

# Pine Nut Land Health Project

DRAFT ENVIRONMENTAL ASSESSMENT

DOI-BLM-NV-C020-2013-0017-EA

U.S. Department of the Interior  
Bureau of Land Management  
Carson City District  
Sierra Front Field Office  
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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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## 1.0 INTRODUCTION

### 1.1 Background

The Bureau of Land Management (BLM) Carson City District, Sierra Front Field Office is proposing a 24,564 acre<sup>1</sup> land health project in the Pine Nut Mountains, located in Douglas, Lyon and Carson City Counties, Nevada (Figures 1-3). The Pine Nut Land Health Project (Project) would be implemented over a 10 to 15 year period to protect, maintain and restore ecologically diverse, properly functioning and resilient native plant communities.

Vegetation management treatments are needed in the Pine Nut Mountains to restore ecological balance, diversity and resilience to plant communities and reduce hazardous fuels to protect people, property, infrastructure and resources from severe wildfire. Wildlife habitat quality is diminishing due to woodland expansion and is threatened by heavy accumulations of fuels that greatly increase the potential for large, high-intensity wildfires. Historically, periodic wildfires maintained a healthy balance of vegetation types and prevented fuels from accumulating; however, the existing patterns of vegetation are not conducive to favorable effects from fire without the intervention of proposed treatments. Hazardous fuels currently need to be managed to protect vegetation from uncharacteristic, severe wildfire.

Altered disturbance regimes and climate change have resulted in major changes in plant community compositions. Since the 1860's, many bunchgrass and sagebrush-bunchgrass (*Artemisia sp.-Poaceae sp.*) communities, which dominated the Intermountain West, have shifted to pinyon-juniper woodlands (*Pinus monophylla-Juniperus osteosperma*) or introduced annual dominated communities (West 1984, Miller et al. 1994). Studies show that the expansion of pinyon-juniper has more than tripled in the areas dominated by pinyon-juniper woodlands within the last 150 years. Although pinyon-juniper woodlands have increased dramatically in the last 150 years, they currently occupy far less than they are capable of under current climatic conditions (Miller & Tausch, 2001). The increasing dominance of pinyon-juniper within portions of the Pine Nut Mountains is apparent from aerial photography and presence of young pinyon-juniper expanding into sagebrush communities where soil type indicates no or very few trees should exist. Woodland expansion affects soils, vegetation structure and composition, water, nutrient and fire cycles, forage production, and plant and wildlife biodiversity.

Studies conclude that barring some major environmental change or management action, trees will continue to dominate most of the sites favorable to their expansion. This continued tree dominance could result in a stand replacement wildfire with catastrophic consequences because of continuous tree canopy. Studies show that in dense pinyon-juniper woodlands, the ability of the understory to respond after a fire is dramatically reduced and potentially opens the site to invasion by exotics. Any treatments or rehabilitation of these areas could be difficult and costly.

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<sup>1</sup> In this document, the term "Project area" refers to the site-specific treatment units (24,564 acres) described in Section 2.1.1. The term "planning area" refers to the larger planning area (Pine Nut Mountains, 397,899 acres) used in identifying suitable and priority treatment areas, determining likely resources that may occur in the Project area, and for the cumulative effects study area (Section 5.0).

An increase in tree dominance results in a loss of understory vegetation, and fires in dense pinyon-juniper can be extremely difficult to control and very damaging to healthy woodlands, sagebrush, and herbaceous vegetation. Goals of pinyon-juniper management include an attempt to restore ecosystem function and a more balanced plant community that includes shrubs, grasses, and forbs, and to increase ecosystem resilience to disturbances. Mule deer (*Odocoileus hemionus*), pinyon jays (*Gymnorhinus cyanocephalus*), mountain chickadees (*Poecile gambeli*), and scrub jays (*Aphelocoma californica*) depend on woodland landscapes that have a more open canopy and park-like structure with a robust understory of forbs, grasses, and shrubs. In highly dense pinyon-juniper stands, the understory is eliminated over time.

The spread of pinyon-juniper may also be a contributing factor in decreasing water availability (both limiting streamflow and shallow groundwater). Riparian vegetation communities would respond to increased water availability by expanding their distribution and improved health. The health of riparian areas is important to maintaining quality wildlife habitat on the landscape. Riparian hardwoods such as aspens (*Populus tremuloides*) and cottonwoods (*P. Trichocarpa*) are vulnerable to intense fire, although they can survive lower-intensity fires, and reducing heavy fuel loads in riparian areas can significantly lower the risk of wildfire. Management guidelines recommend removal of conifers within and adjacent to aspen and cottonwood stands (Bartos 2001, Shepperd 2006). Control and/or reduction in the density and extent of pinyon-juniper in the watershed would benefit the riparian community. Healthy springs/wet meadows support abundant and diverse forbs and insect populations that Bi-State sage-grouse<sup>2</sup> (*Centrocercus urophasianus*) chicks are critically dependent on.

This draft environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) and is in compliance with applicable regulations and laws passed subsequently, including the President's Council of Environmental Quality Regulations (CEQ), U.S. Department of Interior requirements, and guidelines listed in BLM Manual Handbook H-1790-1. This draft EA analyzes the potential environmental impacts of the Proposed Action and Alternatives, and documents public participation as well as the decision-making process.

## **1.2 Purpose and Need**

The purpose and need of the proposed Project is to improve the health and resiliency of vegetation in the Pine Nut Mountains. The Project would:

- Restore and maintain sagebrush habitat;
- Restore and maintain riparian plant communities;
- Restore and maintain wet meadows and springs;
- Protect and enhance historic pinyon-juniper woodland habitat;
- Reduce the potential of large-scale high severity wildland fire;
- Provide for public and firefighter safety and protection of property and infrastructure; and
- Provide woodland products to the public, tribes and commercial entities.

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<sup>2</sup> In this document the terms "sage-grouse" and "Bi-State sage-grouse" are used synonymously. On March 23, 2010 the U.S. Fish and Wildlife Service (USFWS) determined that the Bi-State sage-grouse, known to occur in the Project area, is a distinct population segment (DPS) of the greater sage-grouse.

### **1.3 Scoping and Issues Identification**

On March 25, 2013, the Project was considered by an interdisciplinary team. The following issues were discussed:

- What treatment units would require a Class III inventory for the National Historic Preservation Act (NHPA)?
- What treatment units will require pre-implementation botanical surveys based on likely occurrences of BLM sensitive plant species?
- What project design features will be required (such as seasonal restrictions) due to treatment units occurring in preliminary priority habitat for the Bi-State sage-grouse?
- How can efforts by the National Resources Conservation Service (NRCS) on adjacent private lands (including lands under the jurisdiction of the Bureau of Indian Affairs) be coordinated?

On April 3, 2013, the BLM initiated a 30-day public scoping period. Letters were sent out to the Project mailing list (approximately 96 residents, other organizations and agencies) and notification was provided to the regional media. Notification to State agencies was provided through the Nevada State Clearinghouse. Information including maps was made available on the Project's website. An article appeared in the *Nevada Appeal* on April 4, 2013 and in *The Record-Courier* on April 5, 2013. On April 11, 2013 the BLM hosted a workshop at the Carson City District Office. A Project overview was provided to participants; maps were available for review and specialists were available for questions. Fourteen people attended the two-hour workshop. The public scoping period closed on May 2, 2013. The BLM received 12 comments on the Project from the public and other agencies. A presentation on the Project was made to the Washoe Tribe of Nevada and California Council meeting on June 14, 2013, and to the Yerington Paiute Tribal Council meeting on July 8, 2013.

### **1.4 Decision to be Made**

The Authorized Officer would decide whether to implement the vegetative treatments as described in the Proposed Action.

### **1.5 Land Use Plan Conformance Statement**

The Proposed Action and Alternatives described below are in conformance with the Carson City Field Office Consolidated Resource Management Plan (2001):

- FIR-2.1 Restore fire as an integral part of the ecosystem, improve the diversity of vegetation and to reduce fire hazard fuels;
- FOR-1.1 Forest and woodland management will be based on the principles of multiple use, sustained yield, and ecosystem management;
- RIP-2.1 Protect and maintain existing and potential fisheries and riparian areas in good or better condition (proper functioning condition);



- WLD-2.4 Maintain and improve wildlife habitat, including riparian/stream habitats, and reduce habitat conflicts while providing for other appropriate uses; and
- WLD-6.4 Wildlife habitat improvement projects will be guided, in the most part, by provisions in activity level plans such as habitat management plans, or interdisciplinary activity plans. These plans will be developed through consultation with interested parties and will be coordinated with livestock, wild horse, and wilderness plans. These plans will be focused on rehabilitation and improvement of wildlife habitat through protective fencing, water developments, grazing management, and vegetation treatments.

This draft EA is in conformance with the 1991 Record of Decision *Vegetation Treatment on BLM Lands in Thirteen Western States, and the Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States*, which is hereby incorporated by reference.

## **1.6 Relationships to Statutes, Regulations, and Other Plans**

### ***Executive Orders, Laws, Regulations, and State Statutes***

- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989);
- Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (2001);
- National Environmental Policy Act of 1969;
- The National Fire Plan, Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001);
- Protecting People and Natural Resources, A Cohesive Fuels Treatment Strategy (2006);
- The Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy, November 2004;
- Memorandum of Understanding Between the BLM and FWS to Promote the Conservation of Migratory Birds – BLM 2010-110;
- National Historic Preservation Act (16 USC 470f), implemented through the *State Protocol Agreement between BLM Nevada and the Nevada State Historic Preservation Office for Implementing the National Historic Preservation Act* (2012) under the provisions of the National Programmatic Agreement between the BLM and the Advisory Council on Historic Preservation; and
- Consultation and Coordination with Indian Tribal Governments – EO 13175.

### ***Other Plans***

The National Fire Plan, Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001) – states in part: “Fire Management and Ecosystem Sustainability - The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.”

This draft EA is consistent with *Protecting People and Natural Resources, A Cohesive Fuels Treatment Strategy* (2006). The mission of the strategy is to lessen risks from catastrophic wildfires by reducing fuels build-up in forests and woodlands and by reducing threats from flammable invasive species on rangelands in the most efficient and cost effective manner possible.

This draft EA is consistent with the Nevada Community Wildfire/Hazard Assessment Project – Douglas County (2005), which assessed wildfire risks to Douglas County communities and recommended risk mitigation projects. The Project scored Pine Nut Creek in the High Hazard category and Ruhenstroth in the Moderate Hazard category.

The BLM’s National Sage-Grouse Habitat Conservation Strategy (BLM IM 2005-024), November 2004, establishes a clear objective for management of sage-grouse habitat on BLM-managed public lands. “Implementation of BLM’s national sage-grouse strategy and the state-level sage-grouse habitat conservation strategies will complement and expand the on-going efforts by the Sierra Front Field Office to conserve sagebrush ecosystems on public lands administered by the BLM for the benefit of sage-grouse and other wildlife species.”

The Greater Sage-Grouse Conservation Plan for Nevada and Eastern California states management actions that sustain the health of rangelands and the quality of sagebrush habitat are the highest and immediate priorities (The Nevada Governor’s Conservation Team 2004).

The 2012 Bi-State Action Plan and is designed to achieve conservation of sustainable habitats for the Bi-State sage-grouse DPS by protecting un-fragmented habitat, restoring historic habitat that has been impacted by pinyon-juniper encroachment and wildfire, and reestablishing habitat connectivity (Bi-State Technical Advisory Committee 2012).

## 2.0 ALTERNATIVES

### 2.1 Description of Alternatives

#### 2.1.1 *Alternative A: Proposed Action*

The Proposed Action is to implement up to 24,564 acres of vegetation treatments in strategically located treatment units in the Pine Nut Mountains as described below to meet land health objectives. The proposed vegetation treatments may be implemented individually or in combination depending on site conditions within the treatment units; if it is determined that a type of treatment is not appropriate for a specific site within a treatment unit it would not be implemented on that site. It is anticipated that the Project would be implemented over a 10 to 15 year period; however, the time to complete the Project would ultimately depend on funding and environmental conditions. Most treatments are anticipated to be implemented in late summer and fall.

##### 2.1.1.1 *Implementation Prioritization*

To the extent possible resources will be leveraged and integrated across multiple programs and with other agencies and partners to improve implementation efficiency. Generally implementation would be prioritized based on funding source, objectives, expected beneficial effects, cost and ease of treatments. Areas within preliminary priority habitat<sup>3</sup> (PPH) (Figure 18) would be the highest priority for treatment for non-fire funding (by priority: 1 - Mill Canyon; 2 - Bald Mountain; 3 - Mount Siegel, 4 – Crest, 5- Slaters). Areas directly adjacent to designated at risk wildland-urban interface (WUI) would be the highest priority for treatment for fire funding with areas adjacent to community associated infrastructure the second priority (by priority: 1 - Ruhenstroth; 2 - Pine Nut; 3 - Sunrise; 4 - Mineral). Once treatment is complete in the highest priority areas the remaining treatment areas would be evaluated and prioritized annually taking into account objectives, expected beneficial effects, access, terrain, vegetation composition, vegetation condition and visual disturbance.

##### 2.1.1.2 *Treatment Units*

The following is a summarization of each treatment unit (**see Table 1 for figure numbers**):

- Bald Mountain (3,599 acres): Treatment unit located along the southern most crest of the Pine Nut Mountains. The unit is located within PPH and occurs in brood-rearing/summer habitat in the Bald Mountain area. The unit was designed to include as much of the sage-grouse total summer (June – July) utilization distribution<sup>4</sup> (UD) as feasible.

This unit includes the top ends of South Camp Canyon, Minnehaha Canyon, and Mill Canyon. The upland vegetation community is dominated by pinyon-juniper trees to the south of Bald Mountain proper and mountain mahogany (*Cercocarpus ledifolius*) to the north of Bald Mountain and into Mill Canyon. The riparian systems in the tree dominated drainages no longer express surface water. South Camp Spring and China Spring are

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<sup>3</sup> Not to be confused with “critical habitat” designated by the U.S. Fish and Wildlife Service (USFWS) for a species listed or proposed to be listed, under the Endangered Species Act. See section 3.6.

<sup>4</sup> Utilization distribution (UD) is a method of constructing a species distribution based on random samples of locational observations, often over different points in time.

examples of diminishing available surface water. The head of the Mill Canyon channel is dry and does not appear to be maintained by flowing water. Upland vegetation species dominate the channel bottoms and no riparian obligate species have been observed. The riparian systems in Mill Canyon are in reasonable condition, however evidence of historical grazing and mining use are seen in active headcuts lower in the drainage, these make Mill Canyon susceptible to erosion during high flow events. Heavy grazing of the grass/forb/sedge community continues to create barren areas and headcuts in the channel. The healthy overstory of aspen and willows are an important stabilizing element on this system. Surface water appears to be perennial with no signs of recent high flow events. Streamflow originates in the Buena Suertes Spring enclosure. Additional inflow comes from the first western tributary. Streamflow continues the entire length of the drainage below Buena Suertes Spring.

- Brunswick (308 acres): Treatment unit located on both sides of the Brunswick Canyon Road. Unit is strategically located to reduce the potential for large-scale high severity wildland fire, improve travel safety and would improve woodland health. Pinyon-juniper density varies from low to high. Desired shrub and herbaceous vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. Forest insect and disease activity is high.
- Buffalo Canyon (159 acres): Treatment unit located in the 2011 Ray May Fire. Numerous dead standing trees are present. The BLM portion of the fire was seeded immediately following the fire with limited success initially. Treatment to reduce dead fuel loading. Through soil scarification and seeding to reestablish desired shrub and herbaceous vegetation.
- Bull Canyon (176 acres): Treatment unit located in a stretch of Bull Canyon with management concerns over the downward trend, documented most recently in August 2002, toward reduced streamflow and declining shallow groundwater supplies. There is currently no riparian vegetation and the unnamed spring is dry. Pinyon-juniper trees cover much of the upper watershed and appear to be spreading into lower elevation areas. Many patches of dead and dying trees are present in the drainage.
- Cherokee (233 acres): Treatment unit is located upwind from a low density residential area and directly adjacent to Pine Nut Road, a primary access road for the west slope of the Pine Nut Mountains. Pinyon-juniper density varies from moderate to high. Desired shrub and herbaceous vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. Forest insect and disease activity and associated tree mortality is high.
- Como (872 acres): Treatment unit includes two discontinuous sub-units located along the Fort Churchill to Wellington Backcountry Byway in the vicinity of the historic Como mining district. The western sub-unit is in moderate to high density pinyon-juniper which would be thinned. Forest insect and disease activity and associated tree mortality is high. The east sub-unit is in the 2008 and 2012 Como Fires where numerous dead standing

trees are present which would be cut. Treatment to reduce dead fuel loading. Through soil scarification and seeding to reestablish desired shrub and herbaceous vegetation.

