

**ENVIRONMENTAL ASSESSMENT  
LIVESTOCK GRAZING AUTHORIZATION**

**EA Number      CA 170-09-0001**

**Allotment Number and Name(s)**

**6020 Little Round Valley**

**BLM Bishop Field Office  
Prepared  
July 2011**

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## Chapter 1: INTRODUCTION

### A. Summary

This environmental assessment (EA) was prepared to analyze and disclose the environmental consequences of grazing or not grazing domestic sheep on the Little Round Valley allotment in Mono County, California. The EA is a site-specific analysis of potential impacts that could result from implementation of one of the alternatives. The EA assists the Bureau of Land Management (BLM) in project planning and in ensuring compliance with the National Environmental Policy Act (NEPA) and other applicable laws and policies affecting the action and alternatives. If the authorized officer determines that this action has “significant” impacts following the analysis in the EA, then an Environmental Impact Statement (EIS) would be prepared for the action. If not, a Grazing Decision will be issued along with a Finding of No Significant Impact (FONSI) statement, documenting the reasons why implementation of the selected alternative would not result in “significant” environmental impacts. The selection of any alternative that would modify the mandatory terms and conditions of the allotments, or that would make all or portions of the allotments unavailable for grazing by domestic livestock, would not conform to the Bishop Resource Management Plan (BLM 1993), and would therefore require a plan amendment.

### B. Background

The Little Round Valley allotment (Map 1) analyzed in this EA is located in the Long Valley Management Area of the BLM Bishop Field Office. The elevation range is between 6,800 and 8,500 feet. Vegetation communities are dominated by Great Basin Big Sagebrush and Bitterbrush. Livestock kind, permitted season of use, allocated animal unit months (AUMs), and use type for the allotment as prescribed in the Bishop Resource Management Plan (BLM 1993) are:

Allotment	Kind	From	To	AUMs	Use
Little Round Valley	Sheep	10/05	10/18	43	Perennial

The approximate public, state, and private land acreages (See Map 1) are:

Allotment Name	Public Land	State Land	Private Land*
Little Round Valley	1,399	0	443

\* Includes Los Angeles Department of Water and Power

There is one livestock operator for the Little Round Valley allotment. In the interim, the grazing permit which authorizes use on the Little Round Valley allotment was renewed under Section 402 of the Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 USC 1752). The permit will expire in 2011. Renewing the permit under the appropriations act

authorized existing grazing use to continue, while allowing BLM time to complete rangeland health allotment assessments and to meet applicable National Environmental Policy Act (NEPA) requirements to analyze the environmental consequences of issuing a 10-year grazing permit.

### **C. Purpose and Need for the Action**

The purpose of the action is to consider whether or not to authorize domestic sheep grazing for 10-years on the Little Round Valley allotment. The purpose of the action is also to ensure that any grazing authorizations implement provisions of, and are in conformance with, the Bishop Resource Management Plan (RMP) (BLM 1993) and the Secretary of the Interior approved Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000). If authorized, grazing would be in accordance with 43 Code of Federal Regulations (CFR) 4100 and consistent with the provisions of the Taylor Grazing Act (1934), as amended, the Public Rangelands Improvement Act (1978), and the Federal Land Policy and Management Act (FLPMA) of 1976. If grazing is not authorized, or if the mandatory terms and conditions for the allotment are modified, the Bishop RMP would be amended.

The action is needed to respond to the expired 10-year grazing permit that was issued under the appropriations act. There is also a need to consider and analyze management recommendations to reduce or eliminate the risk of contact and subsequent disease transmission between domestic sheep and the federally endangered Sierra Nevada bighorn sheep (*Ovis canadensis sierra*) as outlined by the U.S. Fish and Wildlife Service in Section II E of the final Recovery Plan for the Sierra Nevada Bighorn Sheep (FWS 2007a). Allotment specific recommendations to reduce or eliminate the risk of contact and potential disease transmission were developed based on information provided in two documents: 1) A Process for Identifying and Managing Risk of Contact between Sierra Nevada Bighorn Sheep and Domestic Sheep (Baumer et al. 2009), and 2) Application of the Document Entitled *A Process for Identifying and Managing Risk of Contact between Sierra Nevada Bighorn Sheep and Domestic Sheep* (Croft et al. 2009, 2010).

### **D. Scoping and Issues**

#### ***Public Scoping***

On January 23, 2006, the Bishop Field Manager sent a letter to the permittee who grazes the Little Round Valley allotment informing him of the status of the 10-year grazing permit and included a proposed schedule for environmental assessment and permit completion.

On November 23, 2007, the Bishop Field Manager sent a second letter to the permittee who grazes the Little Round Valley allotment informing him how the environmental assessment would be prepared and the status of the 10-year grazing permit. Included with the letter was a proposed schedule for environmental assessment and permit completion.

On December 17, 2007, a Notice of Alternative 1 (NOPA) was sent to the permittee who grazes the Little Round Valley allotment. The NOPA was also sent to one hundred and twenty-five

interested publics including the Center for Biological Diversity, The Wilderness Society, California Wilderness Coalition, Sierra Club, Earth Justice, Audubon Society, Friends of the Inyo, Mono Lake Committee, Lahonton Regional Water Quality Control Board, Great Basin Unified Air Pollution Control District, Inyo and Mono County Supervisors, California Department of Fish and Game, Natural Resource Conservation Service, Bodie State Park, and BLM Resource Advisory Council (RAC) members of California. The NOPA contained the Need for Alternative 1, Plan Conformance, Alternative 1 and Alternatives, a schedule for EA completion, and area maps. The NOPA was also posted on the BLM internet site for public review at <http://www.blm.gov/ca/st/en/fo/bishop.html>. The NOPA provided a 30 day comment period on Alternative 1 and alternatives. One letter was received from the Natural Resource Conservation Service (NRCS) on December 21, 2007 and has been addressed within Chapter 1, Section D, under Issues and Alternatives. No other comments were received and no issues or additional alternatives were identified as a result of this public scoping.

On March 14, 2008, the Bishop Field Manager sent a letter and package of information to all BLM permittees to share current information. Of particular interest, the package included the latest information in regards to Sierra Nevada bighorn sheep and Greater Sage-grouse (*Centrocercus urophasianus*).

On April 3, 2009, the Bishop Field Office received a letter from the U.S. Fish and Wildlife Service (FWS) concerning new information that had become available related to the level of risk associated with grazing domestic sheep on federal allotments in close proximity to the federally-listed, endangered Sierra Nevada bighorn sheep. Due to concern over the potential negative effects of disease on bighorn sheep, the FWS encouraged the BLM to fully consider the available risk assessment information (Baumer et al. 2009, Croft et al. 2009 which was revised by Croft et al. 2010) and other pertinent information in any future actions involving domestic sheep grazing on allotments located in close proximity to Sierra Nevada bighorn sheep.

### ***Public Review of Environmental Assessment CA-170-09-0001***

On July 7, 2011, EA CA 170-09-0001 was made available for a two week public review and comment period and posted on the BLM internet at <http://www.blm.gov/ca/bishop>. The permittee, Inyo National Forest, Los Angeles Department of Water and Power, the Center for Biological Diversity (CBD), and Western Watersheds Project (WWP) were notified that the EA had been posted on the BLM internet site. Written comments on the EA should be addressed to: Field Office Manager, BLM - Bishop Field Office, 351 Pacu Lane, Suite 100, Bishop, CA 93514. Comments should be received by July 21, 2011.

### **E. Tiering to Existing Land Use Plan(s)/Environmental Impact Statement(s)**

The Bishop Resource Management Plan (BLM 1993) provides a comprehensive framework for managing land use authorizations, including grazing permits, for public lands administered by the Bishop Field Office. The Bishop Resource Management Plan replaced the Benton-Owens Valley (BLM 1982a) and the Bodie-Coleville (BLM 1983) Management Framework Plans.

Grazing decisions and changes in grazing decisions from the Benton-Owens Valley and the Bodie-Coleville Management Framework Plans are summarized in Appendix 4 of the Bishop Resource Management Plan (pages A4-1 through A4-11). Mandatory terms and conditions for all allotments administered by the Bishop Field Office were established at the land use planning level in the Bishop Resource Management Plan. The Bishop Resource Management Plan also established which public lands administered by the Bishop Field Office would be available for livestock grazing (allotted vs. un-allotted).

This EA is tiered to the Final Bishop Resource Management Plan and Environmental Impact Statement (RMP/EIS; BLM 1991). Tiering helps focus this EA more sharply on the significant issues related to grazing on the allotment while relying on the Final Bishop RMP/EIS for the overall analysis of grazing actions throughout the Bishop Field Office. Livestock grazing was analyzed in Chapter 4, Impacts, of the Final Bishop RMP/EIS (pages 4-20 through 4-26).

Impacts associated with adoption of the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000) were analyzed in Chapter 4 of the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final Environmental Impact Statement (BLM 1998). The analysis contained in this EA also tiers to that analysis.

#### **F. Prevention of Unnecessary or Undue Degradation**

In addition to management prescriptions analyzed in this EA, including all terms and conditions, the BLM may use its authority to close any area of an allotment to grazing use or take other measures to protect resources at any time, if needed. Therefore, issuance of a grazing permit with appropriate terms and conditions is consistent with the BLM's responsibility to manage public use, occupancy, and development of the public lands and to prevent unnecessary or undue degradation of those lands (43 USC 1732(b)).

#### **G. Relationship to other Statutes, Regulations, and Plans**

The following Statutes, Regulations, and Plans provide additional legal framework for grazing on public lands.

##### ***Air Quality***

Section 176 (c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 *et seq.*), and regulations under 40 CFR part 93 subpart W, with respect to the conformity of general Federal actions to the applicable State Implementation Plan apply to projects within any Federal Air Quality Non-Attainment/Maintenance Areas. Under those authorities, "no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan." Under CAA 176 (c) and 40 CFR part 93 subpart W, a Federal agency must make a determination that a Federal action conforms to the applicable

implementation plan before the action is taken.

#### 40 CFR Part 93.153 Applicability.

(c) The requirements of this subpart shall not apply to the following Federal actions:

(ii) Continuing and recurring activities such as permit renewals where activities will be similar in scope and operation to activities currently being conducted.

Where livestock grazing occurs within an area classified as a Federal Air Quality Non-Attainment/Maintenance Area, the BLM will make a determination whether the action is in conformance with the applicable State Implementation Plan requirement. The Great Basin Unified Air Pollution Control District (GBUAPCD) has state air quality jurisdiction over parts of Inyo and Mono counties.

The Little Round Valley allotment occurs outside of any Federal Air Quality Non-Attainment/Maintenance Area.

#### ***Cultural Resources***

California BLM has the responsibility to manage cultural resources on public lands pursuant to the 1966 National Historic Preservation Act, the 1980 Rangeland Programmatic Memorandum of Agreement with the Advisory Council on Historic Places (WO IM 80-369), the 1997 Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act, the State Protocol Agreement Between the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer (2004) and other internal policies.

#### ***Special Status Plant Species***

The BLM uses the term "Special Status Plants" to include: 1) Federally-listed endangered and threatened plants; 2) Plants proposed for federal listing; and 3) BLM designated sensitive plants. Sensitive plants are those species that are neither federally-listed, nor proposed for federal listing, but which are designated by the BLM State Director for special management consideration. By national policy, federal candidate species are automatically treated as BLM sensitive species. The California State Director has also conferred sensitive status on all California state-listed endangered, threatened, and rare species; and on species on List 1B (plants rare and endangered in California and elsewhere) of the California Native Plant Society's Inventory of Rare and Endangered Plants of California (unless specifically excluded by the State Director on a case-by-case basis); and on certain other plants the State Director believes meet the definition of sensitive.

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 (BLM 1993, p. 17) stipulates year-long protection of sensitive plants (Special Status Plants) and their associated habitats.

No Special Status Plant Species populations are present on the Little Round Valley allotment based on historical records, field monitoring, and/or habitat suitability.

### ***Threatened and Endangered Species (T&E)***

Pursuant to Section 7 of the Endangered Species Act, consultation with the U.S. Fish and Wildlife Service (FWS) is required on allotments for which BLM determines that livestock grazing may affect listed species or designated critical habitat. The stipulations of any grazing permit may be modified to conform to the terms and conditions specified in a FWS biological opinion as the result of formal consultation. In addition, the terms and conditions of any grazing permit may also be modified through subsequent land use plan amendments or revisions to conform to decisions made to achieve recovery plan objectives.

In August 2000, the Bishop Field Office submitted a Biological Evaluation and requested formal consultation on the Bishop Resource Management Plan (RMP) under Section 7(a) (2) of the Endangered Species Act to the FWS. The Biological Evaluation analyzed potential effects on six listed species that occurred within the Bishop Field Office's jurisdiction: Owens pupfish (*Cyprinodon radiosus*), Owens tui chub (*Siphateles bicolor synderi*), Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), bald eagle (*Haliaeetus leucocephalus*), and Fish Slough milk-vetch (*Astragalus lentiginosus var. piscinensis*). In 2007, one of these six species, the Bald Eagle, was delisted. Only designated critical habitat for Sierra Nevada bighorn sheep and Fish Slough milk-vetch overlaps with any public land administered by the Bishop Field Office. Subsequent requests for action on formal consultation on the Bishop RMP were made to the FWS in September 2005 and in April 2008. To date, no action has been taken by the FWS.

No threatened or endangered species are present on the Little Round Valley allotment based on historical records and field monitoring. However, Sierra Nevada bighorn sheep (*Ovis canadensis californiana*) do inhabit parts of the Sierra Nevada range several miles from the allotment. Portions of the allotment between Rock Creek and Hilton Creeks and west of Highway 395 were identified as relatively high-risk for domestic sheep grazing in Section II E of the final Recovery Plan for the Sierra Nevada Bighorn Sheep (FWS 2007a) and the subsequent risk assessment process (Baumer et al. 2009, Croft et al. 2009, 2010) because of the potential for contact associated with domestic sheep grazing in close proximity to occupied Sierra Nevada bighorn sheep habitat. Using the process outlined by Croft et al. 2010, portions of the allotment overlap the "predicted area of potential contact" and are considered to pose a "high/unacceptable risk of contact" between domestic sheep and Sierra Nevada bighorn sheep.

