this species decline and future extinction. BLM actions toward the conservation of sage grouse and their habitat is outlined in the Bureau of Land Management National Sage Grouse Habitat Conservation Strategy (BLM 2004a). This plan directs future BLM management actions as they pertain to sage grouse and sage grouse habitats.

Implementation of effective grazing management is the primary tool for ensuring adequate rangeland habitat for mule deer, bighorn sheep, pronghorn antelope, and nongame species. Grazing management actions include resting and/or deferring defined areas from grazing use on a scheduled basis. Establishing light utilization standards on key browse sites provides deer with the necessary browse while allowing existing plants to achieve good vigor and seed production for the establishment of new plants. Grazing management is implemented within the WFO through issuing final multiple use decisions, in accordance with the grazing administration regulations (43 CFR § 4100), including standards and guidelines for grazing administration at 43 CFR § 4180.

Grazing management is also integral to protecting habitat conditions of key wildlife areas, such as aspen and mahogany stands, riparian areas, wetlands, and meadows. Fencing provides additional livestock/horse controls in areas where animals concentrate. Small exclosures are used in meadows, riparian areas, and aspen stands.

Protecting other key wildlife sites, including sage grouse strutting grounds, raptor nest territories, and bighorn sheep lambing areas from surface and human disturbance during the breeding season is also a major component of the existing wildlife program. MFP wildlife management decisions are identified in Table 3-8.

Management decisions

Table 3-8
Current Management for General Wildlife

Current Management Decision	Planning Decision Number	Decision Source	Status
Manage range conditions to allow existing big game populations to reach reasonable numbers. Monitor condition and trend of key wildlife areas to ensure habitat is available.	WL 1.1	**Sonoma-Gerlach MFP**	
The primary management objective for the following area is to provide crucial wildlife habitat for mule deer and bighorn sheep. Any domestic livestock use will be considered secondary and must be complementary to this primary use.	WL 1.4a-1.4b	**Sonoma-Gerlach MFP**	
In allotments designated for grazing system development, the forage needs of wildlife will be estimated within the pastures where the wildlife use occurs and will be taken into consideration in AMP development.	WL 1.7	**Sonoma-Gerlach MFP**	
In the design, implementation, or revision of grazing management systems, plans for horse management areas or horse use areas, consider aspen and mahogany as a critical management species. Specific management objectives will be designed for these critical species and these objectives will be used in the activity plans developed on an area.	WL 1.9	**Sonoma-Gerlach MFP**	
Management objectives of activity plans (such as AMPs and HMAs) will include specific objectives pertaining to improving and maintaining desired riparian areas and meadow habitat. In the development of activity plans, meadows and riparian areas will be considered as critical areas.	WL 1.10	**Sonoma-Gerlach MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Protect sage grouse strutting grounds and give proper consideration to other sage grouse habitat by accepting as guidance NDOW Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that they might inventory the area for sage grouse use, and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, powerline rights-of-way, land exchanges, mining, and mineral leasing).	WL 1.11	**Sonoma-Gerlach MFP**	
Preserve broadleaf woodland habitat in the entire resource area by	WL 1.12	**Sonoma-Gerlach MFP**	
limiting firewood and post cutting to pinion and juniper and by responding quickly to fires, where nonconiferous woodlands are involved. Exceptions are where harvesting or fire has been identified as a management tool.			
Provide water for wildlife at existing water sources by adhering to multiple use principles in maintenance, use, and development of water sources on public land in the planning area (list).	WL 1.13	**Sonoma-Gerlach MFP**	
Coordinate development of new habitat management plans (HMPs) and revision of existing deficient ones, so that HMP completion coincides with completion of companion AMPs.	WL 1.14	**Sonoma-Gerlach MFP**	
Retain in public ownership all public lands containing valuable wildlife habitat, as determined by appropriate BLM personnel at the	WL 1.16	**Sonoma-Gerlach MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
time of disposal proposals, unless it is determined that such land, because of its location or other characteristics, is difficult and uneconomical to manage as part of the public lands or there is a higher and better use.			
Acquire by exchange or other means those private lands intermingled with public lands that contain high resource values within the Lahontan Cutthroat Trout Natural Area.	WL 1.17	**Sonoma-Gerlach MFP**	
The applicable section of L 4.1 states, "All powerline rights-of-way well within raptor areas will contain stipulations requiring anti-bird electrocution structures, and wherever feasible and possible such rights-of-way will not be constructed within 400 yards of existing roads to minimize shooting of raptors."	WL 1.22	**Sonoma-Gerlach MFP**	
Limit off-road vehicle use during the lambing season (February 1 to May 31) in bighorn sheep use areas as reintroductions are made.	WL 1.24	**Sonoma-Gerlach MFP**	
Limit new trail or road construction on potential bighorn sheep range to minimize access. Potential bighorn sheep ranges include the following: Fox Range Buffalo Hills Granite Range Calico Range Black Rock Range Selenite Range Sonoma Range Tobin Range East Range Stillwater Range Humboldt Range West Humboldt Range Existing roads or trails may be closed or use limited if it is determined that they interfere with the normal life processes of the bighorn sheep.	WL 1.25	**Sonoma-Gerlach MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Through a coordinated planning approach in the development of activity plans (AMPs, HMPs, HMAs, etc.), ensure that waterfowl habitats are adequately addressed and where appropriate provide for improved waterfowl habitat conditions.	WL 1.26	**Sonoma-Gerlach MFP**	
Maintain and improve habitat for sensitive, protected, and T and E species listed by the USFWS, BLM, and Nevada.	WL 1.27	**Sonoma-Gerlach MFP**	
Manage range conditions to allow existing big game populations to increase in reasonable numbers, where possible.	WL 1.2	**Paradise-Denio MFP**	
In the design, implementation, or revision of grazing management systems, plans for horse use areas, consider aspen and mahogany as "critical" management species.	WL 1.3		
In the design, implementation, or revision of grazing management systems, plans horse use areas consider mountain browse as critical management species(.). Specific management objectives will be designed for these critical species and these objectives will be used in the activity plans developed for an area.	WL 1.4		
Management objectives of activity plans (such as AMP and HMA) will include specific objectives pertaining to improving and maintaining desired riparian and meadow habitat.	WL 1.5		
—Improve ~500 acres of mule deer habitat along Rock Creek in the Santa Rosa Range by establishing shrubs.	WL 1.7	**Paradise-Denio MFP**	
Limit off-road vehicle use during the lambing season in bighorn sheep use areas as reintroductions are made.	WL 1.8	**Paradise-Denio MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Preserve woodland habitat in the resource area by authorizing the harvesting of woodland products only in special situations on a case-by-case basis (no public cutting areas are identified), by responding quickly to fires in nonconiferous woodlands, and harvesting woodland products as a management tool.	WL 1.10		
All activity plans will take measures to protect important wildlife areas and waters.	WL 1.11	**Paradise-Denio MFP**	
—Preserve the existing acres of mahogany, limber, and whitebark pine.	W.L. 1.12	**Paradise-Denio MFP**	
Establish and fence water catchments units for a variety of wildlife species.	WL 1.14	**Paradise-Denio MFP**	
Acquire by exchange or other means the Quinn River Lakes at the south end of Kings River Valley.	WL 1.15	**Paradise-Denio MFP**	
Fence Button Lake to three-wire antelope fence standards to exclude wild horses and livestock.	WL 1.16	**Paradise-Denio MFP**	
Restrict the use of poisons, with secondary killing effects, on the public lands.	WL 1.18	**Paradise-Denio MFP**	
Modify existing fences that restrict or alter wildlife movements to allow passage.	WL 1.19	**Paradise-Denio MFP**	
Limit new trail or road construction on potential bighorn sheep range to minimize access.	WL 1.20	**Paradise-Denio MFP**	
Maintain and improve habitat for sensitive, protected, and T and E species listed by USFWS, BLM, and NDOW and those protected by existing federal and state laws and regulations.	WL 1.21	**Paradise-Denio MFP**	
Provide alternative roosting poles for golden eagles and other raptors along 16 miles of SR 140, between the Bilk Creek Mountains and the northern-most portion of the Black Rock Desert by 1984.	WL 1.22	**Paradise-Denio MFP**	
Provide water for wildlife at existing water sources by adhering to multiple use principles in the maintenance, use, and	WL 1.23	**Paradise-Denio MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
development of water sources on public land in the planning area.			
Acquire or provide sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water law and other appropriate direction to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	WL 1.24	**Paradise-Denio MFP**	
Through a coordinated planning approach in the development of activity plans (e.g., AMPs, HMPs, HMAs), ensure that waterfowl habitats are adequately addressed and, where appropriate, provide for improved waterfowl habitat conditions	WL 1.25	**Paradise-Denio MFP**	
Fence one unnamed spring in the Slumbering Hills from livestock use.	WL 1.27	**Paradise-Denio MFP**	
Protect sage grouse strutting grounds and the area within two miles of each ground and give proper consideration to other sage grouse habitat by accepting as guidance Nevada Department of Wildlife's Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that it might inventory the area for sage grouse use and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, road, gravel pits, rock gathering, power line rights-of-way, and land exchanges).	WL 1.28	**Paradise-Denio MFP**	
—Through the coordinated planning process, ensure that fish habitat factors (bank stability, percent shading, siltation of pools, and spawning gravels) are	WLA 1.4, 1.5, 1.6	**Paradise-Denio MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
included as objectives of AMPs that contain fishable streams.			
Develop HMPs for streams within each grazing allotment.	WLA 1.7	**Paradise-Denio MFP**	
Planning on streams with multiple owners will be coordinated under cooperative planning agreements (CRMP process).	WLA 1.8 and 1.9	**Paradise-Denio MFP**	
As sites are identified or as an opportunity arises, acquire or exchange those lands along the North Fork and Little Humboldt and resource areas that support or have the potential to support sportfishing.	WLA 1.10	**Paradise-Denio MFP**	
Whenever practicable all reservoirs constructed on public land that have fisheries potential will be fenced, with the water piped to a tank for livestock use. Any new irrigation reservoirs on public land will have a minimum pool requirement established. The same will apply on existing reservoirs when the opportunity arises. This will be coordinated with other affected individuals, permittees, or agencies in advance, such as Division of Wildlife Resources.	WLA 1.11	**Paradise-Denio MFP**	
Cooperate with NDOW and private owners to eliminate hazards to fish from existing and future diversions.	WLA 1.12	**Paradise-Denio MFP**	
Continue to monitor streams, lakes, and reservoirs. Use BLM BMPs and Nevada Water Pollution Handbook.	WLA 1.13	**Paradise-Denio MFP**	
Encourage mining and other interests to work with the BLM to mitigate possible adverse environmental impacts.	WLA 1.14	**Paradise-Denio MFP**	
Recognize the need for water rights for fisheries. Work with NDOW and state water engineer to protect fisheries habitat.	WLA 1.15	**Paradise-Denio MFP**	
Firelines will not be constructed by heavy equipment along riparian stream zones, and flame retardant will not be applied to streams.	WLA 1.18	**Paradise-Denio MFP**	

Table 3-8
Current Management for General Wildlife *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
The roads on all resource area streams be waterbarred or relocated to specific problems where identified (URA): Jackson Creek, Kings River, Granite Creek, China Creek, Horse Creek, Craine Creek, Alder Creek, Battle Creek, Pahute Creek, Alta Creek, Big Creek, Quinn River, and Mary Sloan Creek.	WLA 1.19	**Paradise-Denio MFP** BLM has developed standard operating procedures for road maintenance on BLM System Roads as an amendment to Paradise-Denio/Sonoma Gerlach RMP	
In BLM-initiated areas apply no pesticides or herbicides to Paradise-Denio Resource Area streams, lakes, or reservoirs, unless adverse impacts can be adequately mitigated.	WLA 1.22	**Paradise-Denio MFP**	

USFWS candidate species are managed in order to prevent the federal government from listing them as threatened and endangered. The WFO is currently using the Draft Management Guidelines for Sage Grouse and Sagebrush Ecosystems In Nevada. These guidelines are intended to promote the conservation of sage grouse and their sagebrush habitats on Nevada public lands. These guidelines will establish policy and will be incorporated into long-term sage grouse/sagebrush conservation assessment and strategy plans. Management decisions also address specific threatened and endangered species actions to enhance Lahontan cutthroat trout habitat and to encourage the recovery of these species. The current MFP decisions as they relate to sage grouse and listed species are identified in Table 3-9.

Table 3-9
Current Management for Special Status Species

Current Management Decision	Planning Decision Number	Decision Source	Status
Protect sage grouse strutting grounds and give proper consideration to other sage grouse habitat by accepting as guidance NDOW Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that they might inventory the area for sage grouse use and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, power line rights-of-way, land exchanges, mining, and mineral leasing).	WL 1.11	**Sonoma-Gerlach MFP**	
The applicable section of L 4.1 states, "All powerline rights-of-way well within raptor areas will contain stipulations requiring anti-bird electrocution structures, and wherever feasible and possible such rights-of-way will not be constructed within 400 yards of existing roads to minimize shooting of raptors."	WL 1.22	**Sonoma-Gerlach MFP**	
Limit off-road vehicle use during the lambing season (February 1 to May 31) in bighorn sheep use areas as reintroductions are made.	WL 1.24	**Sonoma-Gerlach MFP**	
Limit new trail or road construction on potential bighorn sheep range to minimize access. Potential bighorn sheep ranges include the following: Fox Range Buffalo Hills Granite Range Calico Range Black Rock Range Selenite Range Sonoma Range Tobin Range East Range	WL 1.25	**Sonoma-Gerlach MFP**	

Table 3-9
Current Management for Special Status Species *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Stillwater Range Humboldt Range West Humboldt Range Existing roads or trails may be closed or use may be limited if it is determined that they interfere with the normal life processes of the bighorn sheep.			
Maintain and improve habitat for sensitive, protected, and T and E species listed by the USFWS, BLM, and Nevada.	WL 1.27	**Sonoma-Gerlach MFP**	
Improve and maintain the condition of all aquatic habitat of each stream, lake, or reservoir having the potential to support a sport fishery or threatened or endangered fish species, at levels conducive to the establishment and maintenance of a healthy fish community	WLA-1	**Sonoma-Gerlach MFP**	
Through a coordinated planning process, ensure that fish habitat factors (bank stability, siltation of pools and spawning gravels) are included as objectives of AMPs that contain fishable streams.	WLA 1.4	**Sonoma-Gerlach MFP**	
Improve and maintain a sufficient quantity, quality, and diversity of habitat for all species of wildlife in the planning area.	WL-1	**Paradise-Denio MFP**	
All activity plans will take measures to protect important wildlife areas and waters.	WL 1.11	**Paradise-Denio MFP**	
Maintain and improve habitat for sensitive, protected, threatened and endangered species listed on the USF WS Endangered and Threatened List, BLM-NDOW Sensitive Species List, and those protected by existing federal and state laws and regulations.	WL 1.21	**Paradise-Denio MFP**	
Provide alternative roosting poles for golden eagles and other raptors along 16 miles of SR 140, between the Bilk Creek Mountains and the northernmost portion of the Black Rock Desert by 1984.	WL 1.22	**Paradise-Denio MFP**	
Protect sage grouse strutting grounds and the area within two miles of each ground and give	WL 1.28	**Paradise-Denio MFP**	

Table 3-9
Current Management for Special Status Species *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
proper consideration to other sage grouse habitat by accepting as guidance Nevada Department of Wildlife's Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that it might inventory the area for sage grouse use and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, power line rights-of-way, and land exchanges).			

3.2.8 Wild Horse and Burros

Relevant Plans and Amendments

The Sonoma-Gerlach MFP, completed in 1982 and amended with a Lands Amendment in 1999, generally covers the south and west side of the planning area (see map) (BLM 1982b). As required by FLPMA, the MFP provides for multiple use and sustained yield management, while complying with pertinent laws regarding the protection of natural resources. The management emphasis is on ecological monitoring of range resources and minerals management.

The Paradise/Denio MFP, completed in 1982 and amended with a Lands Amendment in 1999, generally covers the north and west side of the planning area (BLM 1982a). The MFP provides for multiple use and sustained yield management, while complying with pertinent laws regarding the protection of natural resources.

The current management philosophy is defined in Public Law 92-195, December 15, 1971, The Wild Free Roaming Horses and Burros Act, which states that "Such action shall be taken, in the following order and priority, until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation."

Management Decisions

Current management decisions as they relate to wild horse and burros are identified in Table 3-10.

Table 3-10
Current Management for Wild Horse and Burros

Current Management Decision	Planning Decision Number	Source	Status
Establish wild horse and burro numbers by herd use area using the following criteria. Existing/current wild horse and burro numbers (as of July 1, 1982) will be used as a starting point for monitoring purposes, except where one of the following conditions exists: 1. Numbers are established by adequate and supportable data; or 2. Numbers are established by court order.	**WH&B 1.1**	Sonoma-Gerlach MFP	Ongoing
Establish wild horse and burro numbers by herd use area on non-checkerboard lands.	**WH&B 1.1**	Paradise-Denio MFP	Ongoing
Remove wild horses and burros from the checkerboard Horse Use Areas (HUAs) unless a cooperative agreement providing for the retention and protection of wild horses and burros is consummated with the affected private landowner(s).	**WH&B 1.3**	Sonoma-Gerlach MFP	Ongoing
Manage and protect wild horses and burros where they occurred on 12/15/1971 on non-checkerboard lands.	**WH&B 1.3**	Paradise-Denio MFP	Ongoing
Remove wild horses and burros from the checkerboard HUAs.	**WH&B 1.4**	Paradise-Denio MFP	Completed
Acquire sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water laws or other appropriate direction, to support the uses of the public lands for wild horse, wildlife, aquatic habitat, livestock, and recreation.	**WH&B 1.5**	Paradise-Denio MFP	Ongoing
License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	**WH&B 1.5**	Sonoma-Gerlach MFP	Ongoing
Appropriate sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water laws or other appropriate direction, to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	**WH&B 1.7**	Sonoma-Gerlach MFP	Ongoing
Attempt to establish a wild horse viewing area on Winnemucca Mountain. Work out details such as water needs, fencing, and cooperative agreements through CRMP.	**WH&B 2.1**	Paradise-Denio MFP	Completed attempt 6/6/1988
License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	**WH&B 2.2**	Paradise-Denio MFP	Ongoing

3.2.9 Wildland Fire Ecology and Management

The purpose of the WFO FMP is to identify and integrate all wildland fire management guidance, direction, and activities required to implement national fire policy and fire management direction throughout the planning area. This includes direction from the Paradise-Denio and Sonoma-Gerlach MFPs, the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness RMP and

Other Contiguous Lands in Nevada, and other subsequent amendments to the MFPs, RMPs, and other applicable WFO Special Management and/or Activity Plans.

Existing management direction from the Paradise-Denio MFP, the Sonoma-Gerlach MFP and the RMP for the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness and Other Contiguous Lands in Nevada implementation plans allows for fire to be restored as an integral part of ecosystems to meet resource management objectives. This plan also directs activities to improve protection of human life and property through aggressive fire protection, reduction of hazardous fuels, and restoration of fire-damaged ecosystems.

The current FMP serves to provide clear management direction for fire and resource personnel. This management direction may be modified as a result of any amendments of the Paradise-Denio and Sonoma-Gerlach MFPs, the RMP for the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness and Other Contiguous Lands in Nevada, or other related planning documents.

Federal policy requires that an FMP be developed for all acres of burnable vegetation on federal land. The FMP was developed in compliance with the Interagency Fire Management Plan Template, to ensure that FMPs prepared by the U.S. Departments of the Interior (USDI) and Agriculture (USDA) have consistent content and format. The following federal fire management policies and strategies are incorporated in the WFO FMP:

- Federal Wildland Fire Management Policy and Program Review, 1995, and the Review and Update of the 1995 Federal Wildland Fire Management Policy, 2001; A Collaborative Approach for Reducing Wildland fire Risks to Communities and the Environment, 2001, 10 Year Comprehensive Strategy Implementation Plan, 2002; and
- The Interagency Fire Management Plan Template, 2003.

The FMP also provides quantified information for the Fire Program Analysis (FPA) planning process. FPA is the interagency fire-planning model used to project the budget and personnel needs for the WFO and all other fire management organizations administered by the USDI and USDA. The FPA process is being implemented in two phases. The FMP will provide information for Phase I and Phase II of FPA. These FPA Phases will develop program budgets and organizations for all fire management functions, which includes wildland fire preparedness, initial attack, wildland fire use, large fire suppression, fuels management, stabilization and rehabilitation, community education/assistance, and fire prevention activities.

The fire management information presented in the FMP will be updated to ensure that the most current information is available for use in the FPA resource and budget

allocation process. The fire management objectives and strategies identified will also be updated as appropriate, to reflect current issues and conditions.

Current management decisions relating to wildland fire are identified in Table 3-11.

Table 3-11
Current Management for Wildland Fire

Current Management Decision	Planning Decision Number (Goals)	Decision Source	Status
Goals:		WFO FMP	Pending Approval Spring 2005
Ensure that firefighter and public safety are the highest priority in every fire management activity.	WFM 1		
Assess risk to communities and rural developments in terms of direct wildland fire impact and economic values, and implement effective programs to mitigate that risk through collaborative planning, projects, and education.	WFM 2		
Implement the full range of wildland fire and fuels management practices, including prescribed fire, and mechanical, chemical, biological, and cultural treatments that will reflect land management decisions as identified in WFO Plans.	WFM 3		
Establish new and/or continue existing partnerships with all interagency cooperators to facilitate coordinated fire management activities.	WFM 4		
In those WFO areas that have fire protection provided by another agency, ensure that fire protection cooperators are informed and aware of all fire management decisions related to the suppression of wildland fires.	WFM 5		
Encourage close coordination and collaboration among stakeholders with federal, interested organizations, private landowners, state, and local partners.	WFM 6		
Develop and use the best scientific information (including fire science, vegetation, ecology, watershed, public safety, etc.) available to deliver technical and community assistance to support ecological, economic, and social sustainability.	WFM 7		
Design the use of prescribed fire to protect, maintain, and enhance resources, and as nearly as possible, allow fire to function in its ecological role when appropriate for the site and situation, as identified in the WFO plans.	WFM 8		
Encourage a multi-disciplinary, integrated approach to fire and resource management within the WFO.	WFM 9		

Table 3-11
Current Management for Wildland Fire *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Management Options (for all goals/objectives): 1. Wildland fire management options for each FMU within the FMP will typically include management options based on FRCC for the following: • Wildland Fire Suppression—Appropriate Management Response • Prescribed fire and possible future applications of wildland fire use • Non-Fire Fuels Treatment that include mechanical, biological, chemical and biomass removal • Post-Fire Rehabilitation and Restoration • Community Protection, Community Assistance, and Rural Fire Assistance 2. Include management considerations identified in BLM Greater Sage Grouse Species National Policy and Guidance—Fire Management Issues, Strategies, Options and Guidelines. 3. Include management considerations identified in Greater Sage Grouse Conservation Plan for Nevada and Eastern California—June, 2004—Fire Management Issues, Strategies, Options and Guidelines 4. Include management goals, objectives and considerations identified in North Central Nevada Sage Grouse Conservation Plan			

3.2.10 Cultural Resources

The cultural resource management guidance provided by federal laws and regulations has been incorporated into existing Management Framework Plans and activity plans for the planning area. Through the plans, selected sites and areas have received additional protection and attention (Table 3-12). A National Programmatic Agreement (NPA) has been established among BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (SHPO) regarding the manner in which BLM will meet its responsibilities under the National Historic Preservation Act (NHPA).

The State Protocol Agreement between the Nevada BLM and Nevada SHPO further defines the roles and responsibilities under the NPA. The goal of the NPA and the Protocol Agreement is a more meaningful and productive partnership between SHPO and BLM to enhance cultural resource management on public lands managed by the BLM in Nevada.

Table 3-12
Current Management Decisions for Cultural Resources

Sonoma-Gerlach MFP	Paradise-Denio MFP
CR1.1 - Establish an interpretive program concerning specific sites listed in MFP, if the evaluation proves that interpretation is warranted. Maintain fire protection for those sites that have significant values.	**CR1.1-** Establish an interpretive program, where warranted, concerning specific sites listed in the MFP. Maintain fire protection for those sites that have significant values.
CR1.3 - Whenever feasible and practical, preserve significant Basque aspen carvings by protecting trees from fire or cutting or mitigate damage.	**CR1.3 -** Whenever feasible and practical, preserve significant Basque aspen carvings by protecting trees from fire or cutting or mitigate damage through photo-documentation, rubbings, or other acceptable means. Donate some or all preserved carvings to the Humboldt County Museum or the Nevada State Museum.
CR1.4 - Consider specific historical sites listed in the MFP in the development of the District Fire Management Plan and determine if they warrant preservation.	**CR1.4 –** Consider the following historical sites in the development of the District Fire Management Plan and determine if they warrant protection from fire: Red Butte Laurel Varyville National Dutch Flat Daveytown
CR1.5 -Prior to destruction, line shacks, miner's cabins, and other isolated historical structures will be evaluated to determine which should be left intact.	**CR1.5 –** Line shacks, miner's cabins, and other isolated historical structures will be evaluated to determine which should be left intact. This evaluation will consider which sites have the historic, scenic, or other aesthetic qualities that make the structures appeal to a visitor's sense of beauty or sense of curiosity.
CR1.6 - Evaluate specific sites listed in MFP to determine which, if any, have historic or cultural values.	**CR1.6 -** Preserve the North Fork of the Little Humboldt Lithic Scatter in its present condition, allowing periodic investigations for management use.
CR1.8 – Evaluate specific sites listed in MFP to determine which if any have historic or cultural values. Take measures to protect those that are shown to be significant.	**CR1.8 –** Specific cultural sites listed in the MFP have been identified as having particular importance and will be given special protection.
CR1.9 - Through fencing, protective overburden, riprap, and other appropriate measures, arrest physical destruction of Summit Twin Spring and other important sites as they are identified.	**CR1.9 –** Through fencing, protective overburden, riprap, and other appropriate measures, arrest physical destruction of Paiute Creek, CrNV-02-1677, and other important sites as they are identified.
CR1.10 - Post positive protective signs at specific sites listed in MFP.	**CR1.10 –** Post positive protection signs at Ezra's Retreat, Pole Canyon Petroglyphs, Pole Canyon Rockshelter, and other sites as they are identified.
CR1.15 - Ensure that a cultural resources survey is completed prior to any activity that will result in new surface disturbance or transfer of land from public ownership.	**CR1.13 –** Develop and implement Cultural Resource Management Plans on a geographic area (allotments) basis as archeological or historical resources are discovered.

Table 3-12
Current Management for Cultural Resources *(continued)*

Sonoma-Gerlach MFP	Paradise-Denio MFP
CR1.19 - Encourage mining and other interests to work with BLM to mitigate possible adverse environmental impacts to cultural resources.	**CR1.15 -** Where required by regulation, ensure that a cultural resources survey is completed prior to any activity that would result in new surface disturbance or transfer of land from public ownership. Exceptions are those not required by policy or regulations, e.g., 3809 mining notice.
	CR1.16- Encourage mining and other interests to work with the BLM to mitigate possible adverse impacts to cultural resources.

Cultural resource inventories, evaluations of NRHP eligibility and effect, and consultation with the Nevada SHPO are undertaken for authorized actions, including surface-disturbing proposals in accordance with Section 106 of the NHPA.

Collecting or excavating cultural materials on public lands is prohibited, except by a BLM permit per the Archeological Resource Protection Act of 1979 (ARPA) and other laws and regulations. Unauthorized collection, excavation, or damage of cultural sites is a prosecutable offense subject to citations and/or misdemeanor and felony penalties.

BLM Manual Sections 8100–8160 help guide the BLM's planning and decision making as it affects historic properties and other cultural properties. In accordance with BLM Manual Handbook 8110, cultural resources must be categorized according to their potential uses. The following use categories are identified: scientific use, conservation for future use, traditional use, public use, experimental use, discharged from management.

Native American Values

BLM as a representative of the federal government is responsible for maintaining a formal government-to-government relationship with federally recognized Indian tribes. This relationship, which has a very long-established history, is reiterated and clarified in the Executive Memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" and Executive Order 13175. This relationship focuses on ensuring that the rights and interests of tribes are considered and protected when federal agencies act. Cultural resource management guidance under NEPA, FLPMA, NHPA, NAGPRA, AIRFA, ARPA, BLM Manual Section 8160 and Manual Handbook H-8160-1, and Executive Order 13007 (Indian Sacred Sites) require direct consultation with tribal representatives and identifying and protecting important archaeological, religious, and/or sacred sites, as well as providing tribal members appropriate access to these sites. Also included are provisions for reasonable access for tribal members to gather and harvest plant, animal, and aquatic resources for treaty, subsistence, or traditional use purposes.

Policy and standards for government-to-government consultation between the BLM and Native American groups is provided in BLM Manual 8120 *Tribal Consultation under Cultural Resource Authorities*. The objectives of BLM's Native American consultation efforts are to ensure that tribal issues and concerns are given legally adequate consideration during the decision making process, and to foster good working relationships with tribes.

3.2.11 Paleontological Resources

Guidance for the current management of paleontological resources includes FLPMA, NEPA, BLM Manual 8270, and a variety of federal regulations. FLPMA requires that public lands be managed in a manner that protects the "…quality of scientific…" and other values. NEPA 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.

BLM Manual 8270 addresses identification of paleontological resources, classification of formations, land use planning, permitting, and other activities related to the management of paleontological resources on BLM public lands. It establishes as the policy of BLM that paleontological resource management is a distinct BLM program, to be given full and equal consideration in all its land use planning and decision-making actions. Paleontological resources are managed to prioritize research needs, facilitate educational and recreational needs, protect significant fossil locations, and foster awareness and appreciation of the resources.

43 CFR 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 8365 addresses the collection of invertebrate fossils and fossil plants. 43 CFR 8365.1-5 addresses the willful disturbance, removal, and destruction of scientific resources or natural objects, and 8360.0-7 identifies the penalties for such violations.

43 CFR 3621, 3622, and 3623 address the collection of petrified wood. 43 CFR 3802 and 3809 address protection of paleontological resources from operations authorized under the mining laws.

43 CFR 8200 and 1610.7-2 address procedures and practices for the management and protection of lands that have outstanding natural history values, such as fossils, and the establishment of ACECs. 36 CFR 62 addresses procedures to identify, designate, and recognize National Natural Landmarks, which include fossil areas.

Other direction for managing paleontological resources comes from 18 USC Section 641 (Theft of Government Property), USC Section 1361 (Damage to Government Property), Secretarial Order 3104 (Collection Permitting), Onshore Oil and Gas Order No. 1 and 43 CFR Title 3162, Offer to Lease and Lease for Oil and Gas Form 3100-11 (Energy Development Stipulations), and the Federal Cave Resources Protection Act of 1988 and 43 CFR 37 (Cave Resources).

The MFPs identified objectives for protecting paleontological resources, but no decisions were rendered. The MFP planning objectives and decisions are identified below in Table 3-13.

Table 3-13
Current Management for Paleontological Resources

Sonoma - Gerlach MFP Objective:	**Sonoma-Gerlach Decision**
4.0 Paleontological resources will be conserved for their scientific value.	Rejected; this is a Standard Operating Procedure.

Paradise-Denio MFP Objective:	**Paradise-Denio Decision**
4.0 Paleontological resources will be conserved for their scientific value.	Reject the recommendation. This is included in the District's standard operating procedures.

3.2.12 Visual Resources

The Sonoma-Gerlach MFP, completed in 1982 and amended with a Lands Amendment in 1999, generally covers the south and west side of the planning area (BLM 1982b). The Paradise-Denio Management Framework Plan, completed in 1982 and amended with a Lands Amendment in 1999, generally covers the north and west side of the planning area (BLM 1982a). The number of acres of VRM classes in the planning area is as follows:

- Class I: 421,429 acres;
- Class II: 594,987 acres;
- Class III: 1,257,732 acres;
- Class IV: 7,503,585 acres; and
- Unknown: 273,389 acres.

Current management decisions relating to visual resources are identified in Table 3-14.

Table 3-14
Current Management for Visual Resources

Current Management Decision	Planning Decision Number	Decision Source	Status
Manage areas in the VRM classes listed. Manage these areas according to the visual guidelines for each class.	R4.1	Paradise-Denio MFP	Completed to the extent possible, as some areas may have incorrect or inconsistent visual resource management classifications.
Identify and manage areas in the VRM classes listed	R3.1	Sonoma-Gerlach MFP	Completed to the extent possible, as some areas may have incorrect or inconsistent visual resource management classifications.

3.2.13 Wilderness Study Areas

WSAs are lands identified through the BLM wilderness inventory process as possessing wilderness characteristics (defined by the Wilderness Act of September 3, 1964, 16 USC 1131). Section 603 (c) of FLPMA requires that WSAs be managed to maintain their suitability for wilderness designation and prevent unnecessary degradation. To ensure suitability, the BLM manages WSAs under its Interim Management Policy (IMP) for Lands under Wilderness Review. Additional documents that guide BLM management direction for WSAs are listed in Table 3-15.

Table 3-15
Relevant Plans and Amendments

Document Title	Year	Administrative Record Document Number
Paradise-Denio MFP	1982	MFP III
Sonoma-Gerlach MFP	1982	MFP III
Nevada Statewide Wilderness Report	1991	

The IMP identifies six provisions that apply to the interim management of lands under wilderness review:

- Lands under wilderness review must be managed so as not to impair their suitability for preservation as wilderness.
- Permitted activities in WSAs (except grandfathered and valid existing rights) are temporary uses that create no new surface disturbance nor involve permanent placement of structures.
- Those grazing, mining, and mineral leasing uses that existed on October 21, 1976, may continue in the same manner and degree as on that date, even if this would impair wilderness suitability.
- Lands under wilderness review may not be closed to appropriation under the mining laws in order to preserve their wilderness character.
- Valid existing rights must be recognized.
- All lands must be managed to prevent unnecessary or undue degradation.

The BLM is responsible for ensuring that wilderness values on lands currently identified as WSAs are not degraded until Congress either designates them as Wilderness Areas (into the National Wilderness Preservation System) or releases the lands from further consideration. The status of the existing WSAs will not change as a result of the RMP process.

A discussion of the current resource values and uses in each WSA can be found in the Nevada BLM Statewide Wilderness Report, 1991.

Table 3-16 identifies current management objectives and actions for special designations.

Table 3-16
Current Management for Wilderness/Wilderness Study Areas

Current Management Objectives	Planning Decision Number	Decision Source	Status
Protect all intensive study areas from surface disturbance until finally eliminated through the wilderness inventory process.	W-1	Paradise-Denio MFP	No management decision rendered
Provide a wilderness experience within wilderness areas.	W-2	Paradise-Denio MFP	No management decision rendered
Protect wilderness characteristics of all intensive study areas from surface disturbances unless and until they are eliminated through the inventory process. Continue this protection for areas designated WSAs as a result of the inventory.	Wi-1	Sonoma-Gerlach MFP	No management decision rendered
All actions on lands under wilderness review will be processed in accordance with the BLM Manual H-8550-1, entitled Interim Management Policy for Lands under Wilderness Review (IMP).		Sonoma-Gerlach MFP	
The BLM must manage all WSAs so as not to impair their suitability for preservation as wilderness.		Sonoma-Gerlach MFP	
Manage East Fork High Rock Canyon, High Rock Lake, Little High Rock Canyon, North Black Rock Range, Pahute (aka: Paiute) Peak, Calico Mountains, and Selenite Mountains according to VRM Class I management objectives		Sonoma-Gerlach MFP	

Wild and Scenic Rivers

The preparers of the existing MFPs did not conduct an eligibility inventory or make recommendations on suitability for any river or stream segments in the planning area.

The WFO has not conducted an inventory to determine the eligibility, tentative classification, or suitability for streams within the Winnemucca RMP planning area.

No specific management actions have been implemented to protect the Outstanding Resource Values (ORVs) of the North Fork of the Little Humboldt River, but 14 miles of the river are within the North Fork of the Little Humboldt River WSA. Managing the WSA under the IMP has protected the values associated with that portion of the river.

3.2.14 Livestock Grazing

Grazing decisions for the Paradise-Denio and Sonoma-Gerlach MFPs and EIS were issued July 1982 (BLM 1982a, 1982b). These documents established the multiple use goals, objectives, and management actions that guide management of the public lands within the two planning areas.

On February 12, 1997, the Secretary of the Interior approved standards and guidelines for Nevada, which provide directions to achieve properly functioning ecosystems for both upland and riparian areas. Standards and guidelines provide for managing rangelands in a manner that will achieve or maintain ecological health, including the protection of habitats for threatened or endangered species and the protection of water quality.

In Nevada, the allotment evaluation process is used to determine if existing multiple uses are meeting or making progress toward meeting general land use plan objectives, allotment specific objectives, and the standards and guidelines.

The allotment evaluation consists of, or involves, the following:

- The evaluation of current grazing use for all users (livestock, wild horses, and wildlife), based on vegetation monitoring data analysis and interpretation;
- Recommendations to change or adjust grazing systems;
- Recommendations to change or adjust livestock stocking levels;
- Establishment of stocking levels for wild horses; and
- Recommendations for range improvements to assist in meeting allotment specific objectives and standards for rangeland health.

Land within the WFO range program is divided into allotments and is managed individually for forage production and general health. Allotment management is covered either by multiple use decisions, allotment evaluations, allotment management plans (AMPs), herd area management plans, or by the existing MFPs. Multiple use decisions and allotment evaluations analyze all grazers of a range (i.e., livestock, horses, or native wildlife). AMPs and herd area management plans are used to analyze only livestock and horses/burros, respectively. Some allotments may not be covered by any of these types of plans, in which case, management is deferred to the MFPs. Such allotments usually do not contain important, sensitive, or valuable resources, and therefore have not been analyzed on an activity plan level.

Current management decisions relating to livestock grazing in the WFO are identified in Table 3-17.

Table 3-17
Current Management for Livestock Grazing

Current Management Decision	Planning Decision Number	Decision Source	Status
Grazing Decision for Livestock Wild Horses and Burros and Wildlife Grazing will be managed in the Paradise-Denio Resource Area with multiple uses fully considered. Emphasis will be placed on implementation of the Rangeland Management Policy through the CRMP process. This decision established the base herbivore grazing levels by grazing allotment. They are as follows: Livestock- Active preference or negotiated adjustments. Wildlife- Reasonable numbers as established by BLM and the Nevada Department of Wildlife. Wild Horses and Burros- Existing/current WH&B numbers (as of July 1, 1982) will be used as a starting point for monitoring purposes except where one of the following conditions exist: a. Numbers are established by adequate and supportable resource data. b. Numbers are established through the CRMP process as documented in CRMP recommendations and agreed to by the District Manager. c. Numbers are established by formal signed agreement between affected interests. d. Numbers are established through previously developed interim capture/ management plans. Plans are still supportable by parties consulted in the original plan. EAs (EARs) were prepared and are still valid. e. Numbers are established by court order. The sequence of action will be as follows: 1. Establish priorities for action (categorize each allotment into selective management categories). 2. Negotiate any changes in allotment base grazing levels through CRMP. If there is no agreement, use the base level above as a starting point for the monitoring process. 3. Issue a grazing decision; establish a monitoring plan and studies for grazing and other uses, preferably	RM 1.1 (MFP III)	Paradise-Denio MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office. Selective Management is not a useful tool over time. The sequence of action will be as follows: Numbers 5 and 6: Adjustments are made within consecutive grazing seasons if the allotment management objectives have not been met according to 4180 CFR (Fundamentals of rangeland health and standards and guidelines for grazing administration).

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
through coordinated Resource Management Planning (CRMP). Begin (or continue) monitoring. 4. Develop and implement (as time and funding permit) allotment management plans and activity plans for other uses. All activity plan and acceptable CRMP recommendations will be coordinated. Implementation will include base herbivore grazing level adjustments. 5. At the end of the third and fifth year of grazing following issuance of the grazing decision make necessary use adjustment base upon monitoring results, and other data then available. Adjustments other than numbers may be required separately or in combination with numbers. For example, changes of seasons-of-use, additional water development, seeding or other land treatments may be required. If monitoring reveals that a particular use or practice is causing resource damage, that particular use may be adjusted separately. 6. After the fifth year adjustments, continue monitoring and if adjustments in addition to the fifth year adjustments are required, adjust livestock, wild horses, and wildlife proportionately based on forage availability. (Providing the wildlife reasonable numbers have been obtained; if not, wildlife reasonable numbers will be renegotiated prior to making the adjustments.) A decision changing active preference will not be issued until monitoring, and/or CRMP group recommendations, and/or baseline inventory, or a combination of these has provided sufficient data to support a decision to that effect. This may occur at any time during this process.			

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Grazing Decision for Livestock Wild Horses and Burros and Wildlife Grazing will be managed in the Sonoma-Gerlach Resource Area with multiple uses fully considered. Emphasis will be placed on implementation of the Rangeland Management Policy through the CRMP process. This decision established the base herbivore grazing levels by grazing allotment. They are as follows: Livestock- Active preference or negotiated adjustments. Wildlife- Reasonable numbers as established by BLM and the Nevada Department of Wildlife. Wild Horses and Burros- Existing/current WH&B numbers (s of July 1, 1982) will be used as a starting point for monitoring purposes except where one of the following conditions exist: a. Numbers are established by adequate and supportable resource data. b. Numbers are established through the CRMP process as documented in CRMP recommendations and agreed to by the District Manager. c. Numbers are established by formal signed agreement between affected interests. d. Numbers are established through previously developed interim capture/ management plans. Plans are still supportable by parties consulted in the original plan. EAs (EARs) were prepared and are still valid. e. Numbers are established by court order. The sequence of action will be as follows: 1. Establish priorities for action (categorize each allotment into selective management categories). 2. Negotiate any changes in allotment base grazing levels through CRMP. If there is no agreement, use the base level above as a starting point for the monitoring process. 3. Issue a grazing decision; establish a monitoring plan and studies for grazing and other uses, preferably	RM 1.1 (MFP III)	Sonoma-Gerlach MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office. Selective Management is not a useful tool over time. The sequence of action will be as follows: Numbers 5 and 6: Adjustments are made within consecutive grazing seasons if the allotment management objectives have not been met according to 4180 CFR (Fundamentals of rangeland health and standards and guidelines for grazing administration).

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
through coordinated Resource Management Planning (CRMP). Begin (or continue) monitoring. 4. Develop and implement (as time and funding permit) allotment management plans and activity plans for other uses. All activity plan and acceptable CRMP recommendations will be coordinated. Implementation will include base herbivore grazing level adjustments. 5. At the end of the third and fifth year of grazing following issuance of the grazing decision make necessary use adjustment base upon monitoring results, and other data then available. Adjustments other than numbers may be required separately or in combination with numbers. For example, changes of seasons-of-use, additional water development, seeding or other land treatments may be required. If monitoring reveals that a particular use or practice is causing resource damage, that particular use may be adjusted separately. 6. After the fifth year adjustments, continue monitoring and if adjustments in addition to the fifth year adjustments are required, adjust livestock, wild horses, and wildlife proportionately based on forage availability. (Providing the wildlife reasonable numbers have been obtained; if not, wildlife reasonable numbers will be renegotiated prior to making the adjustments.) 7. A decision changing active preference will not be issued until monitoring, and/or CRMP group recommendations, and/or baseline inventory, or a combination of these has provided sufficient data to support a decision to that effect. This may occur at any time during this process. The Sonoma-Gerlach Resource Area plan will also implement a selective management approach on all allotments.			

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Review and update existing grazing management systems and include considerations and objectives for wild horses and burros, watershed, wildlife, and other resources in their development. This should be done through the CRMP process whenever possible.	RM 1.2 (MFP III)	Sonoma-Gerlach MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office
License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	RM 1.3 (MFP III)	Paradise-Denio MFP	Ongoing
Make season-of-use data available to CRMP groups so that they can use this information in the development of plans using the CRMP process.	RM 1.3 (MFP III)	Sonoma-Gerlach MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office
Review and update select grazing management systems and include considerations and objectives for wild horses and burros, watershed, wildlife, and other resources in their development. AMPs will be reviewed and revised through the CRMP process or reviewed by the CRMP group following revision.	RM 1.4 (MFP III)	Paradise-Denio MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office.
Consider season-of-use-data when developing or revising AMPs. Make season-of-use data available to CRMP groups to use in developing plans in the CRMP process.	RM 1.5 (MFP III)	Paradise-Denio MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office.
1. Allow for conversion from cattle to sheep on all allotments within the resource areas except on those allotments or portions of allotments where conflicts with existing big horn sheep (or imminent reintroductions) cannot be mitigated. 2. Allow for conversion from sheep to cattle on a case-by-case basis. Conversion ratio and authorization will depend upon the suitability of the rangeland involved and will be made only where cattle can be adequately controlled and managed.	RM 1.5 (MFP III)	Sonoma-Gerlach MFP	Ongoing
Consider combining select allotments. This should be fully coordinated with the permittees involved. Use the CRMP process whenever possible.	RM 1.6 (MFP III)	Paradise-Denio MFP	None of the select allotments were combined.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Control economic insect infestations on public lands when proper range management procedures are ineffective, impractical, or not feasible.	RM 1.6 (MFP III)	Sonoma-Gerlach MFP	Ongoing
1. Allow for conversion from cattle to sheep on all allotments within the resource areas except on those allotments or portions of allotments where conflicts with existing big horn sheep (or imminent reintroductions) cannot be mitigated. 2. Allow for conversion from sheep to cattle on a case-by-case basis. Conversion ratio and authorization will depend upon the suitability of the rangeland involved and will be made only where cattle can be adequately controlled and managed.	RM 1.7 (MFP III)	Paradise-Denio MFP	Ongoing
Acquire sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water law or other appropriate direction to support the uses of public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	RM 1.7 (MFP III)	Sonoma-Gerlach MFP	Ongoing. The BLM can not acquire new stock water rights for livestock in the state of Nevada by state law.
Control economic insect infestations on public lands when proper range management procedures are ineffective, impractical, or not feasible.	RM 1.9 (MFP III)	Paradise-Denio MFP	Ongoing
Acquire sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water law or other appropriate direction to support the uses of public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	RM 1.10 (MFP III)	Paradise-Denio MFP	Ongoing. The BLM can not acquire new stock water rights for livestock in the state of Nevada by state law.
Implement a selective management approach on all allotments.	RM 1.11 (MFP III)	Paradise-Denio MFP	Selective Management is not a useful tool over time.
Divide the Alder Creek allotment into Alder Creek and Knott Creek Allotments.	RM 1.12 (MFP III)	Paradise-Denio MFP	Completed

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Accept and implement as funding becomes available the coordinated management plans developed by the Winnemucca CRMP committee for the UC, Little Owyhee, and Bullhead Allotments.	RM 1.13 (MFP III)	Paradise-Denio MFP	The CRMP is no longer active in Winnemucca Field Office The CRMP has been superseded by final multiple use planning decisions. Decision Completed
Increase existing forage by artificial methods wherever appropriate: 1. The potential for land treatment have been identified on approximately 269,000 acres. Land treatment is defined as vegetation manipulation (i.e., plowing, burning, spraying, etc., and/or seeding). 2. Developing water sources. Consider selected areas. The exact areas to be treated will be determined in activity plans preferably coordinated through the CRMP process. The treated areas will be rested for two full calendar years after treatment, or until seedlings are firmly established. Seeding application will be done in the fall, late September, or early October. All vegetation manipulations in sage grouse habitat will be done in accordance with the guidance supplied by the Nevada Department of Wildlife. An evaluation of the suitability of the soils for vegetation manipulation will be made prior to the project being approved.	RM 2.1 (MFP III)	Paradise-Denio MFP;	Ongoing, however CRMP is no longer active in Winnemucca Field Office.
Increase existing forage by artificial methods wherever appropriate: 1. The potential for land treatment has been identified on approximately 245,000 acres. Land treatment is defined as vegetation manipulation (i.e., plowing, burning, spraying, etc., and/or seeding). 2. Developing water sources. All vegetation manipulations in sage grouse habitat will be done in accordance with the guidance supplied by the Nevada Department of Wildlife.	RM 2.1 (MFP III)	Sonoma-Gerlach MFP	Ongoing, however CRMP is no longer active in Winnemucca Field Office.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Treated areas will be rested for two full calendar years after treatment, or until seedlings are firmly established. After substantiated by studies, allocate increases in forage among wildlife and livestock. Vegetation manipulations will be approved in accordance with the rangeland management policy and only on those areas where management objectives cannot be met through proper grazing management practices.			
Implement an ear-tagging program on select allotments.	RM 3.1 (MFP III)	Paradise-Denio MFP	Ongoing
Through land disposal or exchange transfer the title of select public lands to private individuals. However, until such time as transfers are made, do not authorize livestock grazing adjacent to residential areas in the Thomas Canyon Allotment. Until disposal, do not manage the remaining lands in an intensive manner. Prior to implementation, this decision will be coordinated with local government. Do not accept exchange of use agreements on the private lands surrounding the public paces in the Thomas Canyon Allotment west of the Thomas Canyon Fence.	RM 3.1 (MFP III)	Sonoma-Gerlach MFP	Ongoing
Combine the Calico and Buffalo Hills Allotments into the Buffalo Hills Allotment with a Calico Pasture within this allotment.		Sonoma-Gerlach MFP (Plan Change)	Decision was issued on June 21, 1989, with ongoing implementation.
Abel Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 4, 1997, with ongoing implementation.
Alder Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 27, 1994, with ongoing implementation.
Antelope Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on February 5, 1998, with ongoing implementation.
Asa Moore Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 29, 2001, with ongoing implementation.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Bottle Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on September 14, 2000, with ongoing implementation.
Buffalo Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 12, 1996, with ongoing implementation.
Buffalo Hills Allotment FMUD.		Final Full Force and Effect Multiple Use Decision Document	Decision issued on February 9, 1993, with ongoing implementation.
Bullhead Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 23, 1997, with ongoing implementation
Buttermilk Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 28, 2001, with ongoing implementation.
Clear Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on December 6, 2000, with ongoing implementation.
Coyote Hills Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 30, 1994, with ongoing implementation.
Crowley Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on April 16, 1998, with ongoing implementation.
Deer Creek Allotment FMUD		Final Multiple Use Decision Document	Decision issued on October 16, 1998, with ongoing implementation.
Dolly Hayden Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on December 6, 2000, with ongoing implementation.
Double H Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 7, 1995, with ongoing implementation.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Dyke Hot Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on February 24, 1995, with ongoing implementation.
Flat Creek, Willow Creek, and Upper Quinn River Allotment FMUDs.		Notice of Area Managers Final Decision	Decision issued on January 30, 1995, with ongoing implementation.
Fort Scott Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 5, 1997, with ongoing implementation.
Goldbanks Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 22, 2001, with ongoing implementation.
Granite Allotment FMUD.		Final Decision Document	Decision issued on February 15, 1991, with ongoing implementation.
Hanson Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 5, 1997, with ongoing implementation.
Happy Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on February 14, 1997, with ongoing implementation.
Hole in the Wall, Jersey Valley , and Home Station Gap Allotment FMUDs .		Final Multiple Use Decision Document	Decision issued on January 9, 1997, with ongoing implementation.
Horse Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on September 25, 1984, with ongoing implementation.
Hot Springs Peak Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 2, 2005, with ongoing implementation.
Indian Creek Allotment FMUD		Final Multiple Use Decision Document	Decision issued in 1993, with ongoing implementation.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Jackson Mountain Allotment FMUD.		Final Multiple Use Decision Document.	Decision issued on May 27, 1994, with ongoing implementation in accordance with stipulation agreement (September 3, 1998).
Jordan Meadows Allotment FMUD.		Final Full Force and Effect Multiple Use Decision Document	Decision issued on June 19, 1995, with ongoing implementation.
Klondike Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 17, 1998, with ongoing implementation.
Leadville Allotment FMUD.		Final Full Force and Effect Multiple Use Decision Document	Decision issued on January 19, 1994, with ongoing implementation.
Little Horse Creek Allotment FMUD.		Final Decision Document	Decision issued on May 22, 1990, with ongoing implementation.
Little Owyhee Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 19, 1999, with ongoing implementation..
Long Canyon Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on December 15, 1995, with ongoing implementation.
Martin Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 11, 1996, with ongoing implementation.
Mullinix Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on March 4, 1998, with ongoing implementation.
Paiute Meadows Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 15, 2003, with ongoing implementation.
Paradise Hill Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 12, 2000, with ongoing implementation.
Pole Canyon Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on April 5, 2000, with ongoing implementation.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Provo Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 27, 2000, with ongoing implementation.
Pueblo Mountain Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 9, 1999, with ongoing implementation.
Pumpernickel Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on April 30, 1996, with ongoing implementation.
Rebel Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 6, 1998, with ongoing implementation.
Rock Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on September 5, 1997, with ongoing implementation.
Rodeo Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 14, 1997, with ongoing implementation.
Singus Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 5, 1999, with ongoing implementation.
Soldier Meadows Allotment FMUD.		Final Multiple Use Decision	Decision issued on May 5, 2004, with ongoing implementation.
Solid Silver Allotment FMUD.		Final Decision Document	Decision issued on February 15, 1991, with ongoing implementation.
South Rochester Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on September 28, 1998, with ongoing implementation.
Spring Creek Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 16, 2000, with ongoing implementation.
UC Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 22, 1998, with ongoing implementation.

Table 3-17
Current Management for Livestock Grazing *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Washburn Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on October 5, 1994, with ongoing implementation.
Wilder-Quinn Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on November 9, 1998, with ongoing implementation.
William Stock Allotment FMUD.		Final Multiple Use Decision Document	Decision issued on January 27, 2000, with ongoing implementation.

Notes: PD=Paradise-Denio MFP (BLM 1982a); SG=Sonoma Gerlach MFP (BLM 1982b)

3.2.15 Energy and Mineral Resources

Relevant Plans and Amendments

Table 3-18 presents the land use plans and amendments guiding minerals management in the planning area.

Table 3-18
Relevant Plans and Amendments

Document Title	Year	Other Relevant Information	Administrative Record Document Number
Paradise-Denio MFP	1982	Multiple use and sustained yield focus with emphasis on ecological monitoring of minerals management.	MFP III
Sonoma-Gerlach MFP	1982	Multiple use and sustained yield focus.	MFP III
PD Lands Amendment	1999	Covers management of mineral resources in the PD MFP not included in the planning area of this land use plan revision.	
SG Lands Amendment	1999	Covers management of mineral resources in the SG MFP not included in the planning area of this land use plan revision.	

Management Decisions

The current MFP objectives and decisions as they relate to energy and minerals are presented in Table 3-19.

Table 3-19
Current Management of Mineral Use

Current Management Decision	Decision Number	Decision Source	Status
Limit the size of mineral withdrawals to what is absolutely necessary to protect the values requiring the withdrawal.	M1.1	PD-MFP	
Make no withdrawals which segregate against mineral entry on areas identified as containing strategic and critical or economically important minerals.	M1.2,1.3,1.4, 1.5	PD-MFP	
Make no withdrawal that segregates against mineral entry on the areas identified in this recommendation as containing "strategic and critical" minerals. Areas within WSAs will be further evaluated during the wilderness study process.	M1.3	SG-MFP	
Make no withdrawals which segregate against mineral entry on the areas identified in this recommendation as containing economically important minerals.	M1.4	SG-MFP	

Table 3-19
Current Management of Mineral Use *(continued)*

Current Management Decision	Decision Number	Decision Source	Status
Develop at least one community material site for sand and gravel within a ten-mile radius of Denio, Golconda, McDermitt, and Paradise Valley and two community material site for sand and gravel within a ten-mile radius of Winnemucca.	M3.1	PD-MFP	
Develop community material sites near the communities of Winnemucca, Lovelock, and Gerlach.	M3.1	SG-MFP	
The Sonoma-Gerlach Resource Area will be open to geothermal and oil and gas leasing with the following restrictions listed:… [see S-G MFP for specific restrictions]	M5.5	SG-MFP	
Resource area will be open to geothermal and oil and gas leasing with the following restrictions: Pine Forest Closure Area. NSO – in areas listed.	M6.6	PD-MFP	
Allow leasing of Winnemucca Lake, Carson Sink, San Emidio Desert, and Smoke Creek Desert for sodium and potassium, as the demand arises. Do not allow leasing on the playa of the Black Rock Desert.	M6.1	SG-MFP	

3.2.16 Recreation

The WFO manages a wide range of dispersed and casual use recreation, as well as activities managed under special recreation permits. Past planning efforts have identified areas and recreation uses that were gaining popularity and required management attention. Currently, recreation management in the WFO is largely driven by on-demand permitted activities and customer information requests about the available recreation opportunities in the WFO. No specific allocations were made for dispersed or permitted uses. With the exception of a few high profile destinations, most areas in the WFO continue to provide opportunities for an unmanaged, unrestricted recreation experience. Past efforts at managing recreation areas and sites have been reactive to resource impacts and diversifying recreation uses. The following section outlines the current approach to recreation management in the WFO and the status of past management decisions.

Dispersed Recreation Management

Recreation use has been largely unrestricted and unmanaged in most of the WFO. Visitors are provided with the opportunity to explore a uniquely remote landscape that provides an unconfined recreation experience with the freedom of choice to camp, hike, or drive wherever they choose. BLM recreation management in most of the WFO is limited to signing and limited road maintenance.

Past planning efforts identified areas with high recreation potential that required further analysis and planning to provide for future recreation opportunities. Activity level

planning efforts have completed for several popular recreation areas to meet recreation management objectives. The BLM manages two primitive camping areas, OHV and mountain bike trails, picnic areas, and one interpretive site and trail. Most of the recreation developments are in areas around local communities or the Pine Forest Range. Other interpretive opportunities are along the emigrant trails and in other remote locations throughout the district.

Table 3-20 presents the land use plans and amendments guiding recreation in the planning area.

Table 3-20
Relevant Plans and Amendments

Document Title	Year	Other Information	Administrative Record Document Number
Paradise-Denio RMP	1982		MFP III
Sonoma-Gerlach	1982		MFP III
Water Canyon Management Plan	1997	Authorized the development of camping and trail facilities. The plan is currently under revision and is scheduled for implementation in 2006. The proposed facilities include developed campsites, a host campsite, vault toilets, trailhead information, new trail development, and road upgrades.	EA NV-020-06-13
Pine Forest Recreation Plan Activity Plan for Pine Forest Recreation Area.	2001	Several project plans have been implemented that tiered to this plan. Campsites, vault toilets, trails, and trailheads have been established. Some fencing/range projects that were authorized in this plan have also been implemented. Property acquisitions are in negotiation for areas surrounding Knott Creek Reservoir, which would require planning to incorporate.	NV-020-02-39
Bloody Shins Mountain Bike Trail	2001	The Bloody Shins Mountain Bike and OHV trail system was developed in 2001. The plan established a multiple use trail system on the fringe of Winnemucca. The trail system was designed to access the surrounding foothills of the Sonoma Range and includes a trailhead in Water Canyon.	EA NV-020-01-19
Lovelock Cave Backcountry Byway Management Plan	2003/2004	An interpretive exhibit was developed at Lovelock Cave to interpret prehistoric resources. Implementation of the plan in 2003/2004 included interpretive panels, an interpretive trail, a toilet, and parking areas.	Designation of the Byway: EA NV-020-04-32 (1994); Road and Parking lot NV-020-99-AD-40 (1999)

Commercial, Competitive and Organized Group Recreation Uses

Requests for SRPs are processed on a first-come, first-served basis. Before events are permitted, NEPA analysis is conducted, taking into consideration the nature of the event, potential impacts on resources, conflicts with other events, and potential impacts on the quality of other visitors' experience. The objective of the permitting system is to satisfy recreational user demands within allowable use levels in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts. Five-year permits are commonly issued for events that do not require significant changes from one year to the next. Outfitter guide permits are currently handled on a state-wide basis with little or no coordination. To minimize new disturbance, most motorcycle races have been limited to previously raced tracks or portions of old courses. Recreation fees, including cost recovery for large events, are collected and managed under the Federal Lands Recreation Enhancement Act (FLREA).

Plan Objectives and Management Decisions

The Management Framework Plans addressed recreation management with the objectives and decisions shown on Tables 3-21 and 3-22 respectively.

Table 3-21
Current Objectives for Recreation

Current Management Objectives	Planning Decision Number	Decision Source	Status
Promote the understanding of the natural resources in the resource areas and the role the BLM plays in managing resources.	R-1	Paradise-Denio MFP	BLM kiosks and/or interpretive panels conveying such information have been installed at several locations, including Water Canyon, Winnemucca Sand Dunes, Bloody Shins Trail Head, Lovelock Cave, Onion Reservoir, and Blue Lakes. Information, brochures, and maps are distributed from the front desk and the WFO BLM web-site and to local visitor centers and museums. Numerous meetings with user groups discussing a variety of issues, including, but not limited to, regulations, plans, proposals, fees, etc., have been conducted.
Provide as many recreation opportunities as possible in the Paradise-Denio Resource Area.	R-2	Paradise-Denio MFP	Specific actions taken to date include primitive campground facilities at Onion Reservoir, trail head facilities and ¾ miles of hiking trails at Blue Lake; trail head facilities and OHV and mountain bike trails at Bloody Shins; tables, fire rings, and vehicle barriers at Water Canyon, Lovelock Cave Byway/20 miles, trail head facilities, and a 1/2 mile interpretive trail. Numerous Special Recreation Permits (SRP) for arts festivals, OHV/4X4 races, 4X4 tours, and guided hunting, hiking, and horseback tours have been granted.
Ensure access to recreation areas for the general public.	R-3	Paradise-Denio MFP	Addressed in Transportation Access and Facilities: Section 3.2.17 of this document.
Protect and enhance the visual resources of the Paradise-Denio Resource Area.	R-4	Paradise-Denio MFP	Addressed in Visual Resources: Section 3.2.11 of this document.

Table 3-21
Current Objectives for Recreation *(continued)*

Current Management Objectives	Planning Decision Number	Decision Source	Status
Maintain safety in recreation areas.	R-5	Paradise-Denio MFP	Ongoing actions to date include identifying and mitigating potential hazards caused by abandoned mines, toxic waste sites, and dangerous thermal (hot) springs.
Preserve certain selected sites from being damaged or torn down.	R-6	Paradise-Denio MFP	Refer to Cultural Resource: Section 3.2.10. Historical resources are evaluated as part of the normal regulatory procedure.
Provide as many recreation opportunities as possible without undue environmental degradation in the Sonoma-Gerlach Resource Area.	R-1	Sonoma-Gerlach MFP	All SRPs require NEPA documentation and Determination of NEPA Adequacy (DNA) before issuance of permit.
Ensure access to recreation areas for the public.	R-2	Sonoma-Gerlach MFP	Addressed in Transportation Access and Facilities: Section 3.2.17 of this document.
Protect and enhance the visual resources of the Sonoma-Gerlach Resource Area.	R-3	Sonoma-Gerlach MFP	Addressed in Visual Resources: Section 3.2.11 of this document.

Table 3-22
Current Management for Recreation

Current Management Decisions	Planning Decision Number	Decision Source	Status
Establish an interpretive program.	R 1.1	Paradise-Denio MFP	Ongoing and expected to proceed at current rates. An interpretive trail was established at Lovelock Cave Byway, and an interpretive trail is in the design phase for Water Canyon and is expected to be implemented in 2005-06. An interpretive exhibit is in the development phase for the Winnemucca Visitor Center and is expected to be completed in 2005-06.
Identify new reservoir sites for water-based recreation and encourage their development.	R 2.1	Paradise-Denio MFP	Two reservoirs have been pursued for acquisition at Clear Creek and Knot Creek.
Develop Recreation Area Management Plans.	R 2.2	Paradise-Denio MFP	Ongoing and expected to continue at current levels. RAMPs have been developed for Water Canyon and Pine Forest. RAMPs for the Winnemucca Sand Dunes and Porter Creek are in the conceptual phase.

Table 3-22
Current Management for Recreation *(continued)*

Current Management Decisions	Planning Decision Number	Decision Source	Status
Establish a wild horse viewing area on Winnemucca Mountain.	R 2.3	Paradise-Denio MFP	No action taken on the Winnemucca Mountain viewing site due to the removal of horses on the adjoining 'checkerboard' lands. A wild horse and viewing driving guide is being developed and is due out in 2005-06 for the Horse Management Areas in the Black Rock-High Rock NCA and adjoining WFO management area.
Part of the Pine Forest Recreation Area is closed to motorized vehicles. Close certain areas during bighorn sheep lambing season. Do WSA closures in compliance with the IMP.	R.2.4	Paradise-Denio MFP	1992 Plan Change to designate vehicle access in WSAs as limited to existing routes that were inventoried during WSA designation. Closed routes and WSA boundaries have not been signed.
Fight all fires in the Pine Forest Closure with hand tools until such time as the fire threatens to destroy the recreation resource. Use IMP guidance within the two WSAs.	R.2.8	Paradise-Denio MFP	Refer to WFO Fire Management Plan pending approval in Spring 2005.
Prevent BLM activities from degrading water quality beyond established standards.	R.2.10	Paradise-Denio MFP	Refer to Soils: Section 3.2.3. and Water Resources: Section 3.2.4 in this document.
Acquire or provide sufficient water on public lands for recreation, wild horses, wildlife, aquatic habitat, and livestock.	R.2.11	Paradise-Denio MFP	Addressed in Water Resources: Section 3.2.4 in this document.
Restrict livestock in high density recreation areas in the Pine Forest area.	R.2.12	Paradise-Denio MFP	Addressed in Livestock Grazing: Section 3.2.13 in this document.
Cooperate in the establishment of the National Desert Trail through the WFO.	R.2.13	Paradise-Denio MFP	A route has been proposed and promoted by the Desert Trail Association. No official action has been taken by the BLM.
Ensure legal access, when consistent with management plans, on all BLM roads to public lands.	R. 3.1	Paradise-Denio MFP	Refer to Transportation Access and Facilities: Section 3.2.17 of this document.
Prior to disposal of public lands, the recreational value of the proposed parcels should be analyzed. Parcels with high recreational value should not be disposed unless under the R&PP Act.	R.3.2	Paradise-Denio MFP	WFO lands have been categorized for disposal.
Identify land ownership for the Eugene Mountain Petroglyphs. Coordinate protection and interpretation with the land owner.	R.3.4	Paradise-Denio MFP	Refer to Lands and Reality: Section 3.2.18 in this document
Retain in public ownership those lands that provide access to the Humboldt and Little Humboldt Rivers and those lands that adjoin these rivers but have no vehicular access.	R.3.5	Paradise-Denio MFP	Refer to Lands and Realty: Section 3.2.18 in this document.
Manage the VRM classes that were	R.4.1	Paradise-	Ongoing – Addressed in Visual Resources:

Table 3-22
Current Management for Recreation *(continued)*

Current Management Decisions	Planning Decision Number	Decision Source	Status
identified on overlays established in 1981.		Denio MFP	Section 3.2.11 of this document.
Preserve significant Basque aspen carvings by fire protection, photo documentation, rubbing or other means. Donate some to the Nevada State Museum.	R.6.1	Paradise-Denio MFP	Recordings of aspen carvings have been conducted by the BLM and University of Nevada, Reno. This resource is constantly diminishing due to the natural life-cycle of aspen groves.
Isolated historical structures will be evaluated to determine which should be left intact and protected.	R.6.2	Paradise-Denio MFP	Ongoing - Refer to Cultural Resource: Section 3.2.10. Prehistorical and historical resources are evaluated as part of the normal regulatory procedure.
Establish easily accessible locations for the viewing and interpreting of wild horses.	R.1.2	Sonoma-Gerlach MFP	No action taken on the Winnemucca Mountain viewing site due to the removal of horses on the adjoining 'checkerboard' lands. A wild horse and viewing driving guide is being developed and is due out in 2005-06 for the Horse Management Areas in the Black Rock-High Rock NCA and adjoining WFO management area.
Acquire or provide sufficient water on public lands through permit, adjudication, or purchase processes as provided by federal and state water law and other appropriate direction to support the uses of the public lands for wild horse, wildlife, aquatic habitat, livestock, and recreation.	R.1.4	Sonoma-Gerlach MFP	Addressed in Water Resources: Section 3.2.4 in this document.
Use the suggested listing as a guide for future recreation management plan's writing and implementation. Recreation management plans would lead to the organized development of an area's recreational values. Priorities should be established for recreation management plan development.	R 1.6	Sonoma-Gerlach MFP	Ongoing
Line shacks, miners cabins, and other isolated historical structures will be evaluated to determine which should be left intact and which should be destroyed. This evaluation will consider the qualities that make the structures appeal to a visitor's sense of beauty or sense of curiosity.	R.1.7	Sonoma-Gerlach MFP	Ongoing - Refer to Cultural Resource: Section 3.2.10. Prehistorical and historical resources are evaluated as part of the normal regulatory procedure.
Establish an interpretive program concerning the sites (listed) if evaluation proves that interpretation is warranted; maintain fire protection for those areas that have significant values.	R.1.9	Sonoma-Gerlach MFP	Ongoing and expected to proceed at current rates. An interpretive trail was established at Lovelock Cave Byway, and an interpretive trail is in the design phase for Water Canyon and is expected to be implemented in 2005-06. An interpretive exhibit is in the development phase for the

Table 3-22
Current Management for Recreation *(continued)*

Current Management Decisions	Planning Decision Number	Decision Source	Status
			Winnemucca Visitor Center and is expected to be completed in 2005-06.
Retain those lands that provide access to the Humboldt River and those lands that adjoin the river but have no vehicular access.	R 2.2	Sonoma-Gerlach MFP	Refer to Lands and Realty: Section 3.2.18 in this document.
Cooperate in the establishment of the Natural Desert Trail through the WFO.	R.2.3	Sonoma-Gerlach MFP	A route has been proposed and promoted by the Desert Trail Association. No official action taken by the BLM.
Acquire or provide sufficient water on public lands for recreation, wild horses, wildlife, aquatic habitat, and livestock.	R.2.11	Sonoma-Gerlach MFP	Addressed in Water Resources: Section 3.2.4 in this document.
Restrict livestock in high density recreation areas in the Pine Forest area.	R.2.12	Sonoma-Gerlach MFP	Addressed in Livestock Grazing: Section 3.2.13 in this document.
Identify and manage areas according to designated VRM classes.	R.3.1	Sonoma-Gerlach MFP	Ongoing – Addressed in Visual Resources: Section 3.2.11 of this document.

OHV Management

BLM uses the land use planning process to make OHV designations, including road and trail designations and redesignations. All public lands within the planning area must be designated as "open," "limited," or "closed" to OHVs. Open designations are used only in limited areas that have been selected for intensive OHV use, where there are no compelling resource protection needs, user conflicts, or public safety issues that warrant limiting cross-country vehicle travel. The majority of the planning area would likely be designated as limited to existing or designated routes, which would include developing and publishing a map that depicts the transportation network of roads and trails available for use under the terms and conditions of the land use plan. Areas that would be designated as closed to OHV use include WSAs and designated wilderness, as well as some areas with significant resource needs. At a minimum, the OHV designations for WSAs must be limited to ways and trails that were in existence at the time of inventory.

Current management decisions relating to OHV use are identified in Table 3-23.

Table 3-23
Current Management for Off-Highway Vehicles

Current Management Actions	Planning Decision Number	Decision Source	Status
The Sonoma-Gerlach Resources area is open to OHV use, with the exception of George W. Lund Petrified Forest (located approximately 50 miles north of Gerlach, NV. (and the two WSAs. George W. Lund Memorial Petrified Forest some 50 miles north of Gerlach in northern Washoe County Designate the Playa of the Black Rock Desert as limited to ORV use Playa . Allow no organized or competitive OHV use that would permanently detract from its natural character, as determined by the authorized officer.	R 1.11	Sonoma-Gerlach MFP	1992 Plan Change: Restrict vehicle access in WSAs to existing routes inventoried during WSA designation.
Add to list of areas closed to OHV use as follows: All WSAs will be managed to limit OHV use to existing ways and trails.			
Part of the Pine Forest Recreation Area is closed to motorized vehicles. Close certain areas during bighorn sheep lambing season. Do WSA closures in compliance with the IMP.	R.2.4	Paradise-Denio MFP	4,544 acres in the Granite Range bighorn sheep lambing area and 105,820 acres on the playa of the Black Rock desert designated as limited for OHV travel. 17,838 acres in the Pine Forest Area closed to vehicle travel. 160 acres of the George W. Lund Petrified Forest is closed to OHV travel. 3,711,776 acres are designated as open to OHV travel in the Paradise-Denio management area. 4,313,872 acres are designated as open to OHV travel in the Sonoma-Gerlach management area.
OPEN Most of the planning area is designated as open to vehicle use.			
3,711,776 acres are designated as open to OHV travel.		Paradise-Denio MFP	
4,313,872 acres are designated as open to OHV travel.		Sonoma-Gerlach MFP	

3.2.17 Renewable Energy Resources

Geothermal resource exploration and development is managed under the minerals leasing portions of the current management framework plans, as identified in Table 3-24. Applications for exploration and development of wind and solar energy resources

Table 3-24
Current Management for Renewable Energy Resources

Current Management Objectives	Planning Decision Number	Decision Source	Status
Make energy resources available on all public lands on a managed and controlled basis, consistent with national energy policies and demands.	M-6	Paradise-Denio MFP	The Paradise-Denio Resource Area will be open to geothermal and oil and gas leasing with the following restrictions: **No Surface Occupancy** on: Sage grouse strutting grounds; Osgood Mountain milk vetch area; Raised Bog; and S-1 cultural and historical sites; **Special Stipulations** on: Critical wildlife habitat areas; and The woolly mammoth area of the east arm of the Black Rock Desert; **No Leasing Permitted** on: The Pine Forest Closure Area; Critical wildlife habitat areas.
Make energy resources available on all public lands and other lands containing federally owned minerals.	M-5	Sonoma- Gerlach MFP	The Sonoma-Gerlach Resource Area will be open to geothermal and oil and gas leasing with the following restrictions: **No Surface Occupancy** on: Visible remnants of the Applegate-Lassen Trail from Rye Patch Reservoir to the Western Pacific Railroad near Trego; Sage grouse strutting grounds; S-1 cultural and historical sites; George Lund Petrified Forest; Soldier Meadows desert dace ACEC; and Black Rock Desert non-competitive areas and KGRAs; **Special Stipulations** on: The west arm of the Black Rock Playa; and Critical wildlife habitat areas; **No Leasing Permitted** on: Community watersheds; and The Mahogany Creek Natural Area.

Table 3-24
Current Management for Renewable Energy Resources *(continued)*

Current Management Objectives	Planning Decision Number	Decision Source	Status
Provide rights-of-way on or across public lands.	L-4.1	Sonoma- Gerlach MFP	Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. Exceptions to this width requirement will be made on a case-by-case basis.
Allocate public lands for utility corridor purposes.	5.1	Paradise-Denio MFP	Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. See MFPIII for additional language. Future rights-of-way corridors will be evaluated on a case-by-case basis, but should be as consistent as possible with the Western States Corridor Study. No new facilities will be allowed to cross the playa of the Black Rock Desert.

are managed as right-of-way authorizations under Title V of FLPMA and CFR Title 43, Part 2802. Commercial CSP or PV electric-generating facilities must comply with current right-of-way application requirements, similar to other commercial uses. Wind and solar energy development are permitted by land use management plans, with restrictions in special management areas, such as wilderness, WSAs, ACECs, sensitive visual resource management areas, national scenic or historic trails, National Landscape Conservation System units, critical habitat areas, and other special management areas where land use restrictions apply to a variety of uses, including wind energy site testing and monitoring. Wind and solar energy development is guided by Instruction Memorandum No.2003-020, *Interim Wind Energy Development Policy* (BLM 2002b), and Instruction Memorandum No. 2005-006, *Solar Energy Development Policy* (BLM 2004e), in addition to the planning decisions in the current management framework plans.

Biomass energy development is guided by Instruction Memorandum No. 2004-227, *Bureau of Land Management's Biomass Utilization Strategy* (BLM 2004f), which directs the BLM to increase "utilization of biomass from BLM lands consistent with the National Fire Plan…and using the tools of the Healthy Forests Initiative, including the new authorities for stewardship contracting projects and the Healthy Forests Restoration Act…." It is not specifically discussed under the existing management framework plans.

3.2.18 Transportation Access and Facilities

Management of the transportation network within the WFO planning area boundary is shared primarily between the State of Nevada, Washoe, Humboldt, Churchill, Lander, and Pershing Counties, and the BLM. State and counties determine levels of

maintenance on their roads based on use; non-BLM roads will be recognized in transportation plans for the area. Other road jurisdictions include those of the US Forest Service, the Bureau of Indiana Affairs, state game preserves, and private land owners. BLM management direction for transportation is based on documents listed in Table 3-25.

Table 3-25
Relevant Plans and Amendments

Document Title	Year	Other Information	Administrative Record Document Number
Paradise-Denio RMP	1982		MFP III
Sonoma-Gerlach	1982		MFP III

The authority for the BLM to maintain and develop a highway system comes through the Federal Highways Administration, Department of Transportation authority for Federal Highways Lands Program, under 23 USC 214. The BLM administers approximately half of the maintained road mileage in the planning area, and local counties maintain the other half, primarily under 23 CFR. Public safety and resource use levels are dictated by functional classification/maintenance levels and are evaluated by the engineering staff, with input from resource specialists, to determine which roads will receive annual maintenance.

When the BLM maintains a road, whether it is designed and constructed by BLM- or an existing two track that has evolved into a road, the BLM road maintenance crews are required to bring the road up to the minimum standard set by the management team. This work may include in sloping, out sloping, or crowning (super elevation) to expedite water flow away from the road surface.

There are other BLM-designated routes in the area that do not receive maintenance, such as resource level roads, maintenance level 1, and unclassified OHV routes. Criteria for designating OHV routes can be found in 43 CFR 8340. The designated route system that may be developed during this planning effort will include all routes other than BLM System Roads and non-BLM roads. All construction of transportation routes, parking areas, and facilities within the planning area must be compliant with the Americans with Disabilities Act.

Table 3-26 displays current management actions relating to transportation and access in the WFO planning area and the current status of each action.

Table 3-26
Current Management for Transportation Access and Facilities

Current Management Decision	Planning Decision Number	Decision Source	Status
Reduce flood and sediment damage, which is sustained by roads and trails through an active maintenance program, employing redesign, blading, graveling, water barring, spur ditching, or installing of culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications. This will be included in the district standard operation procedures.	W 3.5	Paradise-Denio MFP	BLM has developed standard operating procedures for road maintenance on BLM System Roads as an amendment to Paradise-Denio/Sonoma Gerlach RMP
Ensure legal access, when consistent with management plans, on all BLM roads to public lands.	Objective	Paradise-Denio MFP	
Reduce flood and sediment damage, which is sustained by roads and trails through an active maintenance program employing redesign, blading, graveling, water barring, spur ditching, or installing of culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications.	W 3.6	Sonoma-Gerlach MFP ~64	BLM has developed standard operating procedures for road maintenance on BLM System Roads as an amendment to Paradise-Denio/Sonoma Gerlach RMP
	WL 1.19	Paradise-Denio MFP	Facilities
Roads on all resource area streams be waterbarred or relocated to prevent erosion, with priority given to roads on the following streams where specific problems were identified: Jackson Creek Kings River Granite Creek China Creek Horse Creek Craine Creek Alder Creek Battle Creek Pahute Creek Alta Creek Big Creek Quinn River Mary Sloan Creek	WLA 1.19	Paradise-Denio MFP ~216	

Table 3-26
Current Management for Transportation Access and Facilities *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Ensure legal access, where consistent with management plans, on all BLM roads to public lands in the Paradise-Denio Resource Area. The following roads require legal access: Bartlett Creek Headwaters of the Kings River Knott Creek Alder Creek Happy Creek Battle Creek Bottle Creek The Granites Black Rock Point Pinto Mountains Trident Peak Jackson Mountains-King Lear Peak North Fork of the Little Humboldt River Lower Martin Creek Cottonwood Creek Singus Creek Stonehouse Creek Crowley Creek Willow Creek Rebel Creek Wash O'Neal Owyhee Desert Adam Peak Paradise Valley Foothills of the Santa Rosa	R 3.1	Paradise-Denio MFP ~300	
Designate right-of-way corridors along existing transportation and utility facilities, with a specified width of 1.5 miles on each side of the existing transportation/utility facility, as shown on lands overlay MFP Overlay #2. Exceptions to this width requirement will be made on a case–by-case basis following a multiple use analysis of a specific proposal. In addition, allow no transportation or utility corridor to be approved on the Black Rock Playa north of the Western Pacific Railroad tracks, or in those areas identified in cultural resource recommendation 1.2 (page 248 of part II) and 1.6 (page 257 of part II). The separation of rights-of-way within the designated corridors will be limited to the minimum spacing required by such concepts as technology, topography, reliability, and visual impacts.	L 4.1	Sonoma-Gerlach MFP	

Table 3-26
Current Management for Transportation Access and Facilities *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Preserve the integrity of setting of the entire Buffalo Hills planning unit portion of the Applegate-Lassen Emigrant Trail. Avoid creating visual intrusions as seen from the trail at the Crest of the Black Rock Range.	C 1.2	Sonoma-Gerlach MFP	
Ensure legal access to all public lands.	Objective L-5	Sonoma-Gerlach MFP	
Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.	L 5.1	Sonoma-Gerlach MFP	
Provide legal access to the following areas: Stillwater firewood areas Granite Mountain Rodeo Creek Buffalo Hills Golconda Canyon Clear Creek Sonoma Creek Spaulding Canyon Negro Creek Mahogany Creek	L 5.2	Sonoma-Gerlach MFP	
Check all utility lines on public lands for authorized use.	L 6.2	Sonoma-Gerlach MFP	

3.2.19 Lands and Realty

Under existing management, activities would continue under existing law, regulations, and the guidelines set forth in the MFPs, as amended. Land tenure adjustments focus on lands identified for retention, acquisition, and disposal. The BLM may acquire private land either by donation, direct purchase, or by an exchange for federally owned land in the same state and of approximately equal value. All land disposal actions are discretionary. Public lands available for the expansion and growth of communities are defined in the 1999 MFP Lands Amendment by zones. Public land is identified for disposal in order to accommodate the expansion and growth of communities. Rights of way for access, utilities, and other long-term facilities are authorized on a case-by-case basis.

As opportunities arise, the BLM considers acquisition of private lands interspersed with public lands. The BLM continues to focus on acquiring lands that hold high cultural and historical value and on private inholdings that have high resource values, including, but not limited to, habitat for threatened and endangered species and inholdings within the WSAs. Land acquisitions are considered on a case-by-case basis through exchange, purchase, or donation.

Lands to be acquired must meet the following criteria:

- Facilitate access to public land and resources;
- Provide resource protection;
- Facilitate implementation of the MFPs;
- Provide for a more manageable land ownership pattern;
- Maintain or enhance public uses and values;
- Be reviewed for water rights and other encumbrances (easements, rights-of-way, and access); and
- Be inventoried for noxious weeds.

The following list is not considered all-inclusive but identifies some major criteria that are evaluated when considering acquisition actions:

- Land acquisition actions that may adjust county and local tax base and grazing preference will be coordinated with the appropriate government entity and/or permittee;
- All water rights appurtenant to the lands identified for acquisition will be verified prior to any acquisition action;
- Any agreements among the BLM, private landowners, and persons holding water rights will be presented to the State of Nevada Engineer's office for review;
- The State Engineer will be notified of any change in ownership; and
- Lands to be acquired are subject to a Phase I environmental site assessment to identify recognized environmental conditions and to ensure compliance with CERCLA Section 120 (h).

The Sonoma-Gerlach and Paradise-Denio MFPs were prepared in 1982 (Table 3-27).

Table 3-27
Current Management for Lands and Realty

Current Management Decision	Planning Decision Number	Decision Source	Status
Retain the public lands identified below in federal ownership and dispose of these lands under R&PP applications or other appropriate authorities to local government entities. Public land will be retained as the need for such lands are made apparent through community planning documents, unless it has been determined through this land use planning process that disposal is in the public's interest.	L 1.3	Sonoma-Gerlach MFP	
Lands will be retained in public ownership and managed as a dispersion exclusion zone for the liquefied natural gas plant near Lovelock, Nevada.	L 1.4	Sonoma-Gerlach MFP	
Retain lands in public ownership until local community R&PP or urban-suburban expansions specific requests have been made by affected communities. These requests must be identified through the local governmental planning groups/entities.	L 2.1	Sonoma-Gerlach MFP	
Dispose of these identified public lands only under R&PP applications or other appropriate authorities to local government entities as the specified lands are identified and the need for such lands is made apparent through community planning documents. Provide legal access to the areas specified in the plan (see legal descriptions).	L 2.2	Sonoma-Gerlach MFP	
Legalize or eliminate all unauthorized uses of the public lands and collect compensation for any loss or damage suffered by the United States as the result of such uses.	Objective L-6	Sonoma-Gerlach MFP	
Existing Unauthorized Use: Pursue the Porter Springs, Adobe Flat, and Lichfield occupancy unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials. Future Unauthorized Use: Utilize this land use plan to determine the disposition of each trespass as per the policy statement for unauthorized use approved by the Secretary of the Interior on December 24, 1980. Check boundaries of all expanding subdivisions and of isolated dwellings for encroachment and take action as necessary.	L 6.1	Sonoma-Gerlach MFP	

Table 3-27
Current Management for Lands and Realty *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
Pursue existing unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials.	L 6.1	Sonoma-Gerlach MFP	
Retain for recreational purposes the lands listed below and all public lands adjacent to reclamation withdrawn lands or to Rye Patch Reservoir on the west of the reservoir in public ownership (see legal descriptions).	L 2.3	Sonoma-Gerlach MFP	
As sites are identified or need or opportunity arises, acquire by exchange or other means those private lands intermingled with public lands that contain high resource values within the Lahontan Cutthroat Trout Natural area.	L 2.4	Sonoma-Gerlach MFP	
Retain in public ownership lands within the municipal hydrologic basins described as follows. Non-public lands in these municipal watersheds will be given priority for acquisition.	L 2.5	Sonoma-Gerlach MFP	
Make lands available for agricultural disposal provided that disposal is in the national interest, soils are determined suitable, water is available, and disposal is compatible with local government plans.	L 3.3	Sonoma-Gerlach MFP	
Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. Exceptions to this width requirement will be made on a case-by-case basis.	L 4.1	Sonoma-Gerlach MFP	
Provide for communication sites on public land by using existing sites when frequencies are compatible.	L 4.2	Sonoma-Gerlach MFP	
Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.	L 5.1	Sonoma-Gerlach MFP	
Pursue existing unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials.	L 6.1	Sonoma-Gerlach MFP	
Dispose of these public lands under R&PP applications or other appropriate authorities to local government entities as the need for such lands are made apparent through community planning documents (see legal descriptions).	1.0	Paradise-Denio MFP	
Make lands available for agricultural disposal provided that disposal is in the national interest, soils are determined	2.1	Paradise-Denio MFP	

Table 3-27
Current Management for Lands and Realty *(continued)*

Current Management Decision	Planning Decision Number	Decision Source	Status
suitable, water is available, and disposal is compatible with local government plans and is coordinated with local government entities to ensure that necessary services and appurtenances such as roads and schools are possible and practical.			
Transfer out of public ownership public lands identified in the MFP. (see MFP III for legal description).	2.3	Paradise-Denio MFP	
Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.	2.4	Paradise-Denio MFP	
Provide legal access to (see list in MFP III).	2.5	Paradise-Denio MFP	
Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. See MFPIII for additional language. Future rights-of-way corridors will be evaluated on a case-by-case basis but should be as consistent as possible with the Western States Corridor Study. No new facilities will be allowed to cross the playa of the Black Rock Desert.	5.1	Paradise-Denio MFP	
Provide for communication sites on public land by using existing sites when frequencies are compatible. Develop new communication sites only when environmental or technical problems or an existing site are incompatible with new applications.	6.1	Paradise-Denio MFP	
Pursue existing unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials.	7.0	Paradise-Denio MFP	

The Sonoma-Gerlach and Paradise-Denio MFPs were amended in January 1999 by the Paradise-Denio and Sonoma-Gerlach Management Framework Plan Approved Lands Amendment and Decision Record. This amendment centers on land tenure adjustments and identified lands in three land tenure zones. Based on the 1999 Lands Amendment, the following acquisition and disposal criteria have been established (Table 3-28):

Table 3-28
1991 Lands Amendment Land Acquisition and Disposal Criteria

Land Acquisition Criteria	Land Disposal Criteria
Land acquisition actions, that may adjust county and local tax base and grazing preference will be coordinated with the appropriate government entities and/or permittee.	Land disposal actions that adjust county and local tax base and grazing preference will be coordinated with the appropriate government entity and/or permittee.
All water rights appurtenant to the lands identified for acquisition will be verified prior to any acquisition actions. Any agreements among the BLM, private land owners, and persons holding water rights will be presented to the Nevada State Engineer's Office for review. The State Engineer will be notified of any change of ownership.	All water rights appurtenant to the lands identified for disposal will be verified prior to any disposal actions. Any agreements among the BLM, private land owners, and persons holding water rights will be presented to the Nevada State Engineer's Office for review. The State Engineer will be notified of any change of ownership.
Site specific decision regarding land ownership adjustments for the Winnemucca Field Office will be made based on the following criteria through the environmental process (criteria list is not considered all-inclusive but represents the major factors to be evaluated when considering acquisition actions): a. Public resource values or concerns, including but not limited to, threatened, endangered, or BLM and/or Nevada sensitive species habitat; riparian areas; flood plains and wetlands; fisheries; nesting/breeding habitat b. Accessibility of the land for public uses. c. Manageability (difficulty or cost of administration). d. Suitability and need for change in land ownership, for management and use by other state and federal agencies.	All lands considered for disposal must meet one or more of the criteria outlined in Section 203(a) of the Federal Land Policy and Management Act. These are lands that are difficult or uneconomical to manage, lands acquired for a specific purpose but no longer required for that or another federal purpose, or lands that will serve important public objectives, including, but not limited to, expansion of communities and economic development, and that outweigh other public objectives and values. Disposal lands may serve the purpose of community expansion and economic development, of local governmental needs, or to facilitate federal land management by blocking up land ownership patterns, thus reducing BLM administrative costs.
	Lands may be disposed of through the Desert land Act. In addition to criteria identified in the MFP, the soils identified in a proposed Desert Land Act entry must have a Land Capability Class of I, II, or III and must possess adequate water, as determined by the State of Nevada Water Engineer.
	The Winnemucca Field Office will not dispose of lands occupied by listed or proposed threatened or endangered species or identified as crucial wildlife habitat, unless other public uses outweigh the value of a parcel identified as federally owned threatened or endangered species habitat. Disposal will be considered on a case-by-case basis. When disposal of public land that serves a habitat for threatened or endangered species is proposed, consultation with USFWS under Section 7 of the Endangered Species Act is required. Exchange for other parcels of habitat will be encouraged. Other mitigation may also be required.
	Any impacts on cultural resources from proposed disposal actions will be mitigated by plans developed in consultation with the State Historic Preservation Officer, affected tribes, and interested public.

Table 3-28
1991 Lands Amendment Land Acquisition and Disposal Criteria *(continued)*

Land Acquisition Criteria	Land Disposal Criteria
	The following criteria list is not considered all-inclusive but represents the major factors to be evaluated when considering disposal actions: a. Public resource values or concerns, including but not limited to, threatened, endangered, or BLM and/or Nevada sensitive species habitat; riparian areas; flood plains, and wetlands; fisheries; and nesting/breeding habitat; b. Accessibility of the land for public uses; c. Amount of public investments in facilities or improvements (i.e., range improvements, wildlife projects) and the potential for recovering those investments; d. Manageability (difficulty or cost of administration); e. Significance of the decision in stabilizing business, social, and economic conditions and/or lifestyles; f. Encumbrances or conflicts of record; such as water rights, consistency of the decision with cooperative agreements and plans or policies of other agencies; and g. Suitability and need for change in land ownership for management and use by other state and federal agencies.

3.2.20 Public Safety

Abandoned Mines

Work with the Abandoned Mine Lands program should be continued.

Debris Flow

There are no land use plan decisions for managing solid waste sites. Broad scale regulations and policies are contained in BLM Manual 1703. There is a database in which the BLM can log known sites, especially sites that represent a government liability. Managing solid waste sites other than Class III landfills on public land is to make the responsible party clean it up or have the BLM clean it up.

Hazardous Materials

Hazardous materials have been managed through regulation and policy. There are no specific land use plan decisions for managing hazardous materials. Cleanup of hazardous material sites is prioritized by perceived degree of risk or difficulty in achieving results.

CHAPTER 4
MANAGEMENT OPPORTUNITIES

4.1 CURRENT MANAGEMENT DIRECTION

4.1.1 Air Quality

Current Management and Direction

All BLM and BLM-authorized activities are managed to maintain air quality within the thresholds established by the US EPA and the State of Nevada Ambient Air Quality Standards as required under the Clean Air Act. Commercial expansion and increased recreation should lead to localized degradation of air quality, but improvements in air quality control could mitigate some or all of any degradation.

Staff and Budget

The WFO does not have air quality specialists on staff with no annual budget for this resource.

Options For Changing Management

Few options are available for changing management as the State of Nevada has primacy for managing air quality. As a federal land manager, the BLM has the responsibility to monitor the activities of the Nevada Division of Environmental Protection. Although the most likely cause for any air quality degradation would be growth in the area, particular attention should be focused on new major sources of air pollution emissions that may locate within the planning area. The addition of new mining or electrical generation facilities, in particular, could cause significant degradation to the air quality. Because any such facilities would require one or more air quality permits and could be the subject of an EIS, the BLM, as the federal land manager, would have the opportunity to comment on and or participate in the decision making process for the air quality permit. The BLM can use this opportunity to participate in this permitting process as a means to ensure the resource is managed appropriately. In some cases air quality specialists can be hired or obtained on loan from the US EPA to assist the BLM in managing this resource.

4.1.2 Soils

Current Management and Direction

In addition to decisions established through the MFPs, BLM manages the soil resources for multiple uses within the framework of applicable laws, regulations, and agency policy.

Reclamation standards for mining operations are currently established independently for each project through the NEPA process. Among these are specifications for growth medium for revegetation. A standard that is applicable throughout the WFO needs to be developed to ensure that all projects are designed to meet a common set of post-closure objectives. Table 4-1 indicates current management direction and opportunities for change.

Table 4-1
Adequacy of Current Management Direction and Options for Change for Soils

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options for Change
W3.5 (P-D MFP)/ W3.6 (S-G MFP) Reduce flood and sediment damage sustained by roads and trails through an active maintenance program employing the use of redesign, blading, graveling, water barring, spur ditching, and/or installing culverts on Bureau roads and through proper stipulation requirements on non-Bureau road right-of-way applications. This will be included in the district standard operating procedures.	No	Addresses only water erosion, not wind erosion. Addresses only road building, not other commercial uses.	Develop management practices to meet both wind and water erosion objectives. Develop decision aimed at commercial uses and soil-disturbing activities in general.
W3.8 (P-D MFP)/ W3.4 (S-G MFP) Carefully consider land treatments, prohibit disturbance activities, and consider denying land disposals that would result in a significant reduction (50 percent or more) in the amount of vegetative cover in areas designated as having "high" erosion susceptibility or "high" vegetal soil factor, unless such treatments or disturbance and the potential accelerating soil loss can be adequately mitigated through proper management or application of Best Management Practices.	No	Inadequate identification of fragile soil areas needing higher level of management.	Identify and protect areas with highly erodible or fragile soils.

Staff and Budget

Based on trend information, more soil scientist staff and corresponding budget increases are needed to meet future soils management as applied to commercial operations and recreation.

Options for Changing Management

Management decisions need to be refined to address water and wind erosion and other resource degradation as they apply to soils.

4.1.3 Water Resources

Current Management and Direction

The authority to regulate water quality and quantity is delegated to the State of Nevada. It is BLM's role to analyze permitted activities to ensure that they are conducted in a manner that does not unduly affect water resources. BLM objectives, responsibilities and policy regarding the protection of water quality are presented in BLM Nevada State Office Manual Supplement 7240 (BLM 2003). Among other items, the Manual Supplement states that it is BLM policy to "establish measurable objectives for managing the quality of the water resources in resource management plans."

As lead agency under NEPA, BLM also guides projects through the environmental impact documentation process, which provides an opportunity for the BLM to help identify project alternatives and appropriate mitigation measures. Table 4-2 indicates current management direction and opportunities.

Table 4-2
Adequacy of Current Management Direction and Options for Change for Water Resources

Sonoma-Gerlach MFP Planning Decision	Paradise-Denio MFP Planning Decision	Is Decision Responsive to Current Issues?	Options For Change
W 1.1 Prevent BLM and BLM-authorized activities from degrading water quality beyond established standards specified in the Nevada Water Pollution Control Regulations of 1978 and the memorandum of understanding of December 1980 between the BLM and the State of Nevada, Division of Environmental Protection, concerning diffuse source water pollution and the Nevada State 208 Water Quality Plan.	**W 1.1** Same as Sonoma-Gerlach	Yes, in areas. Decision is inadequate when considering management of watersheds to protect ecosystems and to ensure public health and safety or facilitate other public uses.	Identify key watersheds for possible management protection. Management to improve water quality and quantity and comply with objectives of the Clean Water Act. Establish management practices to maintain or restore conditions in riparian and wetland habitats. Management of streams and riparian areas to maintain or enhance resource and habitat values.

Table 4-2
Adequacy of Current Management Direction and Options for Change for Water Resources *(continued)*

Sonoma-Gerlach MFP Planning Decision	Paradise-Denio MFP Planning Decision	Is Decision Responsive to Current Issues?	Options For Change
W 1.2 Retain in public ownership the following lands within the municipal hydrologic basins described as follows. Nonpublic lands in these municipal watersheds will be given priority for acquisition.	**W 2.1** Appropriate sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water law or other appropriate direction to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	Yes.	See above.
W 2.1 Acquire or provide sufficient water on public lands through permit, adjudication, or purchase processes as provided by federal and state water law.	**W 3.5** Reduce flood and sediment damage that is sustained by roads and trails through an active maintenance program, employing redesign, blading, graveling, water barring, spur ditching, and/or installing of culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications.	Yes, in areas. Recent court rulings have limited the BLM's ability to acquire water.	

Staffing and Budget

Based on future trends, staffing and budget would need to be increased in order to manage increasing commercial and recreational usage.

Options for Changing Management

Municipal/well head protection zones as identified by the public.

4.1.4 Vegetation Weeds and Invasive Species

Under existing management, the vegetation within the plan area could be damaged or destroyed by crushing, exposing roots, soil compaction, and introduction of toxic substances by continued recreational use on mounds/dunes, playa edge areas, uplands, springs, meadows, and streamside riparian areas. OHV use, camping, and use of warm springs for bathing would continue to contribute to loss of vegetation and introduction of undesirable nonnative vegetation.

Noxious weeds are expected to continue to spread. The degree to which noxious weeds spread is directly correlated to human activities and control efforts in the area. Although natural elements, such as wind and wildlife, would contribute to weed proliferation under all alternatives, range animals (livestock and horses) and activities involving OHVs would also increase the opportunities for weed populations to spread and become established.

All ecological sites would naturally progress toward Potential Natural Community (PNC) with the absence of disturbance.

However, between now and 2015, little change in ecological status would be evident if all human influences were removed from the rangelands. This lack of change is due primarily to the short time frame involved (12 years). Plant vigor and density may increase, but species composition would be slower to change. As well, wildlife grazing and naturally occurring disturbances (such as fire, flood, and drought) would inhibit the natural succession toward the potential natural community in some areas.

Table 4-3 indicates current management direction and opportunities.

Table 4-3
Adequacy of Current Management Direction and Options for Change for Vegetation Weeds and Invasive Species

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Management Opportunities
Paradise-Denio Management Decisions—Weeds and Invasive Species Where feasible and practical, use prescribed burning, fencing, clear cutting, or herbicides to enhance deteriorated stands of aspen and cottonwood.	Yes, to a limited degree. This decision was made before a significant infestation of tamarisk in the planning area, which has since become a major noxious weed.	This decision pertains only to aspen and cottonwood forest, which makes up only a very small portion of the planning area.	Expand the decision to include other types of wet and riparian forest.
Paradise-Denio Management Decisions—Weeds and Invasive Species Increase existing forage by artificial methods when ever appropriate. The potential for land treatment has been identified on approximately 269,000 acres. Land treatment is defined as vegetation manipulation (e.g., plowing, burning, and spraying).	Yes.	A variety of methods will be required to adequately control weeds in the planning area, including the methods described in this decision.	Survey for other possible treatment areas. Work with the University of Nevada Reno to develop protocol for experimental release of Chinese leaf beetle to control tamarisk in the planning area.
Sonoma-Gerlach Management Decisions, Weeds and Invasive Species Where feasible and practical, use prescribed burning, fencing, clear cutting, or herbicides to enhance deteriorated stands of aspen and cottonwood.	Yes, to a limited degree. This decision was made prior to significant infestation of tamarisk in the planning area, which has since become a major noxious weed in the planning area.	This decision pertains only to aspen and cottonwood forest, which makes up only a very small portion of the planning area.	Expand the decision to include other types of wet and riparian forest.

Staff and Budget

Anticipated commercial and recreational growth will increase need for additional staff and budget.

Options for Changing Management

Include management actions that continue incorporating Standards for Rangeland Health. Develop new management actions to restore sagebrush-scrub and native plant communities to compete with annual invader species. Integrate native species

management goals with wildfire management goals. Conduct surveys every 5 to 10 years to plot changes in extent of major habitat types. Prioritize areas for restoration with native grasses and shrubs.

Opportunities that have been suggested to enhance the weed management program in the WFO include the following:

- Continue to work with Pershing County Cooperative Weed Management Agency (CWMA) to encourage the county to work with the CWMA and the BLM to fund and initiate weed control on county roads.
- Continue to partner with and encourage the Gerlach CWMA and the Paradise Valley Water Conservation District (PVWCD) in their efforts to contain Russian knapweed, leafy spurge, hoary cress, tall whitetop, Scotch thistle, and other weed species by providing funds per existing assistance agreements.
- Continue to work with and encourage the Humboldt County Task Force to act as a steering committee for cooperative weed control projects.

If funding is available, pursue weed control projects in the following areas:

- Alta, Big, Granite, and Pass Creeks (Scotch thistle);
- Paradise Valley, with PVWCD (leafy spurge); and
- Silver State Valley (tamarisk).

The University of Nevada at Reno has partially controlled tamarisk in the Walker Lake area, southwest of the planning area, by controlled experimental releases of the Chinese leaf beetle *(Diorhaba elongata)*. Although this type of control is most effective in areas with dense growth of tamarisk, unlike the more dispersed growth pattern found in the WFO, such treatment may be effective when combined with use of chemicals, such as Garlon and Arsenal.

4.1.5 Wildlife

Effectiveness of Current Management on Wildlife

Fish and wildlife habitat are managed according to the existing MFPs, as well as HMPs. In addition, the BLM is mandated to manage for multiple use and protection of natural resources per the Federal Land Policy and Management Act of 1976. Implementation of effective grazing management is the primary tool for ensuring adequate rangeland habitat for wildlife. Grazing management is implemented within the WFO through issuance of a final multiple use decision, in accordance with the Grazing Administration Regulations (43 CFR §4100), including Standards and Guidelines for Grazing Administration at 43 CFR §4180.

Mineral extraction and recreation are two other land use options that have a large impact on habitat quality and suitability to native and naturalized species occurring within the planning area. MFP decisions have addressed past concerns and approaches to wildlife and habitat management, but modification and expansion of these decisions is necessary to address increased pressure and competing interests of these land use activities on wildlife and wildlife habitat.

Staff and Budget

Based on anticipated recreational and commercial growth, staffing and budget increases would be necessary to provide appropriate management of the public lands with respect to wildlife habitat.

Options for Changing Management

Continued loss of vegetation and habitat fragmentation could adversely affect food, water, cover, and breeding areas for species using these areas. Wildlife could also be adversely affected by disturbance from increasing numbers of people using the planning area. Unlimited OHV use could disturb wildlife during critical times of their life cycles and increase the vulnerability of game species during hunting seasons.

Construction of any facilities could disturb some wildlife species during critical times in their life cycle, including nesting, rearing, migration, and wintering. Construction, road building, and fencing of facilities could displace individual animals and interrupt daily movement and migration patterns of some species, such as mule deer and pronghorn sheep. Operation of sites could lead to a net loss in habitat due to the location of buildings, pits, leach pads, and waste dumps. Management actions identifying and protecting key wildlife habitat is key to reaching desired habitat conditions. Options for improving management of wildlife is summarized in Table 4-4.

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
Sonoma Gerlach MFP Decision			
WL 1.1—Manage range conditions to allow existing big game populations to reach reasonable numbers. Monitor condition and trend of key wildlife areas to ensure habitat is available.	Yes, in areas.	Would result in increased wildlife populations and potential harvest.	Identification and management of areas for introduction or reintroduction of species, such as LCT, bighorn sheep, elk, and sage grouse and expanding wildlife populations.
WL 1.4a-1.4b—The primary management objective for the following area is to provide crucial wildlife habitat for mule deer and bighorn sheep. Any domestic livestock use will be considered secondary and must be complimentary to this primary use.	Yes, in areas.		Determine possible risks to wildlife and their habitat and develop management actions to minimize risks or protect sensitive habitat. Expand to include other areas.

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
WL 1.7—In allotments designated for grazing system development, the forage needs of wildlife will be estimated within the pastures where the wildlife use occurs and will be taken into consideration in AMP development.	Yes, in some areas, no in others. Some allotments do not have wildlife forage allocated.	Stocking rates and forage use by grazing animals is limited by foraging production. Grazing management systems will use stocking rates derived from individual pastures.	Improve resource information so that can properly allocate forage for wildlife by allotment.
WL 1.9—In the design, implementation, or revision of grazing management systems, plans for horse management areas or horse use areas, consider aspen and mahogany as a critical management species. Specific management objectives will be designed for these critical species and these objectives will be used in the activity plans developed for an area.	Yes	Coordinate planning efforts to meet obtainable objectives for critical management species.	
WL 1.10—Management objectives of activity plans (such as AMPs, HMAs) will include specific objectives pertaining to improving and maintaining desired riparian areas and meadow habitat. In the development of activity plans, meadows and riparian areas will be considered as critical areas.	No	Meadow habitats are critical to most wildlife and must be better managed.	See Water Resources. Establish management actions to maintain or restore conditions in wetland and riparian habitats.
WL 1.11—Protect sage grouse strutting grounds and give proper consideration to other sage grouse habitat by accepting as guidance NDOW Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that they might inventory the area for sage grouse use, and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, grave pits, rock gathering, powerline rights-of-way, land exchanges, mining, mineral leasing).	Yes.	Will lessen the impact and decline of sage grouse.	Incorporate management actions utilizing the BLM Sage Grouse Strategy and Governor's Recovery Plan. Develop management actions to prevent or limit habitat fragmentation in key habitat areas. Identify and protect sensitive species habitat.
WL 1.12—Preserve broadleaf species by limiting firewood and post cutting to pinion and juniper and by responding quickly nonconiferous woodland fires. Exceptions are where harvesting or fire has been	Yes	The aesthetic and wildlife habitat value of broadleaf woodlands outweighs its value	

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
identified as a management tool.		as firewood.	
WL 1.13—Provide water for wildlife at existing water sources by adhering to multiple use principles in maintenance, use, and development of water sources on public land in the planning area (list).	Yes	Restate bureau policy.	
WL 1.14— Coordinate development of new HMPs and revise existing deficient ones, so that HMP completion coincides with completion of companion AMPs.	No	HMP revision or development is needed to improve habitat quality, quantity, and diversity in the planning area.	
WL 1.16—Retain in public ownership all public lands containing valuable wildlife habitat, as determined by BLM personnel at the time of disposal proposals, unless it is determined that such land, because of its location or other characteristics, is difficult and uneconomical to manage as part of the public lands or there is a higher and better use.	Yes	Maintain integrity and wildlife value of small and large tracts of land.	
WL 1.22—The applicable section of L 4.1 states, "All powerline rights-of-way well within raptor areas will contain stipulations requiring anti-bird electrocution structures, and wherever feasible and possible such rights-of-way will not be constructed within 400 yards of existing road to minimize shooting of raptors."			
WL 1.24—Limit off-road vehicle use during the lambing season (February 1 to May 31) in bighorn sheep use areas as reintroductions are made.	Yes		Expand to include all occupied areas
WL 1.25—Limit new trail or road construction on potential bighorn sheep range to minimize access. Potential bighorn sheep ranges include the following: Fox Range Buffalo Hills Granite Range Calico Range Black Rock Range Selenite Range Sonoma Range Tobin Range East Range Stillwater Range Humboldt Range	Yes		Expand to include all potential areas

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
West Humboldt Range Existing roads or trails may be closed or use may be limited if it is determined that they interfere with the normal life processes of the bighorn sheep.			
WL 1.26—Through a coordinated planning approach in the development of activity plans (AMPs, HMPs, HMAs, etc.), ensure that waterfowl habitats are adequately addressed and where appropriate provide for improved waterfowl habitat conditions.	No	Waterfowl habitat is rare and requires protection.	
WL-1.27—Maintain and improve habitat for sensitive, protected, and T and E species listed by the USFWS, BLM, and Nevada.			
WLA 1.3—Develop a HMP for each stream in the resource area, along with a prioritized list of streams	No	Improve fish habitat.	
WLA 1.4—Ensure that fish habitat factors are included in the objectives of AMPs that contain fish streams	No	Past AMPs did not adequately consider the impact of livestock grazing on fish and aquatic habitat.	
WLA 1.6—Whenever practicable, all reservoirs built on public land that support fisheries should be fenced and the water piped to a tank for livestock use. New irrigation reservoirs on public land should have a minimum pool requirement established.	Yes	To improve the potential fish habitat that reservoirs provide.	Add language to reflect current policy
WLA 1.8. —Encourage mining and other interests to coordinate with the BLM to reduce adverse environmental impacts.	Yes	Avoid and mitigate potential detrimental effects where possible.	
WLA 1.9—Acquire or provide sufficient water on public lands to support wild horses, livestock, recreation, wildlife, and aquatic habitat.	Yes	Make sure essential resource is provided to wildlife.	
WLA-1.11—Fire lines should not be constructed in riparian stream zones using heavy equipment. Fire retardant should not be applied to water.	Yes	These fire suppression measures can cause more harm than they do good.	In accordance with the FMP
WLA 1.12—BLM roads on resource area streams should be waterbarred to avoid erosion. Priority given to roads on Sonoma Canyon Creek, Thomas Canyon Creek, Rock Creek, Cottonwood Creek, and Red	Yes	Erosion decreases value of aquatic habitat to fish.	• Expand to include all stream crossings. • Avoidance of all stream crossings should be mitigated and

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
Mountain Creek.			corrected, depending on the species affected. • Roads that are located in the headwaters of seeps and springs should be eliminated or rerouted (similar to the road at the headwaters of Washburn Creek).
WLA 1.13—In BLM initiated areas, apply no pesticides or herbicides to Sonoma Gerlach Resource Area streams, lakes, or reservoirs, unless adverse impacts can be adequately mitigated.	Yes	Avoid and reduce fish and invertebrate die-offs and improve bank stability and water quality.	
Paradise-Denio MFP			
WL 1.2—Manage range conditions to allow existing big game populations to reach reasonable numbers.	Yes, in areas.		Identify and manage areas for introduction or reintroduction of species such as LCT, bighorn sheep, elk, sage grouse, and expanding wildlife populations.
WL 1.3—In the design, implementation, or revision of grazing management systems and plans for horse use areas, consider aspen and mahogany as "critical" management species.	Yes		
WL 1.4—In the design, implementation, or revision of grazing management systems and plans for horse use areas, consider mountain browse as critical management species. Specific management objectives will be designed for these critical species, and these objectives will be used in the activity plans developed for an area.	Yes		
WL 1.5—Management objectives of activity plans (such as AMP and HMA) will include specific objectives pertaining to improving and maintaining desired riparian and meadow habitat.	Yes		
WL 1.7—Improve ~500 acres of mule deer habitat along Rock Creek in the Santa Rosa Range by establishing shrubs.	Yes, in areas.	Will provide more food and suitable habitat for mule deer.	
WL 1.8—Limit off-road vehicle use during the lambing season in bighorn sheep use areas as reintroductions are made.	Yes		
WL 1.10—Preserve woodland habitat in the resource area by authorizing the harvesting	Yes		

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
of woodland products only in special situations on a case-by-case basis (no public cutting areas are identified), by responding quickly to fires in nonconiferous woodlands, and by harvesting woodland products as a management tool.			
WL 1.11—All activity plans will take measures to protect important wildlife areas and waters.	Yes, in some areas, no in others. Some allotments do not have wildlife forage allocated.	Will ensure a viable wildlife population.	
W.L. 1.12—Preserve the existing acres of mahogany, limber, and whitebark pine.	Yes	Prevent the loss of important wildlife habitat.	
WL 1.14—Establish and fence water catchment units for a variety of wildlife species.	Yes.	Available year-round water is essential for wildlife habitat.	See Water Resources
WL 1.15—Acquire by exchange or other means the Quinn River Lakes at the south end of Kings River Valley.	Yes.	Would increase waterfowl, migrational birds, and other wildlife populations in the planning area.	
WL 1.16.— Fence Button Lake to three-wire antelope fence standards to exclude wild horses and livestock.	No	The lake is crucial to antelope and fencing will reduce overgrazing and browsing.	
WL 1.17—Exclusive uses, involving crucial wildlife use areas, will not be authorized if conflicts cannot be mitigated.	Yes	These areas are critical to healthy and diverse wildlife population.	
WL 1.18—Restrict the use of poisons, with secondary killing effects, on public lands.	Yes	To avoid toxic bioaccumulation in wildlife, most notably raptors.	
WL 1.19—Modify existing fences, which restrict or alter wildlife movements, to allow passage.	Yes	To avoid interfering with migration and movement of big game wildlife.	
WL 1.20—Limit new trail or road construction on potential bighorn sheep range to minimize access.	Yes	To preserve the quality and value of bighorn sheep areas.	Include all bighorn sheep habitats
WL 1.21—Maintain and improve habitat for sensitive, protected, and T and E species listed by the USFWS, BLM, and NDOW and those protected by existing federal and state laws and regulations.	Yes.	Maintain and improve sensitive species habitats.	
WL 1.22—Provide alternative roosting poles	Yes.	To give golden	

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
for golden eagles and other raptors along 16 miles of SR 140 between the Bilk Creek Mountains and the northernmost portion of the Black Rock Desert by 1984.		eagles a alternate roosting location so that they are not electrocuted on power lines in these areas.	
WL 1.23—Provide water for wildlife at existing water sources by adhering to multiple use principles in the maintenance, use, and development of water sources on public land in the planning area.	Yes.	Needed to ensure that water will be available for wildlife and the continuation of suitable wildlife habitat.	
WL 1.24—Acquire or provide sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water law and other appropriate direction to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	Yes.	Make sure essential resources are provided to wildlife year round.	
WL 1.25—Through a coordinated planning approach in the development of activity plans (such as AMPs, HMPs, HMAs) ensure that waterfowl habitats are adequately addressed and, where appropriate, provide for improved waterfowl habitat conditions.	Yes	Waterfowl habitat is rare and requires protection.	
WL 1.27—Fence one unnamed spring in the Slumbering Hills from livestock use.	No	Important habitat for sage grouse, deer and antelope.	Needs to be expanded to include measures to protect/maintain all wildlife water sources/aquatic habitats
WL 1.28—Protect sage grouse strutting grounds and the area within two miles of each ground and give proper consideration to other sage grouse habitat by accepting as guidance Nevada Department of Wildlife's Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that it might inventory the area for sage grouse use and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, power line rights-of-	Yes		Incorporate S-G guidelines

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
way, and land exchanges).			
WLA 1.7—Develop HMPs for streams within each grazing allotment.	No	Improve aquatic habitat.	
WLA 1.4 1.5, 1.6—Through the coordinated planning process, ensure that fish habitat factors (bank stability, percent shading, siltation of pools, and spawning gravels) are included as objectives of AMPs that contain fishable streams.	Yes		
WLA 1.8 and 1.9—Planning on streams with multiple owners will be coordinated under cooperative planning agreements (CRMP process).	Yes	Cooperation is in the best interested of management and wildlife.	CRMP process replaced by 4C's
WLA 1.10.—As sites are identified or an opportunity arises, acquire or exchange those lands along the North Fork and Little Humboldt and resource areas that support or have the potential to support sportfishing.	Yes	To enhance aquatic wildlife resources.	Broaden to include all important aquatic resources including sport fisheries
WLA 1.11—Whenever practicable, all reservoirs constructed on public land that have fisheries potential will be fenced, with the water piped to a tank for livestock use. Any new irrigation reservoirs on public land will have a minimum pool requirement established. The same will apply on existing reservoirs when the opportunity arises. This will be coordinated with other affected individuals, permittees, or agencies in advance, such as Division of Wildlife Resources.	Yes		
WLA 1.12—Cooperate with NDOW and private owners to eliminate hazards to fish from existing and future diversions.	Yes	Unscreened diversions are hazardous to fish.	
WLA 1.13—Continue to monitor streams, lakes, and reservoirs. Use BLM BMPs and Nevada Water Pollution handbook.	Yes	In compliance with FLPMA.	
WLA 1.14—Encourage mining and other interests to work with the BLM to mitigate possible adverse environmental impacts.	Yes		
WLA 1.15—Recognize the need for water rights for fisheries. Work with NDOW and state water engineer to protect fisheries habitat.	Yes	To protect aquatic resources.	
WLA 1.18—Firelines will not be constructed by heavy equipment along riparian stream zones and flame retardant will not be applied to streams.	Yes	To avoid and minimize the impact of fire.	
WLA 1.19—The roads on all resource area streams be waterbarred or relocated to specific problems where identified	Yes	To protect fish habitat and species.	• Expand to include all stream crossings. • Avoidance of all stream

Table 4-4
Adequacy of Current Management Direction and Options for Change for Wildlife *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
(URA):Jackson Creek, Kings River, Granite Creek, China Creek, Horse Creek, Craine Creek, Alder Creek, Battle Creek, Pahute Creek, Alta Creek, Big Creek, Quinn River, and Mary Sloan Creek.			crossings should be mitigated and corrected, depending on the species affected. • Roads that are located in the headwaters of seeps and springs should be eliminated or rerouted (similar to the road at the headwaters of Washburn Creek).
WLA 1.22—In BLM-initiated areas apply no pesticides or herbicides to Paradise-Denio Resource Area streams, lakes, or reservoirs, unless adverse impacts can be adequately mitigated.	Yes	Avoid and reduce fish and invertebrate die-offs and improve bank stability and water quality.	To conform with pesticide and herbicide instructions and BMPs.

4.1.6 Special Status Species

Effectiveness of Current Management on Special Status Species

Staff and Budget

Based on anticipated recreational and commercial growth, staffing and budget increases would be necessary to appropriately manage the public lands with respect to monitoring and protecting special status species and their habitat.

The continued loss or conversion of native vegetation would adversely affect food, water, cover. and breeding areas for special status species using these areas.

Special status species are adversely affected by increasing numbers of people using the plan area and more intensive recreational activities. Unlimited or expanded OHV use disturbs special status species during critical times of their life cycle and increases vulnerability of sage grouse during hunting seasons. The current trend in the increase in recreation use, particularly OHV activities, is likely to degrade aquatic habitats by increasing siltation and water pollution, destabilizing stream banks, and decreasing stream bank vegetation.

Other acute effects include diminishing suitable spawning habitat, decreasing prey availability, and increasing water temperatures by removing shading and decreasing instream and bank cover. These changes adversely affect the sensitive species that utilize or depend on the affected aquatic habitats. An increase in human activity would also directly affect animal behavior.

Plant species could also be adversely affected by the increase in recreation use, including OHV activities. Special status plant populations could decrease due to soil compaction, introduction of toxic substances, such as motor oil, gasoline or detergents, and uprooting or pruning of individual plants. The increasing numbers of people expected to visit the plan area each year may disturb special status species during breeding, nesting, birthing, or rearing seasons, which are critical times for all wildlife species.

Other land use management concerns include livestock grazing, wild horses and burros, and mineral extraction. Livestock grazing management needs to be improved to minimize and prevent, where possible, detrimental affects of hot season grazing adjacent to streams and rivers. Burgeoning wild horse and burro populations tax vegetative habitats and can degrade aquatic habitats. Increased mining is expected and would also pose a threat to terrestrial and aquatic habitat quality, which would in turn affect sensitive species, such as special status bats and the Lahontan cutthroat trout. Improved management is needed for each of these resources to satisfy federal obligations to protect and recover listed species and Migratory Bird Treaty Act species and birds of conservation concern and to reduce the spread of invasive species.

Options for Changing Management

Management actions are needed that will address these increasing pressures and threats and that will identify and protect federally threatened and endangered species and critical habitat. Many general wildlife decisions also affect the future prospects of special status species. The effectiveness of specific management decisions for special status species are addressed in Table 4-5.

Table 4-5
Adequacy of Current Management Direction and Options for Change for Special Status Species

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
Sonoma- Gerlach MFP Decision			
WL 1.11—Protect sage grouse strutting grounds and give proper consideration to other sage grouse habitat by accepting as guidance NDOW Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that they might inventory the area for sage grouse use, and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, power line rights-of-way, land exchanges, mining, and mineral leasing).	Yes.	Approximately half of the remaining sage grouse habitat is under BLM jurisdiction and management, so BLM land plays a significant role in the conservation of sage grouse and other sagebrush-dependent wildlife species. The MFP needs to be updated to adequately address sage grouse and sagebrush conservation.	Align management actions with Governor's sage grouse plan and BLM Interim Sage Grouse Strategy. Implement strategy and actions outlined in the BLM National Sage Grouse Habitat Conservation Strategy (BLM 2004e), summarized as follows: • Provide needed coordinated policies and program direction at the national and the BLM state and field office levels;

Table 4-5
Adequacy of Current Management Direction and Options for Change for Special Status Species *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
			• Establish and maintain a data base to describe and track conservation efforts in sagebrush habitats; • Provide guidance to ensure integration of sage grouse habitat conservation measures for actions provided through management in land use planning process; • Issue mandatory guidance on management of sagebrush habitat for sage grouse conservation; • Complete and maintain eco-regional assessments of sagebrush and sage grouse habitats across the sagebrush biome; • Provide a consistent and scientifically based approach for collection and use of monitoring data for sagebrush habitats, sage grouse, and other components of the sagebrush community; • Identify, prioritize, and facilitate needed research to develop relevant information for sage grouse and sagebrush habitat conservation in coordination with WAFWA. • Maintain, develop, and expand partnerships to promote cooperation and support for all activities associated with sage grouse and sagebrush conservation;

Table 4-5
Adequacy of Current Management Direction and Options for Change for Special Status Species *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
			• Effectively communicate throughout the BLM and with current and prospective partners on steps the BLM will take to conserve sage grouse and sagebrush habitats; • Facilitate the collection, transfer, and sharing of information among all BLM partners and cooperators, as well as BLM program personnel; • Develop BLM state-level strategies and plans for sage grouse and sagebrush conservation on BLM-administered public lands; • Formulate budgets necessary to support continued implementation of the National Sage Grouse Strategy.
WL 1.22 (combined with Land 4.1)—Special rights permits in raptor areas would have stipulations requiring powerline support structures to be designed so that they greatly reduce the probability of bird electrocutions.	Yes.	To comply with MBTA and protect special status species.	
WL. 1.24—Limit OHV use during the lambing season (February 1 through May 31) in bighorn sheep use areas as reintroductions are made.	Yes.	Lambing period is critical to the success of bighorn sheep populations.	Prohibit OHVs in bighorn sheep use areas during this critical period.
WL. 1.25—Limit new trail or road construction in bighorn sheep ranges.	Yes.	Reduce adverse impacts on bighorn sheep.	Prohibit road and trail construction during lambing periods.
WL. 127—Maintain and improve habitat for sensitive and special status species (USFWS and BLM-NDOW sensitive species lists).	Undetermined, vague.	Enhancement of habitat will improve prospects for these species.	Identify specific areas and conservation measures.
Paradise-Denio) MFP Decision			
WL 1.11—All activity plans, permits, leases, reviews of mining notices, and plans of operations will take measures to protect wildlife concentration areas and raptor	Yes.		Same as 1.1 above.

Table 4-5
Adequacy of Current Management Direction and Options for Change for Special Status Species *(continued)*

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options for Change
nesting areas. 3. Sage grouse strutting, nesting, and brooding areas 4. Important wildlife waters			
WL 1.21—Maintain and improve habitat for sensitive, protected, and T and E species listed by USFWS, BLM, and NDOW and those protected by existing federal and state laws and regulations.			
WL 1.22—Provide alternative roosting poles for golden eagles and other raptors along 16 miles of SR 140, between the Bilk Creek Mountains and the northernmost portion of the Black Rock Desert by 1984.			
WL 1.28—Protect sage grouse strutting grounds and give proper consideration to other sage grouse habitat by accepting as guidance NDOW Guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada. NDOW must be given a minimum of two years notice of any proposed large-scale vegetal manipulations in order that they might inventory the area for sage grouse use and thus provide appropriate input. In addition, sage grouse strutting grounds and associated use areas must be given similar consideration and protection in the planning and permitting of other types of projects and uses (such as fences, pipelines, roads, gravel pits, rock gathering, power line rights-of-way, land exchanges, mining, and mineral leasing).		To protect and recover sage grouse.	

Increased mining and mineral extraction would also pose a threat to terrestrial and aquatic habitat quality, which would in turn affect sensitive species, such as special status bats and the Lahontan cutthroat trout.

Management actions are needed that will address these increasing pressures and threats that identify and protect T and E species critical habitat.

4.1.7 Wild Horse and Burros

Continued recreational use with no limitations and open access to all areas except wilderness areas could damage and degrade vegetation and water resources, reducing forage and available water for wild horses and burros.

Disturbance to wild horses and burros by OHVs could increase, particularly during the foaling period and the hot summer months, when animals are more closely associated with watering sites.

Present areas of recreational use are not adversely impacting any of the herd management areas in the plan area to any great degree. However, increasing numbers of people using the plan area could extend cross-country OHV activity beyond the current use areas and result in disturbance to sensitive wildlife and wild horse and burro habitat. Table 4-6 indicates current management direction and opportunities.

Current Management Direction Analysis

Table 4-6
Adequacy of Current Management Direction and Options for Change for Wild Horse and Burros

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options For Change
WH&B 1.1 (SG) – Establish wild horse and burro numbers by herd use area using the following criteria. Existing/current wild horse and burro numbers (as of July 1, 1982) will be used as a starting point for monitoring purposes except where one of the following conditions exists: 1. Numbers are established by adequate and supportable data; or 2. Numbers are established by court order.	**Yes**		Boundary adjustments/corrections to herd management areas and AMLs. Implementing management actions to determine appropriate management levels.
WH&B 1.1 (PD)-Establish wild horse and burro numbers by herd use area on non-checkerboard lands.	**Yes**		
WH&B 1.3 (SG)– Remove wild horses and burros from the checkerboard HUAs unless a cooperative agreement providing for the retention and protection of wild horses and burros is consummated with the affected private landowner(s).	**Yes**		Boundary adjustments/corrections to herd management areas. Implementation of management actions to determine appropriate management levels.
WH&B 1.3 (PD)–Manage and protect wild horses and burros where they occurred on 12/15/1971 on non-checkerboard lands.	**Yes**		Change in HMA boundaries
WH&B 1.4 (PD) – Remove wild horses and burros from checkerboard HUAs.	**Yes**		HA boundaries will be retained for possible future management actions, such as relocation of animals. Must monitor the areas and remove any animals that may be introduced or move back in.