- Crest (2,865 acres): Treatment unit located along the central crest of the Pine Nut Mountains. The unit is located in PPH and runs roughly north to south from breeding/nesting habitat in the Mill Canyon area in the north down to brood-rearing/summer habitat in the Mount Siegel and Bald Mountain areas in the south. Most sage-grouse move in a southerly direction after the breeding period to the Mount Siegel area by late-June. This unit captures crucial habitat serving as a seasonal movement corridor for the Bi-State sage-grouse population in the Pine Nut Population Management Unit (PMU). Average distance to the lek (in the Mill Canyon area, not in a treatment unit) for June was over 23 miles, which is a substantial increase from May (over nine miles from the lek). Based on data, sage-grouse appear to travel relatively long distances to summer and fall habitat. During July the average distance to the lek was over 25 miles. Seasonal migration patterns appear to slow at this time and remain localized in the south through August.

There are three identified water sources along the spine of the Pine Nut Mountains, above 8,000 feet elevation. These springs or seeps are overcrowded with too high a density of pinyon-juniper trees to currently have much value. Additionally, there are a few dry meadows near Slaters Mine and Upper Buckeye Creek. Pinyon-juniper encroachment appears to be expanding uphill toward the crest of the Pine Nut Mountains, reducing the sage-grouse habitat corridor telemetry has shown their use.

- Eldorado Canyon (778 acres): Treatment unit includes seven discontinuous sub-units located within the El Dorado Canyon watershed. In general, the riparian vegetation community in Eldorado Canyon appears to be in good condition. The community is dominated by a variety of mixed age class willows and occasional large old cottonwoods. The shrub, forb and aquatic components of the community are also diverse and healthy. However, channel stability appears to be variable. The upper canyon exhibits signs of large flow events that caused substantial lateral and vertical channel movement. High eroded banks and small, active headcuts are observed in several locations. Streamflow hydrology is characterized as intermittent since streamflow appears, disappears, and reappears throughout the canyon. Surface flow regimes and groundwater supplies appear to be adequate to support a healthy and vigorous riparian community. However, pinyon-juniper expansion in the watershed may pose a threat to the existing water supply. Dense stands of tree cover substantial areas of the watershed. Patches of dead trees are observed throughout the watershed. In addition, young pinyon age classes are scattered throughout the uplands and appear to be colonizing lower elevations of the watershed as well as the drainage bottom, and its tributaries. Forest insect and disease activity is high.
- Hacket Canyon (133 acres): Treatment unit includes four discontinuous sub-units located in three drainages on the north slope of the Pine Nut Mountains. The riparian system appears to be in good condition; however the upland vegetation is increasing in density into the riparian corridor.

- Illinois (966 acres): Treatment unit is located along the Sunrise Pass Road and two parallel transmission line corridors. It is strategically located to reduce the potential for fire damaging area transmission lines, reduce the potential for a large-scale high severity wildland fire and improve travel safety and would improve woodland health and area aesthetics. Pinyon-juniper density varies from low to high. Desired shrub and understory vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. If this situation is not addressed fuel loads would increase, understory vegetation would be stressed and depleted and the stage would be set for a large-scale high severity wildland fire.
- Illinois Canyon (187 acres): Treatment unit located in Illinois Canyon, a tributary to El Dorado Canyon. Pinyon-juniper density varies from low to high. Desired shrub and understory vegetation is present on portions of the unit and not on others. Where the understory is present, pinyon-juniper trees are in the process of increasing in dominance. Patches of dead pinyon are observed throughout the drainage.

Illinois Canyon, a tributary to Eldorado Canyon, would be thinned to increase riparian health without encouraging/increasing motorized vehicle use. The road that spans the length of Eldorado Canyon increases the risk of increased erosion rates in and around the stream channel.

- Lyon (969 acres): Treatment unit located on the east slope of the Pine Nut Mountains below Lyon Peak between two previously completed vegetation treatment projects, Mill Canyon and Buckskin. Unit located in a potential migration corridor for Bi-State sage-grouse. Pinyon-juniper density varies from low to moderate. Desired shrub and herbaceous vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance.
- Mill Canyon (5,676 acres): Treatment unit located in and around Mill, Mineral and Bull Canyons on the low northwestern slope of the Pine Nut Mountains. This unit occurs in PPH and is near the only known active lek in the Pine Nut Mountains (not in a treatment unit). This unit was designed to include as much of the sage-grouse total spring (March – May) UD as feasible.

The Upper Mill Canyon watershed has limited riparian vegetation consisting of limited to a sparse scattering of stunted cottonwoods adjacent to the channel. No surface water is visible. Pinyon-juniper trees are increasing in number in the upper watershed, as seen in many areas with numerous younger age classes.

Gregs Cabin Meadow Spring is located at the upper end of Bull Canyon in the larger Mill Canyon treatment unit. The spring provided flow in the past, but has been dry for over 10-years. The encroachment of upland vegetation into the riparian community is a concern.

- Mineral (501 acres): Treatment unit is located in a basin upwind of the Sunrise Pass Road and two parallel transmission line corridors. It is strategically located to reduce the potential for fire damaging area transmission lines and reduce the potential for a large-scale high severity wildland fire. Pinyon-juniper density varies from low to moderate. Desired shrub and understory vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. If this situation is not addressed fuel loads would increase, understory vegetation would be stressed and depleted and the stage would be set for a large-scale high severity wildland fire.
- Mineral Valley (163 acres): The Mineral Valley treatment unit is in a drainage on the west slope of Mount Como. The encroachment of upland vegetation into the drainage's riparian community is a concern.
- Mount Siegel (2,191 acres): Treatment unit located along the south-central crest of the Pine Nut Mountains. Treatment unit located in PPH and occurs in brood-rearing/summer habitat in the Mount Siegel area. This unit was designed to include as much of the sage-grouse total summer (June – July) UD as possible.

The treatment unit is at the top of three watersheds, Upper Buckeye Creek, Pine Nut Creek, and Smith Valley-Artesia Lake. There is approximately 65 acres of dry meadows, with some surface water expression. Portions of this meadow system are protected by exclosures.

- Oreana (31 acres): Treatment unit located in a drainage that runs east off Oreana Peak and offers an opportunity to apply vegetation treatment to the upland vegetation communities that are in the drainage bottom in order to protect and enhance the riparian system. The riparian system consists of aspen, cottonwood, and willow stands with some pinyon-juniper encroachment.
- Pine Nut (620 acres): Treatment unit is located directly adjacent to moderate density residential areas and along the primary access/egress road for the residential areas. The risk of high intensity damaging wildfire is high. Moderate density pinyon-juniper woodland. The BLM, the East Fork Fire and Paramedic Districts and local residents are concerned that in the event of an intense wildfire, residential areas could be difficult to defend, property damage could be substantial, access/egress could be compromised and the lives of the public and firefighters could be at risk. Four hundred fifty-four acres of the treatment unit had been treated previously in 2005 and 2009. The BLM is proposing to maintain the original treatment areas as well as expand treatment outside of original treatment boundaries.
- Pine Nut Valley (252 acres): Treatment unit located along the main road through Pine Nut Valley. It is strategically located to reduce the potential for large-scale high severity wildland fire and improve travel safety, woodland health and area aesthetics. Pinyon-juniper density is high with a heavy component of dead down and standing trees. Desired shrub and herbaceous vegetation is limited. Where the understory is present pinyon-

juniper trees are in the process of increasing in dominance. Forest insect and disease activity is high.

- Pipeline Canyon (32 acres): Treatment unit in Pipeline Canyon on the east slope of the Pine Nut Mountains. Drainage offers an opportunity to apply vegetation treatment to the upland vegetation communities that are susceptible to wildfire in order to protect a riparian system that was determined to be in proper functioning condition in 2002. The middle segments of Pipeline Canyon, upstream of the diversion into an irrigation ditch, have healthy and diverse riparian vegetation. Fuel loading in streamside zones is not as heavy compared to other areas.
- Ruhenstroth (189 acres): Treatment unit is located directly adjacent to a moderate density residential area. The risk of high intensity damaging wildfire is high. Moderate to high density pinyon-juniper woodland. The BLM, the East Fork Fire and Paramedic Districts and local residents are concerned that in the event of an intense wildfire, residential areas could be difficult to defend, property damage could be substantial and the lives of the public and firefighters could be at risk.
- Ruhenstroth Well (132 acres): Treatment unit includes two discontinuous sub-units located along two two-track roads that run south from Pine Nut Road into the area of Ruhenstroth Well. It is strategically located to reduce the potential for fire damaging area residences. Pinyon-juniper density varies from low to high. Desired shrub and understory vegetation is present on the majority of the unit. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. The area was previously treated in the 1960's to reduce tree cover and enhance shrub and herbaceous vegetation.
- Slaters (721 acres): Treatment unit located along the central crest of the Pine Nut Mountains. The unit is located in PPH and runs roughly north to south from breeding/nesting habitat in the Mill Canyon area in the north down to brood-rearing/summer habitat in the Mount Siegel and Bald Mountain areas in the south. Most sage-grouse move in a southerly direction after the breeding period to the Mount Siegel area by late-June. This unit captures crucial habitat serving as a seasonal movement corridor for the Bi-State sage-grouse population in the Pine Nut Population Management Unit (PMU). Average distance to the lek (in the Mill Canyon area, not in a treatment unit) for June was over 23 miles, which is a substantial increase from May (over nine miles from the lek). Based on data, sage-grouse appear to travel relatively long distances to summer and fall habitat. During July the average distance to the lek was over 25 miles. Seasonal migration patterns appear to slow at this time and remain localized in the south through August.

There are three identified water sources along the spine of the Pine Nut Mountains, above 8,000 feet elevation. These springs or seeps are overcrowded with too high a density of pinyon-juniper trees to currently have much value. Additionally, there are a few dry meadows near Slaters Mine and Upper Buckeye Creek. Pinyon-juniper encroachment appears to be expanding uphill toward the crest of the Pine Nut Mountains, reducing the sage-grouse habitat corridor telemetry has shown their use.



- Stone Spring (13 acres): Treatment unit located below Lyon Peak on the east slope of the Pine Nut Mountains. Young age class trees have established in the watershed above and around the spring. It appears tree cover in the watershed is contributing to low flow volume and similar to other springs in the Pine Nut Mountains. Stone Spring is in a drying trend.
- Sunrise (1,970 acres): Treatment unit is located along the Sunrise Pass Road and two parallel transmission line corridors. It is strategically located to reduce the potential for fire damaging area transmission lines, reduce the potential for a large-scale high severity wildland fire and improve travel safety and would improve woodland health and area aesthetics. Pinyon-juniper density varies from low to high. Desired shrub and herbaceous vegetation is present on portions of the unit and not on others. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. If this situation is not addressed fuel loads would increase, understory vegetation would be stressed and depleted and the stage would be set for a large-scale high severity wildland fire.
- Sunrise Pass (301 acres): Treatment unit includes three discontinuous sub-units located along the Sunrise Pass Road and two parallel transmission line corridors. It is strategically located to reduce the potential for fire damaging area transmission lines and improve travel safety and would improve woodland health area aesthetics. Pinyon-juniper density is high with a heavy component of dead down and standing trees. Desired shrub and herbaceous vegetation is limited. Where the understory is present pinyon-juniper trees are in the process of increasing in dominance. Forest insect and disease activity is high.
- West Barton Spring (527 acres): Treatment unit includes two discontinuous sub-units located below Rawe Peak on the north slope of the Pine Nut Mountains. The riparian area within the West Barton Spring exclosure was in poor condition in 2002, and determined to be functional-at-risk. The area exhibits a perennial spring with minimal flow, erosion or deposition, with an observed drying trend. The associated meadow/riparian community is invaded by upland vegetation such as sagebrush and pinyon-juniper trees. Compaction of soil is occurring due to wild horse use within and outside the exclosure. Riparian/meadow vegetation communities appear unhealthy. Sedge and rush species are the dominant species present within the exclosure. There is some tule grouped together toward the lower end of the exclosure, suggesting standing water in that small area. However, drying within the exclosure is apparent by the reduction of meadow species on exclosure edges and the invasion of upland plants such as rabbitbrush (*Chrysothamnus viscidiflorus*), single-leaf pinyon, desert peach (*Prunus andersonii*) and sagebrush.

### **2.1.1.3 Treatment Methods**

Table 1, Pine Nut Land Health Treatments, shows what methods (options) may be used in each treatment unit.

**Table 1. Proposed Treatment Options.**

Treatment Unit	Figure Number	Method					
		Hand Thinning	Hand Cutting	Mechanical Mastication	Mechanical Thinning/Removal	Prescribed Fire-Pile Burn	Seeding
Bald Mountain	17		X				X
Brunswick	4	X			X	X	X
Buffalo Canyon	15		X		X		X
Bull Canyon	7		X			X	X
Cherokee	15	X			X	X	X
Como	5/6	X	X		X	X	X
Crest	9/12		X				X
Eldorado Canyon	4/5/8/11		X			X	X
Hacket Canyon	4/5		X			X	X
Illinois	9	X	X	X	X	X	X
Illinois Canyon	5		X			X	X
Lyon	10		X	X		X	X
Mill Canyon	6/7		X				X
Mineral	9	X	X	X	X	X	X
Mineral Valley	12		X			X	X
Mount Siegel	13/16		X				X
Oreana	16		X			X	X
Pine Nut	14/15	X		X	X	X	X
Pine Nut Valley	12	X			X	X	X
Pipeline Canyon	13/16		X			X	X
Ruhenstroth	14			X			X
Ruhenstroth Well	14/15	X			X	X	X
Slaters	13/16		X				X
Stone Spring	10		X			X	X
Sunrise	8/11	X	X	X	X	X	X
Sunrise Pass	9/10	X			X	X	X
West Barton Spring	6/7		X			X	X

The following is a summary of explanations as to why and where each treatment method has been proposed and a description of what each treatment method entails.

- Hand Thinning (Selective Cutting): Hand thinning of pinyon-juniper trees would occur on forestland ecological sites that range from pinyon-juniper woodlands with little desired understory vegetation to woodlands with remnant desirable understory vegetation that is at risk of being depleted from the site.

Shrubs (brush) may be thinned at selected sites where deemed necessary to reduce fuel continuity and fire intensity potential. These sites are generally within the wildland urban interface in the Pine Nut Road and Ruhensroth areas and along the Sunrise Pass Road. Where deemed necessary, brush spacing would be adjusted by treating up to 60 percent of the brush in a mosaic pattern. No brush would be cut in the Mill Canyon area or along the crest of the Pine Nut Mountains.

This treatment method would be conducted using hand tools and chainsaws. Some trees would be cut, while others would be left standing. Thinning trees in dense stands reduces fuel continuity and vegetative competition. Tree health would be promoted by reducing competition for water and nutrients. The size and overall health of the remaining trees would increase. The thinning treatment would target primarily smaller trees, but age class distribution would be taken into consideration to ensure the long term viability of the population. Typically under this treatment the larger older trees would be retained. Where applicable trees would be retained in small groups with openings between the groups. Areas with healthy understory vegetation would be the target locations for openings. Trees cut could include dead, diseased or healthy trees depending on site evaluation and treatment objectives. It may be necessary to cut healthy trees where there are no dead or diseased trees to meet resource objectives. Cut trees may be removed by non-mechanical methods, chipped with a mechanical chipper working on an existing road, lopped and scattered and/or piled and burned, based on site evaluation and objectives. Stump height would be less than six inches and any residual biomass would not exceed two feet in depth.

- Hand Cutting (Non-Selective Cutting): Hand cutting of pinyon-juniper trees would occur on rangeland ecological sites where trees are encroaching into landscapes once dominated by shrubs and herbaceous vegetation and into riparian areas. These sites range from open sagebrush sites with scattered young pinyon-juniper trees to sagebrush sites where young pinyon-juniper woodlands are threatening to deplete desirable understory vegetation to riparian sites with pinyon-juniper trees encroaching into riparian vegetation such as aspen, cottonwood and willow.

This treatment method would be conducted using hand tools and chainsaws. All trees would be cut regardless of size. Cut trees may be removed by non-mechanical methods, chipped with a mechanical chipper working on an existing road, lopped and scattered and/or piled and burned, based on site evaluation and objectives. Stump height would be less than six inches and any residual biomass would not exceed two feet in depth.

- Mechanical Mastication: Pinyon-juniper trees and shrubs (brush) would be removed from both woodland and rangeland ecological site types by a mastication process which grinds up woody plant material. Due to mechanical limitations of the equipment, mastication treatments are limited to areas with less than a 30 percent slope. Mastication treatments are typically used to restore ecological balance in plant communities, provide for increased plant diversity by reducing a dominant species, stimulate new plant growth and/or reduce fuel continuity and potential fire intensity. The pre-treatment condition of the plant community would be considered relative to the management goals. Plant communities in any condition (no understory to intact understory) may be treated.

Trees/brush would be ground with an attachment mounted on machinery such as front-end loaders, tractors, excavators, skidders etc., the machine may have rubber tires, rubber tracks or metal tracks. Trees could be thinned or all cut depending on objectives. Thinning specifications would be similar to Hand Thinning specifications above. Stump height would be less than six inches and the products of grinding would not exceed two feet in depth.

Mechanical equipment would be parked and serviced daily on three to four small (less than ¼ acre) road accessible staging areas located on BLM land on the units designated for mechanical treatment. It can be expected that the vegetation and soils in the staging areas would be effected more than the general Project area due to the frequency of equipment activity on the sites.

A general overview of masticating equipment can be found in the Understory Biomass Reduction Methods and Equipment Catalog (USDA Forest Service, 2000).

- Mechanical Thinning/Removal: Mechanical thinning/removal of pinyon-juniper trees would occur on forestland ecological sites that range from pinyon-juniper woodlands with little desired understory vegetation to woodlands with remnant desirable understory vegetation that is at risk of being depleted from the site. Mechanical thinning/removal would only occur in units designated for the treatment and may not occur on entire units designated for treatment.

Treatment includes the mechanical thinning and/or removal of entire trees or portions of trees for personal use or commercial sale. See Hand Thinning (Selective Cutting) above for description of thinning treatment. Rubber tired/tracked or metal tracked mechanized equipment would be used to cut, either skid or above ground haul, and remove entire trees or portions of trees. Shearing would include separating the tree from the stump, less than six inches from the ground. Once the trees are sheared, they would be skidded or hauled to a designated landing or processing area and be hauled off site.

Mechanical equipment would be parked and serviced daily on (less than ¼ acre) road accessible landings or processing areas located on BLM land on the units designated for mechanical removal. It can be expected that the vegetation and soils on any skid/haul roads or landings or processing areas would be effected more than the general Project area due to the frequency of equipment activity on the sites.

- Prescribed Fire (Pile Burning): Pile burning would be conducted as a follow up treatment to hand thinning and hand cutting to treat undesirable residual biomass however not all hand thinning and hand cutting treatments would be piled and burned.

Prescribed fire treatment includes the burning of hand built piles of residual biomass (e.g. branches, twigs) that result from hand thinning and hand cutting treatments. Pile burns would be conducted in the late fall, winter and spring under low spread potential conditions (e.g. snow on ground). All pile burning would be conducted under an approved prescribed fire plan.

- Seeding: Seeding would be conducted as a follow up treatment to hand thinning, hand cutting, mechanical mastication and mechanical thinning/removal in areas where existing herbaceous understory has been compromised and is not sufficient for natural establishment.

Seeding treatment includes the ground based or aerial broadcast application of seed. Seeding method to be determined based on terrain, soil type, soil moisture, and seed species. Seed mixes would primarily be of native species; however, in some cases non-native species may be applied. Species selection would be based on site potential and objectives.

Specific treatment areas would be evaluated to determine the most appropriate treatment method and resource protection measures based on slope, aspect, terrain, soil, vegetation composition, vegetation condition, amount of fuel/biomass needed to be removed, overall access on site, visual disturbance, and proximity to major roads. Treatment areas would be focused in areas where residual herbaceous vegetation is adequate to promote native release. However, areas in which do not have adequate understory may be treated as well due to the relative importance of the site. The treatment methods would be considered, either individually or in combination, to achieve the desired results.

#### ***2.1.1.4 General Treatment Specifications***

- BLM specialists would collaborate to design site-specific treatment prescriptions;
- Prescriptions for individual treatment sites may vary somewhat to address specific site characteristics;
- To the extent possible, thinning would be designed to restore a broad variety of seral stages, stand ages, openings and tree clumping;
- Existing roads in the treatment areas would remain open. They would be managed to prevent generation of excessive dust and erosion; and
- If invasive species are found in the Project area after treatment and seeding, the sites would be identified for treatment<sup>5</sup>.

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<sup>5</sup> The application of herbicides for treatment of invasive species would be authorized under a separate process.

### **2.1.1.5 Resource Commitments**

The following measures would occur to minimize or avoid adverse impacts during Project implementation:

- Any treatment implemented during the nesting season for migratory birds (May 15 – July 15) or raptors (March 1 – August 31) would be surveyed by a qualified biologist prior to any treatment occurring in a specific unit to identify active nests. Surveys would be conducted in the treatment unit plus a 300 foot buffer for migratory birds and a ¼ mile buffer for raptors. If an active nest is discovered/observed, treatment activities should not occur (or resume) until after young birds have fledged or nests are abandoned unless a 300 foot buffer can be provided around active migratory bird nests and a ¼ mile buffer can be provided around active raptor nests;
- There are no known active leks within Project area; however active leks may be present adjacent to or in the planning area during the life of this project. If an active lek is located within 3.2 miles of a treatment unit, no treatment activities would occur during the breeding season (March 1 to May 15);
- No treatment activities would occur within known nesting and early brood-reading habitat (generally within 3.2 miles of an active lek) between March 15 and June 30;
- Surveys for sensitive plant species would be conducted in mechanical treatment units that have high potential for their occurrence; where species are located, during the critical growing season, implementation would be delayed or hand thinning of trees may replace mechanized equipment;
- Cultural resources evaluated as eligible for the National Register of Historic Places (NRHP) and unevaluated cultural resources identified during implementation of the Project would be avoided. Respect for all cultural resources would be maintained;
- All live aspen, cottonwood and mountain mahogany would be retained;
- Old-growth trees<sup>6</sup> and trees with obvious signs of wildlife use, such as nest cavities or raptor nests, would be retained;
- Individual old-growth trees would be retained within younger stands unless other resource objectives such as forest health, fuels reduction, and sage-grouse habitat require their removal to meet treatment goals;
- No new roads would be constructed;
- Existing maintained (graded) roads may be improved to facilitate movement of vehicles, equipment or wood products;
- Areas of public/private property boundaries would be clearly signed during public firewood removal activity;
- Following public firewood removal, any off-road travel routes would be obliterated, all stumps would be cut to a height than of up to six inches, all slash lopped to a height not to exceed two feet in depth and all trash picked up;
- Mechanical treatments would be scheduled to avoid wet soil conditions;
- Staging areas/landings would be minimized by utilizing existing/natural landings where practicable;

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<sup>6</sup> Old-growth characteristics include rounded or flat crowns, tree ring analysis indicating age >150 years, and a diameter at root collar >21 inches.

- After use any skid trails and staging areas/landings would be restored by restoring the contour and applying mulch and/or seeding where necessary;
- Shredded or cut vegetation would generally be left in place to reduce dust generation, contribute organic matter, obliterate vehicle tracks, stabilize the soil surface, and protect vegetation;
- All equipment moved on and off public land would be free of soil, seeds, and vegetative matter or other debris that could contain or hold seeds;
- The Nevada Energy System Control Supervisor would be notified when treatment activities are occurring in an Nevada Energy right-of-way; and
- All State and federal regulations would be followed.

**2.1.1.6 Schedule:** Treatment could occur any time of the year but the preferred timing of treatment would be mid-July through April.

**2.1.1.7 Monitoring:** Monitoring would be conducted within the treatment areas before, during, and after treatment implementation. Monitoring would consist of surveys to:

1. Ensure that the initial treatment objectives are met;
2. Evaluate vegetation/fuel load recovery; and
3. Identify invasive species for subsequent treatment under a separate action.

**2.1.1.8 Maintenance:** Treatments would be maintained as necessary so that original objectives may be met or continue to be met. Maintenance of the fore mentioned treatments may include any of the described actions in single or in any combination.

**2.1.1.9 Tiering:** This draft EA includes project-specific analysis for the treatment units described in Section 2.1.1.2. However, some of the resources were considered at the larger planning area scale. This analysis is anticipated to remain viable during the life of the Project, anticipated to be 10 to 15 years, unless new information or other site-specific circumstances warrant a re-evaluation. The analysis contained in this draft EA may be tiered to for treatments units within the planning area not included in Section 2.1.1.2. The BLM would first identify the new treatment unit, complete any required compliance under Section 106 of the NHPA, would document whether there is any new information or circumstances (in a Determination of NEPA Adequacy), and if appropriate, issue a Decision Record (BLM 2008).

### **2.1.2 Alternative B: No Action**

Under the No Action Alternative, the BLM would not implement the vegetative treatments described in the Proposed Action. The purpose of the No Action Alternative is to provide the baseline conditions under the current management of the Project area. On the basis of the No Action Alternative, the BLM is able to evaluate the degree of change from the current situation to what would occur under implementation of any other alternative. The Proposed Action would represent a change in BLM's current management of the Project area.

The current trends in vegetation would continue. Pinyon pine and juniper trees would continue to increase in density and expand into sagebrush communities and the health of shrub and understory plants would continue to decline. Conifers would continue to invade riparian areas and cause them to decline in health. Hazardous fuel conditions would continue to accumulate

beyond levels representative of the natural (historic) fire regime and threaten to damage the sagebrush, woodland, and riparian habitats through the high risk of intense wildfires difficult to control. Overall, land health in the Pine Nut Mountains would continue to decline.



## 3.0 AFFECTED ENVIRONMENT

### 3.1 Setting

The planning area is the Pine Nut Mountains, located in Douglas, Lyon and Carson City Counties, Nevada. The communities of Carson City, Minden, Gardnerville, Wellington, Smith and Dayton are spread around the edge of the range. The range, which runs north-south for 38 miles, includes approximately 400,000 acres of mixed ownership (public land, private land, Indian trust land<sup>7</sup>). The southern portion of the range includes the 13,395 acre Burbank Canyon Wilderness Study Area (WSA). The topography of the range varies from rolling hills, approximately 5,000 feet in elevation, to over 9,000 feet in elevation at the tops of the tallest peaks. Vegetation is typical of the western Great Basin and is dominated by a mix of grasses (*Poa* spp.), sagebrush, rabbitbrush, bitterbrush (*Purshia tridentata*), and pinyon and juniper trees. Temperatures can exceed 100 degrees Fahrenheit (°F) at lower elevations during July and August and can drop below 10 °F during December and January. Average annual precipitation is strongly influenced by elevation and varies from six to 16 inches.

#### 3.1.1 Resources Considered for Analysis

The BLM is required to address specific elements of the environment that are subject to requirements in statute or regulation or by executive order (BLM 2008). Table 2 lists the elements that must be addressed in all environmental analysis and indicates whether the Proposed Action and Alternatives affect those elements. Other resources of the human environment that have been considered for analysis are listed in Table 3.

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<sup>7</sup> Trust land refers to land held in trust by the United States for an Indian tribe or an individual tribal member. This means that the United States holds legal title to that land, while the tribe or individual tribal member holds beneficial title, which means that the tribe or tribal member has the right to use the property and derive benefits from it.

**Table 2. Supplemental Authorities\*.**

Resource	Present Yes/No	Affected Yes/No	Rationale
Air Quality	Y	Y	Carried forward for analysis.
Areas of Critical Environmental Concern	N		Resource not present.
Cultural Resources	Y	Y	Carried forward for analysis.
Environmental Justice	N		Resource not present
Farm Lands (prime or unique)	N		Resource not present.
Floodplains	N		Resource not present.
Invasive, Non-Native Plant Species	Y	N	Vehicles and equipment have a low potential to transport seed and plants. Best management practices would be implemented to minimize spread; regional populations are not expected to change therefore this resource is not analyzed.
Migratory Birds	Y	Y	Carried forward for analysis.
Native American Religious Concerns	Y	Y	Carried forward for analysis.
Threatened or Endangered Species (animals)	N		Resource not present.
Threatened or Endangered Species (plants)	N		Resource not present.
Wastes, Hazardous or Solid	N		Resource not present.
Water Quality (Surface/Ground)	Y	N	Best management practices would minimize any potential adverse effect to surface waters in the Project area.
Wetlands/Riparian Zones	Y	Y	Carried forward for analysis.
Wild and Scenic Rivers	N		Resource not present.
Wilderness/WSA	Y	N	Although several treatment units under the Proposed Action are adjacent to the Burbank Canyon WSA, treatment actions would not impair the characteristics of the WSA.

*\*See H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered.*

*Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.*

*Supplemental Authorities determined to be Present/May Be Affected may be carried forward in the document.*

**Table 3. Resources or Uses Other Than Supplemental Authorities.**

Resource or Issue**	Present Yes/No	Affected Yes/No	Rationale
BLM Sensitive Species (animals)	Y	Y	Carried forward for analysis.
BLM Sensitive Species (plants)	Y	Y	Carried forward for analysis.
Fire Management	Y	Y	Carried forward for analysis.
Forest Resources	Y	Y	Carried forward for analysis.
General Wildlife	Y	Y	Carried forward for analysis.
Global Climate Change	Y	N	Although there is public and scientific debate about human-caused global climate change, no methodology currently exists to analyze to what extent the negligible contributions of greenhouse gases (GHG) would contribute to climate change from implementation of the Proposed Action. See Section 5.0 for a summary for effects on the Great Basin.
Greenhouse Gas Emissions	Y	N	Although under the Proposed Action there would be negligible contribution of GHG from pile burning and vehicle/equipment emissions, no methodology exists to assess resource impacts within the Project area from such contributions of GHG.
Land Use Authorization	Y	N	Although right-of-ways are present in the Project area, none of the alternatives would affect these authorizations and activities.
Lands with Wilderness Characteristics	N		Pursuant to Sections 101, 201 and 202 of the Federal Land Policy and Management Act, GIS spatial imagery was reviewed by the BLM. No LWCs were identified within the planning area.
Livestock Grazing	Y	N	Although the Project area overlaps with several active grazing allotments, this Project would not result in a change in allocation of forage to livestock. As a result of tree removal there may be a marginal increase in forage, a minor beneficial effect that does not warrant full analysis.
Minerals	Y	N	Although mining claims are present in the Project area, none of the alternatives would affect any on-going mining activities.
Paleontological	Y	N	Although paleontological resources are present in the Ruhensroth area, the Proposed Action does not include surface-disturbing activities that would expose or adversely affect those resources.
Recreation	Y	N	Although dispersed recreation is present in the Project area, none of the alternatives would affect recreational activities.
Socioeconomics	N		Resource not present.
Soils	Y	N	There are no surface-disturbing activities in the Proposed Action; vehicles and equipment may create minor disturbances to soils but overall soil conditions would not be affected, therefore this resource has not been analyzed.
Travel Management	Y	N	Although dispersed recreation is present in the Project area, none of the alternatives would affect access.
Vegetation	Y	Y	Carried forward for analysis.
Visual Resources	Y	Y	Carried forward for analysis.
Wild Horses and Burros	Y	N	Although a portion of the Project area overlaps with the Pine Nut Mountain Herd Management Area (HMA), the Proposed Action would not change the management of or change the allocation of forage for wild horses. The Proposed Action may marginally increase forage availability for wild horses, a beneficial effect.