If BLM determines that the proposed grazing decision for the Little Round Valley allotment may affect Sierra Nevada bighorn sheep or designated critical habitat, the Bishop Field Office will initiate the appropriate level of consultation with the FWS in accordance with legal and policy requirements. If consultation occurs, the grazing allotment permittee will be invited to participate in the process as an applicant.

### ***Water Quality***

The Little Round Valley allotment is within watersheds governed by basin plans subject to California's Clean Water Act. Nationally, Executive Order # 12088 directs federal agencies to comply with state administrative procedures. Recently, Standards and Guidelines reiterated the intent of the Federal Clean Water Act (CWA) and States' water quality plans. An MOU (BLM Manual Supplement 6521.11) with the California Department of Fish and Game (CDFG) describes how BLM and CDFG will coordinate when activities could affect aquatic or riparian habitat. The Unified Federal Policy to Insure a Watershed Approach in Federal Land and Resource Management (UFP) requires 1) all plans and activity management be conducted on a watershed basis, 2) that all land owners/managers within a watershed be solicited for participation in the planning and management of the watershed, 3) that citizens and officials are better informed of planning and management, 4) that best science is used. The EA should analyze grazing within the Watershed Concept described in the UFP. Where there is a threat to water quality or where water quality violates state standards, coordination must occur with the regional water quality control board(s) and where aquatic or riparian habitat may be impacted CDFG coordination must occur as well. Any allotment that contains any water bodies (streams, lakes, springs, etc.) must have adopted Best Management Practices (BMP) for all associated livestock management activities that could affect water quality. Pursuant to the decisions affecting water quality in the Bishop Resource Management Plan, BMPs for the Field Office area have been submitted to meet the requirements under the CWA.

### ***Wild and Scenic Rivers***

Wild and scenic river values are described in Appendix 2 of the draft Bishop RMP and EIS dated September of 1990. The Interim Management Guidelines for Study Rivers provides direction for grazing management on eligible creeks until the creek is designated a wild and scenic river or released from the wild and scenic river review process. Continued livestock grazing within allotments would be in compliance with this policy. For further information, see Appendix 3 of the final Bishop RMP and EIS dated August of 1991.

The Little Round Valley allotment contains no designated wild and scenic rivers or eligible study river segments.

### ***Wilderness Study Areas***

Livestock grazing on public lands within Wilderness Study Areas (WSAs) must comply with and

be managed consistent with BLM's Interim Management Policy Handbook (H-8550-1) For Lands Under Wilderness Review. The law provides for, and the BLM's policy is to allow, continued grazing uses on lands under wilderness review in the manner and degree in which these uses were being conducted on public land when the Federal Land Policy and Management Act (FLMPA) was signed (October 21, 1976). Grazing within WSAs is subject to reasonable regulations, policies, and practices.

Wilderness values are described in the 1979 Final Wilderness Intensive Inventory Report while the WSA's existing range and other improvements are identified in the 1990 California Statewide Wilderness Study Report (WSR). The Interim Management Policy for Lands Under Wilderness Review (IMP) provides direction for grazing management in WSAs until the WSA is designated wilderness or released from the wilderness review process. (See Appendix A)

The Little Round Valley allotment contains no designated Wilderness or Wilderness Study Areas.

## **H. Plan Conformance**

The action would occur in areas identified as available for livestock grazing (allotted vs. unallotted) in the Bishop Resource Management Plan (RMP) (BLM 1993) and must be consistent with the General Policies, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions, and Support Needs prescribed in the RMP as amended by the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000). The selection of any alternative that would modify the mandatory terms and conditions of the allotments, or that would make all or portions of the allotments unavailable for grazing by domestic livestock, would not conform to the Bishop RMP, and would therefore require a plan amendment.

## **I. Rangeland Health**

Rangeland health assessments have been completed on the grazing allotment in conformance with the Record of Decision, Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (Decision, pg 12). Qualitative rangeland health field assessments were completed in July 2000 on the Little Round Valley allotment.

Geographical Information System (GIS) database information was used to stratify the number of areas (ecological sites) to sample. Field assessments consisted of following protocol established in BLM Technical Reference 1734-6, Interpreting Indicators of Rangeland Health Version 3 (2000). A preponderance of the evidence is the criterion for determining if rangeland health standards are being met at each sample site. Rangeland Health Assessment Determinations, following the Central California Resource Advisory Council assessment protocol, were completed for the Little Round Valley allotment. The Little Round Valley allotment was found to meet the Secretary of the Interior Approved Rangeland Health Standards.

## **Chapter 2: ALTERNATIVES**

An environmental assessment (EA) for a livestock grazing permit must consider a reasonable range of alternatives (WO IM No. 2000-022) including: 1) issuing a new permit based on the application (often the proposed action), 2) issuing a new permit with the same terms and conditions as the expiring permit (current management/no action), and 3) a no grazing alternative. If the application for a permit is the same as the expiring permit (no changes in the terms and conditions), then the proposed action and the no action alternative are the same. Other alternatives may be needed to resolve conflicts or to address new conditions or new information. If other alternatives are identified or proposed during scoping but are determined by the BLM not to reasonably address the purpose and need for action, or not to be technically or economically feasible, or not to be in conformance with the land use plan, or not to be substantially different from another alternative in design or effects, they may be dismissed from detailed analyses (BLM Manual H-1790-1).

As the result of internal scoping, three alternatives have been identified for detailed analyses in this EA:

- 1) Modified Grazing Permit - Under this alternative, the BLM would issue a new permit following the guidance provided by the Bishop Resource Management Plan (BLM 1993), as amended by the Central California Standards for Rangeland Health and Guidelines for Grazing Management (BLM 2000), with additional management prescriptions based on Baumer et al. 2009 designed to reduce the risk of contact between domestic sheep and Sierra Nevada bighorn sheep on the allotments. The alternative also incorporates management prescriptions that would avoid domestic sheep use within the “predicted area of potential contact” as outlined by Croft et al. 2010 and ensure consistency with Inyo National Forest management direction for the Hilton Unit of the Rock Creek sheep and goat allotment.
- 2) Current Management / No Action - Under this alternative, the BLM would issue new permits with the same terms and conditions as the expired permits.
- 3) No Grazing - Under this alternative, the BLM would close the allotment to domestic livestock use, therefore cancelling the permit for the Little Round Valley allotment.

No additional alternatives have been identified as a result of livestock operator consultation, cooperation, and coordination or public scoping efforts. The alternatives are described in detail below.

### **1. Alternative 1 – Modified Grazing Permit**

Alternative 1 is to authorize grazing to Operator 0401651 for 10 years on the Little Round Valley allotment with applicable terms and conditions and other provisions as described in this section. This alternative differs from current management in that the terms and conditions from both the

Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000) are applied specifically for the allotment, with defined implementation guidelines, and tailored to specific vegetation communities and other resources present on the allotment. In particular, following the Application of Guidelines of the Central California S&Gs (BLM 2000), some guidelines were applicable regardless of the specific rangeland health condition and some needed to be more specifically identified and then applied as terms and conditions.

Active use on the allotment would be adjusted to exclude all portions of the allotment within the “predicted area of potential contact” identified by Croft et al. (2009, 2010) (Map 2). The westernmost portion of the allotment located northwest the town of Crowley (Zone 1) would be closed consistent with Inyo National Forest management direction for livestock grazing on the Hilton Unit of the Rock Creek sheep and goat allotment. In addition, all portions of the allotment occurring south and west of Crowley Lake Drive (Zone 2) would be closed to eliminate the risk of contact between domestic sheep and Sierra Nevada bighorn sheep consistent with recommendations of the Recovery Plan for the Sierra Nevada bighorn sheep (USFWS 2007a) and the subsequent analysis and recommendations of the Application Document (Croft et al. 2009, 2010). Therefore, 26 AUMs would be placed in suspension because of suspended use on 963 acres. Should major changes occur in land use or Sierra Nevada bighorn sheep populations, suspended AUMs may become reactivated.

Based on the information provided in the risk assessment by Baumer et al. 2009, management prescriptions for the Little Round Valley allotment under this alternative would include management requirements and grazing practices designed to reduce and detect straying of domestic sheep.

Terms and conditions, grazing practices designed to reduce and detect straying of domestic sheep (Baumer et al. 2009), and provisions related to range improvements and monitoring requirements included under this alternative are detailed below:

A. Mandatory Terms and Conditions

Mandatory terms and conditions including livestock number, livestock kind, season of use, percent public land (% P.L.), and allocated animal unit months (AUMs) are required for each allotment in accordance with 43 CFR 4130.3-1. The proposed mandatory terms and conditions for the Little Round Valley allotment (Map 1) under this alternative are:

Allotment	Number	Kind	From	To	% P.L.	AUMs
Little Round Valley	190	Sheep	10/05	10/18	100	17

## B. Terms and Conditions - Bishop Resource Management Plan

No trailing through a neighboring allotment is allowed without prior authorization by the BLM. Prior to trailing through a neighboring allotment, the trailing permittee would notify the BLM and all identified interested parties.

No salt or other nutrient supplement is allowed within 1/4 mile of meadows, sage grouse strutting grounds, or special status plant populations.

## C. Terms and Conditions - Central California Standards for Rangeland Health and Guidelines for Livestock Grazing

The goal of these terms and conditions is to provide the permittee the opportunity to realize the highest, long-term, agricultural, economic return with the least risk to rangeland health. Livestock would be managed to progress toward maintaining or promoting adequate vegetative ground cover, and maintaining soil moisture storage and soil stability appropriate for the ecological sites within the management units. Maintaining adequate ground cover should allow soil organisms, plants, and animals to support the hydrologic, nutrient, and energy cycles.

Sagebrush Grassland and Pinyon-Juniper Woodland Rangelands: Livestock grazing operations would be conducted so that forage utilization on key perennial species does not exceed 40 percent of the average. Key areas would be selected and utilization on key species would be estimated in accordance with the current BLM technical reference. Utilization monitoring would be conducted by a BLM employee, permittee, and/or trained range consultant. Then, all key area allotment data would be averaged and verified by a BLM employee to determine if the terms and conditions are being met. If utilization guidelines on the average of the upland key areas across the allotment are exceeded for 2 consecutive years or in any 2 years out of every 5 years, BLM would consult with the permittee to address the situation, potentially implementing a management change (e.g. change in livestock distribution). Because of the potential long-term damage to perennial grass species associated with severe grazing, when grazing utilization exceeds 70% in any upland key area for more than 2 consecutive years, management action would be taken to remedy the problem in the area of the allotment that key upland area represents.

## D. Other Terms and Conditions

No supplemental feeding (i.e. hay, pellets/cubes, or other forages) is allowed at any time on public lands without the BLM's authorization. If authorization is granted, the permittee would be required to obtain "certified weed-free" feed for supplemental feeding of livestock.

Range improvements in each pasture/allotment would need to be functioning properly prior to livestock turnout.

Periodically check livestock for weed seed to minimize or stop the spread of weeds such as perennial pepperweed from private land or other areas where known weed infestations exist. A guide on preventing the spread of weeds along with specific species of concern is described in the Eastern Sierra Weed Management Area Noxious Weed Identification Handbook.

Notify BLM of noxious weed locations when encountered on this allotment.

Use existing camps, bedding grounds, and watering sites and do not make new ones. Stay on existing roads and trails with all vehicles.

E. Management Requirements and Grazing Practices to Reduce and Detect Straying of Domestic Sheep

The Bishop Field Office will coordinate with the U.S. Fish and Wildlife Service and the California Department of Fish and Game prior to turnout to determine if recent bighorn sheep locations or movements require a re-evaluation of the risk of contact between domestic sheep and Sierra Nevada bighorn sheep on the allotment.

If new information on bighorn sheep locations and movements indicates that domestic sheep use of the allotment poses an imminent risk of contact, the authorized officer will temporarily close the allotment, or portions of the allotment, as necessary to eliminate the risk of contact after consultation with the permittee in accordance with 43 CFR 4110.3-2(a) and 4110.3-3(b)(1).

The authorized officer will implement changes in active use through a documented agreement or a decision (43 CFR 4110.3-2(a) and 4110.3-3(b)(1)). Notices of closure and decisions requiring modifications of authorized grazing use may be issued as final decisions effective upon issuance or on the date specified in the decision. Such decisions would remain in effect pending the decision on appeal unless a stay is granted by the Office of Hearings and Appeals in accordance with 43 CFR 4.472.

The permittee will notify the Bishop Field Office by telephone or in person, at least 48 hours in advance of entering the allotment. The permittee will also notify the Bishop Field Office by telephone or in person, at least 48 hours in advance of trailing to or from the allotment. This requirement will allow the BLM to fully document the actual season of use and to check with the U.S. Fish and Wildlife Service and the California Department of Fish and Game for the most recent sightings of Sierra Nevada bighorn sheep to assure they are not in, or immediately adjacent to, the allotment.

The permittee will maintain a band size of less than 1,500 dry ewes or yearlings, 900 ewes with single lambs (1,800 total), or 700-800 ewes with twin lambs (2,100 to 2,400 total) while in the allotment. Each band of sheep will have a sheep herder that must be in control of the band at all times.

The permittee will only use sheep herders that are very knowledgeable about the band of domestic sheep they manage.

The permittee will place and retain one herder and at least two guard dogs (specifically Great Pyrenees) plus two herd dogs with domestic sheep while in the allotment. Female dogs in heat should not be placed in the allotment.

The permittee/herder will remove any domestic sheep that is sick or injured from the band prior to entering the allotment. The permittee/herder will also immediately remove from the band any domestic sheep that becomes sick or injured after it has entered the allotment.

The permittee/herder will use marker sheep at a ratio of 1 to 20 to facilitate counts of domestic sheep while in the allotment.

The permittee/herder will place bells on mature ewes at a ratio of at least 1:100 to serve as a warning sound for the herder and to serve as identification and location of sheep to other sheep. If using "bell" sheep as markers, the permittee will place an identifying mark on the bell sheep in case the bell is lost.

