

ENVIRONMENTAL ASSESSMENT

United States Department of the Interior
Bureau of Land Management
Bishop Field Office
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EA Number: DOI-BLM-CAC-070-2009-52-EA

Lease/Serial/Case File No.:

Proposed Action Title/Type: Upper Aurora Canyon Sagebrush Habitat Restoration/Improvement Project

Location of Proposed Action: Upper Aurora Canyon, Mono County, California; Bishop RMP Bodie Hills Management Area; T. 5 N., R. 26 E., portions of Sections 20, 21, 22, 28 and 29, MDM (Map 1).

Applicant (if any): BLM Wildlife Habitat Improvement Project

Plan Conformance:

This proposed action is subject to the Bishop Resource Management Plan (RMP), approved March 25, 1993 (USDI BLM 1993). The proposed action was developed and designed to implement RMP guidance and to ensure conformance with the General Polices, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions and Support Needs prescribed in the Bishop RMP. The proposed action has been reviewed and is in conformance with the plan. See Purpose and Need, below, for specific RMP guidance addressed by this project.

Purpose and Need for Proposed Action:

The purpose of the proposed action is to improve and maintain habitat conditions for Greater Sage-Grouse (*Centrocercus urophasianus*) and other sagebrush associated wildlife species in the upper elevations of Aurora Canyon in the northern portion of the Bodie Hills in Mono County, California.

The proposed action was developed and designed: 1) To implement RMP guidance to improve and maintain habitat conditions for sage-grouse and other sagebrush associated wildlife species; and 2) To ensure conformance with the General Polices, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions and Support Needs prescribed in the Bishop RMP.

The proposed action would implement the following Bishop RMP Decisions (USDI BLM 1993):

- ❖ Protect and enhance unique or important vegetation communities and wildlife habitats (Area-Wide Decisions, p. 17).
 - Increase to 60% the amount of sagebrush habitat within 2 miles of leks that has optimum characteristics for sage-grouse (Area-Wide Decisions, p. 17).
 - Manage sagebrush-bitterbrush areas within 2 miles of sage-grouse leks to meet desired plant community goals (Area-Wide Decisions, p. 17).
- ❖ Meet DPC goals on 25,250 acres (50%) of sagebrush-bitterbrush habitat to provide cover and forage for mule deer, pronghorn and sage-grouse (Bodie Hills Management Area Decision, p. 32).

Additional RMP direction that supports implementation of the proposed action includes:

- ❖ Vegetation will be a key element in the plan and management will be directed toward the achievement of desired plant community goals (Area Manager's Guideline, p. 9).
- ❖ Manage candidate species, sensitive species and other species of management concern in a manner to avoid the need for listing as state or federal endangered or threatened species (Standard Operating Procedure, p. 12).

Concern over the status of sage-grouse populations throughout the western United States has resulted in several attempts to have sage-grouse listed as either threatened or endangered under the Endangered Species Act of 1973 (ESA). To date, the US Fish and Wildlife Service (Service) has received 8 petitions to list Sage-Grouse as either threatened or endangered in various portions of their range. On March 5, 2010 the Service announced completion of their range-wide status review of Greater Sage-Grouse populations and their finding that listing the range-wide population of Greater Sage-Grouse is warranted, but precluded by higher priority listing actions (USDI FWS 2010). The Service also announced their finding that listing the Bi-state population of the Greater Sage-Grouse, which meets the criteria for a distinct population segment (DPS) and occurs within the proposed project area, is warranted, but precluded by higher priority listing actions (USDI FWS 2010). As a result of these findings, both the range-wide population of Greater Sage-Grouse and the Bi-state DPS of the Greater Sage-Grouse became candidates for listing under the ESA. The Service will monitor and review the status of Greater Sage-Grouse, both range-wide and within the Bi-state DPS, annually to determine if a change in listing status is warranted (USDI FWS 2010). These current findings by the Service highlight the need for the proposed action.

In November of 2004, the Bureau of Land Management (BLM) released the "National Sage-Grouse Habitat Conservation Strategy" to support the development and implementation of conservation plans and "on-the-ground"

conservation actions to conserve sage-grouse at the local level (USDI BLM 2004). Conservation planning for Greater Sage-Grouse breeding populations in the proposed project area occurred under the auspices of the *Greater Sage-Grouse Conservation Plan for Nevada and Eastern California* (NDOW 2004). Both of these conservation planning efforts identify the need to develop and implement conservation actions designed to improve and maintain sage-grouse habitat.

In creating the *Greater Sage-Grouse Conservation Plan for Nevada and Eastern California* (NDOW 2004), the proposed project area was specifically addressed by the Bi-State Local Area Planning Group, Bodie Population Management Unit (PMU) as described in Appendix L of the plan. The Bodie PMU local working group, composed of local biologists, land managers, land users, and other stakeholders, identified the treatment of tree encroachment into key sage-grouse habitats as a priority for management attention. Sparsely distributed trees in the early stages of encroachment provide potential perches for avian predators and deter sage-grouse from using otherwise suitable habitat. As noted in the plan, "Many pinyon-juniper encroached sites in the Bodie PMU provide excellent opportunities for sage-grouse habitat improvement, particularly those adjacent to leks and meadows. Pinyon-juniper encroached sites that occur between known seasonal use areas or adjacent breeding populations are also good candidates for sage-grouse habitat improvement projects." (NDOW 2004, Appendix L, p. 96).

The proposed action was developed and designed to address the following sage-grouse conservation objectives identified by the Bodie PMU local working group: 1) Improve sage-grouse habitat quality by treating pinyon and/or juniper encroachment into key sage-grouse habitats in the Bodie PMU; and 2) Manage pinyon and juniper in the Bodie PMU to ensure long-term connectivity between sage-grouse seasonal use areas and adjacent breeding populations (NDOW 2004, Appendix L, p. 96).

The proposed action would implement the following conservation actions identified by the Bodie PMU local working group in the *Greater Sage-Grouse Conservation Plan for Nevada and Eastern California* (NDOW 2004):

- ❖ Remove pinyon and/or juniper in and adjacent to currently occupied breeding habitat in the Bodie PMU using the most appropriate technique to achieve project objectives (Appendix L, p. 96).
- ❖ Identify additional priority treatment sites and implement additional pinyon and/or juniper removal treatments to improve sage-grouse habitat and sagebrush associated plant community health in the Bodie PMU (Appendix L, p. 97).

In 2007, the BLM Bishop Field Office entered into a cooperative agreement with The Nature Conservancy (TNC) to develop a Conservation Action Plan (CAP) for the Bodie Hills. The purpose of the CAP was to inform and guide the formulation of future site-specific vegetation management strategies to protect and enhance

the area's ecological integrity. As part of the CAP process, a combination of remote sensing, field surveys, and ecological modeling was used to evaluate the current condition of ecological systems in the Bodie Hills as compared to their predicted natural range of variability. The results of this analysis indicate that montane sagebrush steppe, Wyoming big sagebrush, and basin big sagebrush ecosystems in the Bodie Hills are currently "highly departed" from their natural range of variability. The analysis also indicated that low sagebrush ecosystems in the Bodie Hills are "moderately departed" from their natural range of variability. The CAP analysis identified the over representation of mid seral (class C), late seral (class E), and uncharacteristic (class U) ecological classes in these ecosystems as primary contributors to this departure. Chainsaw lopping and canopy thinning of conifer trees and prescribed fire are among the recommended management strategies for restoring these ecosystems (Provencher et al. 2009).

Description of the Proposed Action:

Project Overview

The proposed action would involve chainsaw cutting and hand piling and/or lop and scatter of low density pinyon and juniper trees within 5 designated sagebrush habitat restoration/improvement units in the upper elevations of Aurora Canyon in the Bodie PMU. A maximum of 573 acres of tree encroached sagebrush habitats would be treated. All 5 habitat restoration/improvement units are located on public lands administered by the Bureau of Land Management (BLM), Bishop Field Office, approximately 8 miles east of the town of Bridgeport in Mono County, California (Map 1).

Project Area Descriptions

The AC North habitat restoration/improvement unit is 66 acres in size and is located north of the Aurora Canyon Road and west of Geiger Grade. Vegetation composition is classified as 87% montane sagebrush steppe, 12% low sagebrush, 1% pinyon-juniper woodland, and < 1% basin big sagebrush. Existing vegetation is characterized by a mix of sagebrush dominated habitats with sparse pinyon-juniper (< 3% canopy cover) occurring in the unit. Elevation ranges from 7,920 to 8,880 feet above sea level. Slope ranges from 6 to 46% with an average slope of 24%. The unit is dominated by a westerly aspect. The AC North habitat restoration/improvement unit has the potential to provide quality sage-grouse habitat during the spring, late summer, fall, and winter based on slope, aspect, vegetation types, and proximity to known breeding, late summer, fall, and winter use areas in the vicinity of Big Flat and Bull Spring. The unit is surrounded by undeveloped public lands and nearby undeveloped private lands (Map 1).

The South Slope habitat restoration/improvement unit is 220 acres in size and is located north of the Aurora Canyon Road and west of Geiger Grade. The unit extends from the AC North unit south to Aurora Canyon Road. Vegetation composition is classified as 94% montane sagebrush steppe, 3% low sagebrush,

2% pinyon-juniper woodland, < 1% basin big sagebrush, < 1% wet meadow, and < 1% barren. Existing vegetation is characterized by a mix of sagebrush dominated habitats with low density pinyon-juniper (< 5% canopy cover) occurring in the unit. Elevation ranges from 7,760 to 8,880 feet above sea level. Slope ranges from 2 to 55% with an average slope of 26%. The unit is dominated by a southerly aspect. The South Slope habitat restoration/improvement unit has the potential to provide quality sage-grouse habitat during the spring, late summer, fall, and winter based on slope, aspect, vegetation types, and proximity to known breeding, late summer, fall, and winter use areas in the vicinity of Big Flat and Bull Spring. The unit also provides connectivity to potential pre-breeding, brooding, and late summer meadow habitat in upper Aurora Canyon. The unit is surrounded by undeveloped public lands and adjacent undeveloped private land (Map 1).

The Geiger Draws habitat restoration/improvement unit is 189 acres in size and is located north of the Aurora Canyon Road and west of Geiger Grade. The unit extends east from the South Slope unit to the Aurora Canyon and Geiger Grade roads. Vegetation composition is classified as 89% montane sagebrush steppe, 8% low sagebrush, 2% basin big sagebrush, 1% pinyon-juniper woodland, and < 1% wet meadow. Existing vegetation is characterized by a mix of sagebrush dominated habitats with sparse pinyon-juniper (< 3% canopy cover) occurring in the unit. Elevation ranges from 8,000 to 8,520 feet above sea level. Slope ranges from 1 to 50% with an average slope of 20%. The unit is dominated by southerly and westerly aspects. The Geiger Draws habitat restoration/improvement unit has the potential to provide quality sage-grouse habitat during the spring, late summer, fall, and winter based on slope, aspect, vegetation types, and proximity to known breeding, late summer, fall, and winter use areas in the vicinity of Big Flat and Bull Spring. The unit also provides connectivity to potential pre-breeding, brooding, and late summer meadow habitat in upper Aurora Canyon. The unit is surrounded by undeveloped public lands and adjacent undeveloped private lands (Map 1).

The AC South habitat restoration/improvement unit is 27 acres in size and is located south of the Aurora Canyon Road. Vegetation composition is classified as 63% montane sagebrush steppe, 30% low sagebrush, 6% basin big sagebrush, 1% wet meadow, and < 1% aspen. Existing vegetation is characterized by a mix of sagebrush dominated habitats with sparse pinyon-juniper (< 3% canopy cover) occurring in the unit. Elevation ranges from 8,120 to 8,560 feet above sea level. Slope ranges from 1 to 58% with an average slope of 38%. The unit is dominated by a westerly aspect. The AC South habitat restoration/improvement unit has the potential to provide quality sage-grouse habitat during the spring, late summer, and fall based on slope, aspect, vegetation types, and proximity to known breeding, late summer, and fall use areas in the vicinity of Big Flat, Bull Spring, and Four Corners. The unit also provides connectivity to potential pre-breeding, brooding, and late summer meadow habitat in upper Aurora Canyon. The unit is surrounded by undeveloped public lands and adjacent undeveloped private land (Map 1).

The Fulstone Meadows habitat restoration/improvement unit is 71 acres in size and is located south of the Aurora Canyon Road. Vegetation composition is classified as 91% montane sagebrush steppe, 6% aspen, 3% basin big sagebrush, < 1% low sagebrush, and < 1% wet meadow. Existing vegetation is characterized by a mix of sagebrush dominated habitats with sparse pinyon-juniper (< 3% canopy cover) occurring in the unit. Elevation ranges from 7,960 to 8,250 feet above sea level. Slope ranges from 3 to 50% with an average slope of 20%. The unit is dominated by a westerly aspect. The Fulstone Meadows habitat restoration/improvement unit has the potential to provide quality sage-grouse habitat during the spring, late summer, and fall based on slope, aspect, vegetation types, and proximity to known breeding, late summer, and fall use areas in the vicinity of Big Flat, Bull Spring, and Four Corners. The unit also provides connectivity to potential pre-breeding, brooding, and late summer meadow habitat in upper Aurora Canyon. The unit is surrounded by undeveloped public lands and adjacent undeveloped private land (Map 1).

All 5 sagebrush habitat restoration/improvement units are reached by the Aurora Canyon Road and are easily accessible by truck during the normal operating season (May - November). Four-wheel drive may be required during periods of inclement weather.

Project Specifications

All live and standing dead trees exceeding 1 foot in total height within identified sagebrush habitat restoration/improvement unit boundaries would be completely severed from the stump. No live branches would be left on the stumps of cut trees. Cut stumps would not exceed, on the side adjacent to the highest ground, a maximum height of 6 inches for stumps 12 inches in diameter and larger or a maximum height of 4 inches for stumps less than 12 inches in diameter. Cut trees would be limbed and bucked to facilitate piling and/or scattering. Limbs and stems would be bucked so as not to exceed 6 feet in total length. All cut trees and all pre-existing down and dead tree material would be hand piled or scattered per the following specifications:

- ❖ Trees greater than 10 feet in height and/or greater than 6 inches in diameter at the base would be cut and piled. Trees less than 10 feet in height and less than 6 inches in diameter at the base within 100 feet of other trees would also be cut and piled. Hand piles would be constructed in a tight, compact fashion and to a height of not less than 6 feet. Pile diameter would be between 6 and 10 feet. Wherever possible, hand piles would be constructed on top of cut stumps and in openings created by the removal of larger trees. Hand piles would be burned the following fall/winter.
- ❖ Trees less than 10 feet in height and less than 6 inches in diameter at the base and greater than 100 feet from any other trees would be cut, loped and scattered. Limbs and stems would be scattered into natural openings on the ground and far enough apart to avoid piling.

The proposed action would include the following design features to avoid inadvertent impacts to other resources within identified sagebrush habitat restoration/improvement units:

- ❖ Project area access would be limited to existing roads. No off-road vehicle travel would be permitted. All project work would be conducted by hand crews working of foot.
- ❖ No project work would be allowed during periods of high fire danger. Full or partial shutdown days due to high fire danger conditions would be based on the Inyo National Forest Project Activity Level (PAL) system. All pile burning operations would require and conform to an approved burn plan.
- ❖ All project vehicles and equipment would be equipped with spark arrestors and mufflers.
- ❖ No toxic materials or fluids would be used or disposed at the site.
- ❖ No tree removal would occur in true pinyon-juniper woodland ecological sites.
- ❖ Slash piles would not be placed within or immediately adjacent to any disturbed site likely to have a high density stand of cheat grass.
- ❖ To protect cultural resources, exclusion areas would be identified where project specific archeological surveys have identified cultural resources that could be negatively impacted by the proposed sagebrush habitat restoration/improvement work. No project work would be allowed in areas identified for exclusion.
- ❖ If previously undiscovered archaeological resources are encountered during project implementation, operations would be immediately stopped and the Bishop Field Office manager and archaeologist notified. The project would be modified to avoid impacts to any late discoveries of archaeological resources prior to the resumption of work.
- ❖ To protect extant Bodie Hills draba populations, exclusion areas would be identified in low sagebrush habitats where project specific sensitive plant surveys have identified extant Bodie Hills draba populations. No piling and/or pile burning would be allowed in low sagebrush areas identified for exclusion.
- ❖ To protect breeding and nesting birds, no project work would occur between March 1st and August 15th.
- ❖ To protect and improve habitat for pygmy rabbits, exclusion areas would be identified where project specific burrow surveys have identified extant pygmy rabbit populations and/or burrow systems. No piling and/or pile burning would be allowed in areas identified for exclusion.

No Action Alternative:

The No Action alternative would maintain the proposed project areas in their present condition. No removal of pinyon pine and/or juniper invading low sagebrush and big sagebrush/bitterbrush habitats in the project areas would occur.

Alternatives Considered but Eliminated from Further Analysis:

Prescribed Fire - Although the Bodie Hills CAP (Provencher et al. 2009) predicted that both prescribed fire and mechanical thinning treatments in mid to late seral and tree-encroached sagebrush sites would improve overall sage-grouse habitat conditions in the Bodie Hills, the effects of prescribed fire are less predictable and would create a greater level of habitat alteration and disturbance. Prescribed fire would negatively affect sage-grouse habitat quality by eliminating the existing sagebrush understory as well as the targeted trees; would result in the direct loss of potential sage-grouse nesting habitat for an estimated minimum of 25 to 50 years; and would create conditions favorable to invasive weeds.

Environmental Analysis:

AIR QUALITY

Affected Environment

The proposed project areas are not within any federal non-attainment/maintenance area under jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD). Federal actions are not subject to conformity determinations under 40 CFR 93.

Environmental Consequences

Impacts of the Proposed Action

Support vehicles would raise dust while accessing the project areas via dirt roads. Support vehicles and chainsaws would emit various precursor emissions for ozone. Burning of cut-and-piled trees would produce smoke. Emission amounts from the proposed action would be negligible and short-term. The proposed action would not result in the emission of PM₁₀. The proposed action would not measurably affect air quality.

Impacts of No Action

No fugitive dust, precursor emissions for ozone or smoke would be emitted as the result of the proposed project. The no action alternative would have no impact on air quality.

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

The proposed action and no action alternatives would have no effect on any designated Area of Critical Environmental Concern (ACEC) because the proposed project areas are not located within or adjacent to any designated ACEC.

CULTURAL RESOURCES

Affected Environment

As per the State Protocol Agreement (CA BLM 2007), a Class III intensive cultural resources survey was conducted for the entire project area from 08/12/2009 thru 08/19/2009 by Far Western Anthropological, Inc. Thirty-eight cultural sites were located within or immediately adjacent the proposed project area as a result of this survey. Detailed survey results and findings are in the contract survey report CA-170-08-37 (King 2010) which is on file at the BLM Bishop Field Office.

Environmental Consequences

Impacts of the Proposed Action

As no work will be conducted in identified cultural sites, per project specifications (above), the proposed project would have no effect on cultural resources. Protection of cultural resources would be ensured by adjusting project boundaries or using standard avoidance procedures such as flagging and avoiding exclusion areas, directional felling and non-mechanized treatment as per the State Protocol Agreement (CA BLM 2007).

Impacts of No Action

The no action alternative would have no impact on cultural resources.

ENVIRONMENTAL JUSTICE

The proposed action and no action alternatives would have no disproportionate impact, either negative or positive, on any low-income minority because the proposed project would occur in areas of vacant public land and there are no low-income or minority populations living in the vicinity of, or dependent upon, the proposed project areas.

ESSENTIAL FISH HABITAT

The proposed action and no action alternatives would have no effect on essential fish habitat because the proposed project areas are not located within or adjacent to any designated essential fish habitats.

FARMLANDS, PRIME OR UNIQUE

The proposed action and no action alternatives would have no effect on any farmlands, prime or unique, because the proposed project areas are not located within or adjacent to any farmlands, prime or unique.

FLOOD PLAINS

The proposed action and no action alternatives would have no effect on flood plains because the proposed project areas are not located within or adjacent to any flood plains.

GLOBAL CLIMATE CHANGE

Affected Environment

United States Department of Interior, Order Number 3226, signed January 19, 2001, Evaluating Climate Change Impacts in Management Planning, is an order to ensure that climate change impacts are taken into account in connection with planning and decision making. Climate change refers to any significant change in measures of climate (e.g. temperature or precipitation) lasting for an extended period of time (decades or longer). Climate change may result from natural processes, such as changes in the sun's intensity; natural processes within the climate system (e.g. changes in ocean circulation); human activities that change the atmosphere's composition (e.g. burning fossil fuels) and the land surface (e.g. urbanization) (IPCC 2007).

“There is broad scientific consensus that humans are changing the chemical composition of our atmosphere” (Jones & Stokes August 2007). Changes in the atmosphere have likely influenced temperature, precipitation, storms, and sea level (IPCC 2007). Rising greenhouse gas (GHG) levels are likely contributing to global climate change.

The Bodie Hills CAP (Provencher et al. 2009) included global climate change scenarios in its models. Assumptions affecting the modeling of tree encroachment, based on research and communication with regional experts, were that elevated CO₂ levels would speed encroachment by fertilizing trees; and decreased soil moisture as a result of elevated temperatures would increase the mortality of woody species and suppress the fertilizer effect. Tree ring data from western junipers in nearby mountain ranges during the drier Medieval Period, 524-1459 years AD, were used as a surrogate for the warmer, drier future predicted to result from climate change. Tree ring data from wetter periods during the 18th to 20th centuries were used as a surrogate for a future not affected by global climate change. The results of modeling for 250 years show tree encroachment rates as increasing overall under the climate change scenario, and a gradual overall decline without climate change.

Environmental Consequences

Impacts of the Proposed Action

The proposed action would result in some contribution of greenhouse gas (GHG) emissions associated with the operation of vehicles and chainsaws required for project implementation. These contributions would not have a noticeable or

measurable effect, independently or cumulatively, on a phenomenon occurring at the global scale and believed to be due to more than a century of human activities. Locally, the project would counteract the increase in the rate of tree encroachment into sagebrush sites predicted under the climate change scenario modeled in the Bodie Hills CAP (Provencher et al. 2009).

Impacts of No Action

The no action alternative would not contribute to GHG emissions and would have no impact on climate change at either the local or global scale. The increase in tree encroachment into sagebrush sites predicted under a climate change scenario (Provencher et al. 2009) would not be counteracted; trees would encroach into sagebrush habitats at an increasing rate.

INVASIVE, NON-NATIVE SPECIES

Affected Environment

Cheat grass stands consisting of 5-10% cover occur throughout the project area and are most frequently associated with areas directly adjacent to the Aurora Canyon Road. Russian thistle (*Salsola tragus*), *Descurania Sophia* and non-native goosefoot (*Chenopodium* spp.) e.g. *Chenopodium album* comprise 5% or less cover and are more widely scattered. No California A-rated invasive non-native species were documented in the project area.