Table 4-6
Adequacy of Current Management Direction and Options for Change for Wild Horse and Burros
(continued)

Planning Decision	Is Decision Responsive to Current Issue?	Remarks (rationale)	Options For Change
WH&B 1.5 (SG) – License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	**Yes**		Do not license domestic horses adjacent to HMA boundaries unless a minimum of two fences separate the domestic and wild horses.
WH&B 1.5 (PD) – Acquire sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water laws or other appropriate direction, to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	**Yes**		
WH&B 1.7 (SG) – Appropriate sufficient water on public lands through permit, adjudication, or purchase processes, as provided by federal and state water laws or other appropriate direction, to support the uses of the public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	**Yes**		
WH&B 2.1 (PD) – Attempt to establish a wild horse viewing area on Winnemucca Mountain. Work out details such as water needs, fencing, and cooperative agreements through CRMP.	**No**	Checkerboard land status prevented a horse viewing area on Winnemucca Mountain.	Consider having a horse viewing area in another location.
WH&B 2.2 (PD) – License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	**Yes**		

Notes: PD=Paradise-Denio MFP (BLM 1982a); SG=Sonoma-Gerlach MFP (BLM 1982b).

Staffing and Budget Needs – Continued expansion and growth of wild horse and burro herds necessitates the provision of stable staffing and budget for the wild horse and burro program, in order to establish and meet AMLs.

Options for Changing Management – In addition to those listed in the above table, management decisions need to be identified to address HMAs or HAs lacking viable populations and/or where animals are no longer living within existing HMA or HA boundaries.

4.1.8 Wildland Fire Ecology and Management

Table 4-7 identifies the current wildland fire management planning direction within the WFO that meets federal fire management direction (IM-WO-2004-007) on BLM-administered public lands in Nevada. Wildland fire management direction, established

within the WFO FMP, adequately addresses desired wildland fire conditions within the

Table 4-7
Adequacy of Current Management Direction and Options for Change for Wildland Fire Ecology and Management

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
WFM 1. Ensure that firefighter and public safety are the highest priority in every fire management activity. WFM 2. Assess risk to communities and rural developments in terms of direct wildland fire impact and economic values and implement effective programs to mitigate that risk through collaborative planning, projects, and education. WFM 3. Implement the full range of wildland fire and fuels management practices, including prescribed fire and mechanical, chemical, biological, and cultural treatments that will reflect land management decisions as identified in WFO Plans. WFM 4. Establish new and/or continue existing partnerships with all interagency cooperators to facilitate coordinated fire management activities. WFM 5. In those WFO areas that have fire protection provided by another agency, ensure that fire protection cooperators are informed and aware of all fire management decisions related to the suppression of wildland fires. WFM 6. Encourage close coordination and collaboration among stakeholders with federal, interested organization, private landowner, state, and local partners.	Yes	Wildland Fire Management Goals, Objectives, and Management considerations as described in the FMP have been developed to meet federal guidance and regional resource considerations.	Include management actions that continue incorporation of Standards for Rangeland Health. In association with wildlife and vegetation management strategies included in tiered direction from the BLM Great Basin Restoration Initiative, BLM Greater Sage Grouse Species National Policy and Guideline, Greater Sage Grouse Conservation Plan for Nevada and Eastern California, and North Central Nevada Sage Grouse Conservation Plan, continue to develop new management actions to restore sagebrush-scrub and native plant communities to compete with annual invader species. The WFO fire program should continue to develop future planning for community risk and assistance, in consideration with the Nevada Fire Safe Council Statewide Risk Assessment

planning area by developing multiple goals and objectives by FMU. Collectively, these goals and objectives, tiered to the general fire-planning considerations outlined, will address fire and hazardous fuels planning issues on public lands within the WFO.

Current direction establishes landscape-level, fire management goals and objectives and also describes desired wildland fire conditions by FRCC and the management strategies (considering firefighter and public safety) and actions (appropriate management

response and hazardous fuel treatments) to meet these conditions and land use allocations for each FMU within the FMP. The FMUs identify resource protection measures for fire management practices (e.g., wildland fire suppression, prescribed fire treatments, non-fire fuel treatments, emergency stabilization and rehabilitation actions) to protect natural or cultural resource values, and to identify criteria that would be used for establishing fire management priorities.

The general desired wildland fire condition is to have ecosystems that are at a low risk of losing ecosystem components following wildfire and that function within their historical range. In terms of FRCC, the desired wildland fire condition is to trend to a lower FRCC using the least intrusive method possible. In other words, the desired condition is to move lands in FRCC 3 to FRCC 2 and lands in FRCC 2 to FRCC 1 through fire and non-fire treatments, where wildland fire use is the preferred method of treatment, when feasible. Inside some FMUs (e.g., WUI), the general desired condition is to have limited potential for values to be threatened by wildland fire, usually through some modification of fuels.

Appropriate Management Response

A wildland fire that is not a prescribed fire requires an Appropriate Management Response (AMR). The AMR can range from full suppression to managing fire for resource benefit (fire use). It is guided by the strategies and objectives outlined in the development of the LUP, reflecting land and resource values and objectives. The FMP outlines fire management activities and procedures to accomplish those objectives.

In all fire management decisions, strategies, and actions, firefighter and public safety would be the first and highest priority. The full range of management strategies and actions would be used to protect firefighter and public safety. This priority overrides all other strategies and actions. Further, the full range of fire management actions, consistent and integrated with other resource considerations and planning decisions, would be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.

Fire Management Plan (FMP) features that support items listed in Table 4-7 are listed below.

Fire Suppression

- WFO will provide an appropriate management response to all wildland fires that occur within the fire management jurisdiction of the WFO. WFO will also identify appropriate management response goals, objectives, and constraints by specific FMUs within the North Central Nevada Planning Unit.
- Wildland fires may be managed for resource benefit only if an approved Wildland Fire Implementation Plan (WFIP) is in place. The WFIP identifies specific resource and fire management objectives, a pre-defined geographic area, and prescriptive criteria that must be met.

- Human caused fires will always be suppressed.
- Minimum impact suppression tactics will apply, whereby the environmental impacts of emergency fire management methods will be no greater than necessary to meet fire management objectives.
- In the case of a wildland fire that escapes initial attack, a Wildland Fire Situation Analysis (WFSA) must be completed to determine the complexity level and identify suppression alternatives. When analyzing alternatives, consideration should always be given to least-cost suppression tactics as long as other resource objectives can be met.
- Assignment of one or more resource advisors will be a standard practice for all intermediate and large wildfires in high value habitat and special management area FMUs.

Fuels Treatments

- Prescribed fire and non-fire fuels treatments (mechanical, chemical, and biological) will be developed and implemented in order to create fire safe communities, protect private property, achieve resource management objectives, and restore ecosystem health.
- Where practicable, projects will be developed in a collaborative manner consistent with the 10-Year Strategy Implementation Plan (2002).
- Prescribed burns and non-fire fuel treatments will be reseeded, using native species to the extent practicable, wherever residual vegetation is not adequately abundant to revegetate the sites naturally, prevent domination by invasive weed species, and meet ecosystem restoration objectives.
- WUI areas are of great concern to the BLM and will be considered for fuels treatment projects. These areas are identified in the Communities at Risk section of each FMU description. Additional collaborative project level planning will be completed prior to implementation of fuels management actions. Additional at risk areas and projects may be identified through a collaborative process on a case-by-case basis.

Community Education and Assistance

- An active community education and assistance program will be established where needed to create fire-safe communities and prevent catastrophic impacts on sensitive natural resources.
- Fire prevention strategies will be employed to reduce human ignition with special emphasis in the wildland-urban interface, campgrounds, and transportation corridors.

Emergency Stabilization and Rehabilitation (ESR)

- ESR efforts will be designed and implemented to achieve vegetation, habitat, soil stability, and watershed objectives.

- Aggressive actions will be taken in burned areas susceptible to conversion to cheatgrass or other invasive species.

Rx Fire and Fuel Treatment Monitoring

- Increased emphasis will be placed on natural resource objectives for each fire and fuels management treatment. A monitoring and evaluation program will be established to determine the effectiveness of the management implemented. This will include the purposeful collection and analysis of data to determine the results of implementing management actions. It will require monitoring for both pre- and post-fire environmental conditions. This information will be used to adjust management determinations. Adjustment in fire and fuels management practices based on sound scientific monitoring and analysis will be consistent with this plan amendment.

Staffing and Budget

Based on future trends, staffing and budget would need to be increased in order to manage and maintain the vegetation and fuels conditions within the WFO.

Options for Changing Management

Management actions should continue to incorporate Standards for Rangeland Health. In association with wildlife and vegetation management strategies included in tiered direction from the BLM Great Basin Restoration Initiative, BLM Greater Sage Grouse Species National Policy and Guideline, Greater Sage Grouse Conservation Plan for Nevada and Eastern California, and North Central Nevada Sage Grouse Conservation Plan, new management actions to restore sagebrush-scrub and native plant communities to compete with annual invader species should continue to be developed. The WFO fire program should continue to develop future planning for community risk and assistance, in consideration with the Nevada Fire Safe Council Statewide Risk Assessment.

4.1.9 Cultural Resources

Under present management practices, cultural resources would continue to be at risk of damage from illegal removal of artifacts, increasing recreational and commercial usage of public land, and intensive grazing practices.

While the present management approach has been effective in conserving and protecting cultural resource values in the context of specific actions, it is largely ineffective in protecting resources where permitting or other compliance measures are not required. In order to stem or reverse this trend, a shift in management focus from an exclusive reactionary compliance orientation to a more diverse approach incorporating proactive elements is necessary.

A series of generally proactive decisions designed to address these concerns were presented in the MFPs (Table 4-8). All of the decisions are consistent with or mandated by either Section 110 or Section 106 of the National Historic Preservation Act.

Table 4-8
Adequacy of Current Management Direction and Options for Change for Cultural Resources

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
CR1.1 (PD) Establish an interpretive program, where warranted, concerning specific sites listed in MFP. Maintain fire protection for those sites that have significant values.	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as evaluations indicate. Provide specific guidance for implementing an interpretive program.
CR1.1 (SG) Establish an interpretive program concerning the specific sites listed in MFP, if the evaluation proves that interpretation is warranted. Maintain fire protection for those sites that have significant values.	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as evaluations indicate. Provide specific guidance for implementing an interpretive program.
CR1.3 (PD) Whenever feasible and practical, preserve significant Basque aspen carvings by protecting trees from fire or cutting or mitigate damage through photo-documentation, rubbings, or other acceptable means. Donate some or all preserved carvings to the Humboldt County Museum or the Nevada State Museum.	No		A proactive survey and evaluation strategy is required to determine which are significant and therefore warrant protection and/or mitigation.
CR1.3 (SG) Whenever feasible and practical, preserve significant Basque aspen carvings by protecting trees from fire or cutting or mitigate damage.	No		A proactive survey and evaluation strategy is required to determine which are significant and therefore warrant protection and/or mitigation.
CR1.4 (PD) Consider the following historical sites in the development of the District Fire Management Plan and determine if they warrant protection from fire: Red Butte Laurel, Varyville, National, Dutch Flat, and Daveytown.	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as warranted. Some of the subject properties are on private land.
CR1.4 (SG) Consider specific historical sites listed in the MFP in the development of the District Fire Management Plan and determine if they warrant preservation	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as warranted. Some of the subject properties are on private land.
CR1.5 (PD) Line shacks, miner's cabins, and other isolated historical structures will be evaluated to determine which should be left intact. This evaluation will consider which sites have the historic, scenic, or other aesthetic qualities that make the structures appeal to a visitor's sense of beauty or sense of curiosity.	No		A proactive, comprehensive survey and the development of a historic context(s) are required to determine properties that warrant conservation**.**
CR1.5 (SG) Prior to destruction, line shacks, miner's cabins, and other isolated historical structures will be evaluated to determine which should be left intact.	No		A proactive, comprehensive survey and the development of a historic context(s) are required to determine properties that warrant conservation**.**

Table 4-8
Adequacy of Current Management Direction and Options for Change for Cultural Resources *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
CR1.6 (PD) Preserve the North Fork of the Little Humboldt Lithic Scatter in its present condition, allowing periodic investigations for management use.	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as warranted.
CR1.6 (SG) Evaluate specific sites listed in MFP to determine which, if any, have historic or cultural values.	Somewhat		Implement the decision by evaluating the subject properties and adding or subtracting from the list as warranted.
CR1.8 (PD) Specific cultural sites listed in the MFP have been identified as having particular importance and will be given special protection.	Somewhat		The list of properties is based on personnel knowledge and interest and is not comprehensive. This decision has been implemented to only a limited degree.
CR1.8 (SG) Evaluate specific sites listed in MFP to determine which, if any, have historic or cultural values. Take measures to protect those that are shown to be significant.	Somewhat		The list of properties is based on personnel knowledge and interest and is not comprehensive. This decision has been implemented to only a limited degree.
CR1.9 (PD) Through fencing, protective overburden, riprap, and other appropriate measures, arrest physical destruction of Paiute Creek, CrNV-02-1677, and other important sites as they are identified.	Yes		Decision is adequate for the protection of these resources, but it has not been implemented.
CR1.9 (SG) Through fencing, protective overburden, riprap, and other appropriate measures, arrest physical destruction of Summit Twin Spring and other important sites as they are identified.	Yes		Decision is adequate for the protection of these resources, but it has not been implemented.
CR1.10 (PD) Post positive protection signs at Ezra's Retreat, Pole Canyon Petroglyphs, Pole Canyon Rockshelter, and other sites as they are identified.	No		As a protective strategy, posting positive protective signs is ineffective.
CR1.10 (SG) Post positive protective signs at specific sites listed in MFP.	No		As a protective strategy, posting positive protective signs is ineffective.
CR1.13 (PD) Develop and implement Cultural Resource Management Plans on a geographic area (allotment) basis as archeological or historical resources are discovered.	Yes		The decision would likely be adequate depending on the content of the plan. This decision has not been implemented.
CR1.15 (PD) Where required by regulation, insures that a cultural resources survey is completed prior to any activity that would result in new surface disturbance or transfer of land from public ownership. Exceptions are those not required by policy or regulations, e.g., 3809 mining notice.	Yes		These decisions have been successfully implemented and have resulted in the conservation and protection of resource values.
CR1.15 (SG) Ensure that a cultural resources survey is completed prior to any activity that will result in new surface disturbance or transfer of land from public ownership.	Yes		The decision is required by Section 106 of the NHPA.
CR1.16 (PD) Encourage mining and other interest to work with the BLM to mitigate possible adverse impacts to cultural resources	Yes		This decision has been widely implemented and has resulted in the prevention of resource damage.

Table 4-8
Adequacy of Current Management Direction and Options for Change for Cultural Resources *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
CR1.19 (SG) Encourage mining and other interests to work with BLM to mitigate possible adverse environmental impacts to cultural resources.	Yes		These decisions have been successfully implemented and have resulted in the conservation and protection of resource values.

Staffing & Budget

Based on assumptions of increasing recreation and commercial growth, staffing and budgets need to increase to meet agency obligations under Section 106 of the NHPA. Staffing and budget increases will also be necessary to implement most of the proactive management approaches presented, though the formation of partnerships will mitigate the anticipated increases to a substantial degree.

Options for Changing Management

Some of the most potentially effective options relate to adopting a more proactive approach to cultural resources management. The following options could be considered:

- Develop a probabilistic model based on the known density and distribution of cultural resources in relation to observable environmental variables. The model would form the basis for defining areas of high, moderate, and low cultural resource sensitivity.
- Based on this model, establish survey strategies designed to identify sensitive areas or individual properties for protection. It may be beneficial to manage such areas as archaeological districts or areas of critical environmental concern that would be excluded from recreational activities, such as OHV use, and intensive livestock grazing.
- Facilitate protection of sensitive areas and individual properties through increased activity by law enforcement personnel.
- Form partnerships with volunteer groups to assist in the implementation of inventory and protection efforts.
- With the assistance of various partners, increase the presently limited interpretive and public education programs.
- Engage in proactively oriented Native American consultation to ensure that tribal concerns are identified in the planning process.

4.1.10 Paleontological Resources

While generally stable, paleontological resources are at risk from illegal collection and ground-disturbing activities associated with recreational activities. Under present management practices, these risks will persist. Although objectives were defined in the

MFPs for these resources, these recommendations were rejected since they were already included in the District's standard operating procedures.

Staffing & Budget

Based on assumptions of increasing recreation and commercial growth, staffing and budgets will need to increase. This is particularly the case for protecting known resources, identifying previously unknown resources, and regularly monitoring the condition of paleontological resources in general.

Options for Changing Management

In order to better manage these risks, the following changes could be considered:

- Inventory the WFO to identify and map additional areas and geological units (i.e., formations, members, etc.) likely to contain significant or scientifically important paleontological resources.
- Classify these areas based on their potential to contain vertebrate fossils or significant occurrences of invertebrate or plant fossils in accordance with the condition criteria outlined in BLM Manual H-8270-1.
- Develop management recommendations (including mitigation measures in specific localities) to promote scientific, educational, and recreation uses of paleontological resources.
- Develop and implement strategies to regularly monitor areas where important paleontological materials have been identified.

4.1.11 Visual Resources

Some areas may have incorrect or inconsistent visual resource management classifications, due mainly to the earlier management plan focusing on proximity to the main traveled routes and using those routes as one of the main criterion for establishing the VRM management classes. It was thought that the remote areas from the main routes were less visible and, therefore, required less protection of visual resources. As it turns out, those more remote areas are actually the more pristine areas of the district and probably should be Class II or III management areas, instead of Class IV.

The criteria for drawing VRM class boundaries are also inconsistent. For example, it would be better to draw the boundaries of the management classes to the ridgelines of major mountain ranges and scenic vistas, rather than use arbitrary criteria, such as predetermined distances from the main traveled routes, for drawing VRM class boundaries. This would protect the scenery all the way up to the ridgetops instead of just the foreground and middleground, as seen from the traveled routes.

Existing management decisions are somewhat inadequate. Opportunities to improve the quality of the information that decisions are based on and to modify existing decisions include the following:

- Update inventory information on scenic quality. Current manual guidance on scenic quality ratings differs somewhat from the guidance that existed at the time of the previous inventory.
- 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 within the planning area visual sensitivity has increased.
- Display more comprehensively inventory information in GIS layers.
- Reevaluate designated management classes. Many of the Class IV areas are in very pristine settings and should be reevaluated.
- During the inventory process, flag areas in need of rehabilitation. The level of rehabilitation will be determined through the RMP process by assigning the VRM class approved for that particular area.
- Develop management actions that would protect pristine or high quality scenic areas.

Options for improving management of visual resources are summarized in Table 4-9.

Table 4-9
Adequacy of Current Management Direction and Options for Change for Visual Resources

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (Rationale)	Options for Change
Sonoma-Gerlach MFP: R3.1—areas in the VRM classes listed. Manage these areas according to the visual guidelines for each class.	Yes, for most areas.		Review existing VRM classes to determine if VRM class changes are necessary.
Paradise-Denio MFP: R4.1—Manage areas in the VRM classes listed. Manage these areas according to the visual guidelines for each class.	Yes, for most areas.		Review existing VRM classes to determine if VRM class changes are necessary.

4.1.12 Wilderness Values

Although past planning efforts have identified management objectives and actions for WSAs, actions specifically addressing wilderness values have not been established. The increasing recreational use of the entire plan area, particularly in view of the recent trends in dispersed use, special permit events, and OHV use, increase encroachment and trespass into the Wilderness and Wilderness Study Areas. Other areas having wilderness characteristics may also be affected by increased visitor usage, leading to a loss of primitive recreational values and naturalness.

Current Management

The WSAs are managed in accordance with the Interim Management Policy (IMP) and are monitored by ground and air patrols. Boundaries are occasionally signed and patrolled.

Staff & Budget

Anticipated increase in recreation use would increase the need for additional staff and funding to manage wilderness values.

Options for Changing Management

A number of management actions could be implemented through the Winnemucca RMP that would further protect the wilderness values of the WSAs.

These actions include the following:

- Designating the WSAs as closed or limited to designated routes;
- Signing all the routes and boundaries;
- Increasing the frequency of patrols;
- Reclaiming affected areas;
- Restricting recreational activities, for example, group size limits and designated campsites; and
- Increasing visitor education programs.

Management actions need to be identified to protect areas that potentially have wilderness character outside of the WSAs. The BLM can make a variety of land use plan decisions to protect wilderness characteristics, such as establishing visual resource management (VRM) class objectives to guide the placement of roads, trails, and other facilities, establishing conditions of use to be attached to permits, leases, and other authorizations to achieve the desired level of resource protection, and designating lands as open, closed, or limited to OHVs to achieve a desired visitor experience.

The BLM can designate ACECs for areas that meet the relevance and importance criteria in 43 CFR 1610.7-2 (b) and meet special management (43 CFR 1601.0-5[a]) to protect the area and prevent irreparable damage to resources or natural systems and to protect life and promote safety in areas where natural hazards exist. The ACECs may be Research Natural Areas or Outstanding Natural Areas. Examples of other designations to evaluate for appropriateness include Back Country Byways, National Recreation Trails, and Watchable Wildlife Viewing Sites. Management actions would include prescriptions to allowable uses and necessary constraints within each special area designation.

Options for improving management of Wilderness Study Areas are summarized in Table 4-10.

Table 4-10
Adequacy of Current Management and Options for Change for Wilderness Study Areas

Planning Decision	Is Decision Responsive to Current Issues	Remarks (Rationale)	Options for Change
WILDERNESS STUDY AREAS			
All actions on lands under wilderness review will be processed in accordance with the BLM Manual H-8550-1, entitled Interim Management Policy for Lands under Wilderness Review.	Yes.		
BLM must manage all WSAs so as not to impair their suitability for preservation as wilderness.	No.	Proliferation of OHV routes may impair suitability.	OHV route designation; increase signage and patrolling; reclaim affected areas; restrict recreational activities.
Manage East Fork High Rock Canyon, High Rock Lake, Little High Rock Canyon, North Black Rock Range, Pahute (aka: Paiute) Peak, Calico Mountains, and Selenite Mountains according to VRM Class I management objectives.			
WILDERNESS CHARACTER			
No identified actions.		Review public proposals.	Evaluate areas possessing wilderness characteristics.
		Limit activities in areas demonstrating wilderness character.	Establish VRM Class objectives. Designate OHV route.
		Concentrate on high potential sites.	Identify allowable uses and surface restrictions to avoid potential adverse effects.
			Identify lands for exchange (retention, acquisition, withdrawals).
			Identify avoidance or exclusion areas.
AREAS OF CRITICAL ENVIRONMENTAL CONCERN			
Osgood Mountain Milkvetch ACEC		Designated for state listed critically endangered species.	Evaluate current management actions and address need for change. Evaluate OHV designation/VRM objectives.

Table 4-10
Adequacy of Current Management and Options for Change for Wilderness Study Areas *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (Rationale)	Options for Change
PRELIMINARY ISSUES			
(PI) Identify and evaluate potential areas and resources for additional ACECs (RNAs and/or ONAs) designations.		Consult with Ely office on ACEC.	Proposed actions should ensure protection of the area's resources and values to not disqualify it from designation.
			(PI)Approach Nevada Department of Wildlife and SHPO about designations.
			(PI)Outline ACEC management.
			(PI)Include ACEC nomination as *Federal Register* notice.
			Evaluate potential areas for Back Country Byways, National Recreation Trails, Watchable Wildlife Viewing Sites, and Wild Horse and Burro Ranges.

Wild and Scenic Rivers

The WFO has not conducted an eligibility inventory nor made tentative classification or suitability recommendations for any stream or river segments in the planning area. The NRI includes one segment of the North Fork Little Humboldt River and recognizes the potential for outstanding remarkable values associated with the river.

Current Management

Because no outstanding remarkable values have been identified, no special management actions have been implemented to protect them.

Options for Changing Management

The WFO will conduct an eligibility inventory as part of the RMP process. If eligible stream or river segments are identified and recommended as suitable, management actions will need to be identified that would protect the outstanding remarkable values associated with the suitability segments. Options for improving management of Wild and Scenic Rivers are summarized in Table 4-11.

Table 4-11
Adequacy of Current Management and Options for Change for Wild and Scenic Rivers

Planning Decision	Is Decision Responsive to Current Issues	Remarks (Rationale)	Options for Change
WILD AND SCENIC RIVERS			
No current actions.	No.	North Fork Little Humboldt River may possess outstanding remarkable values.	Assess all eligible river segments and make suitability determination according to Section 5 (d) (i) of the Wild and Scenic Rivers Act.
			Once eligibility inventory is complete, implement appropriate management actions to protect outstanding remarkable values
			Establish VRM Class objectives.
			Examples include restricting activities and designating OHV routes.

4.1.13 Livestock Grazing

Under present management, OHV use and recreational activities would continue to adversely impact springs, meadows and riparian areas by reducing vegetation and introducing undesirable non-native vegetation. Unlimited access to all areas in the plan area, excluding Wilderness Areas, could degrade water sources and forage for livestock.

In addition, some kinds of OHV use in areas being grazed could adversely affect livestock production. The OHV traffic could also displace livestock from critical water sources, especially during the hot summer months. Due to the limited interpretation provided with this alternative, public education would depend on casual contact, which is a limited and unorganized means of providing information to the public on rangeland management.

Staffing and Budget—The BLM anticipates that livestock grazing will remain at current levels. Current staffing and budget need to be increased due to additional workload from grazing appeals.

Options for Changing Management—In addition to those listed above other management options include managing livestock to maintain or restore upland habitats, riparian areas, and wetlands and consideration for managing new grazing allotments.

Current Management Direction Analysis

Options for improving management of Livestock Grazing are summarized in Table 4-12.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
RM 1.1 (PD) – Grazing Decision for Livestock Wild Horses and Burros and Wildlife Grazing will be managed in the Paradise-Denio Resource Area with multiple uses fully considered. Emphasis will be placed on implementation of the Rangeland Management Policy through the CRMP process. This decision established the base herbivore grazing levels by grazing allotment. They are as follows: Livestock- Active preference or negotiated adjustments. Wildlife- Reasonable numbers as established by BLM and the Nevada Department of Wildlife. Wild Horses and Burros- Existing/current WH&B numbers (of July 1, 1982) will be used as a starting point for monitoring purposes except where one of the following conditions exist: a. Numbers are established by adequate and supportable resource data. b. Numbers are established through the CRMP process as documented in CRMP recommendations and agreed to by the District Manager. c. Numbers are established by formal signed agreement between affected interests. d. Numbers are established through previously developed interim capture/ management plans. Plans are still supportable by parties consulted in the original plan. EAs (EARs) were prepared and are still valid. e. Numbers are established by court order.	No		1. Selective management is not a useful tool over time. 2. The CRMP is no longer active in the Winnemucca Field Office. 3. Wild Horse and Burros, Part C.- Agreements are no longer applicable. 4. Consider revising the verbage for livestock (as identified in the Black Rock High Rock RMP-page 2-23). 5. Revisit MOUs with other field offices regarding management outside of the district boundary. 6. Remove number 5 and 6 from sequence for action decision.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
The sequence of action will be as follows: 1. Establish priorities for action (categorize each allotment into selective management categories). 2. Negotiate any changes in allotment base grazing levels through CRMP. If there is no agreement, use the base level above as a starting point for the monitoring process. 3. Issue a grazing decision; establish a monitoring plan and studies for grazing and other uses, preferably through coordinated Resource Management Planning (CRMP). Begin (or continue) monitoring. 4. Develop and implement (as time and funding permit) allotment management plans and activity plans for other uses. All activity plan and acceptable CRMP recommendations will be coordinated. Implementation will include base herbivore grazing level adjustments. 5. At the end of the third and fifth year of grazing following issuance of the grazing decision make necessary use adjustment base upon monitoring results, and other data then available. Adjustments other than numbers may be required separately or in combination with numbers. For example, changes of seasons-of-use, additional water development, seeding or other land treatments may be required. If monitoring reveals that a particular use or practice is causing resource damage, that particular use may be adjusted separately. 6. After the fifth year adjustments, continue monitoring and if adjustments in addition to the fifth year adjustments are required, adjust livestock, wild horses, and wildlife proportionately based on forage availability. (Providing the wildlife reasonable numbers have been obtained; if not,			

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
wildlife reasonable numbers will be renegotiated prior to making the adjustments.) A decision changing active preference will not be issued until monitoring, and/or CRMP group recommendations, and/or baseline inventory, or a combination of these has provided sufficient data to support a decision to that effect. This may occur at any time during this process.			
RM 1.1 (SG)-Grazing Decision for Livestock Wild Horses and Burros and Wildlife Grazing will be managed in the Sonoma-Gerlach Resource Area with multiple uses fully considered. Emphasis will be placed on implementation of the Rangeland Management Policy through the CRMP process. This decision established the base herbivore grazing levels by grazing allotment. They are as follows: Livestock- Active preference or negotiated adjustments. Wildlife- Reasonable numbers as established by BLM and the Nevada Department of Wildlife. Wild Horses and Burros- Existing/current WH&B numbers (s of July 1, 1982) will be used as a starting point for monitoring purposes except where one of the following conditions exist: a. Numbers are established by adequate and supportable resource data. b. Numbers are established through the CRMP process as documented in CRMP recommendations and agreed to by the District Manager. c. Numbers are established by formal signed agreement between affected interests. d. Numbers are established through previously developed interim capture/ management plans. Plans are still supportable by parties consulted in the original plan. EAs (EARs) were prepared and	No		1. Selective management is not a useful tool over time. 2. The CRMP is no longer active in the Winnemucca Field Office. 3. Wild Horse and Burros, Part C.- Agreements are no longer applicable. 4. Consider revising the verbage for livestock (as identified in the Black Rock High Rock RMP-page 2-23) 5. Revisit MOUs with other field offices regarding management outside of the district boundary. 6. Remove number 5 and 6 from sequence for action decision.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
are still valid. e. Numbers are established by court order. <u>The sequence of action will be as follows</u>: 1. Establish priorities for action (categorize each allotment into selective management categories). 2. Negotiate any changes in allotment base grazing levels through CRMP. If there is no agreement, use the base level above as a starting point for the monitoring process. 3. Issue a grazing decision; establish a monitoring plan and studies for grazing and other uses, preferably through coordinated Resource Management Planning (CRMP). Begin (or continue) monitoring. 4. Develop and implement (as time and funding permit) allotment management plans and activity plans for other uses. All activity plan and acceptable CRMP recommendations will be coordinated. Implementation will include base herbivore grazing level adjustments. 5. At the end of the third and fifth year of grazing following issuance of the grazing decision make necessary use adjustment base upon monitoring results, and other data then available. Adjustments other than numbers may be required separately or in combination with numbers. For example, changes of seasons-of-use, additional water development, seeding or other land treatments may be required. If monitoring reveals that a particular use or practice is causing resource damage, that particular use may be adjusted separately. 6. After the fifth year adjustments, continue monitoring and if adjustments in addition to the fifth year adjustments are required, adjust			

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
livestock, wild horses, and wildlife proportionately based on forage availability. (Providing the wildlife reasonable numbers have been obtained; if not, wildlife reasonable numbers will be renegotiated prior to making the adjustments.) 7. A decision changing active preference will not be issued until monitoring, and/or CRMP group recommendations, and/or baseline inventory, or a combination of these has provided sufficient data to support a decision to that effect. This may occur at any time during this process. The Sonoma-Gerlach Resource Area plan will also implement a selective management approach on all allotments.			
RM 1.2 (SG) - Review and update existing grazing management systems and include considerations and objectives for wild horses and burros, watershed, wildlife, and other resources in their development. This should be done through the CRMP process whenever possible.	No		Periodically review and update current management practices on all grazing allotments. The CRMP is no longer active in the Winnemucca Field Office. Incorporate Standards for Rangeland Health. Determination of areas that should not be available for livestock grazing. Management actions to accommodate livestock permit holders while allotments are closed. Establish forage banks in order to provide forage during drought, restoration, or rehabilitation. Management of allotments that cross administrative boundaries.
RM 1.3 (SG) - Make season-of-use data available to CRMP groups so that they can use this information in the development of plans using the CRMP process.	No		The CRMP is no longer active in the Winnemucca Field Office. Continue to consider season of use and other

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
			data.
RM 1.3 (PD) - License domestic horses and burros only in those areas where such domestic animals would not be expected to mix with populations of wild horses and/or burros.	Yes		
RM 1.4 (PD) - Review and update select grazing management systems and include considerations and objectives for wild horses and burros, watershed, wildlife, and other resources in their development. AMPs will be reviewed and revised through the CRMP process or reviewed by the CRMP group following revision.	No		Periodically review and update current management practices on all grazing allotments. The CRMP is no longer active in the Winnemucca Field Office. Incorporate Standards for Rangeland Health. Determination of areas that should not be available for livestock grazing. Management actions to accommodate livestock permit holders while allotments are closed. Establish forage banks in order to provide forage during drought, restoration, or rehabilitation. Management of allotments that cross administrative boundaries.
RM 1.5 (SG) – 1. Allow for conversion from cattle to sheep on all allotments within the resource areas except on those allotments or portions of allotments where conflicts with existing big horn sheep (or imminent reintroductions) cannot be mitigated. 2. Allow for conversion from sheep to cattle on a case-by-case basis. Conversion ratio and authorization will depend upon the suitability of the rangeland involved and will be made only where cattle can be adequately controlled and managed.	No		Consider a long term/short term reintroduction of big horn sheep. Consider standards for suitability for conversion from sheep to cattle on a case by case basis. Reasonable efforts must be made to minimize the risk of disease transmission, and to optimize preventive medical and management procedures, to ensure healthy populations of native wild sheep and domestic sheep and goats per IM No. 98-140.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
RM 1.5 (PD) – Consider season-of-use data when developing or revising AMPs. Make season-of-use data available to CRMP groups so that they can use this information in the development of plans in the CRMP process.	No		The CRMP is no longer active in the Winnemucca Field Office. The FMUD now supersedes the AMP. Continue to consider season of use and other data.
RM 1.6 (SG) - Control economic insect infestations on public lands when proper range management procedures are ineffective, impractical, or not feasible.	Yes		Reword decision to, "Control insect infestation that degrades rangeland health."
RM 1.6 (PD) - Consider combining select allotments. This should be fully coordinated with the permittees involved. Use the CRMP process whenever possible.	No		Reword decision to," Combine allotments to improve range administration and management." Modify allotment boundaries to improve range administration and management. The CRMP is no longer active in the Winnemucca Field Office.
RM 1.7 (PD) – **1.** Allow for conversion from cattle to sheep on all allotments within the resource areas except on those allotments or portions of allotments where conflicts with existing big horn sheep (or imminent reintroductions) cannot be mitigated. **2.** Allow for conversion from sheep to cattle on a case-by-case basis. Conversion ratio and authorization will depend upon the suitability of the rangeland involved and will be made only where cattle can be adequately controlled and managed.	No		Consider a long term/short term reintroduction of big horn sheep. Consider standards for suitability for conversion from sheep to cattle on a case by case basis. Reasonable efforts must be made to minimize the risk of disease transmission, and to optimize preventive medical and management procedures, to ensure healthy populations of native wild sheep and domestic sheep and goats per IM No. 98-140.
RM 1.7 (SG) - Acquire sufficient water on public lands through permit, adjudication, or purchase processes as provided by Federal and State Water Law or other appropriate direction to support the uses of public lands for wild horses, wildlife, aquatic habitat, livestock, and	No		Acquire in accordance with state law. In 2005, NRS as amended, BLM can not acquire water rights for livestock.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
recreation.			
RM 1.9 (PD) - Control economic insect infestations on public lands when proper range management procedures are ineffective, impractical, or not feasible.	Yes		Reword decision to, "Control insect infestation that degrades rangeland health."
RM 1.10 (PD)- Acquire sufficient water on public lands through permit, adjudication, or purchase processes as provided by Federal and State Water Law or other appropriate direction to support the uses of public lands for wild horses, wildlife, aquatic habitat, livestock, and recreation.	No		Acquire in accordance with state law. In 2005, NRS as amended, BLM can not acquire water rights for livestock.
RM 1.11 (PD) - Implement a selective management approach on all allotments.	No		Selective management is not a useful tool over time.
RM 1.12 (PD)-Divide the Alder Creek Allotment into two allotments: Alder Creek and Knott Creek Allotments.	No		The CRMP is no longer active in the Winnemucca Field Office. The decision has been implemented and is no longer needed.
RM 1.13 (PD) - Accept and implement as funding becomes available the coordinated management plans developed by the Winnemucca CRMP committee for the UC, Little Owyhee, and Bullhead Allotments.	No		FMUDs which supersede CRMP have been implemented for all three allotments. Decision is no longer needed.
RM 2.1 (PD)- Increase existing forage by artificial methods wherever appropriate: 1. The potential for land treatment have been identified on approximately 269,000 acres. Land treatment is defined as vegetation manipulation (i.e., plowing, burning, spraying, etc., and/or seeding). 2. Developing water sources. Consider selected areas. The exact areas to be treated will be determined in activity plans preferably coordinated through the CRMP process.	No		1. Consider revegetation of degraded areas. 2. Maintain existing seedings by controlling sagebrush. 3. Allow existing seedings to move toward potential natural communities. 4. Reintroduce age class diversities into decadent stands of sagebrush. 5. Take out the following sentence in decision "The potential for land treatment have been identified on approximately 269,000 acres." 6. Recommend not including the specific

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
The treated areas will be rested for two full calendar years after treatment, or until seedlings are firmly established. Seeding application will be done in the fall, late September, or early October. All vegetation manipulations in sage grouse habitat will be done in accordance with the guidance supplied by the Nevada Department of Wildlife. An evaluation of the suitability of the soils for vegetation manipulation will be made prior to the project being approved.			time of seeding applications in the decision. 7. New seedings to mitigate livestock removal from sensitive areas. 8. Provide for non-fire emergency rangeland restoration (i.e. seeding, straw bale waddles, and seedlings)that have been impacted by other natural events (i.e. insect, disease or floods).
RM 2.1 (SG)- Increase existing forage by artificial methods wherever appropriate: 1. The potential for land treatment has been identified on approximately 245,000 acres. Land treatment is defined as vegetation manipulation (i.e., plowing, burning, spraying, etc., and/or seeding). 2. Developing water sources. All vegetation manipulations in sage grouse habitat will be done in accordance with the guidance supplied by the Nevada Department of Wildlife. Treated areas will be rested for two full calendar years after treatment, or until seedlings are firmly established. After substantiated by studies, allocate increases in forage among wildlife and livestock. Vegetation manipulations will be approved in accordance with the rangeland management policy and only on those areas where management objectives cannot be met through proper grazing management practices.	No		1. Consider revegetation of degraded areas. 2. Maintain existing seedings by controlling sagebrush. 3. Allow existing seedings to move toward potential natural communities. 4. Reintroduce age class diversities into decadent stands of sagebrush. 5. Take out the following sentence in decision "The potential for land treatment have been identified on approximately 269,000 acres." 6. Recommend not including the specific time of seeding applications in the decision. 7. New seedings to mitigate livestock removal from sensitive areas. 8. Provide for non-fire emergency rangeland restoration (i.e. seeding, straw bale waddles, and seedlings)that have been impacted by other natural events (i.e. insect, disease or floods).
RM 3.1 (PD)-Implement and ear-tagging program on select allotments.	Yes		Is not limited to selective allotments.
RM 3.1 (SG)- Through land disposal or exchange transfer the title of select public lands to private individuals. However, until such time as transfers are made, do not	No		1. Future land disposals or exchanges would be appropriately handled by the

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
authorize livestock grazing adjacent to residential areas in the Thomas Canyon Allotment. Until disposal, do not manage the remaining lands in an intensive manner. Prior to implementation, this decision will be coordinated with local government. Do not accept exchange of use agreements on the private lands surrounding the public paces in the Thomas Canyon Allotment west of the Thomas Canyon Fence.			lands and realty administration 2. No non-permittee exchange of use. 3. Exchange-of-use authorized only to the permittees that hold the current permit within the allotment. 4. Consider closing portions of allotments near residential areas.
SG Plan Change- Combine the Calico and Buffalo Hills Allotments into the Buffalo Hills Allotment with a Calico Pasture within this allotment.	No		The decision has been implemented and is no longer needed.
Abel Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Alder Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Antelope Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Asa Moore Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Bottle Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Buffalo Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Buffalo Hills Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
Bullhead Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Buttermilk Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Clear Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Coyote Hills Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Crowley Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Deer Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Dolly Hayden Allotment FMUD.	Yes		1. Portions of the allotment may be considered as part of a land exchange. 2. Redefine the boundary of the Dolly Hayden Allotment and consider closure to livestock grazing.
Double H Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Dyke Hot Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Flat Creek, Willow Creek, and Upper Quinn River Allotment FMUDs.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Fort Scott Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
Goldbanks Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Granite Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Hanson Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Happy Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Hole in the Wall, Jersey Valley, and Home Station Gap Allotment FMUDs.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Horse Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Hot Springs Peak Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Indian Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Jackson Mountain Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Jordan Meadows Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Klondike Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Leadville Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
			management.
Little Horse Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Little Owyhee Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Long Canyon Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Martin Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Mullinix Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Paiute Meadows Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Paradise Hill Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Pole Canyon Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Provo Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Pueblo Mountain Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Pumpernickel Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
Rebel Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Rock Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Rodeo Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Singus Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Soldier Meadows Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Solid Silver Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
South Rochester Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Spring Creek Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
UC Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Washburn Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
Wilder-Quinn Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment management.
William Stock Allotment FMUD.	Yes		Results from future Standards for Rangeland Health Assessments may change allotment

Table 4-12
Adequacy of Current Management Direction and Options for Change for Livestock Grazing *(continued)*

Planning Decision	Is Decision Responsive to Current Issues?	Remarks (rationale)	Options For Change
			management.

Notes: PD=Paradise-Denio MFP (BLM 1982a); SG=Sonoma Gerlach MFP (BLM 1982b)

4.1.14 Energy and Mineral Resources

Ability of Current Management Direction to Achieve Desired Conditions

Mineral Resource Trends

Long-term projections on the commodity price for precious metals suggest stabilization of the market, and analysts anticipate that gold will remain over $400 per ounce. Based on these estimates, permitting demands for both hard rock exploration and mining will increase.

Based on the President's energy policy and State of Nevada renewable portfolio, increased demand for geothermal exploration and development and wind power development will increase.

Current Management Limitations

Current management of mineral resources is challenged to meet desired conditions due to the following situations:

- The potential inability to control fluids being generated from heap leach pads following mine closure at locatable mineral mines;
- Expansion of locatable mineral mines and the utilization of existing facilities beyond limits designed for in the original mine plan of operation;
- The post mining use of lands beyond pre-mine uses at locatable mine sites;
- The potential for inadequate protection of resources, based on current understanding of resource needs, due to leasable mineral exploration and development guided by outdated stipulations. This includes impacts on surface springs, traditional uses, visual impacts, and air quality concerns;
- The volume of saleable mineral disposal sites and the lack of adequate protection of resources in areas open to saleable mineral disposal.

Agency Management Capabilities

Currently the WFO employs six staff members in the locatable minerals program, one in the leasable minerals program, and one in the saleable minerals program. The annual budget of the entire minerals program is $950,000. The workload (ranked as low, medium, and high) for the locatable minerals program is high, for the leasables program is high, and the saleables program is medium. In addition, resource specialists are shared between the minerals program and the nonminerals energy program.

Agency Management Needs to Adequately Manage Mineral Resources

Staff and budgets will have to increase in order to accommodate future permitting demands and maintain an appropriate level of customer service.

Options for Changing Management

Discussions in this section are subdivided into locatable, leasable, and salable minerals and nonmineral energy.

Locatable Minerals

Several areas for management changes are possible for locatable minerals to address desired conditions. The emphasis would be on protecting other resources, promoting post-mining utilization of existing infrastructure, planning for potential mine expansions, and improvement of mine reclamation procedures. These measures, if determined to be appropriate, would not only benefit resources but may give mine operators a clear path for mine design and closure and assist the BLM in managing ongoing liabilities associated with inactive and reclaimed facilities. To incorporate these opportunities the following management tools might include the following:

- Clearly identifying areas as being open and closed for mineral development. The closures would be identified as either a discretionary or nondiscretionary closure.
- Identifying areas where restrictions may apply, which could encompass National Wildlife Refuges, withdrawals (power site, hydro, and water), communication, recreation, public purpose patents and leases, ACECs, RNAs, WSAs, cultural sites, traditional use properties, and areas where special resource protections are needed.
- Performing an encompassing environmental assessment during the initial mine planning stages to include consideration of the mine's potential size, including expansions and post mine use.
- Develop guidelines for permitting-phase evaluation of heap leap closure and other reclamation activities that allow for the use of technologies proven in similar climatic and hydrologic conditions. Of particular concern is the control of the movement of fluids in closed heap leach pads.
- Allow for the disposal of mine properties to foster other forms of economic growth and eliminate BLM's long-term liability with maintaining facilities.

Leasable Minerals

At least two opportunities exist for management change for geothermal and oil and gas fluid leasable mineral resources. They are based on the need to protect other resources by updating fluid leasable mineral closure and restriction status for areas with special designations within the planning area. The other area identified for potential management change is leasing stipulation updates. These management changes may include the following:

- Identification of areas closed or restricted to leasable mineral entry, which would encompass National Wildlife Refuges, withdrawals (power site, hydro, and water), communication, recreation, public purpose patents and

leases, ACECs, RNAs, WSAs, cultural sites, traditional use properties, and areas where special resource protections are needed.

- Revised leasing stipulations would put into place the preceding protections through updated and detailed management direction for the development of leasable mineral resources. As an example, these might include temporary restrictions to surface occupancy on wildlife winter range or no surface occupancy or disturbances on highly erosive soils.

Saleable Minerals

The protection of significant resources residing in areas open to saleable mineral disposal. The clear identification of areas open to saleable mineral disposal.

- Identification of area closed or restricted to saleable mineral entry, which would encompass National Wildlife Refuges, withdrawals (power site, hydro, and water), communication, recreation, public purpose patents and leases, ACECs, RNAs, WSAs, cultural sites, traditional use properties, and areas where special resource protections are needed.

Current Land Use Plan Decisions and Options for Change for Energy and Mineral Resources

The current MFP objectives and decisions and change options as they relate to energy and minerals are presented in Table 4-13.

Table 4-13
Adequacy of Current Management and Options for Change for Mineral Use

Planning Decision	Responsive to Current Issues?	Remarks (rationale)	Options for Change
M1.1 (PD) Limit the size of mineral withdrawals to what is absolutely necessary to protect the values requiring the withdrawal.	No.	Does not account for uncertainty in evaluating what is absolutely necessary. Is not consistent with adaptive management policy.	Provide guidance as to what constitutes "absolutely necessary," and/or reduce threshold. Explore localized withdrawals that allow reevaluation based on experience gained through adaptive management.
M1.2, 1.3, 1.4, 1.5 (PD) Make no withdrawals that segregate against mineral entry on areas identified as containing strategic and critical or economically important minerals. M1.3 (SG) Make no withdrawals that segregate against mineral entry on the areas identified in this recommendation as containing "strategic and critical" minerals. Areas within WSAs will be further evaluated during the wilderness study process.	Yes.	Depends on accurate identification of strategic/critical mineral potential.	

Table 4-13
Adequacy of Current Management and Options for Change for Mineral Use *(continued)*

Planning Decision	Responsive to Current Issues?	Remarks (rationale)	Options for Change
M1.4 (SG) Make no withdrawals that segregate against mineral entry on the areas identified in this recommendation as containing economically important minerals.	No.	"Economically important" is too inclusive.	Reverse decision.
M3.1 (PD) Develop at least one community material site for sand and gravel within a ten-mile radius of Denio, Golconda, McDermitt, and Paradise Valley and two within a ten-mile radius of Winnemucca. M3.1 (SG) Develop community material sites near the communities of Winnemucca, Lovelock, and Gerlach.	Yes.		Consider developing community material sites near all communities.
M5.5 (SG) The Sonoma-Gerlach Resource Area will be open to geothermal and oil and gas leasing with the following restrictions listed:….	No.	Superseded within BRD-HRC NCA	
M6.6 (PD) Resource area will be open to geothermal and oil and gas leasing with the following restrictions: Pine Forest Closure Area. NSO – in areas listed.	Yes.	Superseded within BRD-HRC NCA.	
M6.1 (SG) Allow leasing of Winnemucca Lake, Carson Sink, San Emidio Desert, and Smoke Creek Desert for sodium and potassium as the demand arises. Do not allow leasing on the playa of the Black Rock Desert.	Yes.	Superseded within BRD-HRC NCA.	

Prioritize Areas of Ecological Importance to Guide Land Use and Management

The following resources should be considered when developing mineral resource management guidance. The protection of these resources may adversely affect economic vitality of the region, particularly with respect to leasable and saleable minerals. However, resource protection and mitigation measures may be incorporated into future implementation level planning efforts, which would enable the utilization of the mineral resource while protecting important ecological resources. To obtain a more detailed description and location of the ecological resources of concern the reader is referred to the respective resource sections, as follows:

- Fish and wildlife breeding grounds, critical/crucial habitat, migration corridors and fragmentation and connectivity considerations;
- Vegetation;
- Wetlands, floodplain, and riparian areas;
- Erosive soil areas;
- Wild horse and burro management areas;
- Native American religious concerns;

- Visual resources;
- Cultural resources; and
- Water resources.

4.1.15 Recreation

Most recreation opportunities within the WFO are unmanaged and unrestricted. As the population of recreationists continues to increase, management improvements can be made through designations such as SRMAs, ERMAs and other zoning frameworks to address recreation uses and impacts on recreation destinations. Designating areas specifically for recreation purposes provides a diversity of settings consistent with a range of recreation opportunities. Recreation designations are appropriate to implement for the entire planning area.

Dispersed Recreation

Recreation Opportunity Spectrum (ROS)

BLM uses the ROS planning framework to provide and maintain a diversity of recreation opportunities on public lands. Using the ROS framework, geographic areas are delineated based on current or desired environmental settings. Settings are managed to create or maintain recreation opportunities that are dependent on specific resources or environmental conditions of a particular area. Areas may be zoned for commercial recreation, organized group activities, and competitive events

The ROS management framework is also used to manage landscapes for their uniqueness and the diverse recreation opportunities that they provide. While some locations would best be managed for develop recreation opportunities, others would be managed for primitive experiences and solitude.

Special Recreation Management Areas

BLM uses Special Recreation Management Areas (SRMAs) to identify areas where intensive visitor management, resource protection, and facility developments may be required. Site-specific activity plans are prepared for each SRMA designated by an RMP, which would identify recreation, access, and resource management concerns in the area. Areas and resources identified would be assessed for designation as an SRMA.

Existing activity plans for the WFO include the Pine Forest Recreation Area and Water Canyon Recreation Area. BLM can review and revise these plans as necessary. Upon acquisition by BLM, activity plans could also be written for Knott Creek Reservoir and Clear Creek Canyon. Special Areas (congressional or secretarial designation or areas which require special management), either in existing SRMAs or Extensive areas could also be designated through this planning effort.

Extensive Recreation Management Areas

Extensive Recreation Management Areas (ERMA) are areas where only minimal regulatory constraints would be placed on visitors. The majority of BLM lands in the

Winnemucca District would be considered ERMAs, where BLM actions are limited to custodial management, such as signing and securing public access.

The opportunity to experience public lands in an unconfined manner is an increasingly rare resource that BLM has the ability to manage for, while protecting significant and sensitive resources. ERMAs provide important opportunities to experience public lands in an uncontrolled environment, at least in perception, where visitors have the freedom of choice in recreation activity or location. Key areas for acquisition of property, access, or conservation easements may be identified. Changes in resource condition, use levels, demand or recreation opportunities may trigger future planning.

Net Benefits-Based Management

The BLM recreation management program could evaluate the opportunity to manage under a net benefits-based management system, which requires in-depth public involvement to identify specific benefits or dis-benefits produced by recreation or tourism management. Management actions would be proposed to provide opportunities for specific benefits at various sites or through permitted activities.

Special Recreation Permits

Special recreation permits are managed to provide for a diversity of outdoor recreation opportunities throughout the WFO that are consistent with protecting and sustaining the significant and sensitive resources of the area. The development of a permit classification system could be evaluated to assess permit requests, and where feasible, authorize and administer compatible permit proposals. Areas could be allocated based on for large-scale permitted activities, including but not limited to competitive recreation activities and commercial guiding services. Activities authorized under a special recreation permit would be consistent with objectives of the recreation program and recreation management plans.

Options for improving management of Recreation are summarized in Table 4-14.

Table 4-14
Adequacy of Current Management for Recreation and Options for Change

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
Establish an interpretive program.	Yes.	Never implemented.	Carry forward. (reference Black Rock Plan)
Identify new reservoir sites for water-based recreation and encourage their development.			Change to read, "Identify and acquire access or lands to provide for water based recreation needs."
Develop recreation area management plans.	Yes.	The MFPs identified a whole list of areas, which turned out to be unrealistic.	Carry forward. Identify specific and realistic expectations for RAMP developments and identify priority areas.

Table 4-14
Adequacy of Current Management for Recreation and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
Establish a wild horse viewing area on Winnemucca Mountain.	Yes.	Never implemented	Carry forward. (reference Black Rock Plan rather than site specific) Evaluate opportunities for Watchable Wildlife Viewing Areas
Part of the Pine Forest Recreation Area is closed to motorized vehicles. Close certain areas during bighorn sheep lambing season. Do WSA closures in compliance with the IMP.	Yes.		Maintain closures and identify any additional seasonal or permanent vehicle closures in Pine Forest.
Fight all fires in the Pine Forest Closure with hand tools until such time as the fire threatens to destroy the recreation resource. Use IMP guidance within the two WSAs.	Yes.		Carry forward. (Fire management decision)
Prevent BLM activities from degrading water quality beyond established standards.	Yes.		Carry forward. (Water resources management decision). Evaluate opportunities for recreation decision regarding camping, vehicle access, etc. in the proximity of water resources
Acquire or provide sufficient water on public lands for recreation, wild horses, wildlife, aquatic habitat, and livestock.	No.		Include prescriptions regarding drought management.
Restrict livestock in high density recreation areas in the Pine Forest area.	Yes.	Too Specific	Carry forward. (Grazing mgmt section)??? Reword: "Manage developed recreation sites and sensitive high country resource areas to prevent resource degradation or conflict with recreation uses."
Cooperate in the establishment of the National Desert Trail through the WFO.	Yes.	Black rock RMP identified the trail corridor	Evaluate a route to the desert trail through the WFO.
Ensure legal access, when consistent with management plans, on all BLM roads to public lands.	Yes.	We have had problems recently with landowners closing off access through their property	Carry forward. (Transportation section), Also an objective for recreation.
Prior to disposal of public lands, analyze the recreational value of the	Yes.	May need to define Standard/Guidelines	Decisions will be made based on recreation zones in

Table 4-14
Adequacy of Current Management for Recreation and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
proposed parcels. Do not dispose of parcels with high recreational value unless they are under R&PP.		for "high recreational value" ROS classifications.	the RMP.
Identify land ownership for the Eugene Mountain Petroglyphs. Coordinate protection and interpretation with the land owner.	??	??	Cultural Resource management decision
Retain in public ownership those lands that provide access to the Humboldt and Little Humboldt Rivers and those lands that adjoin these rivers but have no vehicular access.	Yes.	??	May be a WSA decision??
Manage the VRM classes that were identified on overlays established in 1981.	No.	Need to further protect visual resources	Reclassify the WFO VRM.
Preserve significant Basque aspen carvings by fire protection, photo documentation, rubbing or other means. Donate some to the Nevada State Museum.	Yes.	May fall under Cultural as much as Recreation	Carry forward. Cultural resource management decision)
Evaluate isolated historical structures to determine which should be left intact and protected.	Yes.	May fall under Cultural	Evaluate need for special area designation. (Cultural resource management decision).
Establish easily accessible locations for viewing and interpreting wild horses.	Yes.	And other wildlife	Repeat decision - See previous comment.
Acquire or provide sufficient water on public lands through permit, adjudication, or purchase, as provided by federal and state water law and other appropriate direction to support the uses of the public lands for wild horse, wildlife, aquatic habitat livestock, and recreation.			Repeat decision - See previous comment.
Use the suggested listing as a guide for future recreation management plan's writing and implementation. Recreation management plans would lead to the organized development of an areas recreational values. Priorities should be established for recreation management plans development.		The following plans have been developed Water Canyon Management Plan (1997) Pine Forest Recreation Plan (2001) Bloody Shins Mountain Bike (OHV) Trail: Lovelock Cave Backcountry Byway	Review and revise existing plans as necessary. (PI) Assess current and future recreation sites (PI) Develop ROS (PI) Address Hunting and Fishing (PI) Address permitting Don't know if all these plans exist

Table 4-14
Adequacy of Current Management for Recreation and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
		Plan Winnemucca Mountain Trail System (on-going)	
Evaluate line shacks, miners cabins, and other isolated historical structures to determine which should be left intact and which should be destroyed. This evaluation will consider the qualities that make the structures appeal to a visitor's sense of beauty or sense of curiosity.		Cultural decision? Combine with similar decision on previous page.	Repeat decision - See previous comment.
Establish an interpretive program concerning the sites (listed) if evaluation proves that interpretation is warranted; maintain fire protection for those areas that have significant values.		Combine with decision related to interpretation earlier in this table. Last clause may be covered elsewhere - in Dist Fire Plan??	Repeat decision - See previous comment.
Retain those lands that provide access to the Humboldt River and those lands that adjoin the river but have no vehicular access.		Listed elsewhere in this table	Repeat decision - See previous comment.
Cooperate in the establishment of the Natural Desert Trail through the WFO.		Listed elsewhere in this table	Repeat decision - See previous comment.
Acquire or provide sufficient water on public lands for recreation, wild horses, wildlife, aquatic habitat, and livestock.			Repeat decision - See previous comment.
Restrict livestock in high density recreation areas in the Pine Forest area.			Repeat decision - See previous comment.
Identify and manage areas according to designated VRM classes.			Repeat decision - See previous comment.
SPECIAL RECREATION PERMITS			
No specific decisions were proposed that related to permitted recreation activities.	Non-decision/Not responsive		(Evaluate a permit process to adequately provide for recreation needs and to efficiently address permit proposals.
			Ensure permitted activity level meets recreation management objectives.

OHV Management

The BLM defines appropriate access to the public lands through the land use planning process. At minimum, the RMP will implement management prescriptions to divide the planning area into OHV area designations of open, limited, or closed. A network of designated roads would be designated for each limited area through the RMP planning process. In cases where route designation is not practicable as part of the RMP, route designations would be deferred to implementation plans.

Options for improving OHV management are summarized in Table 4-15.

Table 4-15
Adequacy of Current Management for Off-Highway Vehicles and Options for Change

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
OFF-HIGHWAY VEHICLES			
The Sonoma-Gerlach Resources area is open to OHV use, with the exception of George W. Lund Petrified Forest (located approximately 50 miles north of Gerlach, NV. and the two WSAs. Designate the following area as limited to ORV use; Playa of the Black Rock Desert. Allow no organized or competitive off-road vehicular use that would permanently detract from its natural character as determined by the authorized officer.		(PI) Address OHV (motorcycle) race routes and consider designating (PI) Designate routes in SRMAs and areas of critical wildlife habitat.	Complete route inventory.
Add to list of areas closed to ORV use as follows: All WSAs will be managed to limit ORV use to existing ways and trails			
Part of the Pine Forest Recreation Area is closed to motorized vehicles. Close certain areas during bighorn sheep lambing season. Do WSA closures in compliance with the IMP.			
LIMITED 1992 Plan Change – designated vehicle access in WSAs as limited to existing routes that were inventoried during WSA designation.	No	Access to and around WSAs should receive priority emphasis as part of the RMP planning effort.	Designate adequate access to WSAs
Outside of the WSAS there are no limited areas.			(PI) Designate routes in WSAs and ACECs
4,544 acres in the Granite Range, Bighorn Sheep Lambing Area and 105,820 acres in the playa of the Black Rock Desert is designated as Limited for OHV travel.			

Table 4-15
Adequacy of Current Management for Off-Highway Vehicles and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
CLOSED Granite Mountain lambing area and Black rock desert WSA were closed – where/when – I don't know	No	The Black Rock is now designated wilderness; I don't think that the Granite mountains closure ever happened.	Close routes in areas with high resource value, such as WSAs, Critical Habitat, near significant cultural sites, etc.
17,838 acres in the Pine Forest Area is Closed to OHV travel			
160 acres of the George W. Lund Petrified Forest is Closed to OHV travel			
OPEN The majority of the planning area was designated as OPEN to vehicle use.	No	Open Areas- Areas and trails are defined in 43 CFR 8340.0-5.	(PI) Designate routes in priority areas (i.e. SRMA, WSA, VRM 1 and 2., community viewshed.)
3,711,776 acres is designated as Open to OHV travel			
4,313,872 Acres is designated as Open to OHV travel.			
			(PI) Designate areas to be opened, closed, or limited
			(PI) Designate routes in special recreation management areas and areas of critical wildlife habitat.

Staff and Budget

The WFO recreation program staff consists of one full-time outdoor recreation planner and one half-time outdoor recreation planner. No seasonal positions are currently funded. Support for recreation management activities also includes contributions by WFO law enforcement and engineering personnel. Based on potential increases in recreation use within the WFO, additional staff and budget would be necessary to meet recreation management objectives.

4.1.16 Renewable Energy Resources

Options for improving management of Renewablel Energy are summarized in Table 4-16.

Table 4-16
Adequacy of Current Management for Renewable Energy and Options for Change

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
The Paradise-Denio Resource Area will be open to geothermal and oil and gas leasing with the following restrictions: **No surface occupancy** on sage grouse strutting grounds, Osgood Mountain milkvetch area, Raised Bog, and S-1 cultural and historical sites; **Special stipulations** on Critical wildlife habitat areas and the woolly mammoth area of the east arm of the Black Rock Desert; **No leasing permitted** on the Pine Forest Closure Area and critical wildlife habitat areas.	Yes in areas.	Decision no longer applies to lands within the BRD-HRC NCA and wilderness areas. Current management deals only with leasable fluid minerals (oil and gas and geothermal resources). New areas that could require closures, seasonal closures, NSO stipulations, or other stipulations not identified and new stipulations not developed.	Develop leasing and permit stipulations and closures appropriate for geothermal leasing, development, production and closure. Develop a comprehensive list of land uses, sensitive areas, and special designations to which specific stipulations, closures, and review processes would universally apply (e.g., NSO for big game winter range). Inventory resources that in the WFO that could potentially be affected by geothermal leasing and subsequent development, production, and closure activities; and develop management actions to avoid these impacts.
		Current management does not comprehensively consider potential effects on migratory birds, invasive nonnative plant species, socioeconomics and environmental justice, WSAs, Native American concerns, wildlife, and sage grouse, nor does it consider cumulative effects of leasing, development, production, and closure activities.	

Table 4-16
Adequacy of Current Management for Renewable Energy and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
The Sonoma-Gerlach Resource Area will be open to geothermal and oil and gas leasing with the following restrictions: **No surface occupancy** on Visible remnants of the Applegate-Lassen Trail, from Rye Patch Reservoir to the Western Pacific Railroad near Trego; sage grouse strutting grounds; S-1 cultural and historical sites; George Lund Petrified Forest; Soldier Meadows desert dace ACEC; Black Rock Desert noncompetitive areas, and KGRAs. **Special stipulations** on The west arm of the Black Rock Playa and critical wildlife habitat areas. **No leasing permitted** on Community watersheds and the Mahogany Creek Natural Area.	Yes, in areas.	Same as above, except for paragraph 1.	Same as above.
Designate right-of-way corridors along existing transportation and utility facilities, with a specified width of 1.5 miles on each side of the transportation/utility facility within the Sonoma-Gerlach Resource Area. Exceptions to this width requirement will be made on a case-by-case basis.	No.	Concerns specific to wind, solar, and biomass resources not identified. New areas that could require closures, seasonal closures, NSO stipulations, or other stipulations not identified and new stipulations not developed. Current management does not comprehensively consider potential effects on migratory birds, invasive nonnative plant species, socioeconomics and environmental justice, WSAs, Native	Develop a comprehensive list of land uses, sensitive areas, and special designations to which specific stipulations, closures, and review processes would universally apply (e.g., NSO for big game winter range). Inventory resources that in the WFO that could be affected by wind and solar site testing and subsequent development, production, and closure activities and develop management actions to avoid these impacts.

Table 4-16
Adequacy of Current Management for Renewable Energy and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
		American concerns, wildlife, and sage grouse, nor does it consider cumulative effects of leasing, development, production, and closure activities.	
Designate right-of-way corridors along existing transportation and utility facilities, with a specified width of 1.5 miles on each side of the transportation/utility facility within the Paradise-Denio Resource Area. See MFP III for additional language. Future right-of-way corridors will be evaluated on a case-by-case basis but should be as consistent as possible with the Western States Corridor Study. No new facilities will be allowed to cross the playa of the Black Rock Desert.	No.	Same as above.	Same as above.

Staff and Budget

Demand for renewable energy exploration and development will increase, based on projected population increases, the President's energy policy, and state incentives, including property tax exemptions, tax deductions for donations to the GreenPower program, requirements that electric utilities disclose the mix or resources used to generate power, and net metering for electric utility consumers who also have wind or solar power generators, as well as the State of Nevada Renewable portfolio. Staff and budgets also will have to increase in order to accommodate future permitting demands and maintain an appropriate level of customer service.

Options for Changing Management

Options for changing current management are to develop the following:

- Solar, wind, biomass, and geothermal resources in the resource management plan. Each type of renewable energy development could have different effects on sensitive resources within the WFO planning area.
- A comprehensive list of land uses, sensitive areas, sensitive resources, and special designations to which specific leasing stipulations would apply to protect these resources during the various stages of geothermal exploration, development, production, and closure.

- Develop a comprehensive list of land uses, sensitive areas, sensitive resources, and special designations to which specific restrictions would apply to protect these resources during the various stages of wind and solar energy site testing and development.

4.1.17 Transportation Access and Facilities

Management Opportunities

The BLM manages a road network to develop and provide for administrative needs. Though administered by a public agency and generally open to use by the general public, BLM roads are not public roads. Public use is generally allowed, but roads may be closed or their use may be restricted to fulfill management objectives, such as protecting public health and safety or preserving resources.

BLM roads are maintained to the minimum level necessary to accommodate their intended functions adequately. All design, construction, and maintenance must be consistent with national policies for safety, aesthetics, protection, and preservation of cultural, historic, and scenic values and accessibility for the physically handicapped.

The BLM also manages facilities for a variety of uses, including transportation, recreation, and rangeland improvements. Facilities are developed and maintained as needed. Facilities are planned, designed, constructed, operated, and maintained so as to protect public safety, provide user safety, protect the environment, conserve and protect the resources, and enhance the productivity and use of the public lands.

Staff and Budget

Based on projected increases in recreation and industrial enterprises, demands for road maintenance and access should increase incrementally. However, road maintenance is restricted by available staff and budgets. Current road maintenance budgets allow for approximately 100 miles of road maintenance per year, and roads classified as maintenance level-4 are primary recipients of annual maintenance. District needs are secondary and remaining funds are allocated to roads retaining the highest maintenance level classification.

Options for Changing Management

The desired future conditions for the BLM's transportation program are as follows:

- To provide access for BLM use on each system road as needed. This means having all necessary right-of-way issues resolved, either through acquisition or condemnation;
- To bring BLM roads up to Federal Highway Standards as described in Manual of Uniform Traffic Control Devices and BLM Manual with regard to traffic control and directional signage.
- To provide funding for public awareness of signs and to have an active sign maintenance program.

- To coordinate BLM System Roads with the District Recreation Map regarding the road numbering system.
- To install portal signs at the district boundaries on major federal/state highways or BLM arterial roads.

Management actions need to be developed that identify and provide long-term flexibility for upgrades in the transportation system commensurate with use. Roads in need of repair, rehabilitation, construction, and maintenance standards appropriate to specific areas should be established. The current way of upgrading a road to a higher functional classification or maintenance level is cumbersome and requires a transportation plan with NEPA analysis. For this reason, road maintenance levels have not been updated since the original MFPs were written. The BLM will evaluate the possibility of including all roads into this planning effort.

Options for improving management of Transportation Access and Facilities are summarized in Table 4-17.

Table 4-17
Adequacy of Current Management for Transportation Access and Facilities and Options for Change

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
Reduce flood and sediment damage, which is sustained by roads and trails through a maintenance program of redesigning, blading, graveling, water barring, spur ditching, and installing culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications. This will be included in the WFO standard operation procedures.		(PI) Address Road maintenance; (PI) Address impacts to resources, changes in maintenance standards, and road closure; (PI) Address criteria for acquiring easements; Eminent domain.	
Ensure legal access, when consistent with management plans, on all BLM roads to public lands.			
Reduce flood and sediment damage, which is sustained by roads and trails through a maintenance program of redesigning, blading, graveling, water barring, spur ditching, and installing culverts on BLM roads and through proper stipulation requirements on non-BLM road right-of-way applications. This will be included in the WFO standard operation procedures.			

Table 4-17
Adequacy of Current Management for Transportation Access and Facilities and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
Preserve the existing 6,150 acres of curlleaf mountain mahogany and 2,000 acres of limber and whitebark pine through a fire suppression program and by prohibiting the harvesting of these species for wood products.			
Modify existing fences, which restrict or alter wildlife movements, to allow passage. Modification may include removing wires or altering their placement, installing passage devices, and constructing ramps or other structures to facilitate wildlife passage. All fence construction or reconstruction within wildlife use areas should meet the three-wire antelope specification, as outlined in BLM manual 1737 and BLM Technical Supplement 6601-1 for antelope and deer. As bighorn sheep are reintroduced, fences within their potential habitat should be modified to standards outlined in the URAs (Bighorn Sheep)			
Roads on all resource area streams should be waterbarred or relocated to prevent erosion, with priority given to roads on the following streams where specific problems were identified (URA): Jackson Creek, Kings River, Granite Creek, China Creek, Horse Creek, Craine Creek, Alder Creek, Battle Creek, Pahute Creek, Alta Creek, Big Creek, Quinn River, and Mary Sloan Creek.			
Ensure legal access, where consistent with management plans, on all BLM roads to public lands in the Paradise-Denio Resource Area. The following roads require legal access: Bartlett Creek Headwaters of the Kings River Knott Creek Alder Creek Happy Creek Battle Creek Bottle Creek			

Table 4-17
Adequacy of Current Management for Transportation Access and Facilities and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
The Granites Black Rock Point Pinto Mountains Trident Peak Jackson Mountains-King Lear Peak North Fork of the Little Humboldt River Lower Martin Creek Cottonwood Creek Singus Creek Stonehouse Creek Crowley Creek Willow Creek Rebel Creek Wash O'Neal Owyhee Desert Adam Peak Paradise Valley Foothills of the Santa Rosa			
Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the transportation/utility facility, as shown on lands overlay MFP Overlay #2. Exceptions to this width requirement will be made on a case-by-case basis following a multiple use analysis of a specific proposal. In addition, no transportation or utility corridor will be approved on the Black Rock Playa north of the Western Pacific Railroad tracks or in those areas identified in cultural resource recommendation 1.2 (page 248 of part II) and 1.6 (page 257 of part II). The separation of rights-of-way within the designated corridors will be limited to the minimum spacing required by such criteria as technology, topography, reliability, and visual impacts.			
Preserve the integrity of setting of the entire Buffalo Hills planning unit			

Table 4-17
Adequacy of Current Management for Transportation Access and Facilities and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
portion of the Applegate-Lassen Emigrant Trail. Avoid creating visual intrusions, such as those seen from the trail in the crest of the Black Rock Range.			
Ensure legal access to all public lands.			
Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.			
Provide legal access to the following areas: Stillwater firewood areas Granite Mountain Rodeo Creek Buffalo Hills Golconda Canyon Clear Creek Sonoma Creek Spaulding Canyon Negro Creek Mahogany Creek			
Legalize or eliminate all unauthorized uses of the public lands and collect compensation for any loss or damage suffered by the United States as the result of such uses.			
Existing unauthorized use: Pursue the following existing unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials. • Adobe Flat Occupancy; and • Lichfield Occupancy. Future Unauthorized Use: With this land use plan as a guide, determine the disposition of each trespass as per the policy statement for unauthorized use approve by the Secretary of the Interior on December 24, 1980. Check boundaries of all expanding subdivisions and of isolated dwellings for encroachment and take action as necessary.			

Table 4-17
Adequacy of Current Management for Transportation Access and Facilities and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
Check all utility lines on public lands for authorized use.			

4.1.18 Lands and Realty

Options for changing management include the following:

- Identify lands suitable for disposal or areas to be considered for disposal. The plan should identify the criteria for disposal.
- Work with local governments to identify particular parcels to be disposed of for economic growth and to meet local community needs, such as landfill sites and other uses that may involve hazard materials.
- Identify areas to be considered for disposal that take into consideration of local community economic development, agricultural needs and long-term land uses of mine areas, and post mining, for example, lands identified by local governmental agencies that have potential for economic expansion, lands within the checkerboard that could be developed for agricultural purposes, and lands that could allow for the changing of grazing allotments to remove livestock form sensitive areas (i.e., if BLM were able to sell Drake lands around his ranch, he would be willing to remove his cattle from the Pine Forest Allotment.)
- Use the 1999 S-G and P-D MFP amendment to identify those lands to be disposed of, utilizing the FLTFA.
- Dispose of current R&PP leases that meet the criteria of hazardous waste sites, such as shooting ranges and landfills.
- Patent rather than lease future R&PP authorizations for land that will be used for sites that could be deemed hazardous waste sites, such as shooting ranges and landfills.
- Use Southern Nevada Public Lands Management Act and Federal Lands Transaction Facilitation Act funding to acquire private lands with high resource values and easements to assure public access to public lands.
- Identify and prioritize the need for easements that need to be acquired to ensure continued public access to the public lands.
- Remove the availability of water from the criteria for disposing of lands.
- Require that all future communication facilities be located at existing communication sites when frequencies are compatible.

- Identify all existing communication sites within the district at the time the plan is approved.
- Develop communication site management plans for all communication sites.
- Require cellular telephone facilities to collocate on the same tower where compatible.
- Eliminate all "planning corridors," if any, in the previous MFPs.
- Designate right-of-way corridors along existing transportation and utility facilities. Specify a width only on a case-by-case basis.
- Evaluate future right-of-way corridors on a case-by-case basis. (The Western States Corridor Study need not be used. Every new transmission line built in northern Nevada and northern California, since the WSCS was adopted, has not been in a WSCS corridor).
- Pursue all unauthorized use cases and either authorize or abate them.
- Identify areas suitable for wind energy development. Address and assess the potential for geothermal, biomass, and solar energy development. Address and assess other energy development including coal and nuclear power plants.

Options for improving management of Lands and Realty are summarized in Table 4-18.

Table 4-18
Lands and Realty Adequacy of Current Management Direction and Options for Change

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
L1.0 (PD) The public lands within the P-D Resource Area will be retained in public ownership unless it has been determined through this land use planning process that disposal of a particular parcel is in the national interest.	Yes, in areas, but the 1999 lands amendment did improve the situation.		Identify lands for disposal that take into consideration local community agricultural needs and long-term land uses of mine areas post mining.
L 2.1 (PD) Retain lands in public ownership until local community R&PP or urban_suburban expansions specific requests have been made by affected communities. These requests must be identified through the local governmental planning groups/entities.			See comments in Options section above.

Table 4-18
Lands and Realty Adequacy of Current Management Direction and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
2.1 (SG) Make lands available for agricultural disposal provided that disposal is in the national interest, soils are determined suitable, water is available, and disposal is compatible with local government plans and is coordinated with local government entities to ensure that necessary services and appurtenances such as roads and schools are possible and practical.			See comments in Options section above.
L 2.2 (PD) Dispose of these identified public lands only under R&PP applications or other appropriate authorities to local government entities as the specified lands are identified and the need for such lands is made apparent through community planning documents. Provide legal access to the areas specified in the plan (see legal descriptions).			See comments in Options section above.
L 2.3 (PD) Retain for recreational purposes the lands identified in the MFP and all public lands adjacent to reclamation withdrawn lands or to Rye Patch Reservoir on the west of the reservoir in public ownership (see legal descriptions).			See comments in Options section above.
2.3 (SG) Transfer out of public ownership public lands identified in the MFP (see MFPIII for legal description).			See comments in Options section above.
L 2.4 (PD) As sites are identified or need or opportunity arises, acquire by exchange or other means those private lands intermingled with public lands that contain high resource values within the Lahontan Cutthroat Trout Natural area. Retain in public ownership lands within the municipal hydrologic basins described as follows. Non-public lands in these municipal watersheds will be given priority for acquisition.			See comments in Options section above.

Table 4-18
Lands and Realty Adequacy of Current Management Direction and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
2.4 (SG) Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.			See comments in Options section above.
2.5 (SG) Provide legal access to Blue Lakes (see list in MFP III).			See comments in Options section above.
3.0 (SG) Provide for disposal of certain public lands as administered by the BLM that show potential for commercial development.	No. These seem to be redundant from section 2 above.		
L 3.3 (PD) Make lands available for agricultural disposal provided that disposal is in the national interest, soils are determined suitable, water is available, and disposal is compatible with local government plans.	No. These seem to be redundant from section 2 above.		
4.0 (PD) Provide rights-of-ways on or across public lands.	Yes		
4.0 (SG) Provide opportunity for communities to acquire public lands suitable for development of recreational and public purpose.	No. There are vague management decisions with respect to ROWs.		
L 4.1 (PD) Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. Exceptions to this width requirement will be made on a case-by-case basis.	Yes		
L 4.1 (SG) Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. Exceptions to this width requirement will be made on a case-by-case basis.	No. There are vague management decisions with respect to ROWs.		
L 4.2 (PD) Provide for communication sites on public land by using existing sites when frequencies are compatible.	Yes		

Table 4-18
Lands and Realty Adequacy of Current Management Direction and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
5.0 (PD) Ensure legal access to all public lands.	Yes		
5.0 (SG) Allocate public lands for utility corridor purposes	No. Corridor information is outdated.		
L 5.1 (PD) Review all proposed disposals of public lands and retain any needed legal access to the remaining public lands.	Yes		
5.1 (SG) Designate right-of-way corridors along existing transportation and utility facilities with a specified width of 1.5 miles on each side of the existing transportation/utility facility. See MFPIII for additional language. Future right-of-way corridors will be evaluated on a case-by-case basis but should be as consistent as possible with the Western States Corridor Study. No new facilities will be allowed to cross the playa of the Black Rock Desert.	No. Corridor information is outdated.		
6.0 (PD) Legalize or eliminate all unauthorized uses of the public lands and collect compensation for any loss or damage suffered by the United States as the result of such uses.	Yes		
6.0 (SG) Provide public lands for communication site development.	Yes		
L 6.1 (PD) Pursue existing unauthorized use cases and either authorize or abate them. Coordinate with state and local government officials.	No		
6.1 (SG) Provide for communication sites on public land by using existing sites when frequencies are compatible. Develop new communication sites only when environmental or technical problems exist or an existing site is incompatible with a new site.	No		
7.0 (PD) Pursue existing unauthorized use cases and either authorize or abate them. Coordinate	No. Does not identify trespass in		

Table 4-18
Lands and Realty Adequacy of Current Management Direction and Options for Change *(continued)*

Planning Decision	Is Decision Responsive to Current Issues	Remarks (rationale)	Options for Change
with state and local government officials (listed).	the plan.		
7.0 (SG) Legalize or eliminate all unauthorized uses of the public lands and collect compensation for any loss or damage suffered by the United States as the result of such uses.	Yes		

4.1.19 Public Safety

Abandoned Mines

Abandoned mine lands should continue to be surveyed and updated.

Debris Flow

Often, it is impractical (and cost prohibitive) to do anything but bury trash on-site. This is not well accepted within the BLM, and there should be some standard guidelines on when and how to bury trash. There doesn't seem to be a set procedure on when or how to accomplish cleanups.

One reoccurring problem is inconsistency in dealing with occupancy trespasses that usually involve solid waste. Often, the BLM deals with trespasses by issuing permits under realty or mineral regulations, thereby preventing cleanup. The ranger sometimes cites people for illegal dumping or littering, but the issuance of a warning and a request that the waste be cleaned up is more typical.

The solid waste closure requirements required by the state are not adequately enforced. Some marginal work has been done on at least one Pershing County site on public land.

Hazardous Materials

It is necessary to identify known hazardous materials sites and to develop management strategies to facilitate cleanup and reclamation of sites is necessary. The database of hazardous materials sites should cover the entire field office area. Cleanup strategies could be simplified if minerals and realty actions involved hazardous materials management to a greater extent. Cleanup strategies should also involve private and state stakeholders, but attempts to do this have not often been successful.

4.1.20 Socioeconomics

There are currently no management actions identified in the MFPs that directly address socioeconomic resources. However, FLPMA directs the BLM to manage public lands for multiple uses, including recreation and commercial development, which influence

local economies (as discussed in Chapter 3). These activities generate revenues from facility fees (e.g., campgrounds), BLM recreation permits (special, competitive, organized group activity and event use permits), timber sales, mining leases and mineral revenues, and grazing fees. A portion of revenue generated from these activities is redirected from the federal government to the states in which they were collected. Table 4-19 presents total federal collections from Nevada BLM-managed land in 2003.

Table 4-19
Total Federal Collections from Nevada BLM-Managed Land (2003)

Activity	Collection
Recreation and use fees	$2,027,103
Grazing fees	$2,014,727
Timber receipts, public domain	$4,451
Mining claim holding fees and service charges	$9,405,150
Mineral royalties, rents, and bonuses	$5,900,462
Miscellaneous receipts	$4,529,622

Congress appropriates funds for the payment in lieu of taxes (PILT) payments to eligible units of local government each year. BLM calculates the payment amounts using a formula based on population and the amount of federal land in a jurisdiction. These payments are in addition to federal revenues transferred to local governments under other programs, such as income generated from the use of public land for livestock grazing, timber harvests, and mineral receipts (BLM 2003).

Table 4-20 presents PILT payments received by the counties in the planning area in fiscal year 2003 and 2004. Washoe County received the largest PILT payments, while Lander County received the smallest. In fiscal year 2004, PILT payments received by the planning area counties totaled $6,142,106, constituting close to half of the total $13,495,376 PILT payments made to all Nevada counties the same fiscal year.

Table 4-20
PILT Payments (2003 and 2004)

County	FY 2003	FY 2004
Churchill	$1,151,139	$1,183,436
Humboldt	$818,863	$841,654
Lander	$454,824	$467,597
Lyon	$1,173,056	$1,203,255
Pershing	$561,467	$577,210
Washoe	$1,817,966	$1,868,954
Planning Area Total	**$5,977,315**	**$6,142,106**

Management of the public lands for recreation also provides economic stimulus for local economies, as evidenced in Table 4-14 above. As people participate in leisure activities, they may spend money in the region, thereby generating jobs and income. Participation rates for both casual recreation use and recreation use that requires special

recreation permits, such as commercial and competitive events, vending operations, and organized group activities, may be expected to expand. Casual recreation participation would continue to increase as a result of normal population growth, particularly in the Reno-Sparks metropolitan area. Participation in special recreation permit events would grow in response to expanded publicity in the news media and communication on the Internet. More events and more participation may be expected as knowledge of the planning area expands.

Based on forecasted population growth for the Reno-Sparks metropolitan area, casual recreation visits may be expected to increase to about 34,000 by 2018. This would produce about 108,000 visitor days, with associated expenditures estimated at about $2.7 million. Willingness-to-pay value (the value of the experience to the recreation users) is estimated at $1.8 million (all estimates are in 1999 dollars).

It is not possible to accurately project the total demand associated with participation in special recreation permit events, but publicity and public interest and enthusiasm will affect participation more than an expanding population will. It is reasonable to assume that a most conservative estimate of growth in this activity would be at least equal to the expected increase in participation rates for casual-use recreation.

Demand for public services would increase correspondingly with an increase in special recreation permit events. It would be important to fully assess potential requirements and assure that cost-recovery agreements are adequate to provide complete reimbursement for services provided by the county governments and for federal planning and management services. In the long term, as all types of recreation participation increase in the planning area, there could be some deterioration and degradation of resource conditions. This would increase management costs for resource maintenance and protection.

Mineral development is influenced by the price of precious metals and tends to follow a boom-bust cycle. Forecasts predict that precious metals will remain highly valued for at least the next few years, and development is expected to continue on public lands. Timber and grazing programs are expected to continue at similar levels of current conditions, depending on land health standards and other resource objectives.

Staff and Budget

The WFO does not have an economist on staff and has no budget.

Options for Changing Management

The BLM has the opportunity to influence socioeconomic conditions through management direction such as the following:

- Changing land status and public access;

- Establishing permitted recreational uses and levels (e.g., increasing/decreasing the number of recreation permits/events allowed annually);
- Implementing fee stations (e.g., day-use areas and campgrounds);
- Altering grazing allotments (e.g. acreages, seasonal restrictions, AUMs),
- Setting aside allotted acreage for open/closed for mineral development; and
- Setting aside allotted acreage open/closed for harvesting forest products.

BLM will also incorporate social information, values, belief, attitudes, lifestyles, community, resiliency, and land us patterns into management decisions.

4.2 AREAS OF ECOLOGICAL IMPORTANCE

Certain parts of the planning area have been identified as being of special ecological significance. A series of 8 parameters was used to make this determination. These include:

- Unfragmented areas of 50,000 acres or more (Figure 4-1),
- Population Management Units (PMUs) (Figure 4-2),
- Wilderness Study Areas (WSAs) (Figure 4-3),
- High Priority Watersheds (Figure 4-4),
- Areas with soil types that can support sensitive or rare plant or animal species or soils that support plant communities of special importance (Figure 4-5),
- Big horn sheep winter range (Figure 4-6),
- Mule deer winter range (Figure 4-7), and
- 50 meter buffer zones around streams (Figure 4-8).