The permittee/herder will count, and document in a log book, all individual sheep and marker sheep upon entering and exiting the allotment. This number will serve as the baseline for the herder to assure that, as the grazing season progresses, the full number of sheep can be accounted for at all times.

The permittee/herder will count marker sheep any time a camp is moved within the allotment. The permittee/herder will also count marker sheep following any scatter event (thunderstorm, predator attack, etc.). If any marker count comes up short, a full count of all sheep would ensue. All marker counts and full counts will be documented in a log book.

If at any time during the grazing season or during the post-season count a domestic sheep is determined to be missing from the band, the permittee will notify the Bishop Field Office, as soon as possible, but within 24 hours. The permittee will immediately initiate a comprehensive search for the stray(s) which will conclude when the stray(s) are located. The permittee will immediately report the results of the search to the BLM.

The permittee will ensure 24 hour monitoring of domestic sheep on the allotment by having the herder in direct visual contact with the sheep at all times during the day and by bedding sheep adjacent to camps (the trailer or donkey-based field camp) at night.

There will be no overnight grazing of domestic sheep to prevent straying.

A GPS unit will be used by the herder to record locations (i.e. bedding grounds) within the log book. The herder will try to be in mobile phone contact with the permittee throughout the time on the allotment. If at any time during the grazing season the permittee/herder observes a

bighorn sheep in the allotment (grazing area), the permittee/herder will notify the Bishop Field Office, as soon as possible, but within 24 hours of the observation. The BLM will immediately notify the U.S. Fish and Wildlife Service and the California Department of Fish and Game. The permittee/herder is directed to increase the distance between the Sierra Nevada bighorn sheep and the domestic sheep. The permittee/herder will document how many bighorn sheep were observed, where the domestic sheep were at the time of the sighting, where the bighorn sheep was sighted, and the direction in which the bighorn sheep moved after the initial sighting.

If at any time during the grazing season the U.S. Fish and Wildlife Service or the California Department of Fish and Game identify a bighorn sheep within the immediate vicinity of the allotment, the Bishop Field Office will coordinate with the permittee to implement a management change to mitigate the potential for contact. This management change will position as much distance as practicable between the wild sheep and domestic sheep. Possible alternatives include increased sheep counts, shifting grazing use to lower elevation areas of the allotment, or to portions of the allotment furthest from known bighorn sheep locations/occupied habitat. In the worst case, the permittee may be required to move all domestic sheep to an alternative allotment.

Prior to permitting use of the suspended AUMs on the Little Round Valley allotment, a subsequent environmental assessment (EA) would be prepared to analyze and disclose the environmental consequences of any reauthorization. The Bishop Field Office would coordinate with the U.S. Fish and Wildlife Service and the California Department of Fish and Game to determine if the status and distribution of Sierra Nevada bighorn sheep populations still warrants the suspension to domestic sheep use. If the suspended AUMs are reconsidered for domestic sheep use, the BLM would use the risk assessment methodology developed by the Sierra Nevada Bighorn Sheep Recovery Team and the best available information on bighorn sheep locations and movement patterns to assess the current risk of contact to determine if sheep grazing can recommence.

#### F. Livestock Grazing

Due to the configuration of the allotment boundary and to more accurately depict allotment use, there will be suspension of 26 Animal Unit Months (AUM) for the Little Round Valley allotment. The westernmost portion of the allotment located northwest of the town of Crowley (Zone 1) and the portions of the allotment located south of Crowley Lake Drive (Zone 2) would be placed in suspension (963 acres). Therefore, there would be a need to decrease livestock numbers to compensate for the reduction in acreage. The withheld AUMs would be placed into suspension and would therefore stay as part of the allotment. Should major land use changes occur, suspended AUMs may become reactivated through a subsequent grazing decision.

#### G. Range Improvements

No range improvement projects exist on the Little Round Valley allotment. This is mainly due

to the allotment being grazed by domestic sheep only, traditionally and recently. No new range improvements need to be constructed to achieve or maintain rangeland health on the allotment. Therefore, no new range improvements are planned to be constructed. If, through monitoring, the Bishop Field Office identifies a need to construct a new range improvement to achieve or maintain rangeland health or to address a site-specific resource concern, a subsequent site-specific project level environmental assessment would be completed at that time.

## G. Monitoring

In general, rangeland allotment monitoring (both upland and riparian) would continue to be conducted annually and/or periodically under three applicable oversight categories. The categories are 1) short term monitoring, 2) long term trend monitoring, and 3) compliance assurance. All monitoring would continue to be performed according to BLM policy and following protocols from BLM approved manuals and technical references. It is BLM policy that monitoring will be conducted on an annual schedule for Selective Management Category to Improve (I) allotments, and periodically on Selective Management Category to Maintain (M) and Custodial (C) allotments. The Little Round Valley allotment is designated as a Category C allotment in the Bishop Resource Management Plan (Appendix 4, pages A4-5 through A4-7) and so would be monitored periodically.

### *Short-Term Monitoring*

Short-term monitoring is a tool to gauge the cause and effect of the current grazing management on resource conditions on allotments. This monitoring consists of information addressing current climatic conditions and the collection of utilization data (including stubble height, if appropriate). Monitoring would consist of documenting utilization levels to ensure that forage utilization on key perennial species does not exceed 40 percent on the average. Key areas would be selected and utilization of key species would be estimated in accordance with the current BLM technical reference. This would assure compliance with permit terms and conditions for the Little Round Valley allotment.

### *Long-Term Trend Monitoring*

Trend refers to the direction of change. Rangeland data are collected at different points in time on the same site in accordance with the BLM technical reference and the results are then compared to detect change. Trend data are important in determining the effectiveness of on-the-ground management actions. The Little Round Valley allotment does not have established long-term trend plots. There is no plan at this time to establish long-term trend plots in the allotment given current management priorities.

### *Compliance Assurance*

Allotment compliance would be conducted on the Little Round Valley allotment on an annual schedule to assure adherence to permit terms and conditions. Compliance involves assuring that

livestock are on/off the allotment according to annual application dates, counting livestock numbers, identifying their location, checking brands, and assuring range improvements function properly.

Compliance monitoring is an important tool to ensure the Bishop Field Office can respond quickly and appropriately to any changes in the potential for contact between domestic sheep and Sierra Nevada bighorn sheep on the Little Round Valley allotment during the grazing season. Staff would be required to respond quickly and appropriately to any violations of the terms and conditions of any permit authorizations for these allotments and/or to any changes in the locations and movements of Sierra Nevada bighorn sheep in proximity to the allotments. Under this alternative, the Bishop Field Office would need to increase the level of allotment administration and compliance assurance monitoring on the Little Round Valley allotment.

**2. Alternative 2 - Current Management/No Action**

This alternative involves issuing a new 10-year permit with the same terms and conditions as under the previous authorization. The terms and conditions of the current permit do not address the potential for contact between domestic sheep and Sierra Nevada bighorn sheep on the allotment; and under current management, the terms and conditions from both the Bishop Resource Management Plan (RMP) (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (S&Gs) (BLM 2000) were applied commonly and broadly to the allotment, without defined implementation guidelines, and were not tailored to specific vegetation communities and resources on the allotment. The Bishop RMP, as well as allotment management and other activity plans were amended when the Central California S&Gs were signed by the Secretary of the Interior on July 13, 2000.

**A. Mandatory Terms and Conditions**

Mandatory terms and conditions for the Little Round Valley allotment were established at the land use planning level in the Bishop Resource Management Plan (BLM 1993). Mandatory terms and conditions including livestock number, livestock kind, season of use, percent public land (% P.L.), and allocated animal unit months (AUMs) are required for the allotment in accordance with 43 CFR 4130.3-1.

The mandatory terms and conditions for the Little Round Valley allotment (Map 1) as prescribed in the Bishop Resource Management Plan (BLM 1993) for the allotment are:

Allotment	Number	Kind	From	To	% P.L.	AUMs
Little Round Valley	1,400	Sheep	10/05	10/18	32	43

**B. Terms and Conditions - Bishop Resource Management Plan**

No salt or other nutrient supplement or sheep bedding is allowed within 1/4 mile of creeks, aspen groves, meadows, sage grouse strutting grounds or special status plant habitat.

No trailing through a neighboring allotment without prior authorization by the BLM.

Burned areas will be rested for a minimum of 3 growing seasons before grazing, to achieve proper functioning condition, recovery of vegetation or desired plant community.

The Bishop RMP Decision for the Desired Plant Community for riparian vegetation along streams is: “riparian vegetation growth is vigorous for woody plants and at least 4-6 inches of residual herbaceous plant height will remain at the end of the growing season or at the time of livestock turnoff, whichever is later.”

C. Terms and Conditions - Central California Standards for Rangeland Health and Guidelines for Livestock Grazing

Comply with the Central California Standards and Guidelines for Livestock Grazing Management.

The maximum forage utilization limit for key perennial species is not to exceed 40% on sagebrush grassland, semi-desert grassland, semi-desert grass and shrubland or pinyon-juniper woodland rangelands. On salt desert shrubland ranges, the maximum utilization limit for key perennial species is not to exceed 35%.

The maximum forage utilization limit in riparian areas and wetlands is not to exceed 45% for herbaceous species of 20% for shrubs and trees.

The maximum utilization limit for bitterbrush in mule deer concentration areas (i.e. migration corridors or winter ranges) is not to exceed 20% of annual growth before October 1.

D. Other Terms and Conditions

No supplemental feeding (i.e. hay, pellets/cubes, or other forages) is allowed at any time on public lands without the BLM's authorization.

Ensure that livestock are not infested with or cannot transport weed seed, or other weed plant material from such species as perennial pepperweed, coming from private land or other areas where known weed infestations exist. Specific species of concern are those described in the Eastern Sierra Weed Management Area Noxious Weed Identification Handbook.

E. Range Improvements

Range improvements would be the same as described in Alternative 1.

## F. Monitoring

Monitoring would be the same as described in Alternative 1, with the exception of the section regarding Sierra Nevada Bighorn Sheep monitoring.

### 3. **Alternative 3 – No Grazing**

This alternative would cancel one permit on the Little Round Valley allotment. As a result, grazing by Operator 0401651 would not be authorized on the allotment. Under this alternative, BLM would initiate the process in accordance with 43 CFR parts 4100 and 1600 to eliminate grazing by Operator 0401651 on the allotment and amend the Bishop Resource Management Plan.

### 4. **Alternatives Considered but Eliminated from Detailed Analysis**

No additional alternatives were identified as a result of livestock operator consultation, cooperation, and coordination or public scoping efforts.

## **Chapter 3: ENVIRONMENTAL ANALYSIS**

### **A. LIVESTOCK MANAGEMENT**

#### **1. Affected Environment**

##### *Past and Present Grazing*

Prior to 1859, the Owens Valley had minimal if any domestic livestock grazing. L. R. Ketcham of Visalia, California in 1859 was documented as the first cattleman to drive cattle into the Owens Valley (Putman and Smith [editor] 1995). By 1910 the Farm Census had reported 43,000 sheep and 20,000 cattle in the Owens Valley.

After the enactment of the Taylor Grazing Act in the 1934, government began taking an active role in managing public lands in the Owens Valley, creating allotment boundaries and developing grazing management systems. In 1946 the General Land Office and Grazing Service merged to create the Bureau of Land Management.

Over the last forty years, grazing on public and private lands in the eastern Sierra region has generally consisted of optimizing stocking rates when forage production was adequate to support livestock, generally throughout various habitat types. Grazing permits on public lands have incorporated numerous federal laws, regulations, policies, and management guidelines to protect and improve various resource values including rangeland and vegetative/wildlife habitat conditions. Monitoring has also been incorporated into grazing management to ensure compliance with permit stipulations. These grazing management practices have generally led to improving trends in rangeland health and habitat conditions within the region.

Presently, the Bishop Field Office administers 58 allotments with 25 permittees spanning a geographic distance of 220 miles from Olancha to Topaz, California, a 750,000 acre narrow configuration of public land straddling the edge of the eastern Sierra and western Great Basin. The physical environment ranges from Great Basin habitat in the north to Mojave Desert in the south. Subsequently, forage capability is often limited by precipitation and elevation which tends to be more favorable in the northern portion of the field office area.

##### *Allotment Specific*

The Little Round Valley allotment is located east of Crowley Lake within the Long Valley Management Area as defined in the Bishop Resource Management Plan (RMP) (See Map 1).

There is one livestock operator that is permitted to use the Little Round Valley allotment. Livestock number, livestock kind, permitted season of use, percent public land, and allocated animal unit months (AUMs) for the Little Round Valley allotment are:

Allotment	Number	Kind	From	To	% P.L.	AUMs
Little Round Valley	1,400	Sheep	10/05	10/18	32	43

The Little Round Valley allotment currently has three distinct portions. One of the portions, located west of the town of Crowley (Zone 1), has historically been used for trailing because of the configuration of the allotment boundaries. The trail begins/ends at the unloading/loading zone located on Inyo National Forest lands which are located in T. 4 S., R. 28 E., in section 28 of the NE corner along the double pole transmission line. The trailing occurs along the west side of the dirt road that is situated west of the BLM Crowley Campground, eventually leading to the Inyo National Forest Rock Creek allotment, Hilton Unit. The other two portions of the Little Round Valley allotment that might be used are situated on the edge of the Little Round Valley meadow complex that is owned by Los Angeles Department of Water and Power (LADWP) and grazed in conjunction with the operator’s LADWP lease. The operator takes full use every year; however, the allotment is not grazed every year. The only time the operator uses public land is in extraordinary or uncertain situations, such as snow storms. Livestock will graze the sagebrush/bitterbrush although bedding will still occur in the designated areas within the LADWP meadow.

**2. Environmental Consequences**

a. Impacts of Alternative 1

Authorizing grazing with revised, allotment-specific terms and conditions would not create negative impacts to livestock operations. Because livestock grazing practices would follow the Bishop RMP guidelines as amended by the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000) and the revised terms and conditions, the permittee would have to manage livestock (e.g. active herd management for better distribution) so forage utilization on key perennial species does not exceed utilization levels, as defined in the proposed terms and conditions described in Chapter 2. For example, strategic management of livestock by active herding to distribute use on forage across the allotment will indirectly improve forage resources. “On many ranges, improvement will occur without reduction in livestock numbers if practices to secure more uniform utilization are met” (Holechek, et. al. 1989). Practices already used to distribute livestock include changing location of watering points and active herd management to move livestock to underutilized areas. Lastly, these terms and conditions are designed to help maintain, protect, and improve rangeland health, increasing the probability of long-term economic viability for the permittee. Improved ecosystem conditions may perhaps increase nutritive value of forage which could result in higher weight gains on livestock, especially calves, which would likely increase rancher profit margins depending on market activity.

Incorporating avoidance measures for Sierra Nevada bighorn sheep, derived from “A Process For Identifying and Managing Risk of Contact between Sierra Nevada Bighorn Sheep and Domestic Sheep” (Baumer et al. 2009), will create extra annual work for the sheep herder while on this allotment, which may add to the operator’s expenses. These avoidance measures are

designed to help eliminate straying of domestic sheep. Also, guard dogs may prevent Sierra Nevada bighorn sheep from pursuing domestic sheep.

Lastly, by suspending AUMs for the portions of the allotment that never get used will better represent actual grazing use of the allotment. The permittee will benefit by only being billed for the portions of the allotment that he grazes.

b. Impacts of Alternative 2

Impacts of Alternative 2 would be similar to those of Alternative 1. One difference is that terms and conditions developed from the Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000), under current management, were applied broadly and uniformly to allotments. No defined implementation guidelines exist nor are they tailored to address specific vegetation communities and/or resources on these allotments, as in Alternative 1. For this alternative, it is likely that BLM, the permittee and other interested public would need to work together to define allotment-specific applications of the rangeland health standards and guidelines.

Furthermore, avoidance measures for Sierra Nevada bighorn sheep derived from “A Process For Identifying and Managing Risk of Contact between Sierra Nevada Bighorn Sheep and Domestic Sheep” (Baumer et al. 2009) would be a voluntary action under the discretion of the operator. Therefore, the avoidance measures would not be incorporated into permit terms and conditions and could not be enforced.

c. Impacts of Alternative 3

The cancellation of grazing on this allotment would force the operator to look for alternative forage if needed during the 2-week permitted season of use, and may increase the cost of the ranching operation.

**3. Map**

Overview of allotment (Map 1)

**B. AIR QUALITY**

**1. Affected Environment**

The Little Round Valley allotment is 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.

**2. Environmental Consequences**

a. Impacts of Alternative 1

Fugitive dust emissions could occur due to the soil disturbance as a result of the trampling action of livestock when soil moisture levels are low. Ruminant animals emit methane gas which is a precursor emission for ozone. The support vehicles emit various precursor emissions for ozone. Actual emission amounts from this grazing activity are negligible.

b. Impacts of Alternative 2

Impacts of Alternative 2 would be similar to those of Alternative 1.

c. Impacts of Alternative 3

There would be no fugitive dust emissions from livestock trampling or precursor emissions for ozone.

**C. AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

None of the alternatives would have any effect on ACECs because none are present or adjacent to the Little Round Valley allotment.

**D. CULTURAL RESOURCES**

**1. Affected Environment**

Located on the western fringe of the Great Basin physiographic province the Owens Valley region, incorporated within the Bishop Field Office, contains the highest archaeological site densities within the Great Basin (Basgall and McGuire 1988; Bettinger 1975, 1982). In 1981 and 1982 the BLM completed two Environmental Impact Statements (EIS) addressing grazing on public lands within the Bishop Field Office; “Proposed Livestock Grazing Management for the Benton-Owens Valley Planning Unit” (1981) and “Proposed Livestock Grazing Management for the Bodie-Coleville Planning Units” (1982b). In both EIS’s cultural resource reviews are limited to Class I literature searches of existing data.

Using existing survey data (BLM 1978; Busby et al. 1979; Hall 1980; Kobori et al. 1980), site densities were predicted to range from 9 sites per square mile (m<sup>2</sup>) in the Benton Planning Unit to 4 sites/m<sup>2</sup> in the Owens Valley Planning Unit.

To evaluate the allotment for cultural resource values a Class I records search was conducted and a GIS utilized to determine previously surveyed acres and sites recorded-on each allotment. Range improvements where livestock congregate (troughs, salt licks, reservoirs, etc.) were

mapped. Following the Bishop Field Office research design for grazing allotment assessments (Halford 1999), all areas with a high probability for the congregation of livestock and for the occurrence of significant cultural resources were field evaluated. The allotment was field checked to determine if congregation areas occur. Inventory was focused on known or suspected areas of historic ground disturbing activities associated with livestock grazing such as water sources, corrals, supplemental feeding areas, bedding areas, and salt block stations. The results of the analyses are used to modify grazing permits to protect or mitigate impacts to cultural resources. If significant cultural resources are identified, the stipulations of the grazing permit may be modified to reflect the presence and protection of significant cultural resources. The Little Round Valley allotment receives sporadic and ephemeral use and does not contain range improvements.

The following table shows the results of the cultural resource analyses.

<b>Allotment</b>	<b>Previously Surveyed (% of allotment)</b>	<b>Newly Surveyed</b>	<b>Previously Recorded Sites</b>	<b>Newly Recorded Sites</b>
Little Round Valley	36%	0	1	0

## **2. Environmental Consequences**

### a. Impacts of Alternative 1

Impacts to cultural properties are predicted to be minimal as a result of Alternative 1. Livestock use on the allotment is less than 2 weeks per year at most and does not occur every year. Impacts to sites are low based on targeted field evaluations and are predicted to be low across the allotment.

### b. Impacts of Alternative 2

Impacts of Alternative 2 would be similar to those of Alternative 1.

### c. Impacts of Alternative 3

This alternative would eliminate all livestock threats of damage to cultural properties.

## **3. Maps**

Due to the proprietary nature of the cultural resource information, no maps are included in this EA.

## **E. ENVIRONMENTAL JUSTICE**

There are no low-income or minority populations living on the Little Round Valley allotment.

There are 11 Native American communities who reside in or near the BLM Bishop Field Office area in varying degrees of proximity to the allotment. Members of these communities do some hunting and subsistence collecting of materials from public lands on various allotments throughout the Field Office area such as pinyon nuts, basket weaving materials, medicinal plants, etc. Some work in nearby local communities or are employed on their respective reservations.

There may be low-income minorities working for the livestock operators on the allotment.

### **2. Environmental Consequences**

#### a. Impacts of Alternative 1

Continued livestock grazing on the allotment would have no effect upon any low-income or minority populations. If any changes in grazing management are required, there may be a loss of a job to a member of a low-income or minority population. There may also be new jobs created and sustained as a result of the long-term livestock grazing sustainability from implementing rangeland health standards, and in implementing Sierra Nevada bighorn sheep avoidance measures. Any such impacts would be limited to a single job here or there. There would not be a disproportionate impact, either negative or positive, to any low-income minority.

#### b. Impacts of Alternative 2

Impacts of Alternative 2 would be similar to those of Alternative 1.

#### c. Impacts of Alternative 3

Under Alternative 3 there could be a loss of some jobs to members of a low-income or minority population. Any such impacts would be limited to a single job here or there. There would not be a disproportionate impact to any low-income minority.

There might be a slight positive impact to some groups (e.g. Native American) through increased availability of some vegetative resources that are collected on public lands. This would however vary by area and type of resource, and would probably be minimal on the allotment.

## **F. ESSENTIAL FISH HABITAT**

None of the alternatives would have any effect on essential fish habitat because there are no anadromous fish species or designated essential fish habitats on the Little Round Valley allotment.

## **G. FARMLANDS, PRIME OR UNIQUE**

None of the alternatives would have any effect on farmlands, prime or unique, because none are present on the Little Round Valley allotment.

## **H. FLOOD PLAINS**

None of the alternatives would have any effect on flood plains because none are present on the Little Round Valley allotment.

## **I. GLOBAL CLIMATE CHANGE**

### **1. Affected Environment**

United States Department of Interior, Order Number 3289, issued on March 11, 2009 replaced Secretarial Order Number 3226, Amendment No. 1, issued January 16, 2009, and reinstates the provisions of Secretarial Order Number 3226, signed January 19, 2001, Evaluating Climate Change Impacts in Management Planning. The Order is 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). "Agricultural activities contribute directly to emissions of greenhouse gases through a variety of processes (USEPA 2008)." A few of these processes include enteric fermentation (normal digestion), field burning of agricultural residues, and soil management activities such as fertilizer application.

"There is broad scientific consensus that humans are changing the chemical composition of our atmosphere" (Jones & Stokes 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. In the eastern Sierra region of California, climate change may result in warmer, drier conditions, and potentially more extreme weather events.

Livestock grazing related to Alternative 1 and Alternative 2 contributes GHGs in the form of methane (USEPA 2008). One direct emission of greenhouse gasses related to livestock grazing on public land is through enteric fermentation and excretion. "CH<sub>4</sub> is produced as part of normal digestive processes in animals. During digestion, microbes resident in an animal's digestive system ferment food consumed by the animal. This microbial fermentation process,

referred to as enteric fermentation, produces CH<sub>4</sub> as a by-product, which can be exhaled or eructated by the animal. The amount of CH<sub>4</sub> produced and emitted by an individual animal depends primarily upon the animal's digestive system, and the amount and type of feed it consumes.” However, challenges exist to determine what fractions of climate change are due to natural variability versus human action since natural contributions of GHGs occur.

## 2. Environmental Consequences

The assessment of GHG emissions and climate change remains in its formative phase. The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts of climate change on resources within the Bishop Field Office. In addition, while Alternative 1 and Alternative 2 may involve some future contribution of GHGs, these contributions would not have a noticeable or measurable effect, independently or cumulatively, on a phenomenon occurring at the global scale believed to be due to more than a century of human activities. Neither Alternative 1 nor Alternative 2 would authorize an increase in activities that would increase GHG emissions.

Rangeland allotment monitoring would continue to be conducted annually and/or periodically. Should warmer and drier conditions occur within the next ten years, which is the term of a grazing permit, monitoring may indicate a need to adjust annual operations. The field manager can also authorize temporary changes in grazing use within the terms and condition of a permit.

Alternative 3 may reduce locally produced GHG emissions from less enteric fermentation and excretion; however, this level of reduction is likely to be minute and practically non-measurable at both the local and global scales.

## J. INVASIVE, NON-NATIVE SPECIES

### 1. Affected Environment

The following table represents the estimated cover of invasive non-native species that occur in the Little Round Valley Allotment. The 2000 Rangeland Health Assessment documented a 0-5% cover of weeds.

Allotment	Invasive Weed Species	Estimated % Cover
Little Round Valley	<i>Bromus tectorum</i> (cheatgrass)	10-15%

The Little Round Valley allotment is adjacent to historic sheep bedding sites that contain dispersed cheatgrass stands. The encroachment of cheatgrass into more intact sagebrush steppe habitat is not evident east of Whisky Creek. The majority (80-90%) of the plant communities within the allotment have received little or no impact from livestock activities. During the 2000

qualitative rangeland health field assessment native plant vigor was considered good and sites met the NRCS ecological site description.

Historic grazing may have contributed to the introduction and spread of non-natives in sagebrush steppe communities but it is unlikely that discontinuing grazing will decrease the extent of cheatgrass in areas it is already present (Strand et al. 2008). Additionally research by Tausch et al. (1994) found that some un-grazed areas can have higher densities of cheatgrass than grazed areas. The ability of cheatgrass to invade arid and semi-arid ecosystems is strongly influenced by temperature and soil water availability; however sites with a high cover of native perennial herbs tend to have relatively high resistance to cheatgrass infestation independent of temperature and precipitation (Chambers et al. 2007).

Models have predicted that deserts and other arid ecosystems may be among the most responsive to elevated levels of CO<sub>2</sub> in the atmosphere (Melillo et al. 1993), this increased CO<sub>2</sub> levels could lead to more successful establishment of non-native annual grasses in arid environments (Smith et al. 2000). Ziska et al. (2005) found that increased atmospheric CO<sub>2</sub> levels may already be responsible for increases in cheatgrass.

Livestock use levels in the eastern Sierra have been in decline since the late 1800's (Beesley 1996) and overall the potential long-term and landscape impacts of increased non-native plant densities may be more a function of increased CO<sub>2</sub> level, fire induced type-conversions and soil water availability (Smith et al. 2000, Brooks et al. 2004, Chambers et al. 2007) than the effects of any of the alternatives.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1**

Livestock activities on the Little Round Valley allotment may increase the chances of non-native plant introduction and spread across the allotment. Impacts associated with heavy grazing of native vegetation may be one of the primary factors influencing invasion by non-native grasses, however sites with a high cover of native perennial herbs tend to have relatively high resistance to cheatgrass infestation independent of site conditions such as temperature and precipitation (Chambers et al. 2007). The terms and conditions outlined in the modified grazing alternative are designed to reduce the chance of introduction and spread of non-native plants as well as maintain or improve rangeland health. Maintaining or improving rangeland health reduces the risk of crossing an ecological threshold that could make the site susceptible to weed infestations. Specifically Alternative 1 would maintain or improve rangeland health by allowing for no greater than 40% utilization of key perennial vegetation. Forty percent utilization has been shown to benefit native vegetation (Van Poollen et al. 1979, Vallentine, J.F. 1990) compared to the 60% utilization identified in the Bishop Resource Management Plan (1993). This benefit would help minimize the vulnerability of the allotment to invasion by non-native plants.

In areas where cheatgrass is already established, high intensity wildfires can promote the

“grass/fire cycle” thereby changing the fire regime which can lead to a vegetation type conversion to non-native annual grasslands (D’Antonio and Vitousek 1992, Brooks and Minnich 2006). Studies have shown that early season grazing, normally before seed set of annual grasses, may help reduce weed spread by reducing inputs into the seed bank of particular sites (Olson 1999, Mosley and Roselle 2006). Additionally well managed grazing can be an effective tool in reducing fine fuel loads and fuel load continuity thereby reducing the risk of large wildfires (Taylor 2006).