Environmental Consequences

Impacts of the Proposed Action

The proposed action is not expected to increase the current distribution or extent of cheat grass within the proposed project area based on the observed effects of similar treatments at lower elevations in the Bodie Hills. Some increase in cheat grass density may occur at the base of cut trees and in the immediate vicinity of burn piles; however these increases would be localized. No large scale change in cheat grass density or distribution is expected since slash piles would not be placed within or immediately adjacent to any disturbed sites likely to have high density cheat grass infestations.

Impacts of No Action

The no action alternative would allow current plant succession pathways and trajectories to continue leading to an increase in pinyon-juniper density and cover. Increased tree densities would increase the risk of high intensity fire and also increase the risk of post-fire invasion of big sagebrush and low sagebrush plant communities by non-native annual grass (*Bromus tectorum*) and forb species. Absent fire, weed densities would fluctuate based on current and future climatic and community succession events.

NATIVE AMERICAN CULTURAL VALUES

Affected Environment

There are 11 Native American communities within, or in close proximity to, the eastern Sierra region administered by the Bishop Field Office. None of these communities are living on, or adjacent to, the proposed project areas. No treaty rights (hunting, fishing, etc.) are associated with any of the communities or with the proposed project areas.

Some members of these communities hunt and some do subsistence collecting of materials such as basket weaving materials and medicinal plants on public lands. However, this is general use and no specific “traditional use areas” have been identified by any of the tribes at this time. Any other traditional uses or use areas have not been divulged to this office.

Tribal consultation occurred during the earliest planning phases at the government to government level. Tribal consultation letters were sent via certified mail on April 20, 2010 and are on file at the BLM Bishop Field Office. Additionally, on May 5, 2010 follow-up phone calls were made to the tribes listed below in an effort to solicit tribal comments or concerns and to offer clarification and further opportunity for tribal input or field visits. No tribal issues or concerns associated with the proposed action were identified as a result of these consultations. Overall, tribal contacts expressed interest in sage-grouse conservation and were supportive of efforts to improve and maintain habitat conditions for sage-grouse populations in the eastern Sierra region.

The following eastern Sierra tribes of were consulted regarding proposed project activity in the upper Aurora Canyon area:

Bishop Paiute Tribe of the Owens Valley
Bridgeport Indian Colony
Mono Lake Kuzedika Indian Cultural Preservation Foundation
Mono Lake Indian Community

Environmental Consequences

Impacts of the Proposed Action

The proposed action is not expected to have any negative impacts on Native American cultural values or concerns described above because there would be no measureable effect on the natural environment upon which Native American cultural values depend.

Impacts of No Action

The no action alternative would have no effect on any Native American cultural values or concerns described above.

RANGELANDS-LIVESTOCK MANAGEMENT

The proposed action and no action alternatives would have no effect on rangelands or livestock management because the proposed project would not modify the terms and conditions of any grazing permit nor alter permitted grazing use on the Aurora Canyon allotment.

RECREATION

Affected Environment

Recreation use associated with the proposed project areas and surrounding vicinity is characterized by light, infrequent dispersed use including exploration of semi-primitive backcountry roads and trails, hiking, hunting and wildlife viewing. The proposed project areas are not located within or adjacent to any developed recreational facilities. No intensive recreation use or activity occurs at or near the proposed project locations. The California Department of Fish and Game manages sage-grouse hunting in the Bodie PMU under a limited quota permit system, based on each year's estimated fall population as derived from annual lek count census data and estimated production.

Environmental Consequences

Impacts of the Proposed Action

There would be no reduction in recreational opportunities because the proposed project areas are not located within or adjacent to any developed recreational facilities and no intensive recreation use or activity occurs at or near the proposed project locations. The proposed action would have a positive effect on recreation by enhancing hunting and wildlife viewing opportunities if sage-grouse numbers increase as a result of project implementation.

Impacts of No Action

The no action alternative would have no effect on recreation opportunities.

SOCIAL AND ECONOMIC VALUES

Affected Environment

Mono County's economy, including the town of Bridgeport, is largely dependent on natural resource-based tourism. No social or economic values are currently associated specifically with the proposed project areas.

Environmental Consequences

Impacts of the Proposed Action

The proposed action would potentially have a positive effect on social and economic values by enhancing hunting and wildlife viewing opportunities, consequently increasing tourism to the general area.

Impacts of No Action

The no action alternative would have no effect on social and economic values.

SOILS

Affected Environment

Soils within the proposed project areas are predominantly comprised of tertiary volcanics and occur on moderately steep to steep slopes. Soils are generally well-drained. Soils that are sandy, strong cobbly, and/or very gravelly may tend to limit the establishment of seeds and seedling development. These soils primarily occur on slopes and ridges and are associated with low sagebrush plant communities.

Environmental Consequences

Impacts of the Proposed Action

The proposed action would involve low intensity soil disturbance, limited primarily to the localized effects of soil heating associated with burning piles of cut trees. Localized surface disturbance would also occur as a result of the crews working around individual trees during project implementation.

Impacts of No Action

The no action alternative would have no impact on existing soil conditions.

VEGETATION, including THREATENED AND ENDANGERED and SPECIAL STATUS PLANTS

Affected Environment

The dominant plant communities within the proposed project areas consist of a mosaic of low sagebrush, montane sagebrush steppe and scattered pinyon-juniper. Low sagebrush sites consist of *Artemisia arbuscula* as the dominant over-story species with a native perennial grass and forb understory consisting of squirrel tail (*Elymus elymoides*), June grass (*Koeleria micrantha*), Weber's needlegrass (*Achnatherum webberi*), side oats (*Melica stricta*), cushion buckwheat (*Eriogonum caespitosum*) and cushion phlox (*Phlox condensata*).

Montane sagebrush communities are dominated by an over-story of mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and bitterbrush (*Purshia tridentata* var. *tridentata*). Understory grasses include Indian rice grass (*Achnatherum hymenoides*), western needlegrass (*Achnatherum occidentale*), Thurber's needlegrass (*Achnatherum thurberianum*), and needle and thread grass (*Hesperostipa comata*). Additional species include but are not limited to snowberry (*Symphoricarpos rotundifolius*), currant and gooseberry species (*Ribes* spp.) and rabbitbrush species (*Chrysothamnus viscidiflorus* and *C. nauseosus*).

Pinyon (*Pinus monophylla*) and juniper (*Juniperus* spp.) stands within the project area consist of small diameter (2-6" DBH) trees and are primarily restricted to the deeper soils of the mountain sagebrush community with sparse pinyon-juniper encroaching into the low sagebrush communities.

In the recently completed Bodie Hills Conservation Action Planning Report (Provencher et al. 2009), several conservation and restoration objectives were developed to address the high percentage of mid seral, late seral and uncharacteristic montane sagebrush steppe and low sagebrush communities in the Bodie Hills. Maintenance of a mosaic of communities and classes, with a special attention to the current lack of earlier succession classes and requirements of special status species is one of the key conservation and restoration objectives. The overall project area currently exhibits a viable mosaic of key vegetation types, but is considered "at risk" with regard to the current encroachment of pinyon-juniper into important Greater Sage-Grouse habitats. Tree-encroached shrublands are defined as having trees that are conical, indicating age of less than 100 years (Provencher et al. 2009).

Environmental Consequences

Impacts of the Proposed Action

Selective removal of pinyon-juniper is expected to have minimal adverse impact on the vegetation communities within the proposed project areas, as it would not require off-road vehicular access. Some existing vegetation may be crushed during the removal of pinyon-juniper, but is expected to re-sprout the following spring and summer. Small (3m diameter) pile burns would also temporarily remove some existing vegetation, but removal would be limited in overall extent and would not impair the overall long-term ecological resiliency of the affected plant communities with regard to native plant recovery. It is anticipated that extant native seed banks would not be negatively impacted by the low intensity burning of the scattered piles which would occur in fall/winter when high soil moisture conditions exist. Post burn recovery of native vegetation would be expected and has been observed on similar sites at lower elevations in the Bodie Hills.

Impacts of No Action

The no action alternative would allow current plant succession trends to continue. Pinyon-juniper density and cover would increase, changing the currently more open mosaic of low sagebrush and montane sagebrush habitat types in a direction away from that prescribed by conservation and restoration goals. Increased tree densities would also accelerate the risk of high intensity wildfire and likely increase the potential for post-fire invasion of these habitats by non-native annual grass (*Bromus tectorum*) and forb species.

Threatened and Endangered Plant Species

No threatened or endangered plant species are known or likely to occur within or adjacent to the proposed project areas, based on historical records, field monitoring, and habitat suitability; and none were encountered during the field visit conducted on July 12-26, 2009. The proposed action and no action alternatives would have no effect on any federally listed threatened or endangered plant species, or result in the destruction or adverse modification of any designated critical habitat, because none are present within or adjacent to the proposed project areas.

Special Status Plant Species

Affected Environment

Special Status Plant Species are those species that have been listed by the California Native Plant Society as List 1B species, which includes plants that are rare, threatened or endangered in California and elsewhere. All of the plants constituting List 1B meet the definition of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. The Bishop Resource Management Plan stipulates yearlong protection of sensitive plants (Special Status Plants) and their associated habitats (USDI BLM 1993, p. 17).

The project area contains suitable habitat for the following Special Status Plant Species:

Allium austrorubens var. *austrorubens*
Arabis bodiensis - Bodie Hills rock-cress
Astragalus oophorus var. *lavinii* - Lavin's milk vetch
Cusickiella quadricostata - Bodie Hills draba
Phacelia monoensis - Mono phacelia

A special status plant survey of the proposed project areas occurred on July 12-26, 2009. Three sites (polygons) contained *Cusickiella quadricostata* with numbers of individuals within surveyed sites ranging from <100 to >4,000. Plants consisted of various age-classes. No other special status plants were documented within the proposed project areas.



Typical *Cusickiella quadricostata* habitat within proposed project areas.

Environmental Consequences

Impacts of the Proposed Action

As the proposed action specifies flagging and avoidance of sensitive plant populations, the long-term productivity and geographical extent of current populations of Bodie Hills draba would not be negatively affected. Scattered small trees, limbs and branches are beginning to encroach into the fringes of some populations, but cut trees would not be piled, stacked or burned in the flagged areas. Keeping trees from encroaching into low sage sites would help maintain and improve Bodie Hills draba habitat in the project areas over the long term.

Impacts of No Action

Under the no action alternative, habitat quality for extant populations of Bodie Hills draba in the proposed project areas would likely decline over the long term. Plant succession trends would continue, resulting in increased pinyon-juniper cover and density in existing *Cusickiella quadricostata* habitat. Increased tree densities would also accelerate the risk of high intensity wildfire and likely increase the potential for post-fire invasion of these plant communities by non-native annual grass (*Bromus tectorum*) and forb species. These events could affect the long-term viability of *Cusickiella quadricostata* populations by altering micro-site characteristics such as soil moisture availability.

VISUAL RESOURCES

Affected Environment

The AC South project area is located partially within a Visual Resource Management (VRM) Class II area. The objective of VRM Class II as defined in the Bishop RMP is “to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen from key observation points, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.”

The remaining project areas, including the remainder of the AC South project area, are located within a VRM Class III area. The objective of VRM Class III as defined in the Bishop RMP is “to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention from key observation points but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.”

The basic elements of form, line, color and texture of the proposed project areas and surrounding vicinity are characterized by open sagebrush steppe habitats typical of the western Great Basin. The project areas are at the interface of pinyon-juniper woodlands with very large areas of open sagebrush steppe, where scattered trees have begun to encroach into the sagebrush. Key observation points as defined in the Bishop RMP (USDI BLM 1993) are located along the county-maintained Aurora Canyon Road.

Environmental Consequences

Impacts of the Proposed Action

The visual impact of the proposed project would be very slight. Removing scattered encroaching trees would not move the actual woodland edge back from the sagebrush steppe area or create any new division between woodland and sagebrush steppe. The existing character of the landscape would be retained and there would be no change in the basic elements of form, line, color and texture. VRM II and III objectives would be met.

Impacts of No Action

Under the no action alternative, trees would be expected to gradually encroach into the sagebrush steppe habitats, with changes in line, color and texture observable over the course of decades.

WASTE, HAZARDOUS OR SOLID

Affected Environment

The proposed project area is not within or adjacent to any existing hazardous materials site.

Environmental Consequences

Impacts of the Proposed Action

The proposed action does not involve the use or storage of hazardous materials, other than fuel used in the vehicles and chainsaws. No hazardous materials would be brought on site or produced during project operations. The proposed action would not generate any hazardous or solid waste within the proposed project areas.

Impacts of No Action

The no action alternative would have no impact to hazardous materials.

WATER QUALITY, DRINKING-GROUND

The proposed action and no action alternatives would have no effect on water quality, either drinking or ground, because the proposed project areas are not located within or adjacent to any to any spring, stream, pond, lake or any other water body or ground water source.

WETLANDS/RIPARIAN ZONES

The proposed action and no action alternatives would have no effect on wetlands or riparian zones because no project work is planned within or directly adjacent to any wetland or riparian habitats.

WILD AND SCENIC RIVERS

The proposed action and no action alternatives would have no effect on wild and scenic rivers because the proposed project areas are not located within or adjacent to any designated wild and scenic river corridor or eligible wild and scenic river study segment corridor.

WILDERNESS

The proposed action and no action alternatives would have no effect on wilderness because the proposed project areas are not located within any designated wilderness area or designated wilderness study area.

WILDLIFE, including SENSITIVE, THREATENED AND ENDANGERED

Affected Environment

The proposed project areas are located within about 3 miles of a Greater Sage-Grouse lek, or strutting ground, where mating takes place during the spring breeding season. After mating, sage-grouse hens typically establish nests in suitable sagebrush or sagebrush/bitterbrush habitat in the vicinity of leks. The hens find essential nutrients for egg-laying and brood rearing in meadows such as those found in upper Aurora Canyon. Large numbers of sage-grouse have been observed in the area during the fall and winter. Sage-grouse have not been observed in the tree-encroached project areas, which are considered unsuitable or compromised habitat due to the natural tendency of sage-grouse to avoid trees and other tall objects which may serve as perches for avian predators (e.g. raptors which prey on young to adult sage-grouse and ravens which prey on eggs and nestlings).

Other birds using the project area may include sagebrush-obligate songbirds such as Sage Sparrow, Sage Thrasher and Brewer's Sparrow, and other birds that largely depend on shrub habitats. Birds preferring pinyon-juniper woodlands are unlikely to be abundant due to the sparse, widely scattered pinyon-juniper distribution in the project areas.

Sagebrush-obligate mammals that may be in the vicinity include pygmy rabbits and sagebrush voles. Surveys have not been conducted in the project areas. Pygmy rabbits are a BLM California designated sensitive wildlife species; soils in the project areas are mostly too rocky for pygmy rabbit burrows, but the Geiger Draws restoration/improvement unit includes some potential habitat. Pygmy rabbits remain close to their distinctive-looking burrows, so their presence or absence in a specific area may often be determined with a high degree of confidence by searching for their burrows.

Pronghorn are frequently observed in the vicinity of the proposed project areas during the late-spring, summer and fall. Pronghorn prefer treeless, open shrubland habitats to woodlands. Mule deer are also common and use the area during their spring/fall migrations and as summer habitat.

Environmental Consequences

Impacts of the Proposed Action

The proposed project would have no measurable detrimental effects on the current or long-term availability of habitat for any animal species known or likely to occur in vicinity of the proposed project areas. The proposed action is designed to benefit Greater Sage-Grouse by reducing habitat fragmentation, increasing connectivity with key meadow habitats, and improving overall habitat quality in the vicinity known spring, fall and winter use areas. The proposed project would also benefit other sagebrush-obligate birds and mammals in the

proposed project areas. Pronghorn and summering mule deer would also benefit from the increase in the availability of open shrubland.

Effects on pinyon-juniper associated breeding birds are expected to be negligible at the population and species levels, as current pinyon-juniper distribution is very sparse and there will be a negligible reduction in the percentage of available pinyon-juniper habitat overall.

There may be some short-term displacement of wildlife such as mule deer and pronghorn from the immediate project vicinity as the result of noise and activity associated with project implementation. No measureable detrimental effects are expected.

The project design includes locating and avoiding any pygmy rabbit burrows. Pygmy rabbits, if present, would benefit from decreased pinyon-juniper encroachment.

Impacts of No Action

As compared to the proposed action, the no action alternative would be detrimental to both existing and predicted sage-grouse habitat conditions and also adversely affect other sagebrush associated wildlife species within the proposed project areas by failing to counteract tree encroachment. Habitat quality for these species would likely continue to decline over the long term.

Threatened or Endangered Wildlife Species

No threatened or endangered wildlife species are known or likely to occur within or adjacent to the proposed project areas, based on historical records, field monitoring, and habitat suitability. The proposed action and no action alternatives would have no effect on any federally-listed threatened or endangered wildlife species, or result in the destruction or adverse modification of any designated critical habitat, because none are present within or adjacent to the proposed project areas.

Sensitive Wildlife Species

The proposed project is designed to improve habitat for Greater Sage-Grouse, a California BLM designated sensitive wildlife species. Pygmy rabbit is also a California BLM designated sensitive wildlife species which, if present in the project areas, would benefit from decreased pinyon-juniper encroachment into sagebrush habitat. The proposed project is designed to avoid any adverse impacts to pygmy rabbit burrows during implementation.