*\*\*Resources or uses determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.*

*Resources or uses determined to be Present/May Be Affected may be carried forward in the document.*

## **3.2 Cultural Resources**

### *Regulatory Setting*

This draft EA includes the site-specific analysis for each of the treatment units in the Project area. Certain treatment methods such as hand cutting do not involve ground disturbance and therefore have a very low potential to adversely<sup>8</sup> affect historic properties. Other methods, such as those that involve mechanized equipment, have the potential to adversely affect historic properties. Due to the phased approach of this Project, anticipated to be implemented over a 10 to 15 year period, there is the potential for historic properties to be adversely affected by the treatments. To resolve potential adverse effects, the BLM is preparing a Programmatic Agreement (PA) in accordance with 36 CFR 800.14 (b). The PA would define the methods through which the BLM would identify historic properties and resolve adverse effects for each phase of the Project. Resolution of adverse effects is typically through site avoidance. Execution of the PA is required prior to the BLM issuing a decision on this Project.

BLM defined the Project Area of Potential Effect (APE) as approximately 24,564 acres of public land. The BLM has reviewed the Project APE for historic properties. Based on a review of the files and geodatabase at the Carson City District Office, the Nevada Cultural Resource Information System (NVCRIS), General Land Office records, and current literature, known historic properties represent important past human use of the landscape in and immediately adjacent to the Project APE. Site types include prehistoric lithic scatters, stone alignments, and camp sites representing at least 12,000 years of human history. Also present are sites dating to the historic period including debris scatters; charcoal-making sites, stone structures; mines and mining exploration areas; and roads associated with mining, ranching, timber cutting, charcoal production and settlement of the area. Ethno-historic (or ethnographic) sites are also present, representing traditional activities such as hunting, tool-making, and pine nut harvesting. Further details on local site types and the potential for effects to historic properties from the implementation of this project are available in a technical report prepared (CRR 3-2666).

Based upon the results the BLM literature review, about six percent of the Project APE has been subject to Class III cultural resource inventory, with 50 inventories conducted between 1975 and 2011. Approximately 183 cultural resources (prehistoric, historic and ethno-historic) were documented and evaluated (32 eligible, 19 unevaluated, and 132 not eligible).

## **3.3 Native American Religious Concerns**

### *Regulatory Setting*

Native American Tribes that have affiliation with the Project area include the Yerington Paiute Tribe and Washoe Tribe of Nevada and California. Under 36 CFR Part 800, consultation letters with a general summary of the proposed Project, and location maps were sent to the Washoe Tribe of Nevada and California and the Yerington Paiute Tribe on May 15, 2013. A presentation

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<sup>8</sup> In Sections 3.2, 3.3, 4.2 and 4.3 the term “adverse” is used consistent with 36 CFR 800.5(a)(1) defined as the “alternation to the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places in a manner that would diminish its integrity.”

was made to the Washoe Tribe of Nevada and California Council meeting on June 14, 2013 and to the Yerington Paiute Tribal Council meeting on July 8, 2013.

Consultation over the last 10 years regarding the Pine Nut Mountains documents tribal comments and concerns including native plants and animals, traditional pine nut harvesting areas, traditional plant gathering areas, Native American cultural resources sites; the development of agreements/contracts for removal of wood products for use or sale by the Tribes, Indian Allotment lands, and continued consultation with BLM. At each new phase for the Project that would involve ground disturbance or mechanical treatments, a Class III cultural resources inventory would be conducted. Each phase of treatment may have an effect on tribal concerns. The BLM would continue to consult with Tribes accordance with NHPA, implementing regulations at 36 CFR 800, and the Project PA.

#### *Traditional Values*

In the planning area there are a number of resources of interest and concern to area Tribes. Areas of interest include: pre-contact and historic sites, human burials, and native plants traditionally used for food, medicine and fiber. Pinyon pines, especially older trees, are valued for nut production. Other valued plants that may occur in the Project area include: rose (*Rosa woodsii*), snowbrush (*Ceanothus velutinus*), mountain mahogany, wild onion (*Allium* sp.), wild garlic, willow (*Salix exigua*), mariposa lily (*Calochortus bruneaunis*), chokecherries (*Prunus virginiana*), and elderberries (*Sambucus nigra*).

### **3.4 Wetlands/Riparian Zones**

Wetlands and riparian areas cover a relatively small amount of land in Nevada and within the planning area. High quality riparian habitat can generally support more species than most other habitat types due to the presence of water and a productive nutrient-rich environment. Principal tree species in lowland riparian areas include Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and black cottonwood (*P. trichocarpa*). Principal shrub species include buffalo berry (*Shepherdia argentea*), chokecherry (*Prunus virginiana*), and several species of willow, such as grey willow (*Salix exigua*), Lemmon's willow (*S. lemmonii*), and yellow willow (*S. lutea*). Grass species (*Poaceae* spp.) include creeping wildrye (*Leymus triticoides*) and a variety of wetland species, including sedges (*Carex* spp.), rushes (*Juncus* spp.), and cattails (*Typha* spp.). Multiple drainages within the Project area have riparian corridors with vegetation communities that support a diversity of wildlife.

### **3.5 General Wildlife**

#### *Habitats*

The vegetation types in the Project area can structurally and functionally be combined into three major wildlife habitats: sagebrush, pinyon-juniper (includes pure and mixed stands of pinyon and juniper), and riparian areas (includes meadows, montane riparian, and small wetlands).

Sagebrush communities are important to a variety of wildlife, including sagebrush obligates such as sage-grouse, Brewer's sparrow (*Amphispiza bilineata*), sage thrasher (*Oreoscoptes montanus*), and sage sparrow (*Amphispiza belli*). Additionally, these communities are important to other species that may be present during certain times of the year, such as pronghorn antelope (*Antilocapra americana*), mule deer, black-throated sparrow (*A. bilineata*) ferruginous hawk

(*Buteo regalis*), vesper sparrow (*Pooecetes gramineus*), loggerhead shrike (*Lanius ludovicianus*) and gray flycatcher (*Empidonax wrightii*).

Pinyon-juniper serves an important food source for the pinyon jay (*Gymnorhinus cyanocephalus*), Steller’s jay (*Cyanocitta stelleri*), western scrub jay (*Aphelocoma californica*), and Clark’s nutcracker (*Nucifraga columbiana*) (Ryser 1985).

*Game Species*

Primary game species within the planning area include mule deer and pronghorn. Other upland game species occurring in the planning area include California quail (*Callipepla californica*), chukar (*Alectoris chukar*), and band-tailed pigeon (*Patagioenas fasciata*).

The Nevada Department of Wildlife (NDOW) has identified most of the planning area as year round habitat for mule deer. Crucial winter range occurs in the southern, lower elevation areas of the Pine Nut Mountains. The northeast side of the planning area is pronghorn antelope habitat. Pronghorn use lower elevations in fall and spring but move to higher elevations in deep winter and mid-summer to escape temperature extremes. All of the Pine Nut Mountains is considered habitat for black bear (*Ursus americanus*). See Table 4 for species distribution.

**Table 4. Large Game Species within the Project area.**

Species	Habitat Status/Type	Acres	% of Project Area
Black Bear	Occupied	24,564	100
Mule Deer	Occupied/Agriculture	80	<1
	Occupied/Year-Round	21,714	88
	Occupied/Crucial Winter	2,769	10
Pronghorn	Occupied/Year-Round	8,173	31

Source: NDOW GIS data (2010).

**3.6 BLM Sensitive Species (Animals)**

Species designated as BLM sensitive must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

1. there is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or
2. the species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

With the exception of a very small portion (107 acres), the Project area lies within the Pine Nut PMU for the Bi-State sage-grouse (Figure 19). The PMU supports a small sage-grouse population estimated at between 292-389 birds (NGSCT 2004). There are no known active leks within any treatment units. Sage-grouse populations in the PMU have been declining; anecdotal evidence suggests that populations within the Pine Nut Mountains were greater and distributed across a wider area (NGSCT 2004). Approximately 17,673 acres (72 percent) of the Project area

is within PPH (Figure 18). These maps were developed through a collaborative effort by the Bi-State Technical Advisory Committee that consisted of representatives from California and Nevada BLM, U.S. Forest Service, U.S. Geological Service, USFWS, and the respective State wildlife agencies. PPH areas were derived from the combination of modeling resource selection functions and calculating UD from telemetry data collected over a seven-year period. According to the 2012 Bi-State Action Plan, the threat level to sage-grouse is high from wildfire and pinyon-juniper encroachment, both threats are addressed by the Proposed Action (Bi-State Technical Advisory Committee 2012).

Direction for BLM proposed actions within PPH are outlined Nevada IM No. NV-2013-009. Under the IM, the BLM is to provide for the:

1. Protection of intact habitats;
2. Minimization of habitat loss and fragmentation; and
3. Management of habitats to maintain, enhance, or restore conditions that meet Bi-State DPS life history needs.

Objectives in the IM that would be met under the Proposed Action include:

1. Improvement of habitat for the Bi-State sage-grouse;
2. Minimize avian predator perches and predation opportunities; and
3. Habitat enhancement is a high priority for the fire management program.

Appendix A provides a list of BLM sensitive animals that may be present in the planning area.

### **3.7 Migratory Birds**

In 2001, President Clinton signed Executive Order (EO) 13186 placing emphasis on the conservation and management of migratory birds. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 and EO 13186 addresses the responsibilities of federal agencies to protect migratory birds by taking actions to implement the MBTA. BLM policy for migratory bird management is provided in Information Bulletin (IB) No. 2010-110 and is based on the 2010 Memorandum of Understanding (MOU) between the BLM and the U.S. Fish and Wildlife Service (FWS) for the conservation of migratory birds. According to the MOU, BLM Priority Migratory Birds are those migratory birds that are those listed in the periodic FWS report *Birds of Conservation Concern* (FWS 2008), and those identified by the FWS Division of Migratory Bird Management as game birds below desired condition.

Appendix A provides a list of migratory birds that may be present in the planning area.

### **3.8 Vegetation**

The Project area supports a diversity of vegetation communities that may be generalized into three categories: pinyon-juniper woodlands, and sagebrush. These different vegetation communities are a result of elevation, moisture, soil substrate, aspect, and past land use practices.

### *Pinyon-Juniper Woodlands*

This is largest vegetation community found in the Project area. Pinyon-juniper woodlands are found on 164,377 acres of BLM-managed lands within the planning area. Over the past 11,000 years, single-leaf pinyon pine has become a dominant species in the middle elevations of the region (Lanner 1983). The distribution of single-leaf pinyon is primarily a function of climate and begins abruptly at the Truckee River and Interstate 80 and increases in dominance southward. Throughout its distribution, single-leaf pinyon mixes with Utah juniper, which is the most common juniper species in the Project area. Western juniper (*Juniperus occidentalis*) may also occur in the Project area, although to a lesser extent.

Pinyon-juniper forests thrive in areas where annual precipitation ranges from 12 to 18 inches but will survive to lower extremes of eight inches in the Project area. Elevation limits are determined at the lower extent by lack of moisture and at the upper limits by biotic competition, low temperatures, and excessive soil moisture. Within the Project area, pinyon-juniper woodlands occupy elevations from about 5,000 to 7,000 feet.

Similar to sagebrush expansion, European settlement has significantly altered the pinyon-juniper woodland. This community has increased in both area (5 to 10 times) and stand density (2 to 20 times) in the Great Basin (Tausch 1999; Miller et al. 2001), due to many factors including mining, grazing, fire suppression, and climatic change. In particular, juniper has expanded into former sagebrush habitats.

### *Sagebrush*

The sagebrush community is found throughout the Project area at all elevations and aspects. This community is divided into two subgroups, big sagebrush and low sagebrush. The big sagebrush community includes three subspecies of big sagebrush (*Artemisia tridentata* spp.): the more common Wyoming sagebrush (*A. t. wyomingensis*), which grows in dry, low elevation areas; mountain sagebrush (*A. t. vaseyana*), which grow in more moist areas and at higher elevations; and basin big sagebrush, which grows at the lowest elevation of the three subspecies. Plants associated with big sagebrush include other shrub species, grasses, and forbs. The low sagebrush community may include both low sagebrush (*A. arbuscula*) and black sagebrush (*A. nova*). Low sagebrush grows in colder, higher elevation sites with thin rocky soils, but may occupy areas similar to Wyoming big sagebrush and may intermix with this subspecies at the transition area between two adjacent ecological communities. Black sagebrush grows in similar conditions but prefers more moisture (Mozingo 1987), and this species is limited in range within the Project area. Other constituents within the low sagebrush community include buckwheat species (*Eriogonum* spp.), lomatium (*Lomatium* spp.), lewisia (*Lewisia* spp.), balsamroot (*Balsamorhiza* spp.), and grasses (*Poa* spp.).



### 3.9 BLM Sensitive Species (Plants)

**Table 5 Lists the Sensitive Plant Species That May Occur or Their Habitat May be Present in the Project Area.**

Common Name	Scientific Name
Lavin's eggvetch	<i>Astragalus oophorus var. lavinii</i>
Margaret's rushy milkvetch	<i>A. convallarius var. margaretae</i>
Pine Nut Mountains mousetails	<i>Ivesia pityocharis</i>
Webber's ivesia <sup>9, 10</sup>	<i>I. webberi</i>
William's combleaf*	<i>Polyctenium williamsiae</i>

\*Suitable habitat may occur around playa lakes in the Project area, however, no project activities would occur in these environments. The Project would have no effect to William's combleaf and the species is not discussed further.

### 3.10 Fire Management

Fire, as the main disturbance agent within ecosystems of the Pine Nut Mountains, plays a critical role in shaping vegetative characteristics. Fire suppression practices of the twentieth century have pushed some ecosystems outside their historic range of variability due to increased fuel accumulations, higher densities of trees and shrubs, and increased ladder fuels. As a result, these areas are prone to higher-intensity wildfires than historically experienced.

The Project area is included in the Carson River and Como fire management units of the Carson City Field Office Fire Management Plan (2002). A fire management unit is a specific land management area that is defined by fire management objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, and major fire regime groups. In general, wildfire is not wanted or may be needed but is not wanted due to constraints imposed by social, political or resource concerns. Aggressive initial attack and full suppression is the general rule. Opportunities for prescribed fire exist but are limited by these same constraints and fuel treatments are primarily limited to mechanical methods. Fire education and prevention programs are a priority.

The occurrence of wildland fire varies from year-to-year depending on weather, climatic, and other conditions. Fire occurrence and size can depend on a range of factors, including elevation, vegetative community, fuel moisture, precipitation or lack of precipitation, the ability of fire to carry in specific types of vegetation, and other climatic dynamics such as dry summer weather following a wet spring or extended periods of drought.

The BLM is responsible for fire management, including fuels management, within the planning area on BLM-administered public lands. The BLM is also responsible for fire suppression within the area on Indian trust lands through an annual agreement with the Bureau of Indian Affairs.

<sup>9</sup> On August 1, 2013, the USFWS issued a 12-month petition finding, proposed rule in the *Federal Register* (46889, Vol. 78 No. 149) for the proposed listing of the Webber's Ivesia as threatened, and designation of critical habitat (46862 Vol. 78 No. 149). The proposed critical habitat in Douglas County is not within the Project area, therefore the BLM has determined this Project would have no effect on the proposed critical habitat.

<sup>10</sup> The BLM has not documented occupied habitat for Webber's Ivesia within the Project area; the BLM has determined that implementation of the Project would not jeopardize the continued existence of the species.