Periodic monitoring (1-3 years) of the allotment would facilitate documenting changes in site composition and density of cheatgrass as well as other invasive species that may appear in the future.

b. Impacts of Alternative 2

Impacts under the current management alternative would be very similar to those of the modified grazing permit alternative. Both current management and the modified grazing permit alternative allow for only 40% utilization of key species, but under current management the terms and conditions of the Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000) are applied more broadly and uniformly across the allotments.

Presence of livestock may increase the chance of invasive plant introduction and spread across the allotments, but current management with the mandatory terms and conditions would not result in any additive effect to existing weed densities.

c. Impacts Alternative 3

Under the no grazing alternative, impacts from weed invasion on native plant communities would continue to impact the small areas where weed populations currently exist, such as within roads, historic sheep bedding locations, and historic mineral exploration sites. Seed from these locations would not be transported into adjacent and currently intact communities by livestock, but would still be transported via vehicles, humans and by non-anthropogenic agents (e.g. rodents, wind, and water).

Discontinuing grazing may result in an increase in fuel levels and fuel continuity, as noted above this may increase the threat of wildfire and the associated potential increase in cheatgrass. Overall impacts to weed densities and ecological function of these plant communities would be confined to environmental perturbations associated with global climate change effects, fire, soil water availability (Smith et al. 2000, Brooks et al. 2004, Chambers et al. 2007) and insect damage.

## **K. NATIVE AMERICAN CULTURAL VALUES**

### **1. Affected Environment**

There are 11 Native American communities who reside in or in close proximity to the eastern Sierra region administered by the Bishop Field Office. None of these communities are living on the Little Round Valley allotment. There are no treaty rights (hunting, fishing, etc.) associated with any of the communities or the allotment.

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

Some general concerns associated with Native American cultural values identified by the Tribes during consultation are:

- They have general concerns with overgrazing and want BLM to control overgrazing to protect the ecosystem and ensure that it is functioning properly.
- They have concerns that water (or other) developments not impact cultural sites and that they not affect deer habitat (through de-watering streams / springs, or trampling of habitat around new troughs, etc.).
- They do not want cattle grazing on top of individual burials or grave sites or within known Native American cemeteries.
- They do not want sheep bedding on top of cultural sites.
- They do not want BLM to use herbicides on plants that they might collect.
- They do not want BLM to cut / remove pinyon for grazing habitat improvement.

### **2. Environmental Consequences**

#### **a. Impacts of Alternative 1**

Alternative 1 is not expected to have any impacts to Native American concerns described above. The rangeland health assessments showed the allotment currently meets rangeland health standards. The proposed terms and conditions are designed to help protect and sustain rangeland health, keep the ecosystem functioning properly, and thereby maintain or improve the natural environment that Native American cultural values depend on. Monitoring would continue and any impacts that affect Native American sites from high congregation and concentration of livestock use would be corrected.

#### **b. Impacts of Alternative 2**

Impacts of Alternative 2 would be similar to those of Alternative 1.

### c. Impacts of Alternative 3

Removing grazing would generally result in fewer impacts to the natural environment, thus alleviating Native American concerns with overgrazing, water project development, and grazing impacts to cultural resources/burial sites, etc.

## **L. RECREATION**

### **1. Affected Environment**

Recreation opportunities in the Little Round Valley allotment are limited. There are no developed recreation sites in the area. The allotment area is relatively small when compared to other local recreation areas and is adjacent to a major US highway. Recreational opportunities most common in this area include off-highway vehicle touring, horseback riding, biking, hiking, skiing, and snowmobiling. The majority of recreational use is by the local residents living in the vicinity of the allotment. Encounters with livestock occur infrequently. However, conflicts have been noted in the past between sheep grazing and recreation activities (e.g. motorcyclists) in the Little Round Valley meadow complex.

### **2. Impacts of Alternatives**

None of the alternatives would have an effect on recreation because proposed facilities or management practices that could potentially alter existing recreation uses or use patterns do not exist in the allotment. Recreationists would continue to encounter livestock infrequently under Alternative 1 and Alternative 2. All alternatives considered would be in conformance with VRM Class II Objectives as listed in Appendix A3 (page number A3-1) of the Bishop RMP (BLM 1993).

## **M. SOCIAL AND ECONOMIC VALUES**

### **1. Affected Environment**

Regionally, livestock operations in Inyo and Mono counties are dependent on federal lands (BLM and U.S. Forest Service) and nonfederal lands (state and private). The Little Round Valley allotment is located in Mono County and has one permittee. There is a careful balance of livestock numbers and seasons of use for grazing, such that any substantial change of use, would negatively affect their overall operation. Having other permits or lease land available does not in itself lead to increased flexibility.

For 2011, the federal grazing fee for Western public lands managed by the Bureau of Land Management and the Forest Service is \$1.35 per animal unit month (AUM). An AUM is the amount of forage needed to sustain one cow and her calf, one horse, or five sheep or goats for a

month. The annually adjusted grazing fee is computed by using a 1966 base value of \$1.23 per AUM for livestock grazing on public lands in Western states. The figure is then adjusted according to three factors - current private grazing land lease rates, beef cattle prices, and the cost of livestock production. The formula used for calculating the grazing fee, established by Congress in the 1978 Public Rangelands Improvement Act, has continued under a presidential Executive Order issued in 1986. Under that order, the grazing fee cannot fall below \$1.35 per AUM, and any increase or decrease cannot exceed 25 percent of the previous year's level.

The local economy is benefited by grazing operations from capital spent to establish and maintain a ranching operation and contributions to the labor force. In 1980 for Inyo and Mono counties, livestock production grossed \$11,303,314 (Inyo-Mono Counties 1981). In 2009 for Inyo and Mono counties, livestock production grossed \$29,593,405 (Inyo-Mono Counties 2010). Agriculture production which includes livestock, field crops, miscellaneous crop production, timber, and apiary is the second largest industry and an integral part of both Inyo and Mono County economies.

In Mono County for 2009, livestock and field crops were the primary production crop. Of a 100% total in agricultural values, livestock production accounted for 60%. This amounted to \$19,596,055 or 60% of the total \$32,697,305 agricultural production in Mono County.

Additionally, the allotment lies in a broad region and valley that is largely undeveloped and rural in nature. Tourism is a primary industry of the area, attracting millions of annual visitors who enjoy the rural, isolated nature of the eastern Sierra. Livestock grazing, for some people, complements the frontier setting they seek in their visits to the area.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1**

This grazing operation benefits the local economy from monies spent to establish and maintain a ranching operation and contributions to the labor force. Sustaining the operations, from continued use of the allotment, would have a positive economic effect on the stability of the overall livestock operation. The social value of retaining a rural, agricultural lifestyle would be preserved and would align with many of the public's perception of the eastern Sierra western culture. Alternative 1 would not adversely impact the social and economic stability of these ranching operations.

### **b. Impacts of Alternative 2**

Impacts of Alternative 2 would be the same as Alternative 1.

### **c. Impacts of Alternative 3**

If grazing were terminated on the allotment, there would be adverse impacts to the operator. The

permittee may be forced to operate with fewer livestock. There would be unauthorized grazing use onto BLM lands, since private and/or federal permitted lands are unfenced. Livestock trespass or drift onto BLM land would result in administrative costs to the agency. The BLM may also receive criticism of this decision from its local constituency because of potential agricultural economic losses.

## **N. SOILS**

### **1. Affected Environment**

The soil classifications of the allotment have been mapped in detail by the Natural Resource Conservation Service (NRCS 1996). Soils on the Little Round Valley allotment are comprised of volcanic and granitic parent materials. Key ecological sites are Ashy Loam, Granitic Loam, Granitic Fan and Mahogany Slope. The Ashy Loam soils are well drained, which provide a more favorable habitat for both grasses and sagebrush steppe species. The Granitic Fan and Granitic Loam sites support stands of Mt. Mahogany. The soils associated with these ecological sites are also well drained, but rocky. Erosion potential on the lower elevation Ashy Loam sites is slight to moderate due to wind erosion and can be somewhat attributable to the effects of livestock hoof action which disturbs the soil surface. Erosion potential of soils of the Granitic Fan sites is low due to infrequent and limited areas of use by livestock. There are no identified erosion problems on the allotment. Cryptobiotic soil crusts are a soil attribute within the Rangeland Health Standards and Guidelines. This attribute as well as other soil stability and function attributes were found to meet the Rangeland Health Standards (BLM, Rangeland Health Assessments 2001-2002) on the Little Round Valley allotment.

BLM assessed the allotment in 2000 to determine if the rangeland health standards were being met. Specific soils standards relate to permeability and infiltration. All sites examined were found to meet the standards for soils.

### **2. Environmental Consequences**

#### **a. Impacts of Alternative 1**

Alternative 1 would create no new impacts because the proposed terms and conditions are designed to help maintain, protect, or sustain rangeland health including soils, and to keep the ecosystem functioning properly. For example, improvements in ecological attributes would be a result of the 40% forage utilization levels which would lead to increases in plant biomass production resulting in adequate soil protection (e.g. wind erosion).

#### **b. Impacts of Alternative 2**

Impacts of Alternative 2 would be the same as Alternative 1 because both alternatives are very similar. The only difference between this alternative and Alternative 1 is that terms and

conditions developed from the Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000), under current management, were applied broadly and uniformly to this allotment. No defined implementation guidelines exist nor are they tailored to address specific vegetation communities and/or resources on this allotment, as in Alternative 1. For this alternative, it is likely that BLM, the permittee and other interested public would need to work together to define allotment specific applications of the rangeland health standards and guidelines.

c. Impacts of Alternative 3

Alternative 3 would have little to no impact on soils separate from on-going natural erosion processes and other non-grazing related anthropogenic disturbances.

**O. VEGETATION/THREATENED AND ENDANGERED**

A baseline range inventory for these allotments was completed in 1977 and correlated to the 1999 NRCS soil/vegetation inventory to document plant cover and composition as well as develop update ecological site descriptions. The majority (80-90%) of the plant communities within the allotment have received little or no impact from livestock activities. In the 2000 qualitative rangeland health field assessment, native plant vigor was considered good and sites met the ecological site description.

The allotment occurs in the Great Basin Physiographic Province. The dominant plant communities are characterized by Great Basin mixed scrub (Holland 1986) with pockets of curl leaf mountain mahogany scrub. Plant composition based on cover is approximately 80% shrubs, 15 % grasses and 5% forbs.

In the Little Round Valley allotment Great Basin mixed scrub includes the following vegetation alliances which are described in *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009); Big sagebrush, Mountain big sagebrush scrub and bitterbrush scrub. Dominant species include mountain big sage (*Artemisia tridentata* ssp. *vaseyana*), big sagebrush (*Artemisia tridentata* ssp. *tridentata*), and low sage (*Artemisia arbuscula*), bitterbrush (*Purshia tridentata*), desert peach (*Prunus andersonii*) and rabbitbrush (*Chrysothamnus*) species are subdominant. Understory species are varied and consist of native perennial bunch grass species; western needlegrass (*Stipa occidentalis*), Indian rice grass (*Stipa hymenoides*), Great Basin wild rye (*Elymus cinereus*), and squirrel tail (*Elymus elymoides*) as well as perennial and annual forbs in the Astragalus, Eriogonum, Eriastrum, Gilia, Lupinus, and Phlox genera. Curl leaf mountain mahogany scrub alliances (Sawyer et al. 2009) are dominated by mountain mahogany (*Cercocarpus ledifolius*).

The majority (80-90%) of the plant communities within the allotment have not been significantly impacted by livestock grazing because of the infrequent use and low number of animals that make use of the allotments as well as the general topography and rough terrain which reduces

livestock access. Generally, utilization of key forage species, e.g. perennial bunch grass species and bitterbrush is slight to moderate (40% or less) and occurs only in the fall.

## **B. Environmental Consequences**

### **a. Impacts of Alternative 1**

Alternative 1 would require that utilization of native vegetation not exceed 40% which was identified in the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000). Forty percent utilization compared to the 60% utilization identified in the Bishop Resource Management Plan has been shown to be beneficial to plant production (Vallentine 1990, Van Poollen and Lacey 1979).

Specifically, 40% or less utilization compared to higher utilization has been shown to benefit vegetation by allowing for (BLM 1998);

- Increased cover of perennial grasses
- Better root distribution
- Increased species diversity
- Increased photosynthetic period
- Increased vegetation structure
- Increase in episodic recruitment of shrubs, grasses, and forbs

Under Alternative 1 allowable AUMs are low and the season of use is short, these use levels would not significantly impair the large-scale ecological function of these plant communities during non-drought years. Impacts to native vegetation do to non-native plant spread and localized soil disturbance would affect very small portions (< 1-2 acres in size) of the allotment and be associated primarily near bedding grounds. These impacts would not contribute to a large-scale reduction in ecological function of the plant communities that occur within the allotment, but would require periodic (2-5 years) monitoring to determine impact thresholds.

As mentioned in Section J - Invasive Non-Natives of this EA, well managed grazing can reduce the risk of high-intensity wildfires and the potential for the associated loss of high diversity native shrub communities. Research has shown varying results as to the effect of grazing on vegetation productivity and native species richness (Strand et al 2008). These varying results may be due to timing and intensity of grazing and existing site conditions including soil type, precipitation levels and past disturbances. According to Laycock (1994) repeated heavy grazing can change productivity or species diversity but moderate grazing has not caused a decrease in species diversity.

### **b. Impacts of Alternative 2**

Impacts of Alternative 2 would be similar to those of Alternative 1. However, under Alternative 2 the entire allotment could be grazed. In addition, the terms and conditions developed from the

Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000), under current management, were applied broadly and uniformly to this allotment. No defined implementation guidelines exist nor are they tailored to address specific vegetation communities and/or resources on this allotment, as in Alternative 1.

Continued grazing at current levels would affect very small portions (in the vicinity of water troughs and mineral blocks) of the allotments and would not contribute to reductions in overall plant community ecological function as long as current Rangeland Health Guidelines are adhered to, e.g. 40% utilization.

c. Impacts of Alternative 3

Under this alternative, livestock grazing on the allotment would cease. Individual plant populations within the communities that are commonly grazed would have an opportunity to complete all phenological stages. As mentioned in Section J of this EA - Invasive, Non-native Species, grazing can reduce fine fuel levels, thereby reducing the potential for a high-intensity wildfire and the possible associated increase of cheat grass and loss of native species diversity. Overall, discontinuing grazing would confine impacts to the ecological function of these plant communities to environmental perturbations associated with change in atmospheric CO<sub>2</sub> levels, fire, soil water availability (Smith et al. 2000, Brooks et al. 2004, Chambers et al. 2007) and insect damage.

*Special Status Plant Species*

The Bureau of Land Management (BLM) uses the term "Special Status Plants" to include: 1) Federal Endangered, Threatened, and Proposed plants, and: 2) BLM Sensitive plants. Sensitive plants are those species that are not federally listed as Endangered or Threatened or Proposed for federal listing, but which are designated by the BLM State Director for special management consideration. By national policy, Federal Candidate species are automatically treated as Sensitive. The California State Director has also conferred sensitive status on California State Endangered, Threatened, and Rare species, on species on List 1B (plants rare and endangered in California and elsewhere) of the California Native Plant Society's Inventory of Rare and Endangered Plants of California (unless specifically excluded by the State Director on a case-by-case basis), and on certain other plants the State Director believes meet the definition of Sensitive.

No Special Status Plant Species populations are present on the Little Round Valley allotment based on historical records, field monitoring, and/or habitat suitability.

**P. WASTE, HAZARDOUS OR SOLID**

None of the alternatives would generate hazardous or solid waste on the Little Round Valley

allotment.

## **Q. WATER QUALITY, DRINKING-GROUND**

Approximately 0.2 miles of Whisky Creek and Spring 9-17-1c which provides a very high volume flow, occurs on the Little Round Valley allotment; both have good water quality. No livestock grazing occurs in these portions of the allotment, so no change in water quality is predicted under any of the alternatives.

## **R. WETLANDS/RIPARIAN ZONES**

### **1. Affected Environment**

Small riparian areas are associated with Whisky Creek and one primary spring source. No livestock grazing occurs in these parts of the allotment and the overall riparian condition is good. The extent of riparian vegetation at the spring is less than one acre, riparian vegetation along Whisky Creek is approximately 0.25 acres. Whisky Creek riparian vegetation condition is dependent on and affected by the adjacent watershed condition and related human activities (see Water Quality section) and on the seasonal hydrologic cycle for surface water flow.

### **2. Environmental Consequences**

#### **1. Impacts of Alternative 1**

Primary impacts to riparian areas associated with grazing include vegetation damage and/or removal and soil and bank disturbance, compaction and vegetation damage and/or removal as well as widening of stream banks (Kauffman and Krueger 1984). The severity of these impacts can vary greatly depending on grazing intensity, type and the pre-existing physical and biological setting.

Impacts from alternative 1 would be similar to those of the current management alternative. Research Terms and conditions of the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 2000) state that forage utilization of native vegetation should not exceed 40% on average, which has been shown to benefit plant production and resilience (Vallentine 1990, Van Poolen et al. 1979) compared to the 60% utilization identified in the Bishop Resource Management Plan (BLM 1993). Additionally, the standards and guidelines state that grazing practices should maintain a minimum herbage stubble height of 4-6 inches on the average on all stream-side riparian and wetland areas at the end of the growing season. There should be sufficient residual stubble or re-growth at the end of the growing season to meet the requirements of plant vigor, maintenance, and bank protection.

b. Impacts of Alternative 2

Under current management, no new impacts to riparian areas would occur. As in the modified grazing permit alternative, the stated terms and conditions would continue to benefit riparian conditions.

c. Impacts of Alternative 3

In the absence of grazing, the ecological function of riparian plant communities would not be affected by livestock use. The riparian vegetation along Whiskey Creek would eventually be restored to a good level of vigor with concurrent cessation of channel bank erosion. Floodplain water table would not be improved without some in-channel mechanical control of the down cutting. The current good condition of riparian vegetation at the other riparian sites would be maintained

## **S. WILD AND SCENIC RIVERS**

None of the alternatives would have any effect on wild and scenic rivers because none are present within or adjacent to the Little Round Valley allotment.

## **T. WILDERNESS**

None of the alternatives would have any effect on designated Wilderness or Wilderness Study Areas because none are present within or adjacent to the Little Round Valley allotment.

### ***Wilderness Characteristics***

#### **1. Affected Environment**

The allotment intersects 2 units that were inventoried for wilderness characteristics in 1979: CA-010-070, Rock Creek; and CA-010-071, Whiskey Creek. The Forest Service has not updated their 1979 inventory for the Inventoried Roadless Areas (IRAs) in question and has not prescribed management to maintain wilderness characteristics in them. These units were not included in acreage recommended for wilderness in the 1988 Forest Plan. BLM is directed by Section 201 of FLPMA to maintain current inventories of all public land resources including wilderness characteristics, and to consider effects on wilderness characteristics along with other resources when conducting a NEPA analysis such as this EA. The BLM Bishop Field Office updated the wilderness characteristic inventory for lands affected by this allotment in June 2011.

Wilderness characteristics are defined in the Wilderness Act of 1964. The original BLM inventory units were established in 1979 according to their potential to include at least 5000

acres of roadless land, and if they met this criterion or one of the size exceptions (including adjoining other Federal lands identified as having wilderness values), were inventoried for other wilderness characteristics: natural condition, that is, generally appearing affected by the forces of nature, with human works substantially unnoticeable; outstanding opportunities for solitude or for primitive and unconfined recreation; and optional supplemental values. The 2011 inventory update followed essentially the same protocol.

The Whiskey Creek inventory unit (CA-010-071) addresses the three discontinuous BLM parcels of the allotment west and northwest of the town of Crowley Lake. Old Highway 395 forms the northeast boundary of these units. The central parcel is the largest, at 330 acres. It adjoins Inyo National Forest land that was not identified by the Forest Service as having wilderness values, did not meet other size exceptions, and was eliminated from the 1979 intensive inventory process. The northern and southern parcels adjoined Inyo National Forest lands that were inventoried as part of the Forest Service's RARE II process (Roadless Area Review and Evaluation of 1979). BLM conducted a 1979 intensive inventory which found that these parcels were lacking in naturalness: an improved road is obvious in all parts of the northern parcel, and an improved road and campground in the southern parcel. Therefore this unit was found to lack wilderness characteristics. The 2011 inventory update determined that the size exception does not currently apply (see discussion for Rock Creek unit below). Also, the same impacts to naturalness currently persist. Therefore, the unit does not have wilderness characteristics.

The Rock Creek inventory unit (CA-010-070) addresses the two southeastern BLM parcels in the allotment (parts of T4S, R29E, Sec 36 and T4S, R30E, Sec 31). The inventory unit is bordered on the north by old Highway 395. The two parcels have only 266 acres (western parcel) and 132 acres (eastern parcel) of contiguous public lands; however, they adjoined Forest Service RARE II units which the Forest Service recommended for wilderness at that time. For this reason the BLM parcels were not eliminated from BLM's 1979 intensive inventory process, because they met the size exception for lands contiguous with other Federal lands identified as having wilderness characteristics. The BLM parcels were found to have wilderness characteristics of naturalness, and, considered together with the adjoining Forest Service lands, to offer opportunities of solitude and for primitive and unconfined recreation.

Currently the former RARE II lands are classified by the Forest Service as Inventoried Roadless Areas (IRAs), as defined by the Department of Agriculture in 36 CFR Part 294 (Federal Register Vol. 66, No. 9, January 12 2001). IRAs are defined simply as those areas previously delineated on a published map. References to "minimum criteria for wilderness" are specifically excluded from the definition; "this modification, which removed the historical context for the definition of inventoried roadless area, has been included in the final rule." The rule describes "roadless area characteristics" that "often characterize" IRAs but do not define them, and that differ from wilderness characteristics. The Forest Service has not updated their 1979 inventory for the IRAs in question and has not prescribed management to maintain wilderness characteristics in them. For these reasons, consistent with current BLM guidance, the 2011 BLM inventory update found that the BLM parcels do not meet the size exceptions for roadless lands of less than 5000 acres that are contiguous with lands contiguous to other Federal lands with identified wilderness

characteristics where the combined total is  $\geq 5000$  acres.

If the Forest Service conducts an inventory update which determines that the adjoining IRAs do have wilderness characteristics, and/or develops direction to manage them for wilderness characteristics, the BLM inventory will be updated accordingly. In recognition of this possibility, potential effects on wilderness characteristics are assessed below.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1 - Rangeland Health**

The proposed action would have positive benefits to wilderness characteristics of naturalness because overall allotment habitat quality would be maintained or slightly improved by implementation of the proposed terms and conditions, which are designed to protect and sustain rangeland health. This proposed system would maintain or improve vegetation communities, weed control and wildlife habitat, promoting the appearance of naturalness over the long term.

Wilderness characteristics of outstanding opportunities for solitude and a primitive or unconfined type of recreation would remain unaffected.

### **b. Impacts of Alternative 2 - No Action**

The no action alternative would maintain the current condition of naturalness. Wilderness characteristics of outstanding opportunities for solitude and primitive and unconfined types of recreation would remain unaffected.

### **c. Impacts of Alternative 3**

Slight increases in naturalness in the form of ecological improvements in plant and wildlife habitat may occur throughout the area due to lack of grazing impacts on various resources, allowing natural processes to dominate. Wilderness values of outstanding opportunities for solitude and primitive or unconfined types of recreation would remain unaffected.

## **U. WILDLIFE/THREATENED AND ENDANGERED**

### ***Wildlife Habitat and Associated Species***

#### **1. Affected Environment**

The sagebrush steppe, sagebrush/bitterbrush and mountain mahogany plant communities found within the allotment support a variety of wildlife species, including migratory birds, small mammals, mesocarnivores, mule deer (*Odocoileus hemionus*), and other species. The Greater Sage-grouse and pygmy rabbit are addressed in the sensitive wildlife species section.

Migratory bird species using the allotment may include sagebrush-obligate songbirds such as Sage Sparrow and Brewer's Sparrow, as well as other species that largely depend on shrub habitats, birds nesting in riparian zones, and generalists that may utilize a combination of the listed habitats.

Habitats within the allotment may be suitable for small mammal species, including sagebrush vole (*Lemmys curtatus*). In 2003, two Sierra martens (*Martes americana sierra*) were captured just east of the allotment's central portion (CNDDDB 59130; MVZ#208653 and MVZ#208655). In 2010, the Sierra Nevada red fox (*Vulpes vulpes necator*) was rediscovered on the east side of the Sierra Nevada. Normally found in open conifer forests at higher elevations, an individual was seen 10 miles south of the allotment at an elevation of 6000'. Surveys have not been conducted in the area for small mammal or mesocarnivore species.

The sagebrush/bitterbrush portion of the allotment may provide some value to the Round Valley mule deer herd during the spring/fall migration to and from wintering habitat. Browse species, especially bitterbrush, are an important source of nutrition during the migration. Interspersed riparian areas provide water and cover.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1**

The overall habitat quality, reflected in the condition of vegetation communities on the allotment, would be improved from current conditions over the long-term with implementation of this alternative. Species guilds within the small mammal and migratory bird groups would gain the most immediate benefit from improvement in the availability of food resources and cover as the result of the closure of a portion of the allotment and utilization limit on key forage species on the remainder. Increases in these groups could provide benefit up the food chain to mesocarnivore species in the area. Mule deer habitat quality would also be improved as the result of the bitterbrush use limit that would ensure adequate bitterbrush leader growth is available for forage. The lower use standards would also promote improved vigor and long-term maintenance of sagebrush associated upland plant communities that provide important wildlife habitat for a wide variety of species on the allotment.

The overall habitat quality of the allotment will be maintained or slightly improved with implementation of the proposed terms and conditions under this alternative because they are designed to help protect and sustain rangeland health, which includes wildlife habitat, and to keep the ecosystem functioning properly. The principal reason for this is a lack of concentrated use in any one area of the allotment which reduces significant alteration impacts to soil and vegetation, thus maintaining more intact wildlife habitats.

## b. Impacts of Alternative 2

The difference between this alternative and the portions of the allotment that will remain open to livestock grazing under Alternative 1 is that terms and conditions developed from the Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000), under current management, were applied broadly and uniformly to the allotment. No defined implementation guidelines exist nor are they tailored to address specific vegetation communities and/or resources on the allotment, as in the proposed action. For this alternative, it is likely that BLM, the permittee and other interested public would need to work together to define allotment-specific applications of the rangeland health standards and guidelines. The overall habitat quality of the allotment will be maintained or slightly improved with implementation of the proposed terms and conditions because they are designed to help protect and sustain rangeland health, which includes wildlife habitat, and to keep the ecosystem functioning properly.

## c. Impacts of Alternative 3

No impacts to wildlife habitat condition would occur since livestock would be completely eliminated from the allotment. The overall habitat quality of the allotment would be expected to improve slightly with the removal of livestock.

### *Sensitive Wildlife Species*

#### **1. Affected Environment**

##### Greater Sage-grouse

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; FWS) has received 8 petitions to list sage-grouse as either threatened or endangered in various portions of their range (FWS 2005). On March 5, 2010 the Service announced completion of their range-wide status review of Greater Sage-grouse (*Centrocercus urophasianus*) populations and their finding that listing the range-wide population of Greater Sage-grouse is warranted, but precluded by higher priority listing actions (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. 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. The Greater Sage-grouse is a BLM Sensitive Species in California.