Within the broad category of ecological importance, each area has been rated as being of high, moderate, or low value. These values are assigned to areas of special ecological significance only in comparison to other such areas, and do not necessarily reflect each areas significance in terms of the entire planning area. The areas were rated as follows:

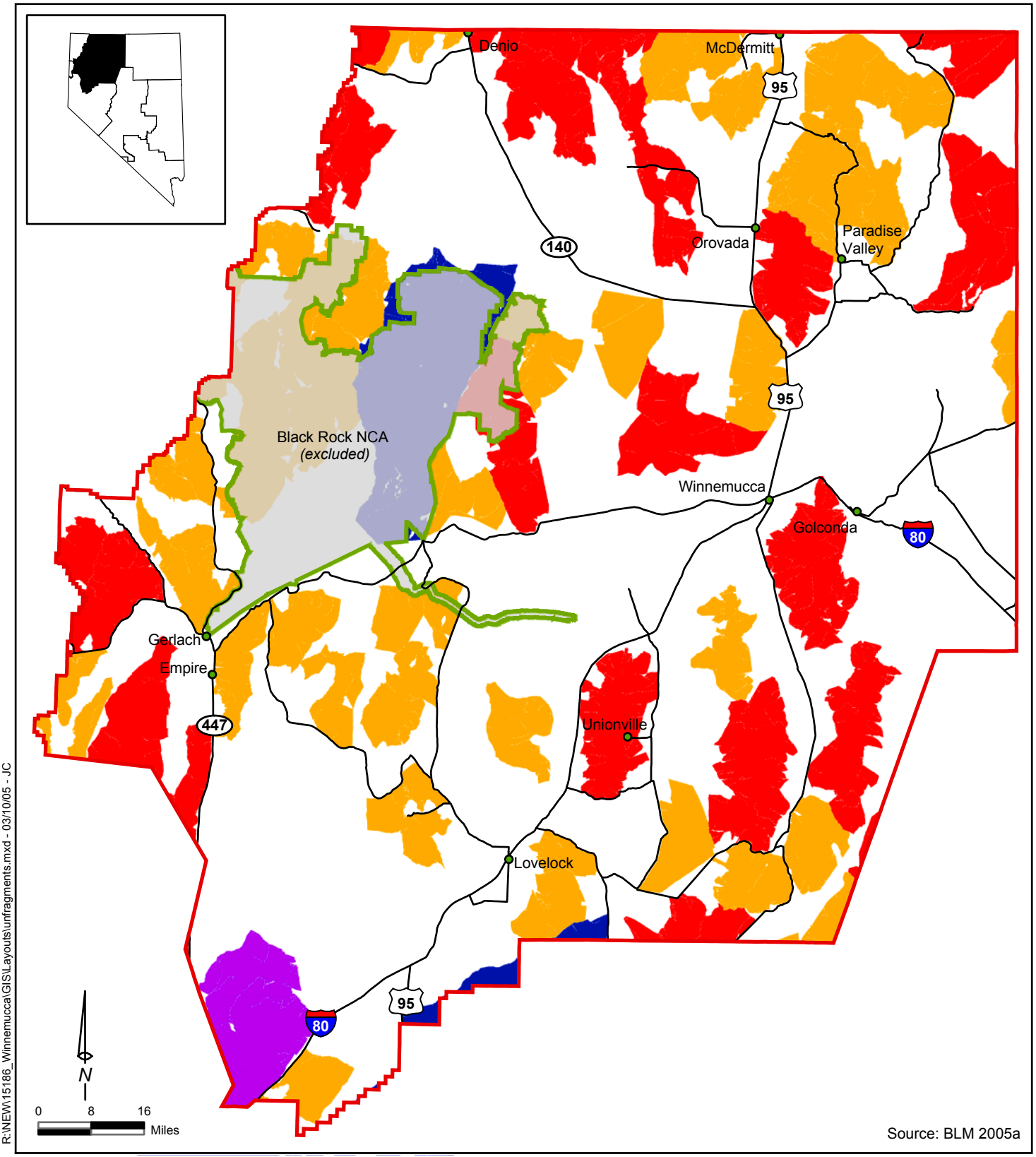
- **High**. Areas that contain between 5 and 7 of the parameters.
- **Moderate**. Areas that contain between 2 and 4 of the parameters.
- **Low**. Areas that contain between 0 or 1 of the parameters.

Figure 4-9 overlays the layers from figures 4-1 through 4-8 to determine the overall areas of highest ecological importance in the field office planning area. Table 4-21 shows the amount of acreages of for high, medium, and low ecological importance in the field office.

Table 4-21
Acreages of Ecologically Important WFO Land

Ecological Importance	Acreages
High	284,413.7
Moderate	4,830,116.98
Low	5,977,140.98

Source: BLM 2005



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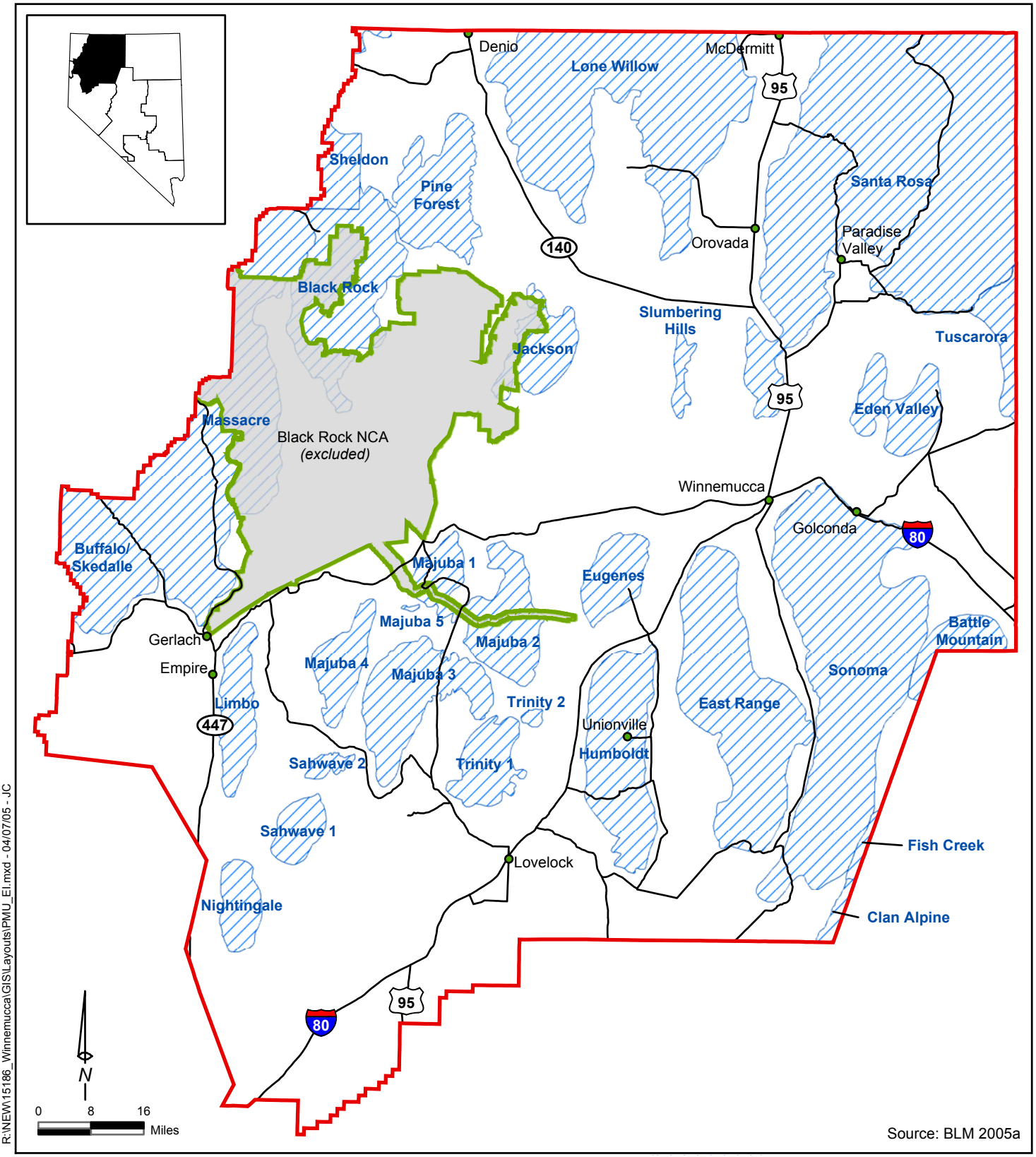
Legend

- <50,000 acres
- 50,000 - 100,000 acres
- 100,001 - 200,000
- 200,001 - 300,000
- >300,000

Unfragmented Lands Winnemucca RMP

Northwest Nevada

Figure 4-1



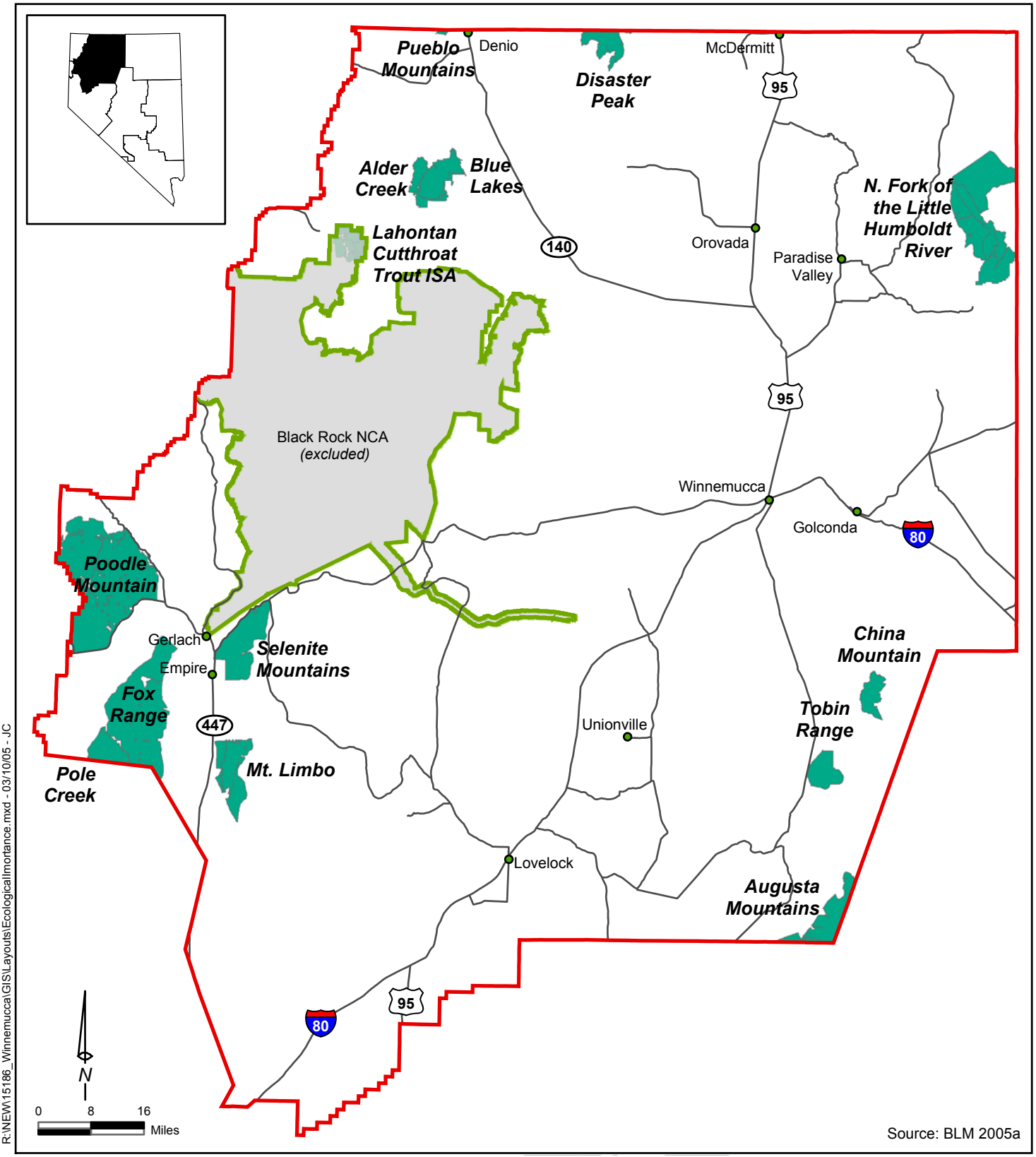
Sage Grouse Population Management Units
Winnemucca RMP

Legend

Population Management Units (PMU)

Northwest Nevada

Figure 4-2



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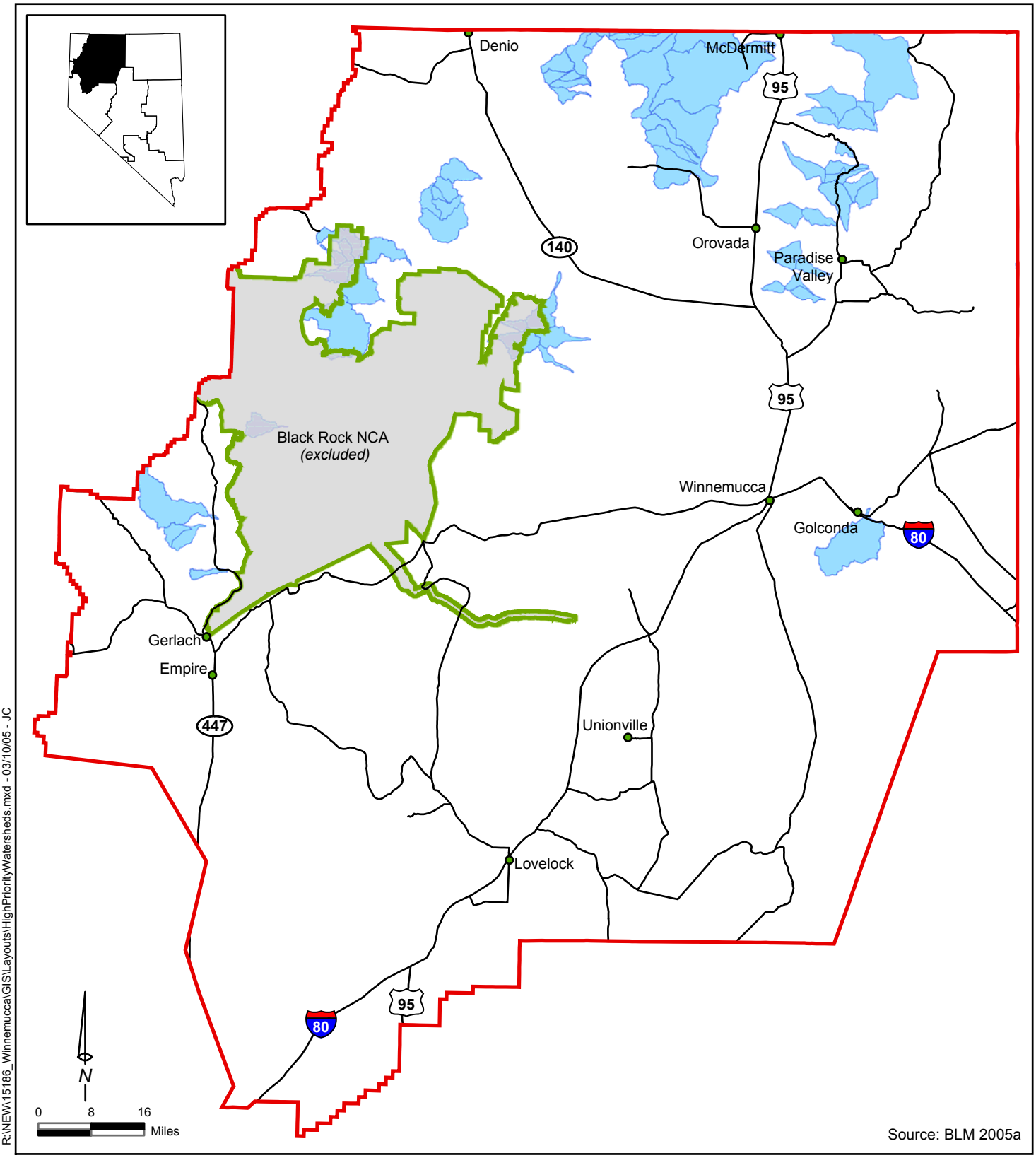
Current Wilderness Study Areas
Winnemucca RMP

Legend

Current Wilderness Study Areas

Northwest Nevada

Figure 4-3



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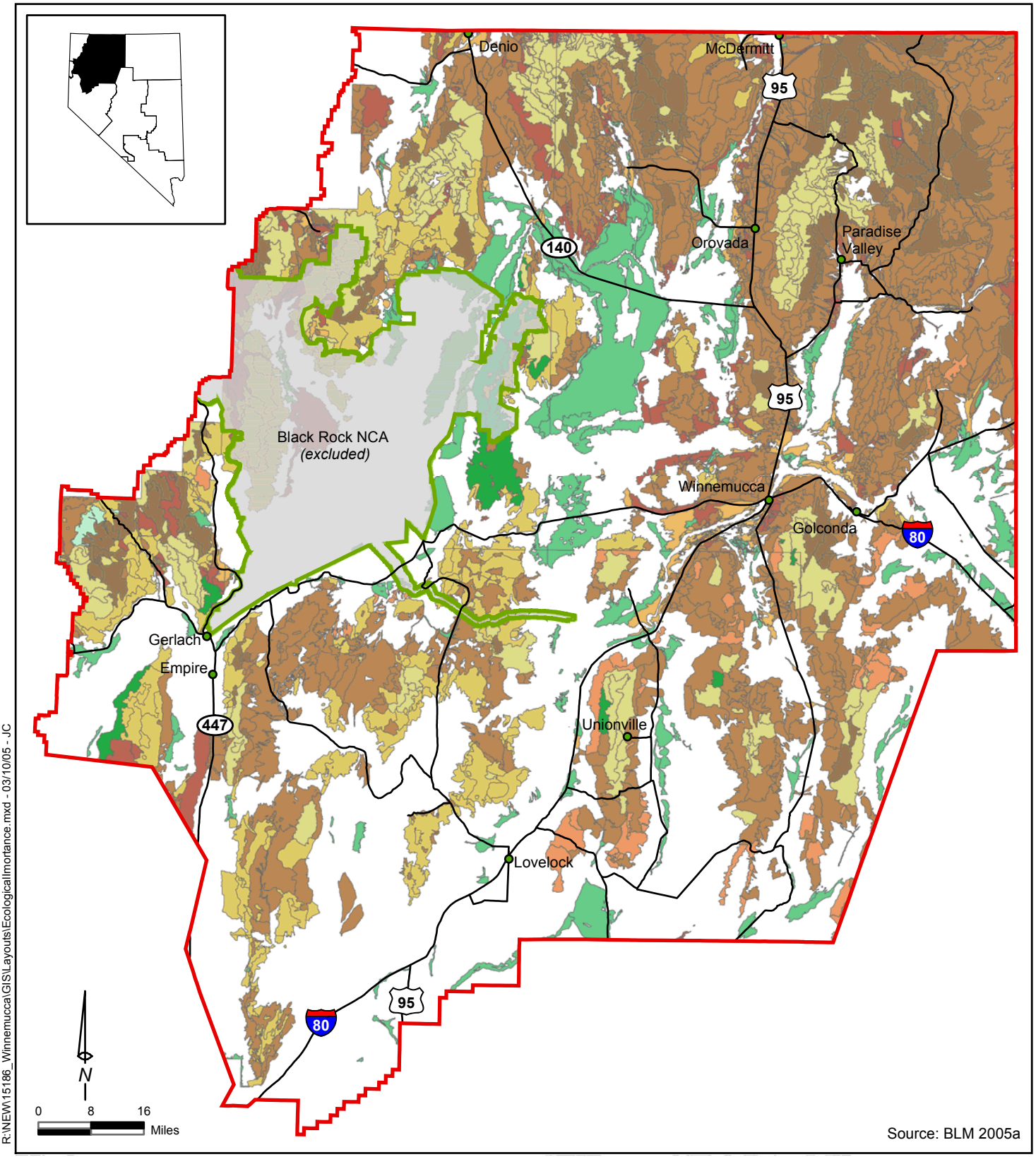
High Priority Watersheds
Winnemucca RMP

Legend

High Priority Watersheds

Northwest Nevada

Figure 4-4



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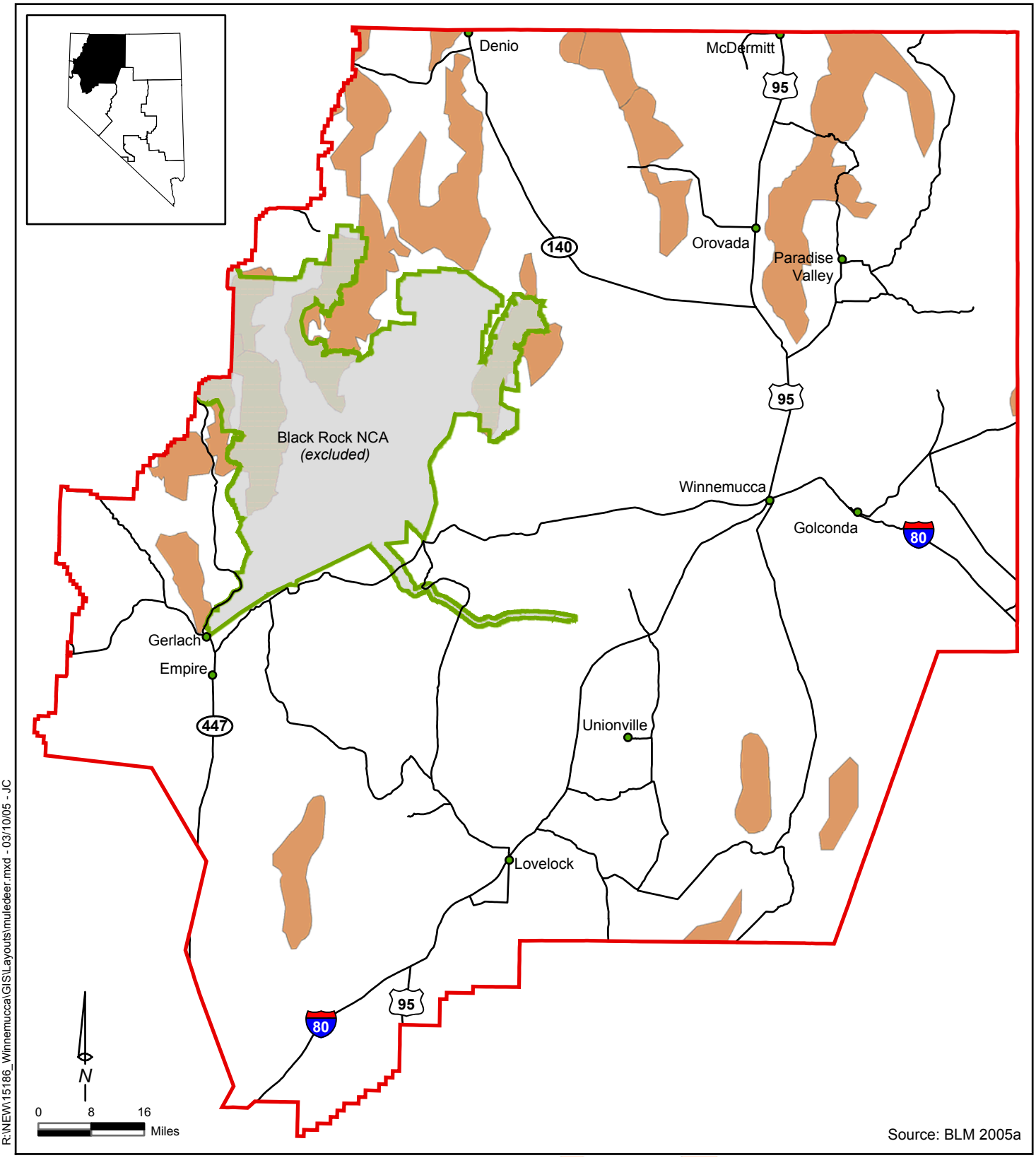
Legend

- *Atriplex confertifolia/ Sarcobatus vermiculatus*
- *Chrysothamnus spp.*
- *Juniperus osteosperma*
- *A. cana*
- *A. tridentata*
- *Ar tr ssp. tridentata*
- *A. nova*
- *A. tripartita*
- *A. arbuscula ssp. arbuscula*
- *Ar ar ssp. longicaulis*
- *Ar tr ssp. vaseyana*
- *Ar tr ssp. wyomingensis*

Special Status Species Habitat
Winnemucca RMP

Northwest Nevada

Figure 4-5



R:\NEW\15186_Winnemucca\GIS\Layouts\muledeer.mxd - 03/10/05 - JC

Bighorn Sheep Range
Winnemucca RMP

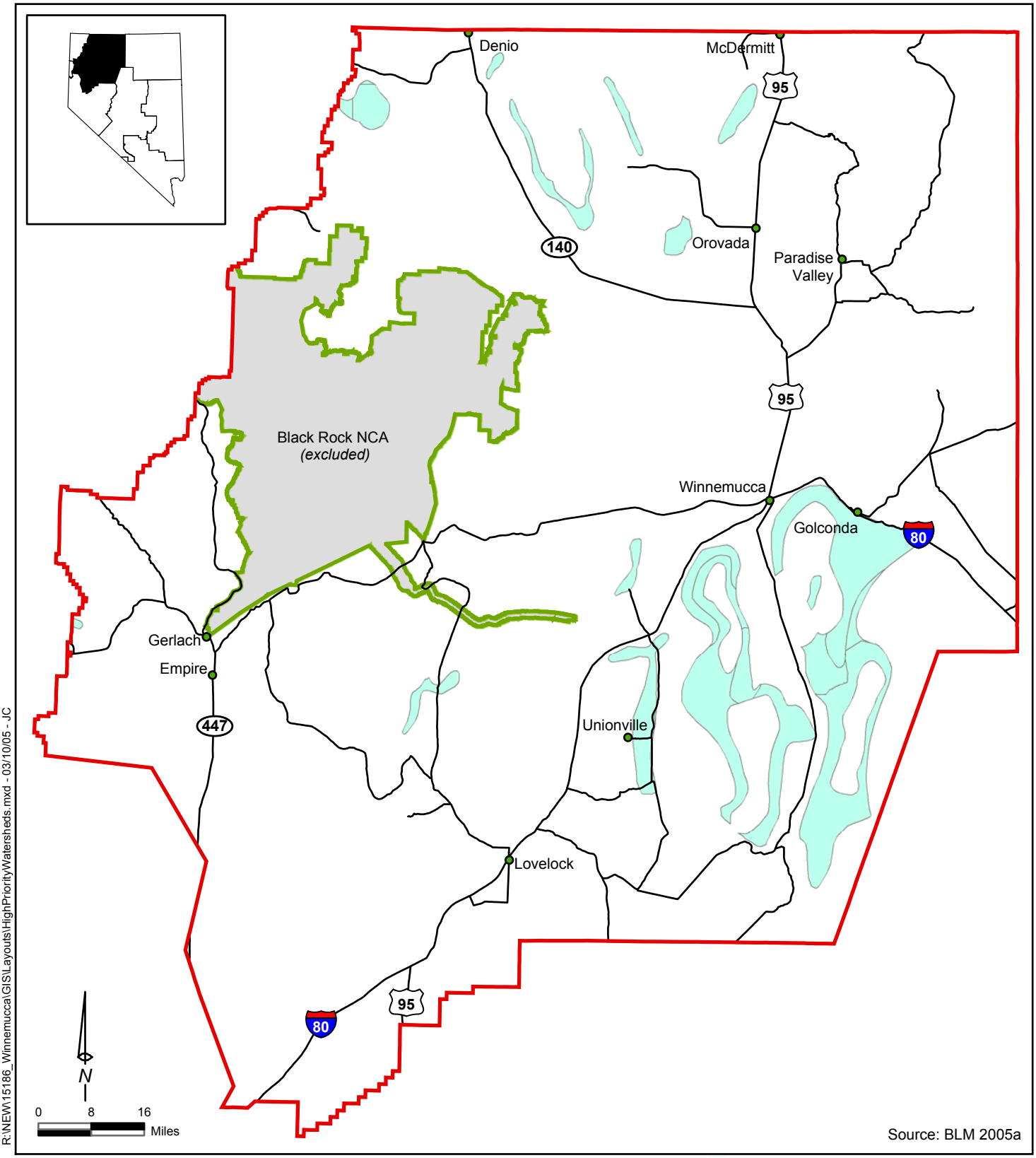
Legend

Bighorn Sheep Range

Northwest Nevada

No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by BLM.

Figure 4-6



R:\NEW\15186_Winnemucca\GIS\Layouts\HighPriorityWatersheds.mxd - 03/10/05 - JC

Mule Deer Winter Range
Winnemucca RMP

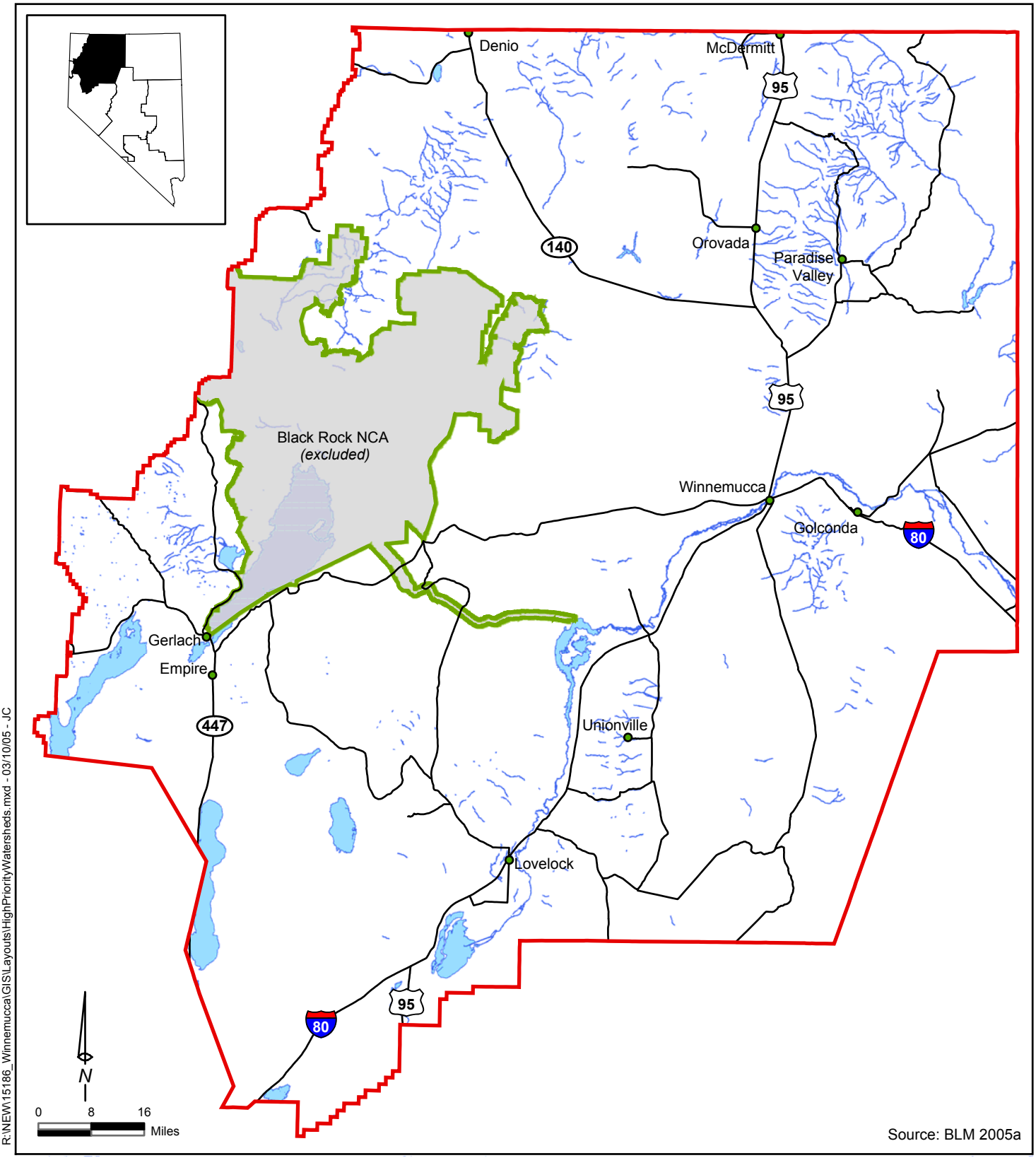
Legend

Mule Deer Winter Range

Northwest Nevada

No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by BLM.

Figure 4-7



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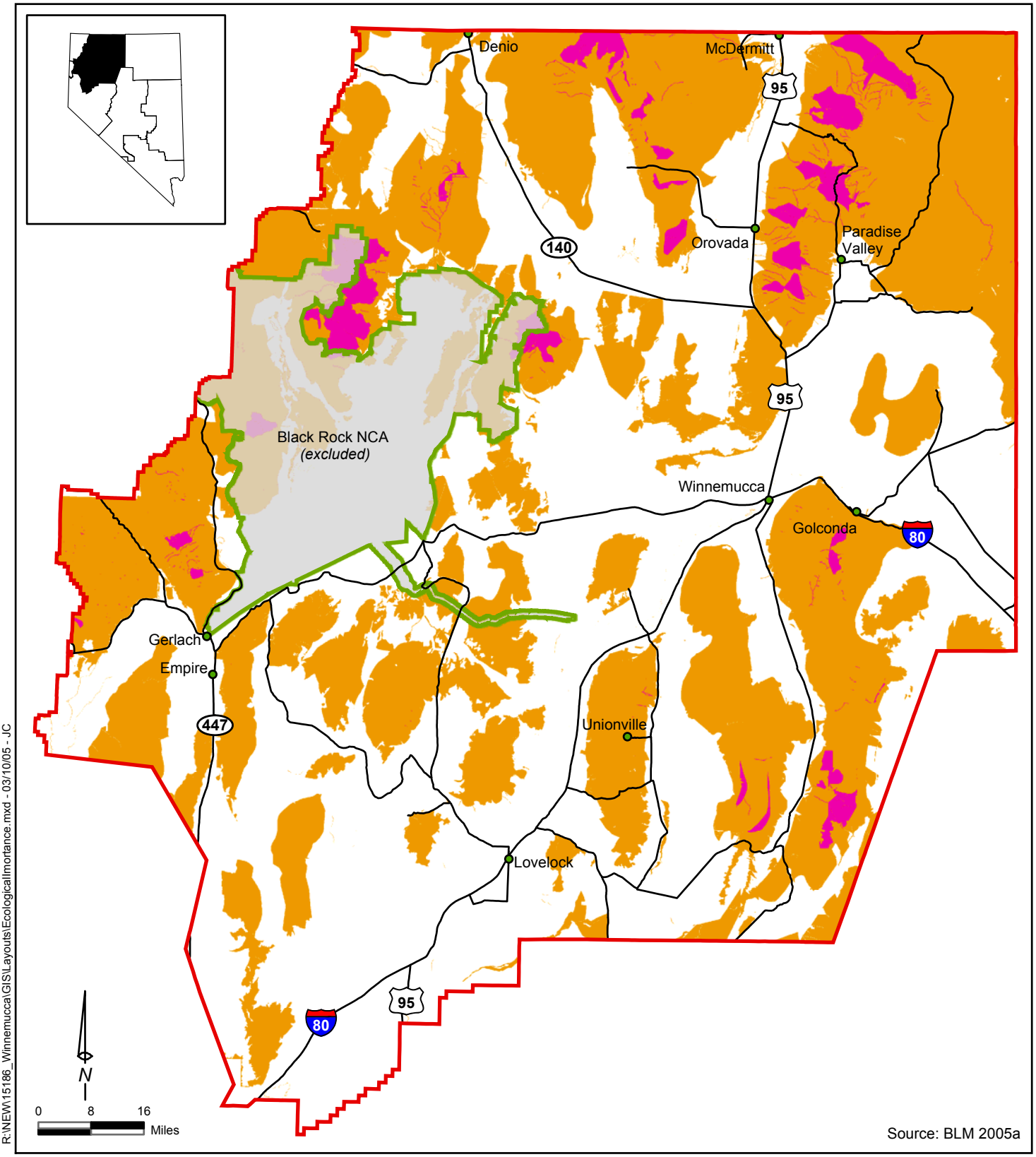
50 Meter Buffer of Water Features
Winnemucca RMP

Northwest Nevada

Legend

50 Meter Buffer of Water Features

Figure 4-8



R:\NEW\15186_Winnemucca\GIS\Layouts\EcologicalImortance.mxd - 03/10/05 - JC

Areas of Ecological Importance
Winnemucca RMP

Northwest Nevada

Legend

- Low Ecological Importance
- Medium Ecological Importance
- High Ecological Importance

Figure 4-9

5. CONSISTENCY/COORDINATION WITH OTHER PLANS

CHAPTER 5
CONSISTENCY/COORDINATION WITH OTHER PLANS

Table 5-1
Consistency/Coordination with Other Plans

Document Title	Date/ Adopted	Summary
1.) County Plans/City Plans		
Churchill County Master Plan Update	2003	http://www.churchillcounty.org/planning/
Humboldt County Master Plan	2002	Not available on line. Planning includes cities, county and all rural communities. Ordered from the following website: http://sos.state.nv.us/county/humboldt.htm.
Lander County Master Plan	1997	Not available on line. In the process of amending the plan. (Town of Battle Mountain). Ordered from the following website: http://sos.state.nv.us/county/lander.htm.
Lyon County Master Plan	1990	Not available on line. Ordered from the following website: http://sos.state.nv.us/county/lyon.htm.
Pershing County Master Plan	2002	Not available on line. Ordered from the following website: http://sos.state.nv.us/county/pershing.htm.
Washoe County Comprehensive Plan	1994	Used to determine the most desirable location of each type of development. The plan has policies and maps designated to define development suitability and conserve natural resources (e.g., to protect critical environmental areas, define water resources, enhance visual and scenic corridors). http://www.co.washoe.nv.us/comdev/publications_maps_products/comdevplan/comdevplan_index.htm~color=grey&text_version

Table 5-1
Consistency/Coordination with Other Plans *(continued)*

Document Title	Date/ Adopted	Summary
2.) State Lands Plans		
Nevada Division of State Lands, Nevada Statewide Policy Plan for Public Lands	1985	The plan is a compilation of individual county and city policy plans dealing with issues related to the use and management of federal lands within their jurisdiction. (Relevant
Nevada Division of State Lands, Lands Identified for Public Acquisition	1999	(Further refined 1985 listing.) Lists parcels of federally administered lands that each county would either like to acquire for public purposes or would like to have the federal government sell to the private sector. (Relevant)
Nevada Division of State Lands, Nevada Natural Resources Status Report	2002	The purpose of the report is to take steps toward developing an integrated comprehensive set of natural resource indicators, and the report presents information that agencies made available to characterize environmental and resource conditions and the impacts of programs. http://www.dcnr.nv.gov/nrp01/content.htm (Relevant)
State of Nevada Drought Plan	1991	This state drought plan establishes an administrative coordinating and reporting system between agencies that should be involved in providing assistance to help mitigate drought impacts. (Relevant)
Statewide Comprehensive Outdoor Recreation Plan (SCORP)	1992	The purpose of the SCORP is "to guide recreation providers in meeting Nevada's recreation needs." Goals of the plan are to "(a) make a comprehensive study and analysis of the issues and trends which affect recreation throughout Nevada, and to (b) establish a ... policy plan for the State of Nevada to address these issues for the next five years, based on the findings and recommended strategies of the (described) issues...." (Relevant) http://www.dcnr.nv.gov/nrp/planpa01.htm
Nevada BLM Statewide Wilderness Report	1991	Recommends wilderness designation of 1.9 million acres within 52 WSAs and release of 3.2 million acres in the state of Nevada. (Relevant)
Statewide Wildfire Management Plan	developing	
Nevada Comprehensive Preservation Plan, Division of Historic Preservation and Archaeology. (second edition)	1991	The plan establishes historic preservation goals for the state and will be used to prioritize grant applications and SHPO projects. Local, state, and federal agencies are encouraged to use the document to help them focus preservation activities in their jurisdictions.
Nevada's coordinated Invasive Weed Strategy	2000	Developed by the Nevada Weed Action Committee as the result of a collaborative process driven by the need to more effectively implement control of invasive weeds throughout the state. (Relevant)
3.) Other Federal Agency Plans		
Black Rock-High Rock RMP	2000	Designated 815,000 acres as a National Conservation Area (NCA) and 752,000 acres as 10 Wilderness Areas (378,000 of the Wilderness acres overlap the NCA). (Adjacent)

Table 5-1
Consistency/Coordination with Other Plans *(continued)*

Document Title	Date/ Adopted	Summary
Southeastern Oregon RMP	2001	Approximately 4.4 million acres of BLM-administered lands spread out over 6.5 million acres of southeastern Oregon, abutting the WFO to the north. (Adjacent)
Carson City Field Office Consolidated RMP	2001	Incorporates decisions from eight major field office planning documents and five amendments to these plans, located southwest of the WFO. (Adjacent)
Shoshone-Eureka Planning Area, Resource Management Plan (RMP)	1986, as amended	The northern part of the Battle Mountain Field Office is referred to as the Shoshone-Eureka Planning Area and contains about 4.3 million acres of public lands. The RMP accounts for parts of Eureka, Lander, and northern Nye Counties and is located south of the WFO. (Adjacent)
Stillwater National Wildlife Refuge	2001	The plan focuses on the conservation of wildlife and their habitat in the western Great Basin (http://pacific.fws.gov/planning/stillwaterdocs.htm). (Relevant)
Contacts		
Clint	NV Div of State Lands	Representative between (RV: Spell out.) state and local/county issues. Currently developing entire database/listing of all plans in Nevada. (775) 687-4364
Skip Canfield	NV Div of State Lands	Representative between state and federal land issues.
Sandy	Humboldt County	Ordered copy 2/27/05, will invoice for $25.
	Lander	Sending plan.
Brandi	Pershing County	Ordered copy 2/26/05, will invoice for $7.
Kerry Page	Lyon County	Send check for $20. to County Office.
Joy	Nevada Division of State Parks	SCORP

6. SPECIFIC MANDATES AND AUTHORITIES

CHAPTER 6
SPECIFIC MANDATES AND AUTHORITIES

6.1 MANDATES AND AUTHORITIES PERTAINING TO ALL RESOURCES

Federal laws and statutes

National Environmental Policy Act (NEPA) of 1969, 42 USC 4321 et seq. NEPA requires the consideration and public availability of information regarding the environmental impacts of major federal actions significantly affecting the quality of the human environment. This includes the consideration of alternatives and mitigation of impacts. A number of federal statutes have been enacted over time to establish and define the authority of BLM to make decisions on the management and use of resources on public land.

The Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 USC 1701 et seq.), provides the authority for BLM land use planning.