## **Current Condition**

### *Fire History*

The weather and fuel structure in the Pine Nut Mountains provide an opportunity for ignitions from frequent summer storms and lightning ignited fires have traditionally been an integral factor in the formation and arrangement of vegetation types across the planning area. Between 1980 and 2012, there has been an average of 18 wildfire starts per year within the planning area. Between 1980 and 2012, there have been 36 documented large wildfires, covering 52,403 acres within the planning area. Recently large fires burned 5,484 acres in 2011 and 13,680 acres in 2012. Lightning accounts for 68 percent of all starts. Cigarettes, vehicles, firearms, children, and unattended campfires account for most human-caused starts. Human-caused starts are most common in the foothills, along the urban interface.

More recently, the combination of wildfire suppression and changing land use patterns has altered the natural cycle and role of fire. Suppression actions have resulted in large, unnatural fuel loads across the landscape, while invasive species such as cheatgrass (*Bromus tectorum*) are fire-adapted and tend to dominate the understory after a fire occurs on lower elevations. Wildland fires will burn with greater intensities and spread more rapidly, consuming more acres than in the past under these altered landscape conditions.

The fire season normally extends from late April to early November. The most critical fire conditions are often present from mid-June until October or November when season-ending winter weather arrives.

### *Fuels Management History*

The National Fire Plan provided funding to improve fire prevention and suppression, reduce hazardous fuels, restore fire-adapted ecosystems, and promote community assistance. Between 1996 and 2012, there have been six prescribed fires for 797 acres and fifteen mechanical fuels treatments for 7,117 acres completed within the planning area. The prescribed fires were conducted on the east slope of Mount Como and north of Jack Wright Pass. The mechanical fuels treatments were conducted along the Carson City, Fish Springs and Smith Valley wildland urban interface areas and in the vicinity of Hackett Canyon, Sullivan Canyon, Mill Canyon and Spring Gulch.

### *Fire Regimes*

Fire regimes are used as part of the fire regime condition class (FRCC) discussion to describe fire frequency (average number of years between fires) and fire severity (effect of the fire on the dominant overstory vegetation—low, mixed, or stand replacement). These regimes represent fire intervals prior to Euro-American settlement and are calculated and classified by analyzing natural vegetation, known fire cycles, and fire history data.

The Project area can be characterized by primarily Fire Regime Groups III and IV (LANDFIRE). Fire Regime Group III in the historical grass, brush and pinyon-juniper plant communities and Fire Regime IV in the historical grass and brush plant communities. Fire Regime Groups III and IV both have a natural historical fire frequency of 35-100 years with Fire Regime III having a mixed fire severity and Fire Regime Group IV a stand replacement fire severity.

### *Fire Regime Condition Class*

FRCC is a classification system that describes the amount of departure an area or landscape has experienced from its historic regime to the present condition. It is used to classify existing ecosystems by looking at conditions of ecosystem components. Departures from the historic fire regimes are caused by fire exclusion, timber harvesting, grazing, introduction and establishment of exotic plant species, insects and disease, and other management activities. Wildland fire and fuels management works towards restoring ecosystem components to their historic range.

The condition class for the Project area varies across the landscape with all three condition classes present however the proposed treatment area can be characterized as Condition Classes 1 and 2 (LANDFIRE). Fire regimes in Condition Class 1, primarily the high elevation mountain big sagebrush communities are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within a historical range. Where appropriate, these areas can be maintained within the historical fire regime by treatments such as hand treatment. Condition Class 2 situations exist where one or more fire return intervals have been missed and vegetation continues to grow uninterrupted, becoming increasingly denser. Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range. Where appropriate, these areas may need moderate levels of restoration treatments, such as hand or mechanical treatments, to be restored to the historical fire regime.

### *Wildland Urban Interface (WUI)*

The planning area contains a large amount of WUI. The intermixed landscape of public and private lands means wildland fires have a heightened potential to spread onto private property, destroying homes and valued landscapes. The BLM coordinates with other federal, State, county, and local agencies and participates in proactive community projects to reduce wildfire risks and damages.

The BLM works with other fire departments and local and State government to identify communities and other WUI values at risk from wildfire and to set priorities for the mitigation of those threats. Within the planning area a number of at risk communities are present.

### *Trends*

The trend in FRCC is likely to continue as vegetation types move further outside their historic fire regime due to fire suppression and an increase in nonnative species. Fires in areas infested with cheatgrass have and will continue to become more frequent, with potential to burn once every few years. Fires in areas with overly dense pinyon-juniper will continue to burn with high intensity and severity. The WUI will continue to expand, bringing urban development pressures to these vegetative communities. In response, suppression and fire exclusion activities will increase in an effort to protect economic values. Extensive WUI and high recreation use creates higher potential for human-caused fires. Costs to protect associated infrastructure from wildland fires is likely to increase.

### 3.11 Forest Resources

Pinyon-juniper woodlands provide a variety of non-economic and economic services and values. These woodlands are visual qualities of the Pine Nut Mountains for scenery and aesthetics, whether up close on one of the many dirt roads that traverses the mountains, to further away along the Highway 395, north-south corridor. Trees contribute to wildlife habitat in the form of providing shade and nesting/perching opportunities. On a watershed scale, trees along with soil, collect and regulate snow melt and run-off. Woodland products, whether for commercial or non-commercial purposes such as firewood, are a beneficial aspect of the woodlands. The geographic distribution of certain tree species can change overtime as a result of climate, wildfire and other natural forces. Urbanization adjacent to BLM-managed lands has resulted in increased concerns about wildfire in the urban interface.

The proximity of the planning area to the major population areas of Dayton, Carson City, Minden, and Gardnerville have resulted in a high demand for firewood, Christmas trees, pine nuts, and the occasional bonsai collector. The area is also valued for its scenic qualities by the public who frequent the area for various recreational activities. Local tribes value the area for spiritual and the rich cultural history, including fall gathering of pine nuts. Table 6 describes the forest and woodland types found within the planning area.

**Table 6. Forest and Woodland Types within the Planning Area.**

Forest/Woodland Type	Density	BLM Acres
Pinyon-juniper	Low- less than 20 percent canopy closure	93,695
	Medium – 20 to 70 percent canopy closure	60,819
	High – greater than 70 percent canopy closure	9,863
Mountain Mahogany	No data available	2,024
Riparian Deciduous	No data available	530
<b>Total</b>		166,931

Source: BLM GIS (2013).

Low density pinyon-juniper stands are indicative of expansion of this woodland type into adjacent sagebrush habitats. The scattered young trees have no economic value (with the exception of an occasional Christmas tree) since they are typically too small and inaccessible for firewood and have yet to produce any pine nuts. Medium density stands still contain an understory grass, forb, and shrub component. High density stands have little to no understory and are typically dominated by large trees that form a continuous canopy. Medium and high density stands are most susceptible to stand replacing fire, insects, and disease due to high fuel loads and low individual tree vigor caused by competition with neighboring trees for water, light, and nutrients. Harvest of firewood comes almost exclusively from these types of stands because of the high levels of mortality.

### 3.12 Visual Resources

Visual resources are the visible physical features on a landscape, such as land, water, vegetation, animals, and structures. Through its visual resource management (VRM) classification, the BLM ensures that the scenic values of public lands are considered before authorizing uses that may result in adverse visual impacts. The visual resources and aesthetics information below provide a

baseline for analyzing potential impacts as a result of this Project. Management objectives for the VRM classifications are described below:

- 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 visual contrast rating stage involves determining whether or not potential visual impacts from proposed surface-disturbing activities or developments would conform to management objectives established for the area or whether project design adjustments would be required. Using the analysis from the visual contrast rating worksheet as a guide, developers can reduce visual impacts caused by a project (BLM 2003). VRM classes and their associated resource management objectives apply only to public land. Table 7 shows the VRM classes for BLM land within the Project area are categorized as Class II, III, or IV (BLM 2001) as follows:

**Table 7. VRM Classification**

Class	Acres	% of Project Area
I	0	0
II	4,088	16
III	10,983	47
IV	9,493	37

Source: BLM GIS (2013).

According to BLM Manual 6330, Managing for Wilderness Study Areas (2012), “All WSAs should be managed according to VRM Class I management objectives until such time as Congress decides to designate the area as wilderness or release it for other uses.” The Burbank Canyon WSA is adjacent to a portion of the southern Project area. However, there no would be implementation activities within or adjacent to the WSA that would impair the areas wilderness characteristics. The Burbank Canyon WSA is not discussed further.

### **3.13 Air Quality**

Air quality regulations for the Project area fall under the jurisdiction of the Environmental Protection Agency (EPA) and the Nevada Department of Environmental Protection’s Bureau of Air Quality (NDEP BAQ).

### ***Ambient Air Quality Standards***

Air quality is defined by ambient air concentrations of specific pollutants determined to be of concern with respect to the health and welfare of the general public. Under the Clean Air Act Amendments of 1990, the EPA established National Ambient Air Quality Standards (NAAQS) and designated six common pollutants, known as criteria pollutants, in order to improve air quality throughout the country. These criteria pollutants are lead, ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide, and particulate matter.

The EPA established standards for each pollutant that must not be exceeded. Areas that exceed a federal air quality standard are designated as nonattainment areas. Nevada has adopted the EPA air quality standards and has the right to establish more stringent state or county standards but may not lessen the federal standards. With minor exceptions, ambient air quality standards must not be exceeded in areas where the general public has access.

### ***Current Condition***

Carson City, Lyon County, and Douglas County are in attainment with the NAAQS. Locations vulnerable to decreasing air quality from development include the population centers of Carson City, Gardnerville-Minden, Dayton, Yerington, and Wellington.

Particulate matter concentrations are expected to be higher near towns because of local combustion sources and unpaved roads. Suspended particles are probably due to fugitive dust that is primarily windblown. Although there is no gaseous pollutant monitoring in the planning area, levels are estimated to be low and within standards. Occasional peak concentrations of carbon monoxide and oxides of nitrogen may be found in the immediate vicinity of combustion equipment.

The Nevada Bureau of Air Quality Planning operates an ambient air quality network of gaseous and particulate pollutant monitors throughout rural Nevada (those areas outside of Washoe and Clark Counties). Carson City, Lyon, and Douglas Counties are in attainment for lead, ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide, and particulate matter, meaning that these counties adhere to criteria pollutant concentration limits established by the EPA and adopted by the State of Nevada. Carson City has one monitoring site for carbon monoxide and particulate matter; a second monitoring site in Gardnerville, also monitors particulate matter.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 Introduction**

This chapter describes and compares the environmental consequences predicted to result from implementing the Proposed Action or Alternatives described in Chapter 2.0. The purpose of this chapter is to present the impact analysis of the alternatives and to disclose the impacts of the actions on affected resources by the Proposed Action or Alternatives.

The potential consequences or impacts of each alternative are addressed in the same order of resource topics in Chapter 3.0. This parallel organization allows readers to compare existing resource conditions (Chapter 3.0) with potential impacts (Chapter 4.0).

#### ***4.1.1 Types of Effects***

This chapter describes the potential direct, indirect, and residual effects to resources that may result from the Proposed Action or Alternatives, as well as identifies the potential monitoring needs associated with the specific resources. In this document, the word “adverse” is used in characterizing minor (non-significant) detrimental effects to a resource, and “negligible” is used in characterizing minor (non-significant) detrimental effects to a resource that are generally undetectable. “Beneficial” effects would have a positive effect on the resource. In this document, the terms “effect” and “impact” are used synonymously. Assessment of effects can be for short-term (generally considered during Project implementation) or the long-term. Effects fall into two categories, direct (caused by the action, same time and place) and indirect (caused by the action, but later in time or further in distance).

### **4.2 Cultural Resources**

#### ***Alternative A: Proposed Action***

Under the Proposed Action, a PA would be executed prior to issuance of a Decision under the NEPA. The PA would define the methods through which BLM would avoid adverse effects during implementation of the Proposed Action. Some units would be treated by hand (lop and scatter) under the Proposed Action. Treatment that does not involve ground disturbance would not result in adverse effect to historic properties. Treatment units that would be treated by mechanical equipment would first be subject to a Class III cultural resources inventory. Based on that inventory, identified historic properties would be delineated as avoidance areas. A larger buffer area may be delineated to ensure that there are no adverse effects to historic properties caused by indirect effects during project implementation. In the long-term, reducing the likelihood of large-scale wildland fire would benefit historic properties in the Project area.

#### ***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to cultural resources from the Proposed Action because it would not be implemented. Without implementation of the Proposed Action, the likelihood of large-scale wildland fire in the Pine Nut Mountains would remain high, and large, severe fires would be an adverse effect to cultural resources.

### **4.3 Native American Religious Concerns**

#### ***Alternative A: Proposed Action***

Under the Proposed Action, a PA would be executed prior to issuance of a Decision under the NEPA. The PA would define the methods through which BLM would avoid adverse effects during implementation of the Proposed Action. Project implementation has the potential to adversely affect known and unknown traditional resources or traditional religious uses. The BLM would continue to consult with the Washoe Tribe of Nevada and California and the Yerington Paiute Tribe during all phases of the Project. Areas identified by the Tribes as key sensitive areas may be delineated as avoidance areas or mechanized treatments may be changed to hand treatment (i.e. lop and scatter). Impacts to traditional religious uses during Project implementation would be avoided through consultation for each phase of the Project. In the long-term, reducing the likelihood of a large-scale wildland fire would benefit traditional resources in the Project area.

#### ***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to access to traditional resources or religious uses from the Proposed Action because it would not be implemented. Without implementation of the Proposed Action, the likelihood of large-scale wildland fire in the Pine Nut Mountains would remain high, and large, severe fires have the potential to adversely affect traditional resources and traditional religious uses.

### **4.4 Wetlands/Riparian Zones**

#### ***Alternative A: Proposed Action***

Under the Proposed Action, treatments in riparian areas would occur primarily by hand (lop and scatter) due to the steep terrain and limited accessibility. During Project implementation, riparian plant species may be crushed, an adverse effect. Use of existing roads would minimize potential for riparian plants to be impacted by vehicles. Most of the treatments are anticipated to occur during late summer or fall, the driest time of the year. Treatments would occur outside of the critical growing period in the life cycle of riparian plants. Treatment activities within riparian areas would be focused on the removal of pinyon-juniper trees. Encroachment of pinyon-juniper into riparian areas can shade out non-conifer species, reduce water flow, and reduce soil moisture, all adverse effects to riparian species. Although these treatments would adversely affect pinyon-juniper, riparian species such as willow, cottonwood or aspen would benefit in the long-term from the treatments. Wildlife associated with the riparian species would also benefit. Removing pinyon-juniper from riparian areas may reduce the effects of large-scale wildland fire that can lead to increased erosion, loss of riparian vegetation, and increase in invasive plants, a beneficial effect.

#### ***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to riparian areas from the Proposed Action because it would not be implemented. Current vegetative trends would continue; riparian areas where conifer expansion contributes to reduced water flow and a reduction in species such as aspen, cottonwood and willow would likely continue, an adverse effect. A large-scale wildland fire would adversely affect riparian areas due to increased soil erosion and removal of riparian vegetation.



## 4.5 General Wildlife

### *Alternative A: Proposed Action*

Wildlife in the Project area is at risk due to habitat loss from pinyon-juniper encroachment and increasing density, loss of understory vegetation and degradation of riparian areas, and severe wildfire from dense tree stands. Preventing the transitioning of sagebrush communities to pinyon-juniper and managing for multi-aged pinyon-juniper stands in a heterogeneous mosaic across the landscape are conservation objectives identified in Nevada's Wildlife Action Plan (WAPT 2012). The Proposed Action addresses and would help accomplish these objectives. The Proposed Action would generally result in improved habitat conditions and resiliency for a variety of wildlife species including sagebrush obligates and others which require more open country, species associated with riparian areas, species which use woodland with a healthy perennial understory, and species that use sagebrush adjacent to woodland (woodland-sagebrush edge).