A conservation plan for sage-grouse in the Bi-State Area was created by a broad based stakeholder group as part of the Greater Sage-Grouse Conservation Plan for Nevada and Eastern California (NDOW 2004), with the Nevada Department of Wildlife and the California Department of Fish and Game (CDFG) as lead agencies. The Bi-State portion of the plan recognizes the South Mono area as one of several Population Management Units (PMUs). Portions of the allotment lie within the South Mono PMU and may include sage-grouse use areas.

The available information on the sage grouse population in Long Valley for the period 1953 through 2003 is summarized under the South Mono Population Management Unit in the Greater Sage-Grouse Conservation Plan for the Bi-State Plan Area of Nevada and Eastern California (NDOW 2004, Appendix L). Six (6) core leks were used to assess the long term breeding population trend in Long Valley from 1973 through 2003. The highest total number of strutting males observed on the 6 core leks combined, for years in which adequate sample size was obtained, was 363 male grouse in 1986. During the same period, the average number of males counted on the 6 core leks was 171 male grouse. The peak male count for all leks within Long Valley in 1986 was 406, which is the 2<sup>nd</sup> highest count on record. For the period 2004 through 2011, average male attendance on core leks was 252 male grouse, with a high of 313 male grouse in 2011. The peak male count for all leks within Long Valley during the 2011 breeding season was 386, which is the 5<sup>th</sup> highest count on record.

Existing and potential risks to the sage grouse populations in the South Mono PMU include wildfire, drought, pinyon/juniper encroachment of sagebrush areas, predation, and various human influences on the habitat like urbanization, hunting, recreational activities, and livestock grazing.

Sage-grouse in the Long Valley portion of the South Mono PMU are believed to be a non-migratory population and extensively use various areas in Long Valley throughout the year for breeding, nesting, brood rearing, foraging, and winter habitat requirements. There are nine (9) consistently counted active leks where breeding occurs each year. Information derived from radio-marked sage grouse has provided important information relating to high use areas during the breeding season, nest locations, summer/late brood habitat and winter habitat. These areas are primarily east of Highway 395, though birds may occasionally use appropriate habitat within the allotment boundary.

### Pygmy Rabbit

The pygmy rabbit (*Brachylagus idahoensis*) is a sagebrush-obligate species known to occur in the vicinity of the allotment. One of two rabbit species in North America that dig their own burrows, pygmy rabbits are dependent on areas of sagebrush growing in deep, friable soils. 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. Populations surveyed in Adobe and Long Valleys primarily occur on Brantel gravelly loamy sand with 0 to 4 percent slopes. These soils are not present in within the allotment

boundary. Suitable soils may occur on the western portion of the allotment, but the eastern portions primarily consist of rock outcrops. The western portion has not been surveyed.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1**

Suitable habitat for Greater Sage-grouse and pygmy rabbit primarily occurs on the western portion of the allotment. The overall habitat quality of this portion would be expected to improve with the removal of livestock. The attributes of the upland vegetation communities that define sage-grouse and pygmy rabbit habitat where they occur on the remainder of the allotment would be maintained and improved from current conditions over the long-term with implementation of this alternative. Implementation of proposed terms and conditions would promote improved sagebrush-associated plant community vigor and long-term ecological health; and ensure the maintenance and improvement of both known occupied and potential sage-grouse habitats on these allotments. Overall sagebrush cover and composition required for sage-grouse nesting, brood rearing, summer, winter, and connectivity habitat would be maintained or improved over the long-term.

Alternative 1 could contribute to the potential for West Nile virus occurrence in the South Mono PMU by supplementing mosquito populations with livestock as a food source. However, the alternative would not contribute to the availability of mosquito breeding habitat because the habitat on the allotment is associated with naturally occurring springs, wet meadows, and streamside riparian habitats; not developed livestock waters.

### **b. Impacts of Alternative 2**

The difference between this alternative and the portions of the allotment that will remain open to livestock grazing under Alternative 1 is that terms and conditions developed from the Bishop Resource Management Plan (BLM 1993) and the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000), under current management, were applied broadly and uniformly to the allotment. No defined implementation guidelines exist nor are they tailored to address specific vegetation communities and/or resources on the allotment, as in the proposed action. For this alternative, it is likely that BLM, the permittee and other interested public would need to work together to define allotment-specific applications of the rangeland health standards and guidelines. The overall habitat quality of the allotment will be maintained or slightly improved with implementation of the proposed terms and conditions because they are designed to help protect and sustain rangeland health, which includes wildlife habitat, and to keep the ecosystem functioning properly.

Alternative 1 could contribute to the potential for West Nile virus occurrence in the South Mono PMU by supplementing mosquito populations with livestock as a food source. However, the alternative would not contribute to the availability of mosquito breeding habitat because the habitat on the allotment is associated with naturally occurring springs, wet meadows, and

streamside riparian habitats; not developed livestock waters.

c. Impacts of Alternative 3

No impacts to sage-grouse or pygmy rabbit habitat condition would occur since livestock would be completely eliminated from the allotment. The overall habitat quality of the allotment would be expected to slightly improve with the removal of livestock. Alternative 3 could decrease the potential for West Nile virus with the removal of livestock as a food source. However, the alternative would not decrease the availability of mosquito breeding habitat on the allotment because the habitat is associated with naturally occurring springs, wet meadows, and streamside riparian habitats; not developed livestock waters.

***Threatened or Endangered Wildlife Species***

**1. Affected Environment**

Sierra Nevada Bighorn Sheep

Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*) were emergency listed as a distinct population segment (DPS) of California bighorn sheep (*Ovis canadensis californiana* at the time of listing) on April 20, 1999 (FWS 1999). The final rule to list this DPS as endangered was published on January 3, 2000 (FWS 2000). Concurrent with the proposed designation of critical habitat for Sierra Nevada bighorn sheep in July 2007, the U.S. Fish and Wildlife Service (FWS) also proposed a taxonomic revision to amend the final listing rule from a DPS of California bighorn sheep to subspecies *Ovis canadensis sierrae* (FWS 2007b). The final rule to designate critical habitat and amend the taxonomic classification for Sierra Nevada bighorn sheep was published on August 5, 2008 (FWS 2008).

At the time of emergency listing, the total population of Sierra Nevada bighorn sheep was estimated to consist of 117-122 individuals distributed among five separate areas in the southern and central Sierra Nevada in California. From 1999 to 2004, the range-wide population showed dramatic increases and by 2004 the total population was projected to include 325-350 individuals (FWS 2007a). By the summer of 2006, a minimum of 400 Sierra Nevada bighorn sheep were estimated to exist range-wide (Wehausen et al. 2007, FWS 2008). The most recent range-wide population estimates for Sierra Nevada bighorn sheep indicates the overall population appears to have stabilized at around 400 in recent years (Wehausen et al. 2008). A total of 200 adult and yearling females were documented in the Sierra Nevada during the summer of 2010 (T. Stephenson pers. comm. 2011). Despite documented population increases, the range-wide population is still below the level (305 adult females) identified as necessary for recovery in the final recovery plan (FWS 2008).

The Little Round Valley domestic sheep grazing allotment is located north of occupied Sierra Nevada bighorn sheep habitat in the Wheeler Ridge Herd Unit and east of the Convict Creek Herd Unit. The allotment does not overlap any currently occupied Sierra Nevada bighorn sheep

habitat or designated critical habitat. To date, there have been no documented occurrences of Sierra Nevada bighorn sheep within the allotment boundary.

In 2008, the population of the Wheeler Ridge Herd Unit was estimated to be 109 bighorn sheep, but experiencing a high level of mortality and shifting to a declining trend (Wehausen et al. 2008). Causes of mortality included mountain lion kills, deaths during capture, and possible old age. In 2009, three pregnant ewes were removed from the Wheeler Ridge Herd Unit and translocated to another unit (Wehausen et al. 2009). A population survey in 2009 located 75 bighorn sheep, including 27 adult females, 3 yearling females, 12 lambs, and 33 rams (T. Stephenson pers. comm. 2011).

In 2009, Sierra Nevada bighorn sheep were reported in the Mt. Stanford area of the Convict Creek Herd Unit (DFG 2009). California Fish and Game conducted surveys and found tracks and droppings that were genetically determined to be from a female bighorn. In the winter of 2010, seven Sierra Nevada bighorn sheep were photographed in the herd unit (T. Stephenson and J. Wehausen pers. comm. 2011). The Convict Creek Herd Unit now appears to be occupied.

Disease transmission from domestic sheep was identified as one of the primary threats to Sierra Nevada bighorn sheep during the listing process (FWS 1999, 2000) and in the final Recovery Plan for the Sierra Nevada Bighorn Sheep (FWS 2007a). There is a substantial body of circumstantial evidence indicating that diseases introduced by domestic sheep have likely played a role in bighorn sheep die-offs and the reduction of wild bighorn populations throughout their range (Foreyt and Jessup 1982, Goodson 1982, Coggins 1988 and 2002, Cassirer et al 1996, Martin et al 1996, Monello et al. 2001, Singer et al. 2001). Domestic sheep have been implicated in the presence of disease diagnosed in wild bighorn sheep (George et al. 2008, Jeffress 2008). A recent experimental study unequivocally demonstrated that bacterium responsible for pneumonia can be transferred from domestic sheep to bighorn sheep (Lawrence et al. 2010), but the transmission of pathogens remains extremely difficult to document under range conditions (CAST 2008) and not all bighorn sheep epizootic disease events can be attributed to contact with domestic sheep (FWS 2007a, WAFWA 2010). Still, wildlife professionals, wildlife veterinarians, and researchers generally agree on the importance of minimizing the risk of interaction between domestic sheep and wild bighorn sheep (Martin et al. 1996, FWS 2007a, CAST 2008, George et al. 2008, Baumer et al. 2009, WAFWA 2010).

Though not confirmed, disease transfer is suspected to have played a role in the historical decline and disappearance of some bighorn sheep herds in the Sierra Nevada beginning around 1870 when domestic sheep grazing was prevalent (Wehausen 1985, FWS 2007a). The analysis of Clifford et al. (2009) showed a 67% reduction in risk in the annual probability of disease transmission from domestic sheep to Sierra Nevada bighorn sheep in the Central Recovery Unit by not grazing domestic sheep during the rut, limiting grazing days by domestic sheep, and ensuring vigilant domestic sheep management. Although outbreaks may not occur frequently, the impact of a single outbreak on the population would be significant. The chance of a significant outbreak occurring increases with time, from 5% in the next five years to 50% within the next 70 years even under grazing restrictions.

In February 2009, a subgroup of the Sierra Nevada Bighorn Sheep Recovery Team (Risk Assessment Team) completed development of a risk assessment tool and released a document entitled A Process for Identifying and Managing Risk of Contact between Sierra Nevada Bighorn Sheep and Domestic Sheep (Baumer et al. 2009; Risk Assessment). Subsequent to release of that document, Croft et al. (2009 and 2010) developed additional information and recommendations to consider when interpreting and applying the information provided by the Risk Assessment Team (Application Document). The Risk Assessment provides a formula to calculate the relative risk of contact (from 0 to 403) based on the mean relative likelihood that a bighorn sheep will occupy a given allotment (MIWD, from 0 to 1.0) and the season and number of days of grazing use. Using the locations of collared bighorn rams, the Application Document found that the MIWD values for all known locations ranged from 0.833 to 1.0, implying that 0.833 can be used as a threshold, below which there is a low risk of contact between domestic and bighorn sheep and above which there is a high or unacceptable risk of contact between domestic sheep and Sierra Nevada bighorn sheep.

## **2. Environmental Consequences**

### **a. Impacts of Alternative 1**

Under this alternative, all grazed portions of the allotment would be outside of the “predicted area of potential contact” that poses a “high/unacceptable risk” of contact (<0.833 as described by Croft et al. 2010) between domestic sheep and Sierra Nevada bighorn sheep. Because grazing would occur outside the area of high/unacceptable risk, and would not occur during the Sierra Nevada bighorn sheep rut (late October-December); and because substantial infrastructure exists between occupied Sierra Nevada sheep habitat and the portions of the allotment that would be grazed, and grazing management practices to reduce and detect domestic sheep straying would be required; the probability of contact leading to disease transmission would be essentially eliminated and substantially lower than under Alternative 2 (current management).

Based on currently available information, this alternative is expected to provide for effective separation between domestic sheep and Sierra Nevada bighorn sheep. Therefore, this alternative is not likely to lead to contact and disease transference between the species and no adverse impacts to Sierra Nevada bighorn sheep are predicted. Because there is a limited possibility that domestic sheep could stray into the eastern most limits of the predicted area of potential contact, this alternative would not completely eliminate the risk of contact between the species. However, since the likelihood of contact would be essentially eliminated, domestic sheep grazing on the Little Round Valley allotment under the modified grazing permit alternative is not likely to adversely affect Sierra Nevada bighorn sheep in the Central Recovery Unit.

This alternative fully incorporates the recommendations outlined by U.S. Fish and Wildlife Service (FWS) in the final Recovery Plan for the Sierra Nevada Bighorn Sheep (FWS 2007a) that the “risk assessment tool” be used to guide future management decisions allowing use on previously identified high-risk allotments (Section II E, Recommendation 1, pages 64-65).

### b. Impacts of Alternative 2

Under this alternative, the relative risk of contact between domestic sheep and Sierra Nevada bighorn sheep is 260 on the western portions of the Little Round Valley allotment and 254 on the easternmost portions, average as compared to the other allotments analyzed in the Risk Assessment. Because grazing within the western portions of the allotment would occur within the “predicted area of potential contact” that poses a “high/unacceptable risk” of contact (<0.833 as described by Croft et al. 2010); and because contact could lead to a disease outbreak that could cause significant population mortality and potentially the loss of entire herds (Clifford et al. 2009); this is considered an unacceptable risk to the federally-listed, endangered Sierra Nevada bighorn sheep (Croft et al. 2010). Over the long-term, domestic sheep grazing on the Little Round Valley allotment under the no action (current management) alternative is likely to adversely affect Sierra Nevada bighorn sheep in the Central Recovery Unit.

### c. Impacts of Alternative 3

No impacts to Sierra Nevada bighorn sheep would occur since no livestock grazing would be permitted on the allotment. The potential for contact and subsequent disease transmission between domestic sheep and Sierra Nevada bighorn on the allotment would be eliminated.