Cumulative Effects:

Cumulative effects are defined as the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). A description of current conditions inherently includes the effects of past actions and serves as a more accurate and useful starting point for a cumulative effects analysis than attempting to discern the effects of individual past actions. “Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past action” (CEQ Memorandum ‘Guidance on the Consideration of Past Actions in Cumulative Effects Analysis’ June 24, 2005). By comparing the no action alternative (current condition) to the proposed action alternative, we can discern the cumulative impact resulting from adding the incremental impact of the proposed action to the current environmental conditions and trends.

The proposed action is expected to contribute to a positive cumulative effect on sagebrush dependent plant and animal species and communities within the Bodie Hills. It would reduce tree encroachment on a total of 573 acres. Another currently planned action proposes to reduce tree encroachment on an additional 658 acres. While no specific similar actions are currently planned in the Bodie Hills at this time, continued efforts to improve sage-grouse habitat conditions are expected and will likely include planning to reduce tree encroachment on 50 to 500 acres per year over the next 5 to 10 years. There are no identified incremental or long-term negative effects associated with implementation of the proposed action that would contribute to cumulative impacts in the larger project vicinity. The addition of the proposed action to existing and future regional activities and impacts would not add to, or cross a threshold of, impact that would result in a significant impact on the human environment.

The no action alternative would contribute to on-going negative cumulative effects by allowing the current trend of tree encroachment to continue unchecked, further contributing to the degradation of sagebrush communities and sage-grouse habitat over time.

Implementation Monitoring:

BLM Bishop Field Office staff would visit the project areas during project implementation as needed to ensure that contract work is conducted according to Project Specifications outlined in this document.

Effectiveness Monitoring:

Project areas would be checked for tree encroachment after 5 years and 10 years to determine if repeat treatments are needed.

As there are many other variables, it may not be possible to assess project effectiveness in terms of change in sage-grouse population size or habitat use.

Lek count censuses and telemetry tracking of Greater Sage-Grouse have been ongoing in the Bodie PMU and will continue. Censuses indicate changes in population size, while telemetry tracking shows use of specific areas.

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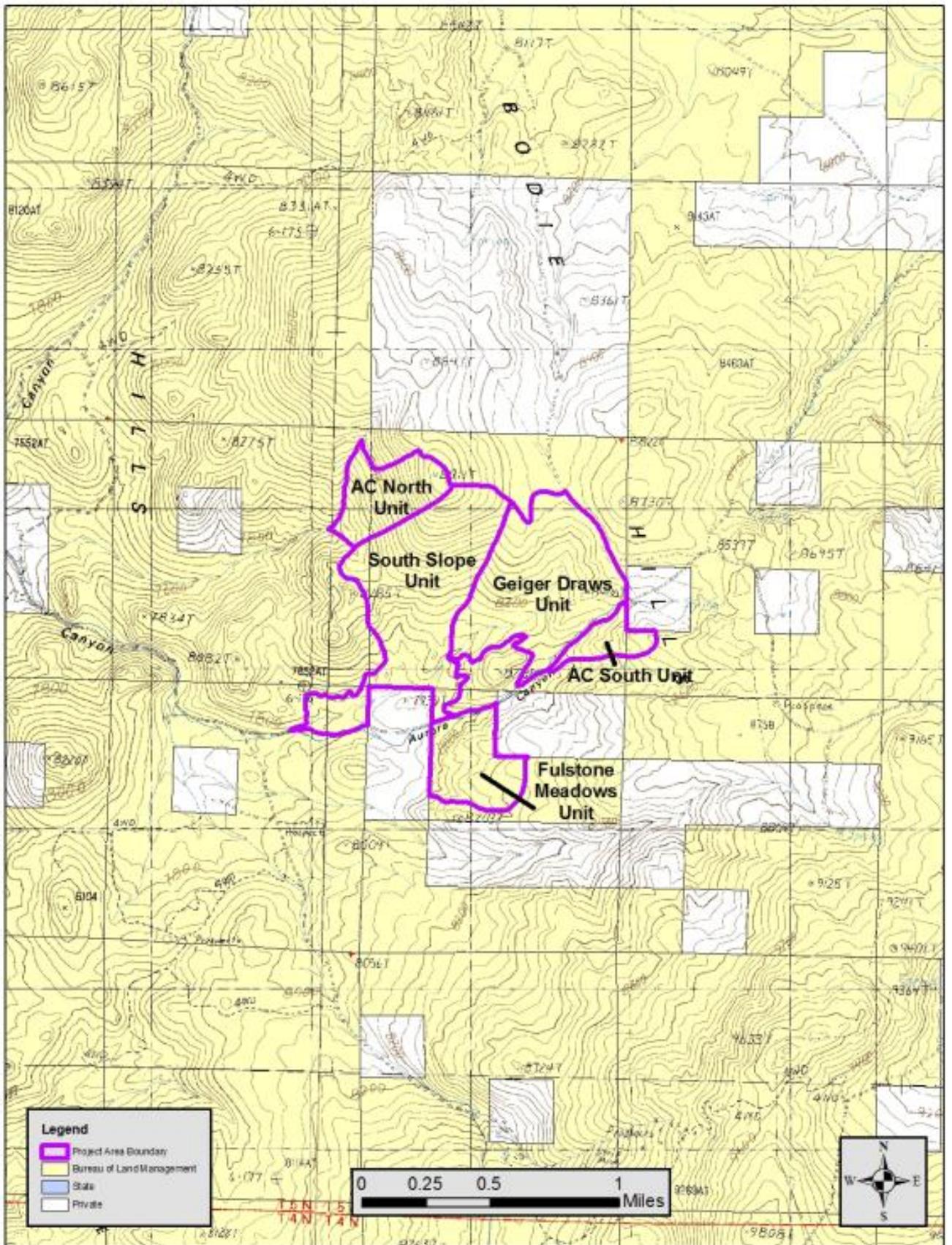
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Map 1. Upper Aurora Canyon Sagebrush Habitat Restoration/Improvement Project.

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