Under the Proposed Action, pinyon-juniper would be removed or thinned in treatment units, which is expected to benefit wildlife by promoting an increase in grasses, forbs, and shrubs. This would increase the abundance, diversity, and vigor of vegetation for cover and forage as well as providing increased food sources for species that eat seeds and insects, as well as an increased prey base for predators. Spacing of retained trees and shrubs would be random and irregular to create a mosaic of patchy habitat; proposed treatments would avoid creating a sharp, well-defined edge between the treated areas and untreated areas outside the Project area. Sagebrush treatment would leave a greater variety of shrub heights and create diversity in age classes in the long term. These treatments would increase the structural complexity and diversity of remaining habitat. Removing pinyon-juniper from riparian areas would benefit wildlife by maintaining or promoting species such as willow, cottonwood, and aspen. Removal of pinyon-juniper may result in increased water flow in riparian areas, a beneficial effect for wildlife. Enhancing overall watershed health is expected to increase or maintain water flow during dry years. Removal or thinning of pinyon-juniper could initially adversely affect species associated with woodlands habitat in the short-term, but in the long-term treatment would help create better habitat, which is woodland with a mostly open canopy and a significant shrub understory. Under the Proposed Action, the likelihood of a large-scale wildland fire would be reduced, a beneficial effect to all wildlife and habitats in the Project area. Reducing the occurrence of large-scale wildland fire would lessen opportunities for exploitation by non-native plants such as cheatgrass, which adversely affect wildlife and their habitats. Creating and maintaining a mosaic of habitat types across the Project area is expected to increase and/or maintain species diversity and increase habitat resiliency to wildfire. The Proposed Action would not eliminate the potential for historic fire regimes, which is a natural disturbance process, but reduce its impact by increasing ecosystem resilience.

Under the Proposed Action, treatments would occur by hand (lop and scatter) or machinery. Operations involving the cutting and/or removal of vegetation by any of the proposed treatment methods could cause direct, short-term, localized impacts to wildlife primarily through disturbance and displacement. Any disturbance and/or displacement would likely be temporary and would only occur in small portions of the Project area in any given year because implementation would occur over a 10 to 15 year period. Displaced individuals could likely move into similar habitat in adjacent areas during Project implementation. The amount of trees

that would be removed in the Project area represents a small amount of the total trees available in the Pine Nut Mountains and the proposed tree removal would protect surrounding habitat from severe wildfire. Ground-dwelling wildlife, such as rodents and reptiles, could be trampled or their burrows destroyed by equipment or foot traffic. Most of the treatments are anticipated to occur during late summer or fall, outside of the critical breeding period for most wildlife species. As stated in Section 2.1.1.5 Resource Commitments, old-growth trees and trees with obvious signs of wildlife use, such as nest cavities or raptor nests, would be retained. All live aspen, cottonwood, and mountain mahogany would be retained. Downed trees and left over slash may enhance cover and nesting opportunities.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. While there would be no effects to wildlife or their habitats, this alternative represents a lost opportunity to enhance and restore wildlife habitat in the Project area. This alternative would continue to result in declining habitat conditions for wildlife. Current vegetative trends that affect the composition of wildlife habitat would continue; sagebrush communities and riparian areas would continue to be degraded by conifer expansion and the quality of woodland habitat would continue to be diminished by increasing tree density. Increases in woodland density also increase the risk of severe fire from high fuel loads. The occurrence of a large-scale wildland fire would adversely affect all wildlife and their habitats. A large-scale wildfire would alter or eliminate habitat in the Project area for the long-term and facilitate the spread of cheatgrass, further impacting and eliminating habitat. Overall, conifer encroachment in sagebrush and riparian communities, and woodland densification and conversion to closed-canopy stands would likely reduce the diversity and abundance of wildlife species in the Project area over time. In the long-term, wildlife species found in the project area would likely be skewed toward those that use pinyon-juniper and/or are tolerant of a loss of understory vegetation.

**4.6 BLM Sensitive Species (Animals)**

***Alternative A: Proposed Action***

Under the Proposed Action, pinyon-juniper would be removed or thinned, which is expected to benefit sensitive species by promoting an increase in grasses, forbs, and shrubs. This would increase the abundance, diversity, and vigor of vegetation for cover and forage as well as providing increased food sources for species that eat seeds and insects, as well as an increased prey base for sensitive raptors. While proposed tree removal could adversely impact individual sensitive species that use woodland habitat in the short-term, it is expected to benefit populations of sensitive species in the long-term because it creates open canopy woodland and promotes the growth of healthy understory vegetation. Removal of trees from rangeland sites where trees are encroaching into sagebrush communities and thinning of trees from forestland sites is expected to benefit both sagebrush and woodland dependent sensitive species by increasing the available amount of high quality habitat in the Pine Nut Mountains. Treatments would avoid creating a sharp, well-defined edge between treated and untreated areas, and would increase habitat health, diversity, and resiliency across the landscape. The Proposed Action would also benefit sensitive species by protecting treated and surrounding untreated habitat from future potential severe wildfire.

Operations involving the cutting and/or removal of vegetation by any of the proposed methods could cause direct, short-term, localized impacts to individuals through disturbance and displacement. Any disturbance and/or displacement would likely be temporary and would only occur in portions of the project area in any given year because implementation would occur over a 10 to 15 year period. Displaced individuals could likely move into similar habitat that surrounds the project area. The amount of trees that would be removed in the Project area represents a small amount of the total trees available in the Pine Nut Mountains. Most of the treatments are anticipated to occur during late summer or fall, outside of the critical breeding period for sensitive species. As stated in Section 2.1.1.5 Resource Commitments, disturbance to nesting sensitive birds would be avoided either because implementation would occur outside the nesting season or because nest surveys would be conducted prior to any treatment. Old-growth trees and trees with obvious signs of wildlife use, such as nest cavities or raptor nests, would be retained. All live aspen, cottonwood, and mountain mahogany would be retained. Downed trees and left over slash may enhance cover and nesting opportunities.

#### *Bi-State DPS of Greater Sage-grouse*

Removal of pinyon and juniper trees in mapped priority habitat for sage-grouse would restore degraded breeding, nesting, brood-rearing, and summer habitats, along with improving connectivity between these seasonal habitats by expanding and opening up movement corridors used by sage-grouse. There would be no direct effects to the known lek in the Mill Canyon area because it is not in a treatment unit, but it would benefit from nearby tree removal that reduces avian predator perches and the risk of severe wildfire. Pinyon-juniper removal is expected to promote an increase in grasses, forbs, and shrubs. This would increase the abundance, diversity, and vigor of vegetation for cover and forage as well as increasing insect prey. Removing trees would reduce available perches for ravens and other avian predators, and may reduce predation impacts on sage-grouse, particularly in nesting and early brood-rearing habitat. Reducing tree expansion and densities in summer habitat would protect wet areas by decreasing tree uptake of water and thus increasing water availability. This would enhance wet areas through ground water recharge. Tree removal would also reduce fuel loads and minimize the risk of losing habitat to severe wildfire. The Proposed Action would restore habitat in the Pine Nut PMU over time and this would likely increase survival rates and help maintain or increase abundance of sage-grouse

As stated in Section 2.1.1.5 Resource Commitments, disturbance to sage-grouse would be minimized by deferring treatment activities within 3.2 miles of an active lek during the breeding season (March 1 to May 15) and deferring treatment activities in nesting and early brood-reading habitat (generally within 3.2 miles of an active lek) from March 15 to June 30.

Shrubs may be thinned in the Sunrise unit (Figures 8 & 11) to accomplish the fuels objectives of reducing fuel continuity and thus fire intensity potential. This unit occurs along the Sunrise Pass Road. Treating trees alone would likely not meet the objective of modifying fire behavior in this area to reduce potential fire impacts to two powerlines that supply electricity to the Carson Valley and South Lake Tahoe, provide for safer access/egress in the event of a fire, and reduce potential for large severe fire. While this unit occurs in mapped priority habitat, sage-grouse do not currently use this area based on telemetry data currently being collected by the USGS. Brush treatment would occur adjacent to the road and brush spacing would be adjusted by treating up to 60 percent of the brush in a mosaic pattern. Thinning would prevent shrub over-dominance by

managing for patchy brush with openings. Shrub stands would be managed for multiple age and size classes.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. While there would no effects to BLM sensitive species or their habitats, this alternative represents a lost opportunity to enhance and restore habitat important to sensitive species. This alternative would continue to result in declining habitat conditions for these species. Current vegetative trends that affect the composition of sensitive animal species habitat would continue; left untreated, sagebrush communities and riparian areas would continue to be degraded by conifer expansion and the quality of woodland habitat would continue to be diminished by increasing tree density. Increases in woodland density also increase the risk of severe fire from high fuel loads. The occurrence of a large-scale wildland fire would adversely affect sensitive species and their habitats. A large-scale wildfire would alter or eliminate habitat in the Project area for the long-term and facilitate the spread of cheatgrass, further impacting and eliminating habitat. Overall, conifer encroachment in sagebrush and riparian communities, and woodland densification and conversion to closed-canopy stands would likely reduce the diversity and abundance of bird species in the Project area over time.

## **4.7 Migratory Birds**

***Alternative A: Proposed Action***

Under the Proposed Action, pinyon-juniper would be removed or thinned in treatment units, which is expected to benefit birds by promoting an increase in grasses, forbs, and shrubs. This would increase the abundance, diversity, and vigor of vegetation for cover and forage as well as providing increased food sources for species that eat seeds and insects, as well as an increased prey base for raptors. While proposed tree removal could adversely impact individual woodland birds in the short-term, it is expected to benefit migratory bird populations in the long-term because it creates open canopy woodland and promotes the growth of healthy understory vegetation. Removal of trees from rangeland sites where trees are encroaching into sagebrush communities and thinning of trees from forestland sites is expected to benefit both sagebrush and woodland dependent bird species by increasing the available amount of high quality habitat in the Pine Nut Mountains. Treatments would avoid creating a sharp, well-defined edge between treated and untreated areas, and would increase habitat health, diversity, and resiliency across the landscape. The Proposed Action would also benefit migratory birds by protecting treated and surrounding untreated habitat from future potential severe wildfire.

Operations involving the cutting and/or removal of vegetation by any of the proposed methods could cause direct, short-term, localized impacts to individual birds through disturbance and displacement. Any disturbance and/or displacement would likely be temporary and would only occur in portions of the project area in any given year because implementation would occur over a 10 to 15 year period. Displaced individuals could likely move into similar habitat that surrounds the project area. The amount of trees that would be removed in the Project area represents a small amount of the total trees available in the Pine Nut Mountains. As stated in Section 2.1.1.5 Resource Commitments, disturbance during the nesting season would be avoided either because implementation would occur during late summer or fall outside critical breeding periods, or because nest surveys would be conducted prior to any treatment. Old-growth trees

and trees with obvious signs of wildlife use, such as nest cavities or raptor nests, would be retained. All live aspen, cottonwood, and mountain mahogany would be retained. Downed trees and left over slash may enhance cover and nesting opportunities.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. While there would be no effects to migratory birds or their habitats, this alternative represents a lost opportunity to enhance and restore habitat. This alternative would continue to result in declining habitat conditions for migratory birds. Current vegetative trends that affect the composition of migratory bird habitat would continue; sagebrush communities and riparian areas would continue to be degraded by conifer expansion and the quality of woodland habitat would continue to be diminished by increasing tree density. Increases in woodland density also increase the risk of severe fire from high fuel loads. The occurrence of a large-scale wildland fire would adversely affect birds and their habitats. A large-scale wildfire would alter or eliminate habitat in the Project area for the long-term and facilitate the spread of cheatgrass, further impacting and eliminating habitat. Overall, conifer encroachment in sagebrush and riparian communities, and woodland densification and conversion to closed-canopy stands would likely reduce the diversity and abundance of bird species in the Project area over time.

## **4.8 Vegetation**

***Alternative A: Proposed Action***

Under the Proposed Action, treatments would occur by hand (lop and scatter) or machinery. During Project implementation, plants may be crushed by foot traffic or use of machinery, an adverse effect. Use of existing roads would minimize potential for vegetation to be crushed by vehicles. Most of the treatments are anticipated to occur during late summer or fall, outside of the critical growing period in the life cycle of a plant. Treatments would be focused on removal of pinyon-juniper from riparian areas and from sagebrush communities. Effects to pinyon-juniper would be adverse, however, removal of pinyon-juniper from these two habitat types would benefit riparian species such as willow, and sagebrush associated vegetative species. In the long-term, removal of pinyon-juniper from sagebrush communities may reduce the occurrence of large-scale wildland fire, a beneficial effect to all vegetative communities.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to vegetation from the Proposed Action because it would not be implemented. Current vegetative trends are likely to continue. Sagebrush and riparian communities would continue to be converted to pinyon-juniper woodlands. As the woodlands become the dominate vegetative species, most understory species would become absent, an adverse effect. Without the treatments, a large-scale wildland fire would be more likely to occur. In the event of a wildland fire, vegetation would be eliminated in the short-term and opportunities for exploitation by non-native plants such as cheatgrass would likely increase, an adverse effect.

## **4.9 BLM Sensitive Species (Plants)**

***Alternative A: Proposed Action***

Under the Proposed Action, some of the units would be treated by lop and scatter. Foot traffic has the potential to crush plant species, a negligible effect. Treatments that would occur by

machinery have a higher potential to crush sensitive plant species, an adverse effect. Most of the treatments are anticipated to occur during late summer or fall, outside of the critical growth period for most species. As described in Section 2.1.1.5, surveys for sensitive plant species would be conducted in mechanical treatment units that have high potential for their occurrence; where species are located, during the critical growing season, implementation would be delayed or hand thinning of trees may replace mechanized equipment. With implementation of pre-work surveys, and work primarily during the non-critical growing period, overall effects to sensitive plant species would be negligible.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to sensitive plants from the Proposed Action because it would not be implemented. Without implementation of the Proposed Action, the likelihood of large-scale wildland fire in the Pine Nut Mountains may be increased. Condition Class in the Project area would likely trend toward Class 2, a situation when fire intervals are interrupted and vegetation becomes increasingly denser, especially from conifer expansion. The occurrence of a large-scale wildland fire would adversely affect sensitive plant species and associated habitats.

## **4.10 Fire Management**

***Alternative A: Proposed Action***

The overall effect of the Proposed Action would result in the intended consequences of reducing the risks of catastrophic wildfire and its potential adverse impacts to life, property, and natural resources, a beneficial effect. The structure, amount, and continuity of flammable vegetation within the Project area would be altered resulting in reduced fire intensity. The treated area would be moved from high intensity wildfire fuel conditions to mixed intensity wildfire fuels conditions. Concentrations of trees would be thinned reducing the connection from the younger trees to the older trees. The openings between tree crowns would reduce the tree torching and crowning potential. The trees which are left would be better protected from the adverse effects of wildfire, because fuel loads would be reduced and more natural breaks in fuels would enable better fire control and management. The shrub component would be thinned reducing the surface fuel quantity and continuity and reducing ladder fuels that can carry fire from the surface into tree crowns.

The Proposed Action is designed to either reduce or maintain the Condition Class for each treatment unit, meaning the project area would be more in line with historical fire regimes and the risk of losing infrastructure or key ecosystem components would be reduced.

There is a slight risk of the equipment conducting the treatments starting a wildland fire by hitting rocks and causing sparks. This risk can be minimized by scheduling the treatment outside periods of very high to extreme fire danger or by having water available on site during treatment operations if the treatment is conducted at a high fire danger.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to fire management from the Proposed Action because it would not be implemented. Without implementation of the Proposed Action, the likelihood of large-scale wildland fire in the Pine

Nut Mountains may be increased. Condition Class in the Project area would likely trend toward Class 2, a situation when fire intervals are interrupted and vegetation becomes increasingly denser, especially from conifer expansion. As a result severity and scope of wildland fire would be increased, an adverse effect.

#### 4.11 Forest Resources

##### *Alternative A: Proposed Action*

The majority of the proposed vegetation treatments would consist of the removal of scattered pinyon-juniper trees within low density pinyon-juniper areas and in areas dominated by sagebrush that have a scattered tree component (Table 7). The 11,267 acres of treatment in the sagebrush type are areas located outside the forest and woodland delineated areas since the low stocking of trees disqualifies them for inclusion as a woodland stand. As such, approximately 13,296 acres of pinyon-juniper woodlands would be treated under the Proposed Action, which is approximately 16 percent of the forest and woodland acres within the planning area. The proposed treatments are fairly dispersed throughout the planning area, so the relative change to the scenic quality would be minimal and spread out over an implementation period of 10 to 15 years.

**Table 8. Proposed Treatments by Community Type.**

Community Type	Density	Treatment Acres
Pinyon-juniper	Low- less than 20 percent canopy closure	8,664
	Medium – 20 to 70 percent canopy closure	5,407
	High – greater than 70 percent canopy closure	1,225
<i>Total treatment acres of pinyon-juniper stands</i>		13,296
Sagebrush	Less than 10 percent stocking of pinyon-juniper trees	11,267
<b>Total</b>		24,564

Source: BLM GIS data 2013.

Approximately 6,632 acres of medium and high density pinyon-juniper woodlands would be thinned under the Proposed Action. The variable density thinning would retain a 30 to 50 percent canopy closure with large seed bearing pinyon trees as the preferred type. Trees infected with mistletoe, blister rust, and impacted by pinyon needle scale insects would be the preferred trees for removal. The thinning and sanitation of insects and diseases would result in a healthier stand and less mortality to the remaining trees. Treatment of slash by either removal, lop and scatter, hand pile/burn, and/or chipping would create stands that are less susceptible to stand replacing fire. Project design features would limit understory disturbance by directing equipment to only a portion of the treatment unit, and would largely retain existing understory grasses, forbs, and shrubs. The understory component would recover and colonize areas that were dominated by trees prior to the thinning. In high density stands where very little to no understory is present, follow up seeding treatments would be done to perpetuate this component and prevent colonization of non-natives or noxious weeds.

The proposed treatments would provide a source of forest products to the communities of Dayton, Carson City, Minden, and Gardnerville. There would be designated firewood areas closer to these communities resulting in less trespass and more compliance with permit stipulations. The Proposed Action would also provide products to commercial entities that may be able to develop long-term markets for wood products such as small biomass facilities,

firewood cooperatives, fencing manufacturers, etc. The presence of viable markets adds value to the material which can then be used to offset the cost of the treatments.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to forest resources from the Proposed Action because it would not be implemented. Not implementing the Proposed Action would miss an opportunity to make available forest resources such as firewood for personal use and enhance pinyon stands which are valuable to local tribes for their nut production. The trends of increasing stand densities, higher tree mortality, decreasing understory diversity, and increased fuel loads would continue. Willful trespass on BLM-managed lands and nearby Indian Trust Assets would likely continue unless the BLM provides new areas for firewood harvesting.

## **4.12 Visual Resources**

***Alternative A: Proposed Action***

Under the Proposed Action, treatment actions would occur in VRM Class II, III and IV areas. Class III and IV allow for moderate to high level of modification to the visual landscape. Treatment within these units would not be inconsistent with the VRM classification, no further analysis is necessary. The Bald Mountain and Mount Siegel units are VRM class II, which allows for low modification to the visual character of these units. Treatment within these units would be by hand cutting only. There would be no mechanical mastication or thinning/removal. Hand cutting has the lowest impact to the visual character of the landscape as it is generally used in areas of low pinyon-juniper/acre ratio. This treatment method is not inconsistent with VRM II.

To minimize the visual contrast, treatment boundaries should mimic the natural patterns of the landscape. However, because the Bald Mountain unit is adjacent to Indian Trust Assets, portions of the treatment would be configured in a rectangular shape. The BLM would seek opportunities for partnering with adjacent landowners to conform to the pattern of the landscape, regardless of ownership.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to visual resources from the Proposed Action because it would not be implemented. In the event of a large-scale wildland fire, the visual character of the treatment units would be changed severely, an adverse effect.

## **4.13 Air Quality**

***Alternative A: Proposed Action***

The potential adverse effects on air quality of the Proposed Action are expected to be minor and would be minimized by conformity to established Nevada Bureau of Air Quality protocols. The Proposed Action would result in a localized short-term effect on air quality in the project vicinity as a result of smoke generated from prescribed burning and exhaust and fugitive dust emissions generated by equipment and power tools. The Proposed Action is expected to result in long-term benefits to air quality because of decreased smoke emissions generated during uncontrolled wildfire events.



Smoke - The Proposed Action would have minor adverse effects on air quality as a result of prescribed burning. The expected smoke emissions generated by the proposed pile prescribed burning are expected to be dramatically less than those generated by an uncontrolled wildfire event if no fuel reduction actions are taken.

Exhaust - The Proposed Action would have minor adverse effects on air quality through the generation of exhaust emissions from equipment and power tools, such as mastication equipment and chainsaws. Emissions generated during implementation are minor and short-term, adverse cumulative effect on air quality.

Dust - The Proposed Action would have minor adverse effects on air quality through the generation of dust from equipment, such as vehicles and mastication equipment. Equipment would be working infrequently on exposed soil and any dust generated would not remain airborne for any length of time.

***Alternative B: No Action***

Under the No Action Alternative, no treatments would occur. There would be no effects to air quality from the Proposed Action because it would not be implemented. In the event of a large-scale wildland fire, during the event air quality in the area would likely be adversely affected.

**4.2 Residual Effects**

“Residual effects” are those adverse effects that remain after implementation of mitigation measures. No major adverse effects (“significant” per 43 CFR 1508.27) have been identified in this draft EA that warrant mitigation. Measures have been incorporated into the elements of the Proposed Action to avoid and minimize adverse effects (see Section 2.1.1.5). No mitigation is necessary; there would be no residual effects.

## 5.0 CUMULATIVE EFFECTS

A cumulative effect is defined under NEPA as “the change in the environment which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other action”. “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR Part 1508.7). Past, present, and reasonably foreseeable future actions are analyzed to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the Proposed Action or alternatives may have an additive and significant relationship to those effects.

### *Cumulative Effects Geographic Area.*

The cumulative effects study area (CESA) for the Project is the planning area, an area encompassing approximately 397,983 acres (Figure 20). The CESA boundary for individual resources may be artificial (administrative) or natural. Only those resources directly or indirectly affected by the Proposed Action and Alternatives are analyzed for cumulative effects. Table 9 describes the CESA for each of the resources that may be affected by direct or indirect impacts is as follows:

**Table 9. CESA by Resource and Summary of Effects.**

Resource	Type of Effect	Acres
Cultural Resources	Indirect effects after implementation, potential long-term decrease in large-scale wildland fire that could threaten historic properties.	24,564
Native American Religious Concerns	Indirect effects after implementation through enhancement of woodlands and older age trees that are valued for pine nut production, and potential decrease in large-scale wildland fire.	24,564
Wetlands/Riparian Zones	Direct effects during implementation by removal of non-riparian vegetative resources; indirect effects by long-term changes to riparian vegetative communities.	24,564
General Wildlife, BLM Sensitive Species (Animals), Migratory Birds	Direct effects during implementation by removal of vegetative resources; indirect effects by long-term changes to sagebrush and woodland communities.	24,564
Vegetation	Direct effects during implementation by removal of vegetative resources; indirect effects by long-term changes to sagebrush and woodland communities.	24,564
BLM Sensitive Species (Plants)	Direct effects during implementation by removal of vegetative resources; indirect effects by long-term changes to sagebrush and woodland communities.	24,564
Fire Management	Indirect effects after implementation, potential long-term decrease in large-scale wildland fire.	397,983
Forest Resources	Direct effects during implementation by providing by-products such as firewood; indirect effects through enhancement of older woodlands and pine nut production.	24,564
Visual Resources	Indirect effects after implementation, minor changes in visual qualities of treatment units.	24,564
Air Quality	Direct effects during implementation as a result of increased vehicle emissions and pile burning.	397,983

### *Timeframe for Effects Analysis.*

The lifespan of the Project is anticipated to be 10 to 15 years. Short-term cumulative effects would occur during implementation. Treatments may occur over several weeks or several

months depending on the unit size, complexity of terrain and access, and method of treatment. Long-term cumulative effects would be expected to occur for several years or up to a decade after implementation of treatments in specific units.

*Past, Present, and Reasonably Foreseeable Actions.*

Past and Present Actions.

The Pine Nut Mountains were subject to a historic regime of wildfire caused by lightning strikes. Natural-caused fire can burn several acres to several thousand acres during one event. In more modern times, the area is also subject to man-caused wildfire in addition to natural (lightning-caused) fire. The wildfire history for the planning area is included in Table 10. Past and present vegetation treatments (Table 11) have been completed in the planning area to reduce catastrophic wildfire risks and to influence plant community composition and diversity. In response to the Bison Fire which occurred in July 2013, the BLM has prepared an Emergency Stabilization and Burned Area Rehabilitation Plan (ESR) (BLM, 2013). Activities approved for implementation include: chaining, hand trenching and log erosion dam construction, and aerial seeding. Chaining would occur on up to 2,885 acres of BLM-managed lands and on up to 631 of non-BLM lands. Depending on availability of funding and weather conditions, these ESR activities may be implemented October-December 2013.

**Table 10. Historic Large Fires in the Planning Area.**

Fire Name	Fire Year	Fire Cause	Acres
Bison	2013	Natural	24,140
TRE	2012	Human	7,153
Springs	2012	Natural	1,191
Preacher	2012	Natural	1,076
Como	2012	Natural	768
Ray May	2011	Human	3,815
Burbank	2011	Natural	1,113
Laurel	2011	Human	318
Holbrook	2011	Human	133
Como	2008	Human	451
Adrian	2007	Natural	14,004
Badger	2005	Human	656

Fires greater than 100 acres between 2003 and 2012 (10-years) included.

Source: BLM Wildland Fire Management Information (2013).

**Table 11. Past/Present Vegetation Treatments in the Planning Area.**

Project Name	Treatment Year(s)	Treatment Type(s)	Acres
Buckskin Valley	2012-2013	Lop and scatter, grinding	2,582
Upper Colony II	2010-2011	Grinding, biomass removal	1,075
Mill Canyon	2007-2010	Lop and scatter, grinding	2,383
Bluebird	2008-2009	Grinding	253
Brunswick Extension	2006	Grinding	30
Upper Colony	2006	Grinding	110
Pine Nut Road 2	2005	Thinning, chipping	18
Pine Nut Road	2004-2005	Thinning, biomass removal, grinding	200
Deer Run/Mexican Dam	2005, 2011	Grinding, seeding	90
Jack Wright 3	2005	Seeding	46
Brunswick	2004	Grinding	459

Jack Wright 2	2003	Prescribed fire	87
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Treatments between 2003 and 2012 (10-years), not including post-fire ESR treatments.  
Source: BLM GIS database (2013).

Historically, livestock grazing is known to have occurred in the planning area since the 1930's under BLM permitting, although sheep and/or cattle grazing are likely to have been occurring in the area since the late 1800's. The planning area overlaps with 17 BLM-administered grazing allotments. During the Comstock era of the 1860's, the timber resources of the Virginia Range to the north, Lake Tahoe region to the west, and Pine Nut Mountains was exploited. Large accessible areas were clear cut to supply the mining communities with lumber for houses, fuel for heating and steam/wood-powered mining equipment.

The Pine Nut HMA is within the planning area. In 1975, the most reliable census of wild horses was completed, which identified an estimated 297 animals. In 1995 the Multiple Use Decision for the Appropriate Management Levels for wild horses was set at between 119-179 animals. Gather and removal of wild horses has continued since 1978. The most recent operation occurred in December 2010, although the effort was a gather and remove/treat effort. Approximately 45 mares were gathered and treated with PZP-22 (Porcine Zona Pellucida, a fertility control). Sixty-five wild horses residing outside the HMA were removed (BLM 2010). The most recent wild horse census was completed in 2012 with a population estimate of 293 animals.

Dispersed recreation has occurred throughout the Pine Nut Mountains. General activities include: rock hounding, hunting, sightseeing, off-highway vehicle (OHV) use, and wildlife viewing. Members of area tribes collect pinyon pine nuts. Annually in certain areas, the BLM permits woodcutting/firewood gathering and cutting/removal of younger evergreen trees for the holiday season. The BLM permits non-commercial and commercial recreation events through its Special Recreation Permit program. Events include motorcycle enduro races usually lasting one to three days, all-terrain vehicle tours, and horse endurance riding. Most of the planning area is an "open and unlimited use" area for travel management. Although most of the vehicle use occurs on existing two-track trails and dirt roads, OHV use is also permitted. Actual numbers of users per day or per year are not available, but generally speaking the intensity of use is low and dispersed. Most use occurs during from spring to fall.

Within the planning area there have been a wide range of realty actions. Rights-of-way have been issued for overhead transmission lines, roads, communication towers, and wind testing. There is no mining in the planning area, although mineral exploration may be occurring.

The Pine Nut Mountains is a mix of public, private and Indian trust lands. Outside of BLM's decision-making on non-federal lands are activities such as recreation, including OHV use and hunting, residential and energy development. Bently LLC is the largest non-federal land owner in the Pine Nut Mountains.

Over the last century average temperatures within the Great Basin have increased 0.6 – 1.1 °F. Increased precipitation has been documented in parts of Nevada, along with changes in species distribution and populations. Snowpack has been documented to be on the decline since 1950. The earlier arrival of spring runoff, greater frequencies and intensities of wildland fire and

invasion of non-native species such as cheatgrass are attributable to global climate change. Winter temperatures have risen faster than any other season (Dugelby 2011, Chambers 2008).

#### Reasonably Foreseeable Actions.

Natural and human-caused wildland fires are likely to occur in the future. The Buckskin Valley Vegetation Treatment Project is a multi-year effort to treat up to 7,000 acres on the east side of the planning area. This project was impacted by the 2013 Bison fire and further implementation of the project is now uncertain. Other activities that are included in the Bison Fire ESR Plan that may be implemented in the future include the removal of wild horses within the Pine Nut HMA to allow for soil stabilization and re-growth of perennial plant species and application of herbicides to control or eradicate noxious weeds. These activities would be authorized under a separate action.

Other on-going activities in the planning area include administration of the grazing program, issuance of Special Recreation Permits for non-commercial and commercial activities, wild horse management, issuance of rights-of-way as requests are submitted to the BLM, and authorization of mining plans. In the Pine Nut Road area a planning effort is underway for the construction and maintenance of two non-motorized trails. A district-wide planning effort is underway to revise the Resource Management Plan (RMP). Prepared originally in the early 1980's, the new RMP may change allocation of resources and how they are used. A decision on the RMP is not anticipated until 2016. As a part of the RMP revision, a Travel Management Plan would be prepared, however the dates for this are unknown. This Plan may adjust the current travel management in the Pine Nut Mountains from "open" to "limited" use.

Projected warming for the Great Basin ranges from 3.6 to 9 °F over the next century. The loss of snowpack is likely to continue and may accelerate. Higher levels of carbon dioxide (CO<sub>2</sub>) may increase plant growth and exacerbate the spread of invasive species such as cheatgrass which has great flammability. The frequency and spread of fire is likely to grow. Pinyon-juniper would likely respond favorably to the increased CO<sub>2</sub> and crown fires may increase. Insect outbreaks could increase during warming episodes (Chambers 2008).

#### Effects Analysis.

##### *Cultural Resources*

Under the Proposed Action, historic properties would be avoided during implementation. There would be no cumulative effects to historic properties. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to historic properties. In the event of a large-scale wildland fire, historic properties would be impacted, a long-term adverse cumulative effect.

##### *Native American Religious Concerns*

Under the Proposed Action and in compliance with the provisions of the approved PA, tribes would be involved in the identification of traditional resource values. When traditional resources are identified, treatments may be modified or moved, resulting negligible or no long-term cumulative effects. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to Native American religious concerns or access to traditional

resources. In the event of a large-scale wildland fire, traditional resource values would be impacted, a long-term adverse cumulative effect.

#### *Wetlands/Riparian Zones*

Under the Proposed Action removal of pinyon-juniper trees from riparian areas would likely improve willow, cottonwood and aspen stands, a long-term beneficial cumulative effect. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to riparian areas. In the event of a large-scale wildland fire, vegetative resources in riparian areas would be impacted, a long-term adverse cumulative effect.