## **V. WILD HORSE AND BURROS**

None of the alternatives would have any effect on wild horses and burros as there are no wild horse and burro populations or designated wild horse herd management areas occurring on the Little Round Valley allotment.

## **W. CUMULATIVE IMPACTS**

### *Introduction*

Current conditions in the project area result from a multitude of natural events and human actions that have taken place over many decades. 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 by “adding up” 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 actions.” (CEQ Memorandum ‘Guidance on the Consideration of Past Actions in Cumulative Effects Analysis’ June 24, 2005). By comparing the “Alternative 2” alternative (current condition) to the action alternatives, we can discern the

“cumulative impact” resulting from adding the “incremental impact” of Alternative 1 to the current environmental conditions and trends. The geographic scope of the cumulative impact analysis for this environmental assessment encompasses the public lands administered by the Bishop Field Office. This geographic scope was chosen because of the unique ecotone of public lands composing two distinct habitat types of Great Basin and Mojave Desert rangelands along the eastern Sierra front range. It is expected that the geographic scope of impacts would be confined to this region.

### ***Regional Impacts***

At a regional level, numerous resource disturbing activities in the Owens Valley and throughout the Bishop Field Office area have created impacts similar to or greater than livestock grazing. These activities include paved and unpaved road development, Off Highway Vehicle (OHV) activities, residential and commercial development, and fire.

The development of roads and trails throughout the region originates from the area’s historic settlement at the turn of the twentieth century when access was needed to develop the area’s resources and transport goods/services. Settlers, miners, ranchers, merchants, etc. developed a region of small communities and road networks to meet daily sustenance needs. Throughout the latter 20<sup>th</sup> century, the region evolved from an agrarian economy to its present day tourism. This altered traditional access use from survival and necessity to one that became recreation based, mostly motorized, although mountain biking, hiking and horseback riding may use similar routes. The thousands of miles of paved and unpaved roads in the region tend to be permanent conversions of sites and constitute a total loss of the site productivity. Associated infrastructure needs i.e. power lines, rest areas, etc. expand the permanency and loss of rangeland habitat. Recreation use, such as OHV activities can be short duration, but are generally repeated throughout the year reflecting the tourist value. Sometimes unauthorized routes are created near the rural communities by horses and/or vehicles.

The BLM and the Inyo National Forest have embarked on motorized access efforts throughout the 1990s to implement route designations to manage for environmental issues and recreation needs. These efforts have led to localized rehabilitation projects improving various habitats and scenic vistas, mostly on BLM land. Additionally, BLM works with the counties to reduce and control private subdivision proliferation and trespass onto adjoining public lands.

The dozen or so communities that occupy the Bishop Field Office area have generally been stable and small, although the Mammoth Lakes community has built high end homes and increased their housing density in the last decade. Obviously, these permanent alterations have irreversibly committed land to housing development, fragmenting plant/animal habitat, altering scenic vistas, etc. Overall, the greatest potential development impact to habitat would occur from housing development on remaining scattered private land tracts throughout the region. Increased property values and a housing shortage have created a strong real estate market in the eastern Sierra. This has prompted landowners to pursue subdivision development, reducing small acreages of habitat in several locations.

Road maintenance, vehicle transport, construction activities and livestock use operations are common vectors or site modifications that can move invasive/non-native species. Potential long-term cumulative impacts of Alternative 1 if weed densities increase, include a reduction in native plant cover and vigor (below and above ground production), increased erosion leading to increased germination of invasive weed seed (Evans and Young 1972), a reduction in mychorrhizal populations, and increased fire frequency. Eastern Sierra plant communities have experienced increased weed invasions in the past years due to increased precipitation levels and likely increases in atmospheric nitrogen deposition (Dukes and Mooney, 1999). If this trend continues without commensurate control methods including using early season grazing (pre-seed set), weed proliferation could be exacerbated.

Past fire suppression has been effective in limiting the spread of fire throughout the region. As a result, vegetation (e.g. sagebrush) would remain or continue towards even-age structure and outside the range of natural variability. Some vegetation types (e.g. pinyon) may continue to encroach into other cover types and the diversity of some species (e.g. grasses) may become lower.

Unpredicted wild or arson fire can have large-scale impacts to the environment, wildlife, and to persons that use public land. These impacts include permanent changes to vegetation communities due to slow fire recovery, increasing non-native invasive populations, and loss of wildlife habitat. Fire that occurs in grazing allotments has the potential to devastate the vegetation and forage base for livestock. Therefore, BLM may temporarily close an allotment until determined appropriate for livestock grazing. If this were the case, livestock operators may be forced to find alternative forage, affecting their economic operations adversely depending on local circumstances.

The addition of Alternative 1 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.

### ***Site-Specific Impacts***

For the Little Round Valley allotment in this assessment, grazing issues and impacts have been minimal due to low livestock use and no facilities to attract and concentrate the use. The low occurrence of sensitive resources such as riparian areas, etc., reduces the likelihood of future adverse impacts as well.

The physical structure and ecological function of plant communities on the allotment are expected to maintain or improve resulting from the lower vegetation utilization standard on key forage species. Improved condition of native bunch grasses and forbs would provide an increased forage base for rodents and passerine birds across the allotment. Populations of these smaller animals should increase in average to above average precipitation years which provide an improved food base for predators. Habitat conditions, both forage quality/quantity and plant

physical structure for large mammals, would be improved from the current situation.

Within the allotment, wild land fires and other natural events changing landscape conditions are expected to continue. Grazing permits would be adjusted to maintain rangeland health standards when fire, drought, and other uncontrollable natural events require it.

#### Sierra Nevada Bighorn Sheep

Many of the grazing allotments considered high-risk to Sierra Nevada bighorn sheep have been or are in the process of being closed, substantially decreasing the risk of contact with domestic sheep and subsequent disease transmission range-wide. Alternatives 1 and 3 would contribute to a decreased risk of disease transference from domestic sheep to Sierra Nevada bighorn, with alternative 3 providing the greatest increase in security for this federally-listed, endangered species. However, until domestic sheep grazing is eliminated from private lands in other parts of the Sierra Nevada bighorn sheep's range, the risk of contact and transference of disease remains relatively high, decreasing the overall contribution of these alternatives to the cumulative potential benefit to Sierra Nevada bighorn sheep.

#### Wildlife, including Sensitive Wildlife Species

Alternatives 1, 2, and 3 would maintain and slightly improve habitat conditions for Greater Sage-grouse, pygmy rabbit, mule deer, and a host of other wildlife species on the allotment; however, the overall small size of the allotment relative to the amount of available habitat would not significantly contribute to the cumulative benefit to the species.

#### ***Conclusion***

The addition of Alternative 1 to the existing environment at the site-specific allotment locations addressed in this EA and within the eastern Sierra region as a whole would not contribute to significant impacts on the human environment. The cumulative impacts of conducting allotment assessments and issuing a grazing permit for this EA's allotment with the proposed terms and conditions would help to maintain or improve rangeland health conditions incrementally and positively. In effect, the addition of Alternative 1 would beneficially improve rangeland health conditions at a local level and further BLM's objective to complete its rangeland condition improvement strategy for the remainder of public lands as well. As a result, improvements in plants and animal habitat, water quality, cultural resources, etc. would occur at local and regional levels creating overall positive cumulative impacts.

## **Chapter 4: CONSULTATION AND COORDINATION**

### ***Livestock Operator Consultation, Cooperation, and Coordination***

The following timeline summarizes actions BLM has taken to consult, cooperate, and coordinate with affected livestock operators on the Standards and Guidelines:

On January 27, 1997, the Bishop Field Manager sent a letter to the permittee that grazes the allotment. The letter stated, “as a requirement of implementing the Bureau’s Healthy Rangeland Standards, regulations require that mandatory terms and conditions and other terms and conditions (43 CFR Subpart 4100, Section 4130.3-1 and Section 4230.3-2 respectively) are to be included in all permits.” The letter also stated, “Another requirement of the regulations are Standards and Guidelines (S&Gs). As of this date, the BLM in California has not completed development of statewide S&Gs and has requested that the Secretary of the Interior grant a 6 month extension to allow their completion and adoption. Therefore the Fallback Standards and Guidelines, as stated in the regulations, will not go into effect on February 12, 1997 if the extension is granted.”

On January 14, 1998, the Bishop Field Manager sent a letter to the permittee who grazes the allotment. It stated, “enclosed is a copy of the National Fallback Standards and Guidelines (S&Gs). These S&Gs will remain in effect until the California BLM Healthy Rangelands Environmental Impact Statement is completed in 1998.” Enclosures with the letter included Background, Fundamentals of Rangeland Health, S&Gs Basic Concepts, and Fallback S&Gs.

On December 11, 2000, the Bishop Field Manager sent a letter to the permittee who grazes the allotment and included a copy of the Central California Standards and Guidelines. The letter invited the permittee to two scheduled meetings to ask any questions or present concerns they may have had with the Central California Standards and Guidelines.

### ***Personal Communication***

Belenky, Lisa T., Staff Attorney, Center for Biological Diversity (CBD). January 30, 2007, Ms. Lisa Belenky requested by telephone to be notified when environmental assessments for grazing permit renewals were posted on the Bishop BLM website for public review. On May 15, 2007, BLM spoke with Ms. Belenky of CBD via telephone. Ms. Belenky requested that BLM send her all proposed decisions on the grazing allotment renewals from the Bishop Field Office via email. On June 11, 2007, BLM received a phone message from Ms. Belenky. Ms. Belenky again requested to be informed when EAs are posted on the BLM website for public review. Ms. Belenky stated she would specifically request proposed decisions on particular allotments to be sent to her. BLM replied via email to Ms. Belenky, acknowledging her requests. However Ms. Belenky did not provide BLM with a listing of specific allotments that CBD was interested in becoming an “interested public” in accordance with 4100.5. On January 18, 2008, per Ms. Belenky’s request, BLM sent her via postal mail a copy of the Bishop RMP 1993, RMP EIS

Volume I & II, Bodie-Coleville Draft Wilderness Recommendation Final EIS 1987, and the Vehicle Access Strategy Plan.

Burke, Thomas D. 1998. Owner and principal investigator of Archaeological Research Services, Inc. BLM and Thomas discussed grazing impacts to archaeological resources. Refer to Chapter 3, Cultural Resources for further information and results.

California Native Plant Society, Bristlecone Chapter. 1999. BLM invited the Bristlecone Chapter to the Rangeland Health Assessments that began in 1999. Members from the Chapter participated at different times between 1999 through 2003. BLM and Bristlecone Chapter also discussed livestock grazing and invasive, non-native species.

Connor, Michael J. California Science Director, Western Watersheds Project (WWP). On February 29, 2008, Mr. Starosta responded via e-mail to Mr. Connor of WWP confirming the addition to the BLM list of interested public. Mr. Starosta sent Mr. Connor a link to the BLM Bishop website to locate the total list of grazing allotments. On March 6, 2008, Mr. Connor sent a follow-up letter to the February 28, 2008 letter and requested to be added to the list of “interested public” for all grazing allotments and grazing management decisions from the Bishop Field Office.

Echenique, Joe. 2007 and 2010. Livestock Operator. On December 5, 2007 and again on March 31, 2010, BLM and Joe had a meeting to discuss the environmental assessment process, proposed terms and conditions, and mitigation measures for Sierra Nevada bighorn sheep. Joe discussed livestock grazing on the Little Round Valley allotment and explained the livestock management for the allotment.

Milovich, George. 1999 through 2007. Agricultural Commissioner Inyo-Mono Counties. BLM and George discussed the process for issuing the full processed 10-year grazing permits. Also, BLM explained the general changes in terms and conditions to the expiring grazing permits due the incorporation of the Central California Standards for Rangeland Health and Guidelines for Livestock Grazing (BLM 2000). Annual Crop and Livestock Reports were obtained annually by visiting the Counties of Inyo and Mono Agriculture Department located in downtown Bishop.

Parker, Jim and Slates, Mike. 2000 and 2007. Great Basin Unified Air Pollution Control District (GBUAPCD). BLM and Jim discussed the environmental assessment (EA) livestock grazing authorizations to be conducted in the future. BLM received language from the GBUACD to be included within the EA’s along with maps of the federal non-attainment/maintenance areas. BLM received an updated federal non-attainment/maintenance area map from Mike in 2007.

Regelbrugge, Jon. 2010. Inyo National Forest (INF) District Manager of Mammoth Ranger Station. On March 31, 2010, BLM, Joe Echenique, and Jon had a meeting to discuss the recently completed environmental assessment and permit for the INF Rock Creek allotment. Joe explained the livestock management for the Little Round Valley allotment and the INF Rock

Creek allotment.

***Native American Communities***

There are 11 Native American communities in the Eastern Sierra region, eight of whom are federally recognized, which reside near or inhabited aboriginal homelands.

During the initialization of the allotment assessment process in FY 1999, seven Native American communities residing within the area administered by the Bishop Field Office - Bridgeport, Mono Lake, Benton, Bishop, Big Pine, Ft. Independence, and Lone Pine - were contacted by letter (January 11, 1999), with a follow-up phone call, to determine if there were any Native American concerns with the grazing program and if they would like to participate in the allotment assessment process. The communities either said that there were no impacts or decided not to comment/participate. None indicated a desire or need to participate in the assessment process. (Consultation log available for FY 1999)

Each of the local tribal offices was contacted again by phone on 11/30/00 and the letter of January 1999 was sent to them again (fax). Several phone calls were made to each Tribe to follow up after they received the letter. Various individuals stated some general concerns which are addressed in Chapter 3, Native American Cultural Values; but again, they stated that there are no direct specific impacts to their communities or to their community members by the grazing program. (Consultation log available for FY2001)

***Environmental Assessment Preparers***

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Martin Oliver	Botanist
Laurie Morrow	GIS Coordinator
Rich Williams	Outdoor Recreation Planner
Greg Haverstock	Archeologist
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## Chapter 5: REFERENCES AND MAPS

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