- Sec. 102 (a) (7) and (8) sets forth the policy of the United States concerning the management of BLM lands;
- Sec. 302 (a) requires the Secretary to manage the BLM lands under the principles of multiple use and sustained yield, in accordance with, when available, land use plans developed under Sec. 202 of FLPMA, except that where a tract of BLM lands has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.

The Clean Water Act of 1987, as amended, 33 USC 1251, establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water.

The Clean Air Act of 1970. The Clean Air Act (91 Stat. 685; 42 USC 7401 et seq.), as amended provides that each State is responsible for ensuring achievement and maintenance of air quality standards within its borders so long as such standards are at

least as stringent as Federal standards established by the US Environmental Protection Agency (US EPA).

Code of Federal Regulations, Title 43, Public Lands: Department of the Interior

Policies

BLM Land Use Planning Handbook, H-1601-1

BLM Manual 1620, S*upplemental Program Guidance*

BLM Manual 1621, *Supplemental Guidance for Environmental Resources*

BLM Manual 9100, *Transportation Guidance*

NEPA Documents

Paradise-Denio and Sonoma-Gerlach Grazing Environmental Impact Statements and MFPs (BLM 1981b, 1981c, 1982a, 1982b).

6.2 SOILS

Federal Laws, Statutes

The Watershed Protection and Flood Control Act of 1954, as amended, directs the federal government to cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies to prevent erosion or flood water and sediment damage.

Mining Regulations 43 CFR 3715 and 3800

Desert Land Act of 1877, as amended (43 USC 321 et seq.)

Soil Conservation and Domestic Allotment Act of 1935, as amended (49 Stat. 163) Soil Info. Assistance for Community Planning and Resource Development Act of 1996 (42 USC 3271 et seq.)

Soil and Water Resources Conservation Act of 1977 (16 USC 1901 et seq.)

Regulations

Surface Management Regulations, 43 CFR 3809

Mineral Material regulations, 43 CFR 3600

Exploration & mining, wilderness review program, 43 CFR 3802

Use and Occupancy under the mining laws, 43 CFR 3715

Wilderness Management, 43 CFR Parts 6300 and 8560

Executive Order 11752 mandates that federal agencies provide national leadership to protect and enhance the quality of air, water, and land resources through compliance with applicable federal, state, interstate, and local pollution standards. This order mentions the Clean Air Act, Federal Water Pollution Control Act, Solid Waste Act, Noise Control Act, insecticide and pesticide acts, and NEPA.

- Nevada Administrative Code Chapter 555, Control of Insects, Pests, and Noxious Weeds

Policy

Manual of Uniform Traffic Control Devices

Memorandums of Understanding (Not an all inclusive list)

MOU with the American Motorcyclist Association (AMA)

MOU with BLM/WFO Humboldt County Commissioners

MOU with BLM/WFO Pershing County Commissioners

MOU with participating agencies on the NW LCT DPS

MOU with participating agencies on the Humboldt LCT DPS

MOU among USFS, BLM, and Tread Lightly, Inc. promotes the protection of national forests and public lands through education about responsible use of recreational wildlands by highway vehicles and other forms of mechanical back country transportation.

MOU with the Department of Conservation, Division of Environmental Protection, pertaining to the administration and reclamation of lands disturbed by exploration and mining operations for locatable minerals.

NEPA Documents

Programmatic Environmental Assessment of Integrated Weed Management on BLM Lands

WFO Geothermal Resources Leasing Programmatic Environmental Assessment

WFO Programmatic Weed Environmental Assessment

WFO Environmental Assessment, For the Normal Year Fire Rehabilitation Plan

Environmental Impact Statement for Vegetation Treatments, Watersheds, and Wildlife Habitats on Public Lands Administered by the BLM in the Western United States, Including Alaska (Vegetation EIS) implements an integrated vegetation treatment

program for BLM-administered public lands that includes manual, mechanical, biological, prescribed burning, and chemical treatment methods.

Western Regional Corridor Study streamlines the process of siting transmission facilities by pre-identifying important, necessary corridors in acceptable areas.

6.3 GEOLOGY

Federal laws and statutes

The Mineral Leasing Act of 1920, as amended (30 USC 181 et seq.), authorizes the development and conservation of oil and gas resources.

The Onshore Oil and Gas Leasing Reform Act of 1987 (30 USC 181 et seq.) provides for the following:

- 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.

The General Mining Law of 1872, as amended(30 USC 21 et seq.), allows the location, use, and patenting of mining claims on sites on public domain lands of the United States.

The Mining and Mineral Policy Act of 1970 (30 USC 21a) establishes a policy of fostering development of economically stable mining and minerals industries and their orderly and economic development and studying methods for disposing of waste and reclamation.

Federal Cave Resources Protection Act of 1988 (PL 100-691).

Regulations

43 CFR, Subpart 37, addresses protection of significant caves and cave resources, including paleontological resources.

43 CFR 3100 Oil and Gas Leasing

43 CFR 3200 Geothermal Resources Leasing

43 CFR 3600 Mineral Material Regulations

43 CFR, Subpart 3622, addresses the free use and collection of petrified wood as a mineral material for noncommercial purposes.

43 CFR, Subpart 3621, addresses collection of petrified wood for specimens exceeding 250 pounds.

43 CFR, Subpart 3610, addresses the sale of petrified wood as a mineral material for commercial purposes.

43 CFR 3715 Use and Occupancy under the mining laws

43 CFR 3802 Exploration and mining, wilderness review program

43 CFR 3809 Surface Management Regulations

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 managing lands that have outstanding natural history values, such as fossils, which are of scientific interest.

43 CFR, Subpart 8365, addresses the collection of invertebrate fossils and, by administrative extension, fossil plants.

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.

Secretarial Order 3104 grants to the BLM the authority to issue paleontological resource use permits for lands under its jurisdiction.

Policies

BLM Handbook H3042-1, *Solids Minerals Reclamation Handbook*

BLM policy for the management of paleontological resources is outlined in Manual Sections 8270

Nevada Cyanide Management Plan

MOU with the Department of Conservation, Division of Environmental Protection, pertaining to the administration and reclamation of lands disturbed by exploration and mining operations for locatable minerals.

6.4 WATER RESOURCES

Federal Laws and Statutes

FLPMA, as amended, 43 USC 1701 et seq., provides the authority for BLM land use planning.

- Sec. 102 (a) (7) and (8) sets forth the policy of the United States concerning the management of BLM lands.
- Sec. 201 requires the Secretary of the Interior to prepare and maintain an inventory of all BLM lands and their resources and other values, giving priority to areas of critical environmental concern (ACECs), and, as funding and workforce are available, to determine the boundaries of the public lands, to provide signs and maps to the public, and to provide inventory data to state and local governments.
- Sec. 202 (a) requires the Secretary of the Interior, with public involvement, to develop, maintain, and, when appropriate, revise land use plans that provide by tracts or areas for the use of the BLM lands.
- Sec. 202 (c) (9) requires that land use plans for BLM lands be consistent with tribal plans and, to the maximum extent consistent with applicable federal laws, with state and local plans.
- Sec. 202 (d) provides that all public lands, regardless of classification, are subject to inclusion in land use plans, and that the Secretary of the Interior may modify or terminate classifications consistent with land use plans.
- Sec. 202 (f) and Sec. 309 (e) provide that federal, state, and local governments and the public be given adequate notice and opportunity to comment on the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for the management of the public lands.
- Sec. 302 (a) requires the Secretary of the Interior to manage the BLM lands under the principles of multiple use and sustained yield, in accordance with, when available, land use plans developed under Sec. 202 of FLPMA, except that where a tract of BLM lands has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.
- Sec. 302 (b) recognizes the entry and development rights of mining claimants, while directing the Secretary of the Interior to prevent unnecessary or undue degradation of the public lands.

The Clean Water Act of 1987, as amended, 33 USC 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 USC 1323, requires the federal land manager to comply with all federal, state, and local requirements, administrative authority, process, and sanctions 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 USC 201, is designed to make the nation's waters drinkable and swimmable. Amendments in 1996 establish a direct connection between safe drinking water and watershed protection and management.

The Economy Act of 1932, as amended, forms the basis for agreements between BLM and NRCS concerning soil survey work and between BLM and NRCS for certain stream monitoring activities.

The Appropriations Act of 1952, McCarran Amendment, allows the US to be joined as a defendant in any suit for the general adjudication of water rights.

The Watershed Protection and Flood Control Act of 1954, as amended, directs the federal government to cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies to prevent erosion or flood water and sediment damage.

The Water Resources Research Act of 1954, as amended, permits the Secretary of the Interior to give grants to, and cooperate with, federal, state, and local agencies to undertake research into any water problems related to the mission of the department.

The Water Resources Planning Act of 1965, as amended, establishes the Water Resources Council, which is directed to maintain studies of water supplies and water programs. The chairman of any river basin commission can request from an agency, and that agency is authorized to furnish, such information as is necessary to carry out its functions.

The Water Resources Development Act of 1974 directs agencies to consider the full range of potentially useful measures in all projects involving reduction of flood losses.

Executive Order 11288 requires heads of agencies to provide leadership in the field of water quality management and requires federal facilities to develop pollution abatement plans.

Executive Order 11507 directs the federal government in the design, operation, and maintenance of its facilities to provide leadership in the nationwide effort to protect and enhance the quality of air and water resources. It provides for action necessary to correct air and water pollution at existing facilities to be completed or underway by December 31, 1972, and requires surveillance to ensure that water quality standards are met.

Executive Order 11514 as amended by EO 11991 directs federal agencies to provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. It provides for continued monitoring, evaluation, and control of the activities of each federal agency, as well as development of programs and measures to protect and enhance environmental quality and to exchange data and research results and cooperate with other agencies to accomplish the goals of NEPA.

Executive Order 11738 directs each federal agency to enforce the Clean Air Act and the Clean Water Act in the procurement of goods, materials, and services.

Executive Order 11752 mandates that federal agencies provide national leadership to protect and enhance the quality of air, water, and land resources by complying with applicable federal, state, interstate, and local pollution standards. This order mentions the Clean Air Act, Federal Water Pollution Control Act, Solid Waste Act, Noise Control Act, insecticide and pesticide acts, and NEPA.

President's Letter of May 26, 1974, creates the Interagency Committee on Water Resources and establishes interagency participation in river basin planning. The federal agencies concerned executed a memorandum of agreement that assigns interagency cooperation to coordinate water and related land resource activities.

Executive Order 11988 Floodplain Management, as amended by EO 12148, directs each federal agency to take action to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains.

Agencies are further required to avoid direct or indirect support of floodplain development whenever there is a practicable alternative.

Executive Order 11990 Protection of Wetlands directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial value of wetlands in carrying out programs affecting land use.

Executive Order 12088 Federal Compliance with Pollution Control Standards requires all federal agencies to comply with local standards and limitations relating to water quality. As a wastewater management agency, each federal agency is bound to recognize and adopt the policies, goals, and standards of approved Section 208 area-wide water quality management plans in regard to those federal lands under its jurisdiction. Each agency also must implement plan standards to the maximum extent feasible in its own planning process and management activities.

Executive Order 12322 requires that any report, proposal, or plan relating to a federal or federally assisted water and related land resources project or program must be submitted to the Director, Office of Management and Budget, before submission to Congress.

Regulations and Handbooks

Surface Management Regulations 43 CFR 3809;

Wilderness Management, 43 CFR Parts 6300 and 8560;

BLM Manual handbook 7240;

Handbook 8560 (H-8560-1), *Management of Designated Wilderness Areas (Supplement).* This manual section identifies the BLM's role in administering wilderness areas on public

lands, provides policy guidance for BLM personnel, and sets the framework for wilderness management program development; and

Interim Management Policy and Guidelines for Lands under Wilderness Review, H-8550-1.

Memorandums of Understanding (not an all inclusive list)

MOU BLM WFO Humboldt County Commissioners;

MOU BLM WFO Pershing County Commissioners;

MOU with participating agencies on the NW LCT DPS;

MOU with participating agencies on the Humboldt LCT DPS; and

MOU 7240-NV931-9301, with NDEP.

Programmatic NEPA Documents

Environmental Impact Statement for Vegetation Treatments, Watersheds and Wildlife Habitats on Public Lands Administered by the BLM in the Western United States, Including Alaska (Vegetation EIS); implements an integrated vegetation treatment program for BLM-administered public lands and includes manual, mechanical, biological, prescribed burning, and chemical treatment methods.

State Laws and Regulations (not all inclusive)

Nevada Administrative Code, Standards for Water Quality. Chapter 445A, NAC 445A.119 to 445A.225;

Nevada Administrative Code, Mining Facilities. Chapter 445A, NAC 445A.350 to 445A.447;

Water Appropriation. Nevada Revised Statues (NRS) Chapter 533, 534; and

Industrial Artificial Pond Permit. NRS 502.390; NAC 502.460 – 502.495.

Interim Nevada State Water Rights Policy (Pending Resolution).

6.5 VEGETATION AND WEEDS AND INVASIVE SPECIES

Federal Laws and Statutes

Carlson-Foley Act of 1968

Federal Noxious Weed Act of 1974

Executive Order 13112 "Invasive Species"

6.6 FISH AND WILDLIFE

Federal Laws and Statutes

Endangered Species Act of 1973 (16USC 1531 et seq.), as amended. 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.

Sikes Act of 1974, Title II (16 USC 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. 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. The North American Waterfowl Management Plan signed in 1986 between Canada and USA further sets population goals and how to achieve them.

Policies

BLM Special Status Species Policy. It is BLM National Special Status Species Policy to comply with the following stipulations:

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 (SSS) and do not contribute to the need to list any SSS, either under provisions of the ESA or other provisions of this policy.

BLM Manual 6840.06—BLM Sensitive Species Policy. BLM policy is to provide sensitive species with the same level of protection as is 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 Bureau administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

BLM Manual 6840 Special Status Species Management—Sage Grouse Policy guidance for 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. C*onservation* in this Strategy, and consistent with 6840 policy, means the use of all methods and procedures necessary to improve the condition of special status species

and their habitats to a point where their special status recognition is no longer warranted.

BLM National Sage Grouse Habitat Conservation Strategy—June 2004. The objective of the national BLM Sage Grouse Habitat Conservation Strategy is to manage public land in a manner that will maintain, enhance, and restore Sage grouse habitats while providing for multiple uses of BLM-administered public land. The following five goals will guide BLM's 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.
5) Ensure leadership and resources are adequate to implement national and state-level Sage grouse habitat conservation strategies.

Other

North Central Nevada Sage Grouse Conservation Plan- The North Central Nevada Local Area Planning Group (NCLAPG) includes representatives from the Nevada Department of Wildlife, the Bureau of Land Management, the US Forest Service, the University of Nevada Cooperative Extension, the Nevada Farm Bureau, county government, sportsmen, ranchers, trappers, conservation groups, mining, and tribal interests.

6.7 WILD HORSE AND BURROS

Federal Laws, Statutes

The Wild Free-Roaming Horse and Burro Act (PL 92-195)

Public Rangelands Improvement Act of 1978 (PL 95-514)

Wild Horse Annie Act of 1959 (PL 86-234)

Policy

BLM Manual 4700-- Wild Horse and Burro Management in land use planning.

6.8 WILDLAND FIRE ECOLOGY AND MANAGEMENT

Federal Laws and Statutes

Protection Act of September 20, 1922 (42 Stat. 857; USC 594).

Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 USC 1856, 1856a).

Economy Act of June 30, 1932 (47 Stat. 417; 31 USC 686).

Disaster Relief Act, Section 417 (Public Law 93-288).

Annual Appropriations Acts for the Department of the Interior.

The Multiple-Use Sustained-Yield Act of June 12, 1960.

The Forest and Rangeland Renewable Resources Planning Act of August 17, 1974.

Healthy Forests Restoration Act, December 2003 (PL 108-148).

Policies

United States Department of the 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.

CFR Title 43 (1610) (BLM's planning guidance and regulations); BLM Manual 1601.

BLM National Fire Policy

43 CFR 9212.0-6 Policy – 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 9212, Fire Prevention (1992) – Consistent with Departmental policy (910 DM 1.4), it is the BLM's policy that:

1) Prevention of catastrophic wildfires is a high priority. Commitment to an effective wildfire prevention program is expected at all levels within the Bureau.
2) The wildfire prevention program shall be designed to minimize losses from fire consistent with resource objectives identified in Resource Management Plans.
3) Wildfire prevention shall stress the analysis of risks, hazards and values and the development of specific educational, engineering, enforcement and administrative prevention actions.
4) Wildfire prevention activities shall be coordinated with all federal, state, county, and municipal agencies.

5) Each state and district office shall provide coordination, guidance, and assistance to achieve an aggressive wildfire prevention program and shall maintain and update as required a Wildfire Prevention Plan integrated with the Fire Management planning process.

6) Wildfire Prevention Program funding shall be consistent with the identified needs as determined through a prevention analysis that is approved as an operational plan of the FMAP (BLM 9212-1).

7) The BLM shall emphasize the use of hazardous fuel reduction techniques as part of the wildfire prevention program.

BLM Manual Section 1742, Emergency Fire Rehabilitation and BLM Handbook 1742— Provides guidance for emergency fire rehabilitation including measures to prevent accelerated soil erosion, establishment of noxious and/or invasive plant species, and 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) – Describes the authority and policy for prescribed fire use on public lands administered by the Bureau of Land management. It is BLM Policy that:

1) The role of fire and its potential use will be considered in establishing the management strategy for all ecosystems.

2) Prescribed fires may be initiated by planned or unplanned (unscheduled) ignition. See definitions under BLM Manual Section 9210.

3) All prescribed fire (including hazard reduction) projects will support one or more approved land management objective(s) derived from the Bureau's land management planning process.

4) The planning and execution of the prescribed fire will be funded by the benefiting program(s).

5) Each prescribed fire project will have an approved Prescribed Fire Plan completed before ignition and will be reported upon completion. Other agency projects supported by the Bureau will have approved participation.

6) Each prescribed fire will be managed and executed in conformance with the approved plan by qualified personnel. The term qualified will include experience, training, and physical fitness for key positions.

7) Prescribed fire projects will comply with federal, state and local regulations and standards, including air quality and smoke management programs.

8) Pre-burn, burn, and post-burn fuel and weather measurement(s) will be taken on all prescribed fire projects for planning purposes, prescription, compliance, and project evaluation. It may not be necessary to take post-burn weather measurements on fuel reduction projects.

9) Pre-burn and post-burn monitoring will be conducted to determine whether resource and fire objectives are achieved, unless where previous documented experience is adequate to predict post-burn results.

Interagency Standards for Fire and Fire Aviation Operations – As amended annually, describes policy and operations for all fire-related activities in the DOI and USDA.

BLM Manual Section 1740 and BLM Manual Handbook H-1740-1—Provides 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 states:

1) Safety—Firefighter and Public Safety is the first priority. All Fire Management Plans and activities must reflect this commitment.

2) Fire Management and Ecosystem Sustainability—The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological and social components.

3) Response to Wildland Fire—Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected dictate the appropriate management response to the fire.

4) Use of Wildland Fire—Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved Fire Management Plans and will follow specific prescriptions contained in operational plans.

5) Rehabilitation and Restoration—Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

6) Protection Priorities—The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.

7) Wildland Urban Interface—The operational roles of federal agencies as partners in the Wildland Urban Interface are wildland firefighting,

hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, State, or local governments. Federal agencies may assist with exterior structural protection activities under formal Fire Protection Agreements that specify mutual responsibilities of the partners, including funding. (Some federal agencies have full structural protection authority for their facilities on lands they administer, and may also enter into formal agreements to assist state and local governments with full structural protection.)

8) Planning—Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. Fire Management Plans must provide for firefighter and public safety; include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.

9) Science—Fire Management Plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociologic factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, Fire Management Plans, and implementation plans.

10) Preparedness—Agencies will ensure their capabilities to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, equipment, and management oversight.

11) Suppression—Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

12) Prevention—Agencies will work together and with their partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.

13) Standardization—Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, values to be protected methodologies, and public education programs for all fire management activities.

14) Interagency Cooperation and Coordination—Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.

15) Communication and Education—Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs. These programs will be continuously improved through the timely and effective exchange of information among all affected agencies and organizations.

16) Agency Administrator and Employee Roles—Agency administrators will ensure that their employees are trained, certified, and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with operational, administrative, or other skills will support the wildland fire program as necessary. Agency administrators are responsible and will be held accountable for making employees available.

17) Evaluation—Agencies will adopt and implement a systematic method of evaluation to determine effectiveness of projects through implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, facilitate resolution of conflicts, and identify resource shortages and agency priorities.

A Report to the President in Response to the Wildfires of 2000; (September 2000), "Managing the Impacts of Wildfires on Communities and the Environment." – Contains the following key points and recommendations:

1) Continue to Make All Necessary Firefighting Resources Available—As a first priority the Department will continue to provide all necessary resources to ensure that fire suppression efforts are at maximum efficiency in order to protect life and property.

2) Restore Damaged Landscapes and Rebuild Communities—After ensuring that suppression resources are sufficient, invest in the restoration of communities and landscapes impacted by the year 2000 fires.

3) Investment in Projects to Reduce Fire Risk—The fires of 2000 have underscored the importance of pursuing an aggressive program to address the fuels problem with help of local communities, particularly those in the wildland-urban interface areas, where threats to lives and property are greater and the complexity and cost of treatments higher.

4) Work directly With Local Communities—Working with local communities is a critical element in restoring damaged landscapes and reducing fire hazards proximate to homes and communities.

5) Be Accountable—A Cabinet-level management structure should be established to ensure that the actions recommended by the Departments receive the highest priority.

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment - 10 Year Comprehensive Strategy, August 2001 – Provides a foundation for wildland agencies

to work closely with all levels of government, tribes, conservation, and commodity groups 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. The four goals are:

1) Improve Prevention and Suppression.
2) Reduce Hazardous Fuels.
3) Restore Fire Adapted Ecosystems.
4) Promote Community Assistance.

Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Strategy—Implementation Plan, August 2001 – States:

1) This Implementation Plan establishes a collaborative, performance-based framework for achieving these goals and actions with performance measures and tasks to identify key benchmarks and track progress over time. It also provides tools to deliver national goals at the local level in an ecologically, socially, and economically appropriate manner. The Implementation Plan contains the following Implementation outcomes that respond to the four goals established in the 10 Year Comprehensive Strategy:
2) Losses of life are eliminated, and firefighter injuries and damage to communities and the environment from severe, unplanned and unwanted wildland fire are reduced.
3) Hazardous fuels are treated, using appropriate tools, to reduce the risk of unplanned and unwanted wildland fire to communities and the environment.
4) Fire-adapted ecosystems are restored, rehabilitated and maintained, using appropriate tools, in a manner that will provide sustainable environmental, social, and economic benefits.
5) Communities at risk have increased capacity to prevent losses from wildland fire and the potential to seek economic opportunities resulting from treatments and services.

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.

Healthy Forest Restoration Act, December 2003 – Purposes of the Act include the following:

1) To reduce wildfire risk to communities, municipal water supplies, and other at-risk federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects;
2) To authorize grant programs to improve the commercial value of forest biomass (that otherwise contributes to the risk of catastrophic fire or insect or disease infestation) for producing electric energy, useful heat, transportation fuel, and petroleum-based product substitutes, and for commercial purposes;
3) To enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape;
4) To promote systematic gathering of information to address the impact of insect and disease infestations and other damaging agents on forest and rangeland health;
5) To improve the capacity to detect insect and disease infestations at an early stage, particularly with respect to hard-wood forests; and
    a) To promote the recovery of threatened and endangered species;
    b) To improve biological diversity; and
    c) To enhance productivity and carbon sequestration.

Special Status Species and Fire Guidance

Fire management planning and activities that involve site-specific projects within the WFO should consider the following guidance where ESA species occur:

1) Ensure compliance with recovery or conservation plans and activities that promote species recovery in the WFO.
2) Ensure compliance with terms and conditions of consultation with the USFWS and the Nevada Department of Wildlife (NDOW) to promote species recovery in the WFO.
3) Identify specific fire management strategies, activities, and guidelines that serve to conserve SSS and ESA listed proposed and candidate species.

BLM Nevada/Regional Policy, Direction and Guidance

Great Basin Restoration Initiative

BLM Nevada fire management policy reflects the goals of the Great Basin Restoration Initiative (GBRI) to restore the health of Great Basin landscapes and vegetation communities. The stated goals of the GBRI are as follows:

1) Maintain landscapes (especially native plant communities) and dependent species where healthy land exists now or can be obtained by using or modifying standard management practices.

2) Restore degraded landscapes to improve land health and reduce invasive species, especially those responsible for altered wildfire regimes.

3) Sustain long-term multiple use and enjoyment of public land in the Great Basin and provide potential economic opportunities to local communities in the restoration process.

Greater Sage Grouse Conservation Plan for Nevada and Eastern California—June 2004

The 2004 First Edition of the Sage Grouse Conservation Plan for Nevada and Eastern California quantitatively identifies "risks to Sage grouse populations as they are understood to date." In consideration of all of the existing factors, it is clear that the risk factors relating to habitat quantity, habitat quality, and wildfire have affected Nevada Sage grouse populations the most. Habitat quantity has been reduced because of pinyon-juniper encroachment and changes in the plant community from sagebrush to annual grasses due to catastrophic wildfire, the invasion of exotic, fire-prone annuals species, improper grazing management systems, and wild horse overuse.

Nevada Fire Safe Council Statewide Risk Assessment

The Bureau of Land Management Nevada State Office, through and with the cooperation of the Nevada Fire Safe Council (a non-profit, statewide stakeholder organization), has developed a statewide, county-by-county risk/hazard assessment and mitigation plan for wildland urban interface communities for all 17 Nevada Counties. This plan consists of several components, which include county and community risk/hazard assessments; prioritization of significant community values that would be severely affected by wildfire; community fire protection preparedness; and community mitigation goals and objectives. The Nevada Statewide Risk Assessment will be used in the development of the WFO Fire Management Plan as it relates to community assistance, community risk assessment, and community protection.

North Central Nevada Sage Grouse Conservation Plan

The North Central Nevada Local Area Planning Group (NCLAPG) includes representatives from the Nevada Department of Wildlife, the Bureau of Land Management, the US Forest Service, the University of Nevada Cooperative Extension, the Nevada Farm Bureau, county government, sportsmen, ranchers, trappers, conservation groups, mining, and tribal interests.

6.9 CULTURAL RESOURCES

Federal Laws and Statutes

The Antiquities Act of 1906, 16 USC 431-433, authorizes the President to designate historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest as national monuments.

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 (NHPA) of 1966, as amended, 16 USC 470, directs federal agencies to take into account the effect of any undertaking [a federally funded or assisted project] on historic properties. "Historic property" is any district, building, structure, site, or object that is eligible for listing in the National Register of Historic Places because the property is significant at the national, state, or local level in American history, architecture, archeology, engineering, or culture.

The Archaeological and Historic Preservation Act of 1974 (PL 93-291) established procedures to review and address impacts from federal construction projects or federally licensed projects, activities, or programs that may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archeological data.

The Archaeological Resources Protection Act (ARPA) of 1976, as amended in 1979, 43 CFR 7 forbids anyone from excavating or removing an archaeological resource from federal land or traditional Native American lands without a permit from the responsible land-managing agency. It also forbids the sale, purchase, exchange, transport, or receipt of any resource removed in violation of ARPA, or any provision from any other law.

The American Indian Religious Freedom Act of 1978, 42 USC 1996, establishes a national policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 requires federal agencies and museums receiving federal funds to locate, inventory, and determine the ultimate disposition of cultural items, that is, Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony (NAGPRA materials) under their possession or control. The Act also requires consultation with appropriate Native American tribes and Native Alaskan and Native Hawaiian organizations regarding the identification and affiliation of these materials as well as those resulting from subsequent intentional excavations and inadvertent discoveries.

Executive Order 13007 directs federal agencies, when possible, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

Executive Memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments." memorandum directed agency and department heads to ensure that the federal government operates within a government-to-government relationship with federally recognized tribal governments.

Executive Order 13175 directs federal agencies to continue to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, tribal trust resources, and Indian tribal treaty and other rights and to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

36 CFR 60 and 63 discuss the National Register of Historic Places 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 Section 106 process for protecting historic properties.

43 CFR 3 and 7 discuss the preservation of American antiquities and archaeological sites.

43 CFR 3809 addresses protection of archaeological resources from operations authorized under the mining laws.

BLM Nevada/Regional Policy, Direction, and Guidance

BLM Manuals: 8100 Series - *Cultural Resources Management*. The manual is a reference source that provides basic information and general summary guidance for BLM's cultural resource management program:

> 8110 – *Identifying Cultural Resources*. This section provides general direction for identifying cultural resources. It is designed to ensure that BLM Field Office managers locate and record cultural resources on lands they administer or are affected by undertakings they authorize; evaluate the resources' significance and their scientific, cultural, public, traditional, and conservation importance as the basis for managing the resources and the surrounding land area; and maintain records that can be used for educational, research, and other learning purposes.
>
> 8120 – *Protecting Cultural Resources*. This section provides general guidance for protecting cultural resources from deterioration; for making decisions about recovering significant cultural resource data when it is impossible or impractical to maintain cultural resources; for protecting cultural resources from inadvertent adverse effects; and for controlling unauthorized uses of cultural resources.

8130 – *Utilizing Cultural Resources for Public Benefit*. This manual section provides specific procedural direction on authorizing the use of cultural resources on public land, and general guidance on ensuring public benefits from their use.

8160 *Native American Consultation and Coordination* and Handbook H-8160-1 *Tribal Consultation under Cultural Resource Authorities*. The manual section and handbook provide policy and guidance on coordination and consultation with Native Americans. The goal is to assure that tribal governments, Native American communities, and individuals whose interests might be affected have a sufficient opportunity for productive participation in BLM planning and resource management decision making.

The BLM has entered into a national Programmatic Agreement with the National Conference of State Historic Preservation Offices and the Advisory Council to meet its responsibilities under Section 106, 110(f), and 111(a) of the NHPA through an alternate process rather than by following the procedure set forth in 36 CFR Part 800.

The State Protocol Agreement between the BLM, Nevada, and the Nevada State Historic Preservation Office (SHPO) defines how the BLM and SHPO will interact and cooperate under the BLM National Programmatic Agreement.

6.10 PALEONTOLOGICAL RESOURCES

Federal Laws and Statutes

The Antiquities Act of 1906, 16 USC 431-433, authorizes the President to designate historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest as national monuments.

43 CFR 8365 addresses the collection of invertebrate fossils and, by administrative extension, fossil plants.

43 CFR 3622 addresses the free use collection of petrified wood as a mineral material for noncommercial purposes.

43 CFR 3621 addresses collection of petrified wood for specimens exceeding 250 pounds in weight.

43 CFR 3610 addresses the sale of petrified wood as a mineral material for commercial purposes.

43 CFR 3802 and 3809 address protection of paleontological resources from operations authorized under the mining laws.

43 CFR 8200 addresses procedures and practices for the management of lands that have outstanding natural history values, such as fossils, which are of scientific interest.

43 CFR 1610.7-2 addresses the establishment of Areas of Critical Environmental Concern for the management and protection of significant natural resources, such as paleontological localities.

43 CFR 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 8365.1-5 addresses the willful disturbance, removal, and destruction of scientific resources or natural objects, and 8360.0-7 identifies the penalties for such violations.

36 CFR 62 addresses procedures to identify, designate, and recognize National Natural Landmarks, which include fossil areas.

18 USC Section 641 addresses the unauthorized collection of fossils as a type of government property.

Secretarial Order 3104 grants to 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 can be used to protect paleontological resources, where appropriate.

Offer to Lease and Lease for Oil and Gas Form 3100-11 provides for inventories and other short-term studies to protect objects of scientific interest, such as significant fossil occurrences, and requires that operations conducted under oil and gas leases minimize adverse impacts to natural and cultural resources.

Federal Cave Resources Protection Act of 1988 (PL 100-691) and 43 CFR 37 address protection of significant caves and cave resources, including paleontological resources.

BLM Nevada/Regional Policy, Direction, and Guidance

BLM Manual 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.

6.11 VISUAL RESOURCES

Federal Laws and Statutes

USCFLPMA, Section 102 (a)(8), requires that public lands be managed in a manner that will protect the scenic values; Section 103 (c) identifies scenic values as one of the resources for which public lands should be managed; Section 201 (a) requires an inventory of all public lands and their resources and other values, including scenic values

be prepared and maintained on a continuing basis; Section 505 (a) requires that each right-of-way contain terms and conditions which will minimize damage to scenic and aesthetic values.

Policies

BLM Manual 8400 and BLM Handbook H-1601-1 Appendix C, Section I, direct that visual resource management objectives (classes) be developed for all BLM lands through the RMP process.

BLM Handbook H-8410-1 establishes and describes the BLM visual resource inventory system. Designation and management of VRM classes allows the BLM to manage surface-disturbing uses in a manner consistent with natural features and existing uses of all parts of the area.

6.12 SPECIAL DESIGNATIONS

Federal laws and statutes

The Wilderness Act of 1964 (PL 88-577; provides for the designation and preservation of wilderness areas)

National Wild and Scenic Rivers Act of 1968 (specifies management and nonimpairment requirements for rivers designated in the NWSRS)

National Trails System Act (16 USC 1241-1249; establishes national trails system, specific trails within system, and objectives and criteria for establishing future system trails)

Black Rock Desert – High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 and the Amendment of 2001

Policies

BLM Manual 1616, *Prescribed Resource Management Planning Actions*

BLM Handbook H-8550-1, *Interim Management Policy for Lands under Wilderness Review* (BLM 1995; specifies management and nonimpairment requirements for WSAs)

BLM Handbook H-8560-1, *BLM Management of Designated Wilderness Areas* (BLM 1988c; specifies management and nonimpairment requirements for designated wilderness areas)

BLM Manual 1613, *Areas of Critical Environmental Concern* (BLM 1988b; describes the process followed to nominate ACECs and to screen areas for their suitability for ACEC designation)

IM No. 2003-274, *BLM Implementation of the Settlement of Utah v. Norton Regarding Wilderness Study* (addresses BLM's inventory of public land for wilderness characteristics; guidance does not affect established WSAs or Wilderness areas)

IM No. 2003-275, *Consideration of Wilderness Characteristics in Land Use Plans (Excluding Alaska)* (provides guidance regarding the consideration of wilderness characteristics in the land use planning process; guidance does not affect established WSAs or wilderness areas)

IM No. 2003-195, *Rescission of National Level Policy Guidance on Wilderness Review and Land Use Planning* (specifies current BLM guidance in effect and rescinds past guidance no longer effective)

BLM Manual 8351, *Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, and Management* (BLM 2001; establishes guidance for identifying, evaluating, and managing wild and scenic rivers)

BLM Handbook H-8357-1 (Byways)

6.13 LIVESTOCK GRAZING

Federal Laws and Statutes

The Taylor Grazing Act of 1934 (43 USC 315) "[T]he Secretary of the Interior is authorized, in his discretion, by order to establish grazing districts or additions thereto…of vacant inappropriate and unreserved lands from any part of the public domain…which in his opinion are chiefly valuable for grazing and raising forage crops[.]…." The act also provides for the classification of lands for particular uses.

The Public Rangelands Improvement Act of 1978 (43 USC 1901) provides that the public rangelands be managed so that they become as productive as feasible in accordance with management objectives and the land use planning process established pursuant to 43 USC 1712.

43 CFR 4100 (Grazing Regulations)

General Allotment Act of 1887, as amended;

Policies

Executive Order 12548, Livestock Grazing Fee

Sierra Front/Northwestern RAC-Standards and Guidelines for Livestock Grazing

6.14 ENERGY AND MINERAL RESOURCES

Federal Laws and Statutes

The Mineral Leasing Act of 1920, as amended (30 USC 181 et seq.), authorizes the development and conservation of oil and gas resources.

The General Mining Law of 1872, as amended(30 USC 21 et seq.), allows the location, use, and patenting of mining claims on sites on public domain lands of the United States.

The Minerals Leasing Act for Acquired Lands of 1947

The Mining and Mineral Policy Act of 1970 (30 USC 21a) establishes a policy of fostering development of economically stable mining and minerals industries and their orderly and economic development and studying methods for disposing of waste and reclamation.

Surface Mining Control and Reclamation Act of 1977

Material Site Rights-of-Way are granted to State Departments' of Transportation under title 23, Section 317 of the USC.

1970 Geothermal Steam Act (84 Stat. 1566; 30 USC 1001 1025). Geothermal resources on federal lands is administered by the BLM through a competitive and noncompetitive leasing system. Regulations under the Geothermal Steam Act are contained in 43 CFR 3200, published December 21, 1973, and made effective January 1, 1974.

The President's National Energy Policy (Executive Order 13212).

Policies

The BLM made a major revision to the federal oil and gas regulations in 43 CFR 3100, effective on June 17, 1988. The new regulations cover competitive and noncompetitive onshore oil and gas leasing.

The BLM administers saleable minerals leasing under 43 CFR 3500 regulations for sodium, potassium, and phosphate, among others.

BLM Manual Section 3021, *Lands Prospectively Valuable for Leasable Minerals*

BLM Manual Section 3031, *Energy and Mineral Resource Assessment*

BLM Manual Section 3060, *Mineral Reports – Preparation and Review*

BLM Manual Section 3891, *Validity Examinations*

BLM Handbook H-3890-1, *Handbook for Mineral Examiners*

Programmatic NEPA Documents

Within the WFO, oil and gas management is further defined by the Regional Geothermal/Oil and Gas Leasing Environmental Assessment of June 1982 (EA-NV-020-2-38, N-11821) as amended. This document defines stipulations for the exploration, development, and production of oil and gas resources. These stipulations are imposed in addition to the Uniform Standard Lease Stipulations (contained 43 CFR 3100) and site specific BMPs incorporated into applications for permit to drill. These stipulations outline no surface occupancy, timing limitation, and controlled surface use restrictions.

6.15 RECREATION

Policies

BLM Manual 1616, Prescribed Resource Management Planning Actions

BLM Manual 9140, Facilities Maintenance

OHV Administration Guidelines for Nevada Public Lands. Established guidelines for OHV use on public lands within Nevada. Developed by Nevada Northeastern Great Basin Resource Advisory Council (RAC), the Sierra Front Northwestern Great Basin RAC, and the Mojave-Southern Great Basin RAC, as chartered by the Department of the Interior.

IM No. 2004-005, *Clarification of OHV Designations and Travel Management in the BLM Land Use Planning Process*

Executive Order 11644 (Use of Off-Road Vehicles in the Public Lands)

Executive Order 11989 (Off-Road Vehicles on Public Lands) (amends Executive Order 11644)

BLM National Management Strategy for OHV Use (January 19, 2001)

National Mountain Bike Strategic Action Plan, (USDI BLM 2002; a guidance document for BLM field offices, interest groups, and individuals on ways to address mountain bicycling and other nonmotorized/mechanical management issues)

The BLM's *Priorities for Recreation and Visitor Services; BLM Workplan Fiscal Years 2003-2007* (USDI BLM 2003; documents the priorities for recreation and visitor services, goals for these programs, and objectives and milestones to implement the priorities)

BLM Manual 8300, *Recreation Management*

6.16 TRANSPORTATION AND ACCESS

Federal Laws and Statutes

Federal-Aid Highway Act of 1958, 1962, 1966, 1968, and 1973 as amended;

Highway Safety Act of 1966 as amended

Architectural Barriers Act of 1968, as amended

Surface Transportation Act of 1978 and 1982 as amended

Policies

Executive Order 11644 (37 FR 2877), as amended by Executive Order 11989 (42 FR 26959h; requires federal agencies to adopt rules regulating OHV use on public lands and to adopt a designation process and designation criteria to protect land resources and promote public safety. The stated underlying authority for issuance of the orders is NEPA [42 USC 4321])

Other than those listed in a comprehensive list of laws and regulations, *The BLM's Priorities for Recreation and Visitor Service* provides goals, objectives, and milestones for the agency as a whole from 2003 to 2007. Direction specific to transportation and facilities planning, construction, and operations is as follows (BLM 2003):

- Complete travel management plans;
- Establish maintenance standards for trails;
- Improve signage and maps for more understandable travel information;
- Ensure public health and safety and improve accessibility at recreation sites;
- Reduce the backlog of identified deferred maintenance projects; and
- Complete needed improvements to critical public drinking water and sewer systems.

BLM Manual 8342 (provides OHV designation guidance)

6.17 LANDS AND REALTY

Federal Laws and Statutes

Mineral Leasing Act of 1920, as amended;

The Recreation and Public Purposes Act of 1926, as amended;

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 Declaration of Taking Act of 1931;

The Condemnation Act of 1888, as amended;

The Engle Act of 1958;

The Federal Power Act of 1920, as amended;

The Act of May 24, 1928, as amended;

The Desert Land Act of 1877, as amended;

The Carey Act of 1894, as amended;

Unlawful Enclosures Act of 1885;

The Act of December 22, 1928, as amended;

Sections 2275 and 2276 of the Revised Statutes, 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); and

43 CFR 9230 (Trespass).

Other

Southern Nevada Public Lands Management Act;

Federal Land Policy and Management Act of 1976; and

BLM's Interim Wind Energy Development Policy - Instruction Memorandum No. 2003-020 dated October 16, 2002

6.18 SOCIAL ECONOMICS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations- This EO requires that Federal Agencies make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

6.19 HAZARDOUS MATERIALS

Federal Laws and Statutes

The Federal Water Pollution Control Act of 1977, 33 USC 1323, requires federal land managers to comply with all federal, state, and local requirements, administrative authority, process, and sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity.

The Clean Water Act of 1972 (CWA), as amended, 33 USC 1251, establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended) (42 USC 9601 et seq.), also known as Superfund, is primarily intended to address risks posed to human health and welfare or the environment resulting from releases or potential releases of hazardous substances. Other key acts related to CERCLA include the following:

- Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) amends CERCLA/SARA (42 USC I 100 1) adds sections 120 and 121 dealing with federal facilities;
- Community Environmental Response Facilitation Act of 1992 (CERFA) amends CERCLA Section 120(h) (42 USC 9620);
- Pollution Prevention Act of 1990 (42 USC 13 101);
- Resource Conservation and Recovery Act of 1976, as amended (42 USC 6901 et seq.);
- Toxic Substances Control Act of 1976 (15 USC 2601 et seq.);
- Federal Insecticide, Fungicide, and Rodenticide Act of 1975 (7 USC 136 et seq.);
- Clean Air Act of 1970, as amended (42 USC 7401 et seq.);
- Safe Drinking Water Act of 1974, as amended (42 USC 300 et seq.);
- Transportation Safety Act of 1974; Hazardous Materials Transportation Act amendments of 1976 and 1990 (49 USC 1801 et seq.);
- Atomic Energy Act of 1954 (42 USC 200 If);
- Uranium Mill Tailings Radiation Control Act of 1978, as amended (42 USC 2014 et seq.);
- Nuclear Waste Policy Act of 1982 (42 USC 10101 et seq.); and
- Executive Order 11514 Protection and Enhancement of Environmental Quality, March 5, 1970

National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, required by section 105 of CERCLA provides procedures coordinated and effective response to discharges of oil and releases of hazardous substances, pollutants, and contaminants, in accordance with the authorities of CERCLA and the CWA.

Occupational Safety and Health Act of 1970, as amended

Lead-based Paint Poisoning Prevention Act, as amended

Policies

BLM Surface Management Regulations (43 CFR 3809)

Departmental Manual Part 602 Chapter 2 describes land acquisitions, exchanges, and disposals hazardous substance determination procedures.

Departmental Manual Part 910 describes national oil and hazardous substance contingency plan procedures.

BLM Manual 1703 (1995) describes the objectives, policies, responsibilities, and authorities for hazardous materials management. It applies to all BLM programs and actions.

BLM Handbook H-1703-1 *CERCLA Response Actions Handbook* (2001) describes the policy and guidance to BLM in the use of CERCLA authorities and responsibilities in addressing hazardous substance releases.

The current BLM guidance for managing hazardous materials or wastes includes the following:

- W.O. Instruction Memorandum No. 2003-008 (9/27/02): Policy for Entry of BLM Personnel onto Sites with Potential of Known Hazardous Substance Releases;
- W.O. Instruction Memorandum No. 2002-138 (03/29/02): Hazardous Substance Discovery Policy for BLM Field Personnel;
- W.O. Information Bulletin No. 2001-071 (2/20/01): Subject: Bureau of Land Management Safety and Health Policy; and
- W.O. Information Bulletin No. 2004-209 (7/13/04): Subject: Deployment and Population of the Site Cleanup System.

6.20 SOLID WASTE

Policies

BLM Manual 1703 (1995) describes the objectives, policies, responsibilities, and authorities for hazardous materials management. It applies to all BLM programs and actions.

BLM Surface Management Regulations (43 CFR 3809)

7. SCOPING REPORT

CHAPTER 7
SCOPING REPORT

After the scoping period closes on May 25, 2005, the BLM will issue a final scoping report, which will include the number of people who attended the formal scoping meeting and the scoping comments the BLM received. The final scoping report will finalize the analysis of the management situation.

8. GLOSSARY

CHAPTER 8
GLOSSARY

Acquired lands. Lands acquired for BLM administration in various ways, such as (1) purchased by congressionally appropriated funds, (2) donated, (3) exchanged, (4) acquired through the Land and Water Conservation Fund, (5) returned to public land status through withdrawal revocations and/or relinquishments, (6) acquired via split-estate, (7) transferred from a federal agency, (8) acquired by easement, and(9) acquired by any other means.

Activity occasion. A standard unit of recreation use consisting of one individual participating in one recreation activity during any reasonable portion of any one day.

Activity plan. A document that describes management objectives, actions, and projects to implement decisions of the AMS or other planning documents. Usually prepared for one or more resources in a specific area.

Adaptive management. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

Aggregate surfacing. The layer or layers of specified or selected material of designed thickness placed on a road subbase or subgrade for support.

Air quality classes. Classifications established under the Prevention of Significant Deterioration portion of the Clean Air Act, which limits the amount of air pollution considered significant within an area. Class I applies to areas where almost any change in air quality would be significant; Class II applies to areas where the deterioration normally accompanying moderate well-controlled growth would be insignificant; and Class III applies to areas where industrial deterioration would generally be insignificant.

Allotment. An area of land where one or more operators graze their livestock. It generally consists of public lands but may include parcels of private or state-owned lands. The number of livestock and period of use are stipulated for each allotment.

Allotment management plan (AMP). A plan for managing livestock grazing on specified public land.

Allowable cut. The amount of timber that can be harvested annually or every ten years, consistent with the principle of sustained yield. The allowable cut includes all planned timber harvest volumes exclusive of such products as Christmas trees, branches, and cones.

Alluvium. Material deposited on the land by water, such as sand, silt, or clay.

All-terrain vehicle (ATV). Small, three- and four-wheel recreational vehicles capable of operating in rugged terrain.

Ambient air quality. The state of the atmosphere at ground level as defined by the range of measured and/or predicted ambient concentrations of all significant pollutants for all averaging periods of interest.

Ambient noise. The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources.

Andesite. A fine-grained igneous rock of intermediate composition composed of about equal amounts of iron and magnesium minerals and plagioclase feldspars.

Animal unit. One cow, one cow/calf pair, one horse, or five sheep.

Animal unit month (AUM). The forage needed to support one cow, one cow/calf pair, one horse, or five sheep for one month (approximately 800 pounds of forage).

Appropriate management level (AML). The optimum number of wild horses that provide a thriving natural ecological balance on the public range.

Aquatic. Living or growing in or on the water.

Area of critical environmental concern (ACEC). Area where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect humans from natural hazards.

Asbestos. A group of fibrous silicate minerals, generally used in the manufacture of heat- and fire-resistant materials (such as cloth, yarn, paint, paper, brake-linings, and tile).

Attainment area. A geographic area in which levels of a criteria air pollutant meet the health-based National Ambient Air Quality Standard for that specific pollutant.

Attenuation. The reduction of sound intensity and energy as a function of distance traveled.

Attribute. A discreet feature or characteristic of biotic or physical resources that can be measured (example: plant density, which is the number of individuals or stems per unit area).

Back Country Byways. The Bureau of Land Management's scenic byways program. Scenic corridors along many of the agency's roads that have significant scenic, historical, cultural or recreational qualities.

Band. A group of wild horses running together or a lone wild horse.

Beneficial use. Any of various uses of water in an area. Water may be for agricultural, domestic, or industrial use, salmonid spawning, recreation, wildlife habitat, or other uses.

Berm. A curb or dike constructed to control runoff water; also a horizontal step in the slope profile of an embankment dam.

Best management practices (BMPs). A set of practices that, when applied during management actions, ensures that negative impacts on natural resources are minimized. BMPs are applied based on site-specific evaluation and represent the most effective and practical means to achieve management goals for a given site.

Big game. Larger species of wildlife that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.

Biodiversity (biological diversity). The variety of life and its processes and the interrelationships within and among various levels of ecological organization. Conservation, protection, and restoration of biological species and genetic diversity are needed to sustain the health of existing biological systems. Federal resource management

agencies must examine the implications of management actions and development decisions on regional and local biodiversity.

Biological opinion. A document prepared by US Fish and Wildlife Service staff stating their opinion as to whether or not a federal action will likely jeopardize the continued existence or adversely modify the habitat of a listed threatened or endangered species.

Board foot. A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board 1-foot wide, 1-foot long, and 1-inch thick before finishing.

Borax. An evaporite mineral ($Na_2B_4O_7 \cdot 10H_2O$). It is the major source of boron and is generally found in alkali lake deposits. It has a variety of uses (including glass and ceramics manufacturing, agricultural chemicals, chemical fluxes, fire retardant, and preservative).

Buffer strip. A protective area adjacent to an area of concern requiring special attention or protection. In contrast to riparian zones, which are ecological units, buffer strips can be designed to meet varying management concerns.

Candidate species. Any species not yet officially listed but which are undergoing a status review or are proposed for listing according to *Federal Register* notices published by the Secretary of the Interior or the Secretary of Commerce.

Channeled. Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

Clastic. A rock composed of broken pieces of rock.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt. *Geology*: A rock or mineral fragment of any composition finer than 0.00016 inches in diameter. *Mineral:* A hydrous aluminum-silicate that occurs as microscopic plates and commonly has the ability to absorb substantial quantities of water on the surface of the plates.

Clayey soil. Silty clay, sandy clay, or clay.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change as long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Commercial forestland. Forestland that can produce 20 cubic feet of timber per acre per year and that is not withdrawn from timber production.

Commercial thinning. A cutting made in a forest stand to remove excess merchantable timber in order to accelerate growth or improve the health of the remaining trees.

Commodities. Goods and services produced by industries.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concession leases. Authorize the operation of recreation-oriented services and facilities by the private sector, on BLM-administered lands, in support of BLM recreation programs. The concessionaire is authorized through a

concession lease administered on a regular basis. The lease requires the concessionaire to pay fees to the BLM in exchange for the opportunity to carry out business activity. BLM Handbook H-2930-1, Recreation Permit Administration, provides consistent and explicit direction to supplement the Recreation Permit Administration Manual 2930 and regulations set forth in 43 CFR 2930.

Condition survey. An inspection of a facility that identifies and documents conditions, deficiencies and physical problems using established maintenance condition standards as a reference.

Corrective maintenance. Maintenance performed on a nonroutine basis and considered to be a one-time only cost.

Criteria pollutant. The US EPA uses six criteria pollutants as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards. The criteria pollutants are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Crucial winter range. A BLM definition that applies to elk and mule deer comprised of areas defined by Idaho Department of Fish and Game as "winter concentration areas" and "severe winter range:"

- Winter concentration area: That part of winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.

- Severe winter range: That part of the overall range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.

Cubic feet per second (cfs). As a rate of stream flow, a cubic foot of water passing a referenced section in 1 second of time. One cfs flowing for 24 hours will yield 1.983 acre-feet of water.

Culvert. A conduit or passageway under a road, trail or other facility usually consisting of a round pipe, a pipe-arch or an open or closed bottom box or arch.

Cultural resources. Locations of human activity, occupation, or use. Cultural resources include archaeological, historic, or architectural sites, structures, or places with important public and scientific uses and locations of traditional cultural or religious importance to specified social or cultural groups.

Cultural resources inventory. An inventory to assess the potential presence of cultural resources. There are three classes of surveys:

- Class I. An existing data survey. This is an inventory of a study area to provide a narrative overview of cultural resources by using existing information and compile existing cultural resources site record data on which to base the development of the BLM's site record system.

- Class II. A sampling field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites within a portion of an area so that an estimate can be made of the cultural resources for the entire area.

- Class III. An intensive field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites in an area. Upon its completion, no further cultural resources inventory work is normally needed.

Cumulative effects. The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

Cushion material. Native or imported material generally placed over rocky sections of unsurfaced roads to provide a usable and maintainable traveled way.

Deep soil. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Design narrative. A detailed description of the project to be designed, the extent of required services and a preliminary cost estimate.

Desired future condition (DFC). The condition of rangeland resources on a landscape scale that meet management objectives. It is based on ecological, social, and economic considerations during the land planning process. It is usually expressed as ecological status or management status of vegetation (species composition, habitat diversity, and age and size class of species) and desired soil qualities (soil cover, erosion, and compaction).

Diatomite. A soft, crumbly, lightweight, highly porous sedimentary rock consisting mainly of microscopic siliceous skeletons of diatoms (single-celled aquatic plants related to algae). It is used for filter aids, paint filler, abrasives, anti-caking agents, insecticide carriers, and insulation.

Diversity. The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Drainage, surface. Runoff, or surface flow of water, from an area.

Drawing. A graphic representation of an existing condition, the work to be done or product to be furnished.

Earnings. Wages and salaries, other labor income, and proprietor's income (including inventory valuation and capital consumption adjustments).

Easement. Right afforded a person or agency to make limited use of another's real property for access or other purposes.

Ecological site inventory (ESI). The basic inventory of present and potential vegetation on BLM rangelands. Ecological sites are differentiated on the basis of the kind, proportion, or amount of plant species.

Ecosystem-based management. Management driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function; any land management system that seeks to protect viable populations of all native species, to perpetuate natural-disturbance regimes on the regional scale, to adopt a planning timeline of centuries, and to allow human use at levels that do not result in long-term ecological degradation.

Employee compensation. Wages and salaries paid to employees by industries, plus the value of benefits and any contributions to Social Security and pension funds by the employee and employer.

Embankment. A structure of soil, aggregate or rock material placed on the prepared ground surface and constructed as a road subgrade.

Endangered species. Any species that is in danger of extinction throughout all or a significant portion of its range.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no continuous supply from melting snow or other source, and its channel is above the water table at all times.

Epithermal deposit. A type of hydrothermal deposit that occurs mainly as veins formed within 1,600 feet of the surface and with temperatures ranging from 122 to 392°F.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated). Erosion much more rapid than geologic erosion, occurring mainly as a result of human or animal activities or of a catastrophe in nature, such as with fire, that exposes the surface.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as floodplains and coastal plains; synonymous with natural erosion.

Evaporite mineral. A mineral precipitated as a result of evaporation (example: halite).

Existing routes. The roads, trails, or ways that are used by motorized vehicles (jeeps, all-terrain vehicles, motorized dirt bikes, etc.), mechanized uses (mountain bikes, wheelbarrows, game carts), pedestrians (hikers), and horseback riders and are, to the best of the BLM's knowledge, in existence at the time of AMS publication.

Extensive recreation management area (ERMA). Area where recreation management is less structured (than within an SRMA) and recreation use more dispersed with minimal regulatory constraints and where minimal recreation-related investments are required.

Federal Land Policy and Management Act of 1976 (FLPMA). Public Law 94-579 signed by the President on October 21, 1976. Establishes public land policy for management of lands administered by the Bureau of Land Management. FLPMA specifies several key directions for the Bureau, notably that management be on the basis of multiple-use and sustained yield, that land use plans be prepared to guide management actions, that public lands be managed for the protection, development, and enhancement of resources, that public lands be retained in federal ownership, and that public participation be utilized in reaching management decisions.

Feldspar. The most abundant mineral of Earth's crust. The two groups are alkali and plagioclase.

Fertility. The quality that enables a soil to provide plant nutrients in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, aggregation, and other growth factors are favorable.

Fuel type. An identification association of fuel elements of distinctive species, form, size, arrangement or other characteristics that will cause a predictable rate of spread or resistance to control under specific weather conditions.

Fine-textured soil. Sandy clay, silty clay, or clay.

Fire effects. The physical, biological, and ecological impact of fire on the environment.

Fire intensity. The product of the available heat of combustion per unit area of ground and the rate of spread of the fire.

Fire management area. One or more parcels of land having a common set of fire management objectives.

Fire regime. Periodicity and pattern of naturally occurring fire in a particular area or vegetative type, described in terms of frequency, biological severity, and area extent.

Fire suppression. All the work activities connected with fire-extinguishing operations, beginning with the discovery and continuing until the fire is completely extinguished.

Floodplain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially. It is usually a constructional landform built of sediment deposited during a flood.

Fluvial (fluviatile) deposit. A sedimentary deposit laid down, transported by, or suspended in, a stream.

Forage. All browse and herbaceous foods that are available to grazing animals.

Forb. Any herbaceous plant not a grass or a grasslike species.

Forest health. The condition in which forest ecosystems sustain their complexity, diversity, resiliency, and productivity, while providing for human needs and values.

Forestland. Land that is now, or is capable of being, at least 10 percent stocked by forest tree species such as ponderosa pine, Douglas fir, western larch, white fir, or lodgepole pine.

Fuels. Includes living and dead plant materials that are capable of burning.

Fuel type. An identification association of fuel elements of distinctive species, form, size, arrangement or other characteristics that will cause a predictable rate of spread or resistance to control under specific weather conditions.

Graben. A fault-bounded down-dropped portion of the Earth's crust.

Gravel. Rounded or angular fragments of rock as much as 3 inches in diameter. An individual piece of gravel is a pebble.

Gravel (geology). Unconsolidated, rounded rock fragments greater than 0.08 inches in diameter. Sizes range from pebbles (.008–2.5 inches) to cobbles (2.5–10 inches) to boulders (greater than 10 inches).

Grazing preference. The total number of animal unit months of livestock use on public lands apportioned and attached to base property owned or controlled by a permittee. Some of the total grazing preference may have been suspended in past administrative actions. That portion of the grazing preference that is not suspended is the active grazing preference.

Grazing system. Scheduled grazing use and non-use of an allotment to reach identified goals or objectives by improving the quality and quantity of vegetation.

Groundwater (geology). Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Habitat. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Habitat management plan (HMP). A written and approved activity plan for a geographical area that identifies habitat management activities to be implemented in achieving specific objectives of planning decisions.

Hazardous material. A substance, pollutant, or contaminant that, due to its quantity, concentration, or physical or chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment.

Harvest unit. An area from which trees are harvested. Harvest method can range from clearcutting to individual tree selection.

Herd. One or more wild horse bands using the same general area.

Herd area (HA). A geographic area identified as having provided habitat for a wild horse herd in 1971.

Herd management area (HMA). A geographic area identified in a management framework plan or resource management plan for the long-term management of a wild horse herd.

Herd management area plan. A plan that prescribes measures for the protection, management, and control of wild horses and their habitat on one or more HMAs, in conformance with decisions made in approved management framework or resource management plans.

High resource values. Lands with high resource values are considered to be public lands that have the caliber of resources to qualify them for inclusion in SMAs, such as ACECs, NWSRs, WSAs, and high resource areas, such as critical wildlife habitat areas, wild horse herd areas, critical fish habitat areas, cultural site areas, and threatened and endangered species habitats. Long-term retention of public lands in these SMAs is either required by law through congressional action or identified through the land use planning process.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes.

Hot-springs deposit. A type of hydrothermal deposit formed in a hot-springs environment.

Hydrothermal deposit. A mineral deposit formed by hot, mineral-laden fluids.

Individual tree selection cutting. A cutting method in which selected trees are removed throughout a harvest unit to meet a specific goal. Goals can range from harvest of a specific volume to improving the health of the remaining trees.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Inslope. The slope between the shoulder and the ditch bottom in cut sections of a road.

Interim management policy (IMP). Policy for managing public lands under wilderness review. Section 603 (c) of FLPMA states "During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this act: Provided, that, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection."

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Interior drainage. Streams with no outlet to the sea.

Invertebrate. An animal lacking a backbone or spinal column.

Karst region. An irregular limestone region with sinks, underground streams, and caverns.

Known geothermal resource area (KGRA). "An area in which the geology, nearby discoveries, competitive interest, or other indicia would, in the opinion of the Secretary, engender the belief in men who are experienced in the subject matter that the prospect for extraction of geothermal stream or associated geothermal resources are good enough to warrant expenditures or money for that purpose" [43 CFR 3200.0-5(k)].

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Leasable minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium and sodium minerals, and oil and gas. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lek. Areas used by sage-grouse during the mating season where males display to attract receptive females. These sites are characterized by low vegetation with sparse shrubs often surrounded by big sagebrush communities. Strutting grounds or leks are considered to be the center of sage-grouse activities.

Lentic. Pertaining to standing water, such as lakes and ponds.

Limestone. A sedimentary rock consisting chiefly of calcium carbonate.

Lithic site. An archaeological site containing debris left from the manufacture, use, or maintenance of flaked stone tools.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Locatable minerals. Minerals or materials subject to claim and development under the Mining Law of 1872, as amended. Generally includes metallic minerals, such as gold and silver, and other materials not subject to lease or sale (such as some bentonites, limestone, talc, and some xeolites). Whether or not a particular mineral deposit is locatable depends on such factors as quality, quantity, mineability, demand, and marketability.

Maintenance. The work required to keep a facility (road or building) in such a condition that it may be continuously utilized at its original or designed capacity/efficiency and for its intended purposes.

Maintenance Level. An established standard which prescribes the frequency and intensity of maintenance necessary to meet the management and use objectives of the facility.

Management framework plan (MFP). BLM land use plan; predecessor to a resource management plan.

Map unit. The basic system of description in a soil survey and delineation on a soil map. Can vary in level of detail.

Mature timber. Trees that have passed their maximum rate of growth in terms of physiological processes, height, diameter, or volume.

MBF. Thousand board feet.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Metamorphosed. Rock that has been altered in composition, texture, or structure by heat or pressure or both.

Mineral entry. Claiming public lands (administered by the BLM) under the Mining Law of 1872 for the purpose of exploiting minerals. May also refer to mineral exploration and development under the mineral leasing laws and the Material Sale Act of 1947.

Mineral materials. Common varieties of such material as sand, building stone, gravel, clay, and moss rock obtainable under the Minerals Act of 1947, as amended.

Mining Law of 1872. Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the General Mining Laws or Mining Laws.

MMBF. Million board feet.

Multiple use management. Management of public land and resource values to best meet various present and future needs of the American people. This means coordinated management of resources and uses to assure the long-term health of the ecosystem.

Multiplier. A change in an economic measure resulting from a specified change in some other economic measure.

National Environmental Policy Act of 1969 (NEPA). Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision making.

National Register Of Historic Places (NRHP). A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance, established by the Historic Preservation Act of 1966 and maintained by the National Park Service.

Naturalness (a primary wilderness value). An area that generally appears to have been affected primarily by the forces of nature, wherein the imprint of people's work is substantially unnoticeable.

Nonconstructional Improvements. A practice or treatment which improves the resource condition and/or production for multiple use. Such improvements may include seedlings; plant control through chemical, mechanical, biological means; prescribed burning; water spreaders; pitting; chiseling; contour furrowing; etc.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Off-highway vehicle (OHV). A conveyance that can be operated off improved and regularly maintained roads with hardened or gravel surfaces.

Off-road vehicle designations. Public lands designated for OHV use. Lands in the planning area are designated as open, limited, or closed for OHV use.

- Open. Designated areas and trails where OHVs may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343). For the purposes of this AMS, an open area is where all types of motorized vehicles (for example, jeeps, all-terrain vehicles, motorized dirt bikes) and mechanized uses (mountain bikes, wheelbarrows, game carts) are allowed to travel freely at all times, anywhere in the area, on roads or cross country, subject to the operating regulations and vehicle standards set forth in 43 CFR, subparts 8341 and 8342.

- Limited. Designated areas and trails where the use of OHVs is subject to restrictions, such as limiting the number or types of vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions, such as limiting use to certain types of vehicles during certain times of the year, are possible. For the purposes of this AMS, a limited area is one where motorized and mechanized travel is restricted to designated routes, unless otherwise noted. Off-road cross-country travel is prohibited in limited areas. Some routes may be closed in limited areas.

- Closed. Designated areas and trails where the use of OHVs is permanently or temporarily prohibited. Emergency use of vehicles is allowed. Use may be allowed for other reasons, but such use shall be made only with the approval of the authorized officer. For the purposes of this AMS, a closed area is where motorized and mechanized use is prohibited in all locations at all times.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Overstory. The trees in a forest that form the upper crown cover.

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

Patented claim. A claim on which title has passed from the federal government to the mining claimant under the Mining Law of 1872.

Pavement. A surface course of concrete or bituminous material placed on a road, trail, turnout, etc., to support the traffic load and distribute it to the subgrade.

Planning area. The geographical area for which land use and resource management plans are developed and maintained. The planning area for this AMS is about 7.3 million acres of federal land administered by the Winnemucca Field Office.

Percolation. The downward movement of water through the soil.

Perennial stream. A stream in which water is present during all seasons of the year.

Permeability. The quality of the soil that enables water to move downward through the profile, measured as the number of inches per hour that water moves downward through the saturated soil.

Personal income. Employee compensation plus property income.

Physiographic province. A geographic region with similar climatic, land form, and geologic features and which is significantly different from adjacent regions.

Pluvial. Referring to a period of greater rainfall.

Pluvial lake. A water body formed during a period of exceptionally high rainfall (such as during a time of glacial advance during the Pleistocene epoch) and now either extinct or existing as a remnant, such as Lake Bonneville.

Policy. A guiding principle upon which a specific decision or set of decisions is based.

Porphyry deposit. A large, low-grade metallic mineral deposit containing disseminated sulfide minerals (examples: copper, gold, molybdenum, or tin).

Prescribed burning. Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions that allow the fire to be confined to a predetermined area and at the same time to produce the fire line intensity and rate of spread required to attain planned resource management objectives.

Prescribed fire. Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescription. Written statement defining objectives to be attained, as well as measurable criteria, which guide the selection of appropriate management actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, and legal considerations under which the fire will be allowed to burn.

Preventative maintenance. Scheduled servicing, repairs, inspections, adjustments, and replacement of parts that result in fewer breakdowns and fewer premature replacements and achieve the expected life of facilities and equipment.

Primary wilderness values. The primary or key wilderness values described in the Wilderness Act by which Wilderness Study Areas and designated wilderness are managed to protect and enhance the wilderness resource. Values include roadlessness, naturalness, solitude, primitive and unconfined recreation, and size.

Primitive and unconfined recreation (a primary wilderness value). Nonmotorized and undeveloped types of outdoor recreation activities. Refers to wilderness recreation opportunities, such as nature study, hiking, photography, backpacking, fishing, hunting, and other related activities. Does not include the use of motorized vehicles, bicycles, or other mechanized means of travel.

Productivity. (1) Soil productivity: the capacity of a soil to produce plant growth, due to the soil's chemical, physical, and biological properties (such as depth, temperature, water holding capacity, and mineral, nutrient, and organic matter content). (2) Vegetative productivity: the rate of production of vegetation within a given period. (3) General: the innate capacity of an environment to support plant and animal life over time.

Profile grade. The trace of a vertical plane, as shown on the drawings, intersecting the top surface at the centerline of the proposed facility construction.

Proper functioning condition (PFC). Riparian-wetlands function properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows. The functioning condition of these areas is influenced by geomorphic features, soil, water and vegetation.

Public land. Any land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM.

Public road. Part of a public agency road system. A public road is not within the BLM's jurisdiction, does not receive support from BLM construction or maintenance funds, and is not subject to BLM regulations. This differs from a road built to serve a BLM facility which the public is allowed to use, such as a road to a recreation site. A BLM road remains under BLM control, even though it serves the general public. The BLM administers no "legal", public roads. A public road must meet the criteria for public roads as established by the Secretary of Transportation (23 U.S.C. 101 and 104).

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Rangeland health. The degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained.

Raptor. Bird of prey with sharp talons and strongly curved beaks, such as hawks, owls, vultures, and eagles.

Reclamation. Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.**Reconstruction.** Replacing, rebuilding or restoring an improvement, facility or treatment (i.e. fence, spring development, cattle guard, road, trail, building, parking lot, etc.) to its original or modified condition.

Recreation opportunity spectrum (ROS). A means of characterizing recreation opportunities in terms of setting, activity, and experience opportunities.

Recreation site. An area where management actions are required to provide a specific recreation setting and activity opportunities to protect resource values, to provide public visitor safety and health, or to meet public recreational use demands and recreation partnership commitments. A site may or may not have permanent facilities.

Recreation use permits. Authorizations for use of developed facilities that meet the fee criteria established by the Land and Water Conservation Fund Act of 1964, as amended, or subsequent authority (such as the pilot fee

demonstration program). Recreation use permits are issued to ensure that US residents receive a fair and equitable return for the use of those facilities to help recover the cost of construction, operation, maintenance, and management of the permits.

Rehabilitation. The activities necessary to repair damage or disturbance caused by wildfire or the fire suppression activity.

Reportable quantity. The amount of a hazardous material or substance that is considered reportable under CERCLA. Reportable quantities are 1 pound or greater, or an amount as established and listed at 40 CFR 302.4 or under section 111 of the Clean Water Act.

Research natural area (RNA). An area where natural processes predominate and which is preserved for research and education. Under current BLM policy, these areas must meet the relevance and importance criteria of ACECs and are designated as ACECs.

Resource management facility. Any physical development, including transportation facilities, structures, developments, practices, treatments or improvements used to aid in the management, rehabilitation and protection of the public lands and waters.

Resource management plan (RMP). A land use plan as described by the FLPMA.

Restoration. Actions taken to modify an ecosystem to achieve desired, healthy, and functioning conditions and processes.

Rhyolite. A fine-grained light-colored silica-rich igneous rock composed largely of potash feldspars and quartz.

Rift. A graben of regional extent; it marks a zone where the entire crust is ruptured under tension.

Right-of-way. A permit or an easement authorizing the use of public land for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, and reservoirs. Also, the reference to the land covered by such an easement or permit.

Right-of-way corridor. A parcel of land identified by law or by order of the Secretary of the Interior, through a land use plan, or by other management decision as being the preferred location for existing and future right-of-way grants and suitable to accommodate one type of right-of-way or one or more rights-of-way that are similar, identical, or compatible.

Riparian. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or subirrigation zone of streams, ponds, and springs.

Riparian/aquatic system. Interacting system between aquatic and terrestrial situations. Identified by a stream channel and distinctive vegetation that requires or tolerates free or unbound water.

Riparian zone. An area one-quarter mile wide encompassing riparian and adjacent vegetation.

Road. As used herein, a transportation facility used primarily by vehicles having four or more wheels, documented as such by the owner, and maintained for regular and continuous use.

Roads. Vehicle routes that have been improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

Roadless. Refers to the absence of roads that have been constructed and maintained by mechanical means to ensure regular and continuous use.

Roadway. As used herein, the portion of a road within the limits of the excavation and embankment.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more (examples: pebbles, cobbles, stones, and boulders).

Routes. A combination of roads, trails, or ways that are used by motorized vehicles (such as jeeps, all-terrain vehicles, motorized dirt bikes), mechanized uses (mountain bikes, wheelbarrows, game carts), pedestrians (hikers), and/or equestrians (horseback riders).

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand (geology). A rock fragment or detrital particle between 0.0025 and 0.08 inches in diameter.

Scenic river. A river or section of a river that is free of impoundments and whose shorelines are largely undeveloped but accessible in places by roads.

Section 202 lands. Lands being considered for wilderness designation under section 202 of FLPMA.

Sediment. Soil, rock particles, and organic or other debris carried from one place to another by wind, water, or gravity.

Selection cutting. Removal of individual or small groups of trees to meet predetermined goals for the remaining stand.

Series, soil. A nationally defined soil type set apart on distinct soil properties that affect use and management. In a soil survey, this includes a group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The portion of the roadway contiguous to the travelway for accommodation of stopped vehicles, for emergency use and for lateral support of pavement structure, or the edge of the travelway if no shoulder width exists.

Silica. Silicon dioxide (SiO_2), occurring in both crystalline (such as quartz, cristobalite, and chalcedony) and amorphous form (such as opal), as well as impure forms (such as diatomite and chert), and combined as silicates for numerous significant minerals (such as feldspars or amphiboles).

Silt (geology). A rock fragment or detrital particle smaller than very fine sand and larger then coarse clay, ranging from 0.0024 to 0.00016 inches in diameter and commonly having a high content of clay minerals. As a soil separate: individual mineral particles ranging in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class: soil that is 80 percent or more silt and less than 12 percent clay.

Slate. A compact, fine-grained, platy metamorphic rock formed from shale or claystone.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. For example, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Soil. A natural, three-dimensional body at Earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil association. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single soil map unit.

Soil classification. The systematic arrangement of soils into groups or categories on the basis of their characteristics.

Soil compaction. An increase in soil bulk density of 15 percent or more from the undisturbed level.

Soil complex. A map unit of two or more kinds of soils in such an intricate pattern or so small an area that it is not practical to map them separately at the selected scale of mapping.

Soil productivity. The capacity of a soil for producing a specified plant or sequence of plants under specific management.

Soil profile. A vertical section of the soil extending through all its horizons and into the parent material.

Soil survey. A field investigation resulting in a soil map showing the geographic distribution of various kinds of soil and an accompanying report that describes the soil types and interprets the findings.

Soil texture. The relative proportions of sand, silt, and clay particles in a mass of soil.

Special recreation management area (SRMA). An area where recreation is one of the principal management objectives, where intensive recreation management is needed, and where more than minimal recreation-related investments are required.

Special recreation permits. Authorizations that allow for recreational uses of public lands and related waters. Issued as a means to control visitor use, to protect recreational and natural resources, and to provide for the health and safety of visitors. Commercial special recreation permits also are issued as a mechanism to provide a fair return for the commercial use of public lands.

Special status species. Plant or animal species known to be or suspected to be limited in distribution, rare or uncommon within a specific area, or vulnerable to activities that may affect their survival. Lists of special status species are prepared by knowledgeable specialists throughout Nevada; the BLM prepares a list of state sensitive species predominantly based on the lists prepared biennially by ONHP.

Special stipulation. A specific operating condition or limitation added to a mineral lease to protect sensitive resources. It modifies the original terms and conditions of that lease.

Stand. A community of trees occupying a specific area and sufficiently uniform in species, age, spatial arrangement, and condition as to be distinguishable from trees on surrounding lands.

Standard. A principle which must be followed or a condition which must be met.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates.

Subgrade. Top surface of roadbed upon which subbase, base or surface course is constructed. For roads without base course or surface course, that portion of roadbed prepared as the finished wearing surface.

Surface course. The top layer of a road structure designed to resist skidding, traffic abrasion, the disintegrating effects of climate, and to provide structural support for heavy vehicles.

Supplemental values. Resources associated with wilderness that contribute to the quality of wilderness areas.

Sustained yield. Maintenance of an annual or regular periodic output of a renewable resource from public land consistent with the principles of multiple use.

Talc. A very soft, light green mineral ($Mg_3Si_4O_{10}$ $[OH_2]$), found in basic igneous rocks and metamorphosed dolomites ($CaMg$ $[CO_3]_2$). It is used in a wide variety of applications (such as filler, cosmetics, and lubricants and as ornamental stone).

Talus. Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.

Terrestrial. Living or growing in or on the land.

Thinning. A cutting made in a forest stand to remove or kill excess timber in order to accelerate growth or improve the health of the trees that remain.

Threatened species. Any species or significant population of that species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Usually includes only those species that have been recognized and listed as threatened by federal and state governments but may include species categorized as rare, very rare, or depleted

Timber. Standing trees, downed trees, or logs that are capable of being measured in board feet.

Total dissolved solids. Salt or an aggregate of carbonates, bicarbonates, chlorides, sulfates, phosphates, and nitrates of calcium, magnesium, manganese, sodium, potassium, and other cations that form salts.

Traditional cultural properties. A cultural property that is eligible for inclusion in the National Register of Historic Places because of its association with a living community's cultural practices or beliefs that are rooted in that community's history and are important in maintaining the community's continuing cultural identity.

Trails. Land facilities that are used primarily for foot traffic, beasts of burden, and various special equipment or machinery generally used for individual travel. Facilities used by jeep or four-wheel drive are classified as "roads" or "ways".

Travelway. The portion of the roadway for the movement of vehicles, exclusive of shoulders.

Trend. The direction of change in ecological status observed over time. Trend is described as toward or away from the potential natural community or as not apparent.

Trespass. Any unauthorized use of public land.

Turnout. Ashort auxiliary lane on a one-lane road provided for the passage of meeting vehicles, or a small area adjacent to the road allowing vehicles to stop temporarily.

Understory. That portion of a plant community growing underneath the taller plants on the site.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Utility Corridor. Tract of land varying in width and forming passageway through which various commodities such as oil, gas, and electricity are transported.

Utilization. The proportion or degree of the current year's forage production that is consumed or destroyed by animals (including insects); may refer either to a single plant species, a group of species, or to the vegetation as a whole; synonymous with use.

Vegetation manipulation. Alteration of present vegetation by using fire, plowing, or other means to manipulate natural succession trends.

Vegetation type. A plant community with immediately distinguishable characteristics based on and named after the apparent dominant plant species.

Vertebrate. An animal having a backbone or spinal column.

Visit. A unit of measure for evaluating the amount of recreational activity on public land; equivalent to one person spending any part of a day recreating on public land.

Visitor day. Represents one person using BLM-managed lands for all or part of one day. For example, if one person spent one night camping on public lands, it is counted as two visitor days.

Visual resources. The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that comprise the scenery of the area.

Visual resource management (VRM). The inventory and planning actions taken to identify visual resource values and to establish objectives for managing those values, and the management actions taken to achieve the visual resource management objectives.

Visual resource management classes. Identify the degree of acceptable visual change within a characteristic landscape. A classification is assigned to public lands based on the guidelines established for scenic quality, visual sensitivity, and visibility.

- VRM Class I. This classification preserves the existing characteristic landscape and allows for natural ecological changes only. Includes congressionally authorized areas (wilderness) and areas approved through an RMP where landscape modification activities should be restricted.

- VRM Class II. This classification retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities should be low and not evident.

- VRM Class III. This classification partially retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities may be moderate and evident.

- VRM Class IV. This classification provides for major modifications of the characteristic landscape. The level of change in the basic landscape elements due to management activities can be high. Such activities may dominate the landscape and be the major focus of viewer attention.

- VRM Class V. This classification applies to areas where the characteristic landscape has been so disturbed that rehabilitation is needed. Generally considered an interim short-term classification until rehabilitation or enhancement is completed.

Visual sensitivity. Visual sensitivity levels are a measure of public concern for scenic quality and existing or proposed visual change.

Watershed. Topographical region or area delineated by water draining to a particular watercourse or body of water.

Way. As used herein, a roadlike feature used by vehicles having four or more wheels, but not declared a road by the owner and which receives no maintenance to guarantee regular and continuous use.

Wild horses. Unbranded and unclaimed horses that use public land as all or part of their habitat or that have been removed from such land by an authorized officer but have not lost their status under section 3 of the Wild Free-Roaming Horse and Burro Act.

Wilderness. An area formally designated by Congress as a part of the National Wilderness Preservation System.

Wilderness characteristics. Identified by Congress in the Wilderness Act of 1964, and namely size, naturalness, outstanding opportunities for solitude, or a primitive and unconfined type of recreation, and supplemental values, such as geological, archaeological, historical, ecological, scenic, or other features.

Wilderness inventory. A written description of resource information and data, and a map of those public lands that meet the wilderness criteria as established under Section 603 (a) of FLPMA and Section 2 (c) of The Wilderness Act.

Wilderness study area (WSA). A roadless area or island that has been inventoried and found to have wilderness characteristics, as described in section 603 of FLPMA and section 2 (c) of The Wilderness Act. WSAs were administratively designated by BLM following evaluation of wilderness inventories.

Wildfire. Any fire occurring on wildland that is not meeting management objectives and thus requires a suppression response. An unwanted wildland fire.

Wildland fire. Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland fire situation analysis (WFSA). A decision making process that evaluates alternative management strategies against selected safety, environmental, social, economical, political, and resource management objectives as selection criteria.

Withdrawal. An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws. Withdrawals are also used to transfer jurisdiction of management of public lands to other federal agencies.

Woodland. A forest community occupied primarily by noncommercial species such as juniper, mountain mahogany or aspen.

9. LIST OF PREPARERS

CHAPTER 9
LIST OF PREPARERS

Table 9-1
RMP/EIS Preparers

Name	Years Experience	Role/Responsibility	Education
Bureau of Land Management			
Gail Givens	22	Field Office Manager	BS Natural Resource Conservation
Jeff Johnson	16	Planning and Environmental Coordinator	BS Conservation of Natural Resources
Rodger Bryan	27	Wildlife	BS Wildlife
Jerry Carpenter	25	Facilities/Road Manager	Engineering Technician
Delores Cates	17	Geothermal/Oil and Gas and Visual Resources	BS Geology
Ken Detweiler	29	Special Status Species/Wildlife	BS Wildlife
Craig Drake	14	Water Resources	BS Resource Management/Hydrology
Bob Edwards	33	Lands/Realty	BS Business Management
Mark Ennes	4	Cultural Resources/Paleontology	MA Anthropology
Jeff Fedrizzi	9	Fire management	MS Wildlife Resource/Fire Ecology
Linda Goulter	28	Support Services, Roads, and Transportation	MS Procurement and Acquisition Management

Table 9-1
RMP/EIS Preparers *(continued)*

Name	Years Experience	Role/Responsibility	Education
Dave Hays		Nonrenewable Resources	*Core Team*
Rod Herrick	28	Hazardous Materials	MS Geology
Arlan Hiner	31	Renewable Resources	BS Forestry
Heidi Hopkins	2	Wild Horses and Burros	MS Vertebrate Zoology
Dave Lefevre	3	Recreation	BS Recreation Management
Vince Lincoln	4	GIS	BS Geography
Ken Loda	21	Locatable Minerals	BS Geology
Brian Murdock	8	Wild and Scenic Rivers/Wilderness	BS Environmental Studies
Chuck Neill	19	Forestry/Weeds	BS Range Conservation
Ronda Purdy	7	Vegetation/Livestock Grazing	BS Range Conservation
Matt Varner	5	Fish and Aquatic/Riparian Habitat	BS Wildlife and Fisheries Management
Mike Whalen	37	Fuels Management/Fire Ecology	
Vicki Wood	12	Assistant Field Office Manager	MED Education
Mike Zielinski	27	Soils Scientist	BS Resource Management/Soils
Gerald Gulley	5	Recreation	MS Forestry
Jamie Thompson	19	Public Affairs	JD Law
Joey Carmosino	4	Recreation	MA Recreation Administration
Carson City Field Office			
Tom Crawford	30	Social and Economic Resources	BS Natural Resource and Environmental Economics

Table 9-1
RMP/EIS Preparers *(continued)*

Name	Years Experience	Role/Responsibility	Education
Nevada Department of Wildlife			
Contractor			
Gary Bridges		Computer Support	
Contractor—Tetra Tech			
David Batts	15	Project Manager	MS Natural Resource Planning, BS International Development
Holly Prohaska	8	Environmental Coordinator/Rangelands, Livestock Grazing, and Wild Horse and Burros	MS Environmental Management BA Marine Science, Biological Pathway BS Geology
Kirk Miller	25	Environmental Coordinator	Graduate Professional Degree in Hydrogeology
Joe Arnett	20	Vegetation, Wetlands, Riparian and Forestry	MS Plant Systematics
Kevin T. Doyle	18	Cultural Resources/Paleontology	BA Sociology BA Geography
Justin Colgan	5	Support Services and GIS/Webmaster	
Derek Holmgren	7	Lands and realty/Visual Resources/Hazardous Materials	MPA Environmental Policy and Natural Resource Management MS Environmental Science BS Environmental Science
Genevieve Kaiser	15	Lands and Realty/Socioeconomics/Renewable Resources	MS Energy Management and Policy BA Economics Professional Certification: GIS
David Kane	18	Rangelands Resources	PhD Ecology and Conservation Biology (expected 2005); BS Wildlife Ecology
Angie Nelson	9	Recreation, Travel Management/Transportation and Visitor Services	BA Biology
Bindi Patel	4	Socioeconomics Environmental justice	MEM Resource Economics and Policy BA Geology
David Steed	14	Wildland Fire Ecology and Management	BS Idaho State University
Randy Varney	15	Technical Writing/Editing	MFA in Writing (expected 2005) BA Technical and Professional Writing
Leslie Garlinghouse	7	Public Collaboration	BS Environmental Science and Policy
Michael Egan	17	Minerals resources and oil and gas	BS Geology
Jeanette Weisman	5	Fish and Wildlife/Special Status Species	BS Zoology-Bioanthropology

Table 9-1
RMP/EIS Preparers *(continued)*

Name	Years Experience	Role/Responsibility	Education
Tom Whitehead	18	Water Resources/Soils and Geology	MS Hydrology BS Geology BA Anthropology
Kirk D. Winges	27	Air Quality and Climate	BS Earth and Planetary Science MS Chemical Engineering
Jennifer Zakrowski	7	Recreation/Travel Management/Administrative Designations	MS Project Management BS Natural Resource Management

10. REFERENCES

CHAPTER 10
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