#### *General Wildlife*

Under the Proposed Action, wildlife associated with pinyon-juniper woodlands would be negligibly cumulatively impacted in the short-term. Those wildlife species associated with sagebrush and riparian communities would benefit cumulatively in the long-term by the removal of pinyon-juniper trees. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to wildlife or their habitats. In the event of a large-scale wildland fire, wildlife would be adversely impacted in the short-term during the event, and their habitats would be adversely affected over the long-term. Overall cumulative effects to wildlife from the No Action Alternative would be adverse.

#### *BLM Sensitive Species (Animals)*

Under the Proposed Action, sensitive animal species associated with pinyon-juniper woodlands would be negligibly cumulatively impacted in the short-term. Those sensitive animal species associated with sagebrush and riparian communities would benefit cumulatively in the long-term by the removal of pinyon-juniper trees. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to sensitive animals or their habitats. In the event of a large-scale wildland fire, sensitive animals would be adversely impacted in the short-term during the event, and their habitats would be adversely affected in the long-term. Overall cumulative effects to sensitive animals from the No Action Alternative would be adverse.

#### *Migratory Birds*

Under the Proposed Action, migratory birds associated with pinyon-juniper woodlands would be negligibly cumulatively impacted in the short-term. Those migratory birds associated with sagebrush and riparian communities would benefit cumulatively in the long-term by the removal of pinyon-juniper trees. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to migratory birds or their habitats. In the event of a large-scale wildland fire, migratory birds would be adversely impacted in the short-term during the event, and their habitats would be adversely affected in the long-term. Overall cumulative effects to migratory birds from the No Action Alternative would be adverse.

#### *Vegetation*

Under the Proposed Action, short-term adverse cumulative effects would occur by the removal of pinyon-juniper trees that are encroaching into sagebrush and riparian communities. At the same time, those communities would benefit in the long-term cumulatively by the removal of those trees. Under the Proposed Action, the thinning of pinyon-juniper woodlands would

cumulatively benefit those retained trees by reducing the scope and intensity of large-scale wildland fires. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to vegetation. In the event of a large-scale wildland fire, vegetative communities would be adversely impacted in the short and long-term. These types of fire have the capability of replacing native species with non-native species or weeds across the broad landscape, an adverse cumulative effect. Current vegetative trends would continue under the No Action Alternative, pinyon-juniper would dominate and replace existing sagebrush communities, and would crowd out willow, cottonwood and aspen stands in riparian areas, a cumulatively adverse effect.

#### *BLM Sensitive Species (Plants)*

Under the Proposed Action, short-term adverse cumulative effects would occur during Project implementation. In the long-term, sensitive plant species would benefit cumulatively by the removal of pinyon-juniper. Under the Proposed Action, the thinning of pinyon-juniper woodlands would cumulatively benefit sensitive plant species by reducing the scope and intensity of large-scale wildland fires. Under the No Action Alternative, no treatments would occur, there would be no short-term cumulative effects to sensitive plant species. In the event of a large-scale wildland fire, sensitive plant species would be adversely impacted in the short and long-term. These types of fire have the capability of replacing native species with non-native species or weeds across the broad landscape, an adverse cumulative effect. Current vegetative trends would continue under the No Action Alternative, pinyon-juniper would dominate and replace existing sagebrush communities and associated sensitive plant species, a cumulatively adverse effect.

#### *Fire Management*

Under the Proposed Action, through a combination of thinning and pinyon-juniper removal from sagebrush and riparian communities, the occurrence of wildland fire would likely be smaller in scale, and native vegetative communities would be more resilient and capable of successful post-fire response. The potential of the replacement of native species with non-natives and weeds would be reduced. Residential areas adjacent to public lands would likely benefit from thinning treatments in the wildland urban interface. Overall cumulative effects for fire management are beneficial. Under the No Action Alternative, no treatments would occur, there would be no change in the current fire conditions in the planning area. The occurrence of large-scale wildland fire scale and scope would likely increase, an adverse cumulative effect. Large landscape fires provide the opportunity for the replacement of native species with non-natives or weeds, a long-term adverse cumulative effect.

#### *Forest Resources*

Under the Proposed Action, forest resources such as firewood and other products would be made available, a short-term beneficial cumulative effect. Under the No Action Alternative, no treatments would occur, there would be no change in the current availability of forest resources through regular BLM permitting processes. In the event of large-scale wildland fire, forest resources such as pine nuts would likely be lost for many years, an adverse cumulative effect. Fire events kill trees and those trees could be made available for harvest or firewood cutting, a short-term beneficial cumulative effect.

### *Visual Resources*

Under the Proposed Action, in VRM II areas there would be negligible cumulative effects to the visual character in the short-term due to thinning and removal of pinyon-juniper trees. This contrast would be minimized by mimicking the terrain during treatment. Reducing in scale and/or scope a wildland fire would ensure the existing visual character of the treatment units would remain intact, or minimally impacted. Overall, cumulative effects to visual resources is neutral. Under the No Action Alternative, no treatments would occur, there would be no change to the visual character of the treatment units. A large-scale wildland fire, especially a crown-fire, would adversely affect the visual quality of the burn area, an adverse cumulative effect. Initially soil surfaces and trees would be blackened, a major contrast to the current character of the treatment units, a short-term adverse cumulative effect. Depending largely on precipitation levels and vegetative response, dead standing trees are likely to remain visible for many years. If post-burn areas are successfully seeded, the visual contrast would be somewhat lessened, although evidence of fire may be visible for a decade or more, an adverse cumulative effect.

### *Air Quality*

Under the Proposed Action, treatment actions would lessen the opportunity for large-scale wildland fire. Once treatments have been implemented, the scope and intensity of fire may be reduced, resulting in less smoke and pollutants during subsequent fire events. During implementation of the Proposed Action, pile burning would be conducted to remove residual vegetative materials, and there would be some increase in emissions from vehicles and equipment. This activity would cause short-term negligible cumulative effects to air quality. The opportunity for an inversion to occur, which could severely impact air quality in urban areas, would be avoided by conducting pile burning during non-summer seasons. Overall cumulative effects to air quality would be negligible. Under the No Action Alternative, no treatments would occur. Emissions from recreational vehicles and other activities in the planning area would continue. During a wildland fire event, there would be a sharp increase in smoke and its associated pollutants depending on a fires scope and intensity, an adverse cumulative effect. After full fire suppression, air quality would likely return to pre-fire conditions.



## 6.0 CONSULTATION AND COORDINATION

### 6.1 Public Review and Comment

This draft EA has been made available to the public for review and comment for 30-days. **Comments must be received by the close of business on November 20, 2013.** This draft EA and supporting documents are available on the Carson City District website at: [http://www.blm.gov/nv/st/en/fo/carson\\_city\\_field/blm\\_information/nepa.html](http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa.html).

All comments received will be reviewed and categorized. Although not required for an EA by regulation, an agency may respond to *substantive* and *timely* comments received.

*Privacy notice:* before including your address, phone number, e-mail address, or other personal identifying information in your comment(s), you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment(s) to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Substantive comments:

1. question, with reasonable basis, the accuracy of information in the EA;
2. question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis;
3. present new information relevant to the analysis;
4. present reasonable alternatives other than those analyzed in the EA; and/or
5. cause changes or revisions in one or more of the alternatives.

No response is necessary for non-substantive comments (BLM 2008).

Upon the conclusion of this public review process, the BLM may issue a Final EA, and sign the FONSI and a Decision Record for the Proposed Action. The Decision Record would provide the rationale for selection of the Proposed Action that the BLM would implement.

### 6.2 Individuals, Tribes, Organizations and Agencies Contacted

#### 6.2.1 *Individuals*

Alexakos, Steven & Theresa  
Ambrosini, Richard  
Amoruso, Vincent & Mary  
Andrews, Dennis & Sherry  
Bardecker, Jerald & Barbara  
Bartholomew, Donald  
Beard, George & Christine  
Boggs, Kenneth & Marci  
Bracket, John  
Breden, James  
Brown, Gerald & Kira

Brueckner, Allen & Cherylene  
Burger, Stephen & Lori  
Campbell, Robert & Patricia  
Carlson, Anita  
Clark, Terri & Lawrence  
Clifford, Loraine  
Cook, Stephen & Kathleen  
Daniels, John & Bette  
Daphne, Orea  
Deleme, Frederick & Loretta  
Dibble, Calvin & Linda  
Douglas, Kenneth & Sharon  
Eberhard, Ronald & Patricia  
Fagan, Mel & Meredith  
Francis, Roy & Elisabeth  
Gamble, David & Diane  
Gaureault, Joe & Wende  
Gearhart, Dan & Judith  
Gervie, Charles & Mary  
Gibbons, Michael & Barbara  
Gillett, Lucile  
Gronewold, Don & Linda  
Henningsen, Michael & Marshall  
Heth, Jordan  
Holdeman, Darr & Tammy  
Irvine, Hal & Karen  
Jewkes, David & Judy  
Kazen, James & Yvonne  
Krocker, Gerald, & Judith  
Lafferty, Mary Carolynn  
Maki, Wayne & Diane  
McNeilly, Clyde  
Minor, Peter & Susan  
Moglich, Mark & Susie  
Moxley, Clarence & Diana  
Mueller, John & Lisa  
Murray, Francis & Stella  
Noble, Steve  
Orberg, Robert & Sharon  
Parrott, Stephen  
Perretta, Larry & Cheryl  
Peyton, John  
Pollock, Scott & Maureen  
Potosky, John & Debra  
Ratekin, Gary & Jacqueline  
Rau, Raymond & Wes

Rehfeldt, Nancy  
Rich, David & Ruth  
Rogalski, Roger  
Rogers-McCabe, Deborah  
Rowland, Nancy  
Russell, Darrell & Patricia  
Schnock, Carl & Marie  
Sims, Joe  
Smith, Thomas & Cindy  
Spain, Theresa  
Spivey, Jerry & Judy  
Struwe, Steven & Cecile  
Swartz, Allan & Carol  
Tahti, Thane & Crecelius  
Thompson, Lemuel & Jennie  
Twichell, Paul & Matthews  
Washington, Milton & Bonnie

#### **6.2.2 Tribes**

Washoe Tribe of Nevada and California  
Yerington Paiute Tribe

#### **6.2.3 Organizations**

Bently Family Ltd Partnership  
Borda Land and Sheep Company  
City of Refuge  
F.I.M. Corp  
Great Basin Bird Observatory  
H Bar C Cattle Co., Inc.  
Hodges Transportation Inc.  
NV Energy  
Resource Concepts Inc.  
Ricci Family Limited Partnership  
Triple B Development LLC

#### **6.2.4 Agencies**

Bureau of Indian Affairs  
East Fork Fire and Paramedics District  
Natural Resources Conservation Service  
Nevada Department of Agriculture  
Nevada Natural Heritage Program  
Nevada Department of Wildlife  
Nevada State Clearinghouse (multiple State agencies)  
U.S. Fish and Wildlife Service  
U.S.G.S. Western Ecological Research

### 6.3 List of Preparers

BLM staff that contributed to this document.

Name	Resource
Tim Roide	Project Lead, Fire Management, Air Quality
Brian Buttazoni	NEPA Compliance, Visual Resources, Cumulative Effects
Coreen Francis	Forestry
Rachel Crews	Cultural Resources, Native American Religious Concerns
Katrina Leavitt	Vegetation
Pilar Ziegler	General Wildlife, BLM Sensitive Species (Animals), Migratory Birds
Dean Tonenna	BLM Sensitive Species (Plants)
Niki Cutler	Wetlands/Riparian Zones

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## Appendix A - BLM Sensitive Animals and Migratory Birds

### BLM Sensitive Animals and Migratory Birds That May be Present or Their Habitat May be Present in the Planning Area.

Common Name	Scientific Name	BLM Sensitive Species	BLM Migratory Bird
Big brown bat	<i>Eptesicus fuscus</i>	Y	-
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	Y	-
Brewer's sparrow	<i>Spizella breweri</i>	Y	Y
Burrowing owl	<i>Athene cunicularia</i>	Y	N
California myotis	<i>Myotis californicus</i>	Y	-
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	Y	-
Ferruginous hawk	<i>Buteo regalis</i>	Y	Y
Fringed myotis	<i>Myotis thysanodes</i>	Y	-
Golden eagle	<i>Aquila chrysaetos</i>	Y	Y
Green-tailed towhee	<i>Pipilo chlorurus</i>	N	Y
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Y	N
Little brown bat	<i>Myotis lucifugus</i>	Y	-
Loggerhead shrike	<i>Lanius ludovicianus</i>	Y	Y
Long-eared myotis	<i>Myotis evotis</i>	Y	-
Long-legged myotis	<i>Myotis volans</i>	Y	-
Mourning dove	<i>Zenaida macroura</i>	N	Y
Northern goshawk	<i>Accipiter gentilis</i>	Y	N
Pale kangaroo mouse	<i>Microdipodops pallidus</i>	Y	-
Pallid bat	<i>Antrozous pallidus</i>	Y	-
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	Y	Y
Sage sparrow	<i>Amphispiza belli</i>	N	Y
Sage thrasher	<i>Oreoscoptes montanus</i>	Y	Y
Swainson's hawk	<i>Buteo swainsoni</i>	Y	N
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Y	-
Virginia's warbler	<i>Vermivora virginiae</i>	N	Y
Western pipistrelle bat	<i>Pipistrellus hesperus</i>	Y	-
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Y	-
Yuma myotis	<i>Myotis yumanensis</i>	Y	-



## Appendix B - Firewood Permit Stipulations

For personal use firewood permits the following stipulations will apply:

- Motorized equipment or vehicles are not allowed off existing roads. Permittee parking shall not block traffic or impeded fire or emergency vehicles. Wheelbarrows, other hand powered carts, and winches may be used to bring wood to the permittee's vehicle;
- The permittee must avoid causing damage or disturbance to antiquities and cultural resources, wetlands, riparian areas, plants, and natural resources, and roads, fences, and other improvements;
- Stumps must be left no higher than six inches above the ground surface on the uphill side. Trees must not be uprooted by pushing or pulling;
- Slash (limbs and tops) should be cut and scattered so that it lies no higher than 18 inches above the ground and is not concentrated;
- The permittee is responsible for removing all his or her own garbage and litter; and
- A working spark arrestor is required for each power saw in use. The permittee is required to have a shovel in their possession during fire season.

The following stipulations will be applied to commercial firewood permits:

- Equipment use will not be allowed during periods of high soil water content in order to avoid damage to the soil resource;
- Main access corridors shall be spaced approximately 50 feet apart and forest products will be yarded to these access corridors with at least one end suspended at all times. Driving equipment to every tree will not be allowed in order to minimize the damage to soils, shrubs and grasses;
- Access corridors will be carefully designed in partial cutting units to avoid damaging leave trees from yarding activities;
- Equipment approved for use will have low ground pressure ratings or other pertinent designs that limit compaction of soils;
- Landings (product processing areas) will be designated by BLM and shall not exceed 1 acre in size and will not cover more than 5% of the harvest unit.
- The permittee must avoid causing damage or disturbance to antiquities and cultural resources, wetlands, riparian areas, plants, and natural resources, and roads, fences, and other improvements;
- Stumps must be left no higher than six inches above the ground surface on the uphill side. Trees must not be uprooted by pushing or pulling;
- Slash (limbs and tops) should be cut and scattered so that it lies no higher than 18 inches above the ground and is not concentrated;
- The permittee is responsible for removing all his or her own garbage and litter. Hazardous material such as fuel and oil shall be stored in a leak proof location or on a lined containment berm; and
- A working spark arrestor is required for each power saw in use. The BLM reserves the right to limit the hours of equipment operation during periods of high fire danger to prevent an operator cause fire. The permittee is required to have a shovel and a fire

extinguisher for every power saw and piece of equipment. In larger operations, there may be an additional requirement for a BLM approved water pumper to be located on site during operations.