

ENVIRONMENTAL ASSESSMENT  
LIVESTOCK GRAZING AUTHORIZATION

DOI-BLM-CAN070-2009-0006-EA

NUT MOUNTAIN ALLOTMENT

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## CHAPTER 1: INTRODUCTION

This Environmental Assessment (EA) is prepared to disclose and analyze the environmental consequences of re-authorizing a livestock grazing permit/lease for 10-years as proposed on the Nut Mountain Allotment. The EA is a site-specific analysis of potential impacts that could result with the implementation of one of the alternatives. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), as well as other laws and policies affecting the alternatives. If the field manager determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a grazing decision will be issued along with a FONSI statement, documenting the reasons why implementation of the selected alternative would not result in “significant” environmental impacts.

### *Background*

The Nut Mountain Allotment is located in northwestern Washoe County Nevada at T 41- 43 N, R 19 - 21 E; and encompasses 74,721 acres public lands and 6,195 acres private lands. Elevation ranges from 5,400 and 7,000 feet; precipitation varies from 8 to 16 inches depending on elevation. The Massacre Rim Wilderness Study Area (WSA) and the Massacre Rim Area of Critical Environmental Concern (ACEC) are located in the northern portion of the allotment. The southern-most portion of the allotment includes 11,915 acres of the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area (NCA); and 3,505 acres of the East Fork High Rock Canyon Wilderness Area (see Map 1).

Two Herd Management Areas (HMAs) are within the boundaries of the Nut Mountain allotment. The Nut Mountain HMA lies entirely within the allotment south of NV 8A; a portion of the Bitner HMA lies within the allotment north of NV 8A (see Map 2). The Appropriate Management Level (AML) for Bitner HMA is 20 horses, and the AML for Nut Mountain is 55 horses.

The grazing permit for the Nut Mountain Allotment authorizes 815 cattle to utilize 4893 (Active) AUMs from April 16 to October 15 annually. The Nut Mountain Allotment is an “I” (Improve) category allotment, meaning that it has the highest priority with large amounts of public land, significant resource and grazing management issues that require attention, along with a high potential for improvement in range condition.

## *Purpose and Need for the Action*

The purpose of the action is to consider whether to authorize grazing on the Nut Mountain Allotment. If authorized, grazing would be in accordance with 43 CFR 4100 and consistent with the provisions of the Taylor Grazing Act, Public Rangelands Improvement Act, and Federal Land Policy and Management Act. The action will also ensure that all authorizations implement provisions of, and are in conformance with the Record of Decision for the Surprise Resource Management Plan approved in April 2008, and the Black Rock Desert – High Rock Canyon Emigrant Trails National Conservation Area (NCA) Resource Management Plan of July 2004.

The current permit was issued under the Appropriations Act, and the BLM has been directed to renew and reissue all 10-year public land livestock grazing permits. This renewal process requires that BLM first determine whether current permitted grazing use conforms to the Surprise and NCA RMPs and the Standards for Land Health and Guidelines for livestock management (S&G determination). If current management does not conform to these mandates, then alternatives would be developed and analyzed to meet these requirements, along with any alternatives raised during scoping.

The Rangeland Health Assessment (RHA) and Determination was completed in February 2009. The Nut Mountain Allotment Land Health Standard Determination found that riparian, stream health and biodiversity standards are not being met. Specific resource issues resulting in this determination were identified in the Mountain Pasture and Hanging Rock use area. Current permitted livestock grazing is considered a contributing factor in failure to meet the standards. This EA will review the environmental and socio-economic impacts of alternatives considered, and determine which grazing changes may be needed. The final grazing permit issued may be dependent upon management changes and the number and type of rangeland developments allowed, including fencing, exclosures and water developments. The BLM may select several different management strategies as means to address standard failures.

The Nut Mountain RHA Determination is incorporated into this EA by reference, and a copy can be found at the Surprise Field Office, and is posted on the Surprise Field Office web page at [http://www.blm.gov/ca/st/en/fo/surprise/grazing\\_permit\\_renewals.html](http://www.blm.gov/ca/st/en/fo/surprise/grazing_permit_renewals.html).

BLM has considered the following criteria as the basis for re-issuance of grazing permits:

- What grazing system(s) and level(s) of grazing intensity should be authorized, to promote sustainable ranching operations and healthy rangelands?
- What additional rangeland development projects, if any, are necessary to promote sustainable ranching operations and healthy rangelands?
- How will BLM grazing management practices and rangeland development affect habitat quality for wildlife management importance such as greater sage-grouse?

- How will BLM grazing management practices and rangeland development affect the wild horse Nut Mountain and Bitner Herd Management Areas?

### ***Scoping and Issues:***

The public was first notified of the project in January 2008, and a scoping letter was sent to 66 interested publics of record on January 17, 2008. Comment letters were received from Western Watersheds Project and Nevada Department of Wildlife (NDOW). Permittees offered verbal comments during the 2009 annual grazing meeting.

BLM met with local tribal groups to discuss this grazing permit renewal and other projects being proposed.

Washoe-Modoc Experimentally Stewardship Program (ESP) and Northeastern Resource Advisory Committee were provided updates as to the progress of the grazing permit renewal for the Surprise Field Office.

Following the completion of the Land Health Determination, a second scoping letter/notice of proposed action was sent out in late February to notify the interested publics of our finding and to provide any additional input.

A Technical Review Team (TRT) was established by ESP to review resource conditions on the allotment as well as findings from the 2008 Rangeland Health Assessment. Alternatives for mitigating impacts to riparian areas, meeting rangeland health standards, and future grazing management were developed in consultation with the TRT.

Based on issues identified during scoping and regulatory requirements, three alternatives were developed which are analyzed in this EA.

### **Issues**

The following issues/concerns were raised by the public, state agencies, and TRT in response to the Notice of Proposed Action, and scoping:

#### **Wild Horses**

Comment: During scoping and the TRT process the permittees, NV Commission for the Preservation of Wild Horses, and NDOW raised concerns that the resident wild horse population in the Nut Mountain HMA is far higher than the AML as result of ingress from the neighboring Bitner HMA. This situation is contributing to significant impact on riparian habitats in the allotment, and that attainment of riparian objective is not possible with yearlong wild horse use. NDOW also believes the wild horse habitat suitability needs to be re-examined in consideration

of the limited number of adequate public water sources in the HMA. There are concerns that the current and past wild horse population is adversely affecting riparian habitat for other wildlife species.

One commenter questioned the inequality of permitted livestock AUMs when compared with the wild horse AML, and that the AML needs to be re-examined by the BLM.

Response: The 1981 Cowhead-Massacre Management Framework Plan established several goals and decisions to establish the current management units of Bitner and Nut Mountain HMAs and Bitner and Nut Mountain Allotments. These areas are separated by drift fences and natural barriers that allow for the natural movement of wild horses between HMAs during periods of inclement weather. The drift fences also have “horse gates” that are opened by BLM during the winter months when cattle are not authorized. There may be instances where horses have drifted into the Nut Mountain Allotment in the winter and not moved back to the Bitner HMA when snow cover recedes.

Both HMAs were last gathered in 2007. Bitner HMA population is slightly above AML, and Nut Mountain HMA is slightly under AML. (Refer to the Wild Horse Affected Environment section for additional information). The re-examination of the AML is outside the scope of this EA and this issue should be addressed by analyzing the AML of both HMAs in the future.

### **Monitoring and Resource Objectives**

Some members of the TRT suggested that new key monitoring areas be established to measure progress towards meeting Rangeland Health Standards and resource objectives including objectives for bitterbrush. Monitoring plans also need to be implemented that would differentiate cattle and wild horse grazing impacts.

Response: Monitoring and resource objectives are included in the Proposed Action.

### **Grazing Management**

Revision of the existing grazing system and establishment of an interim grazing system until projects are implemented was also recommended.

Response: The Proposed Action includes an interim and final grazing system.

### **Wildlife Habitat**

The EA should include utilization standards for upland sage-grouse breeding habitat and pygmy rabbit habitat.

Response: Wildlife habitat is discussed in environmental analysis section for wildlife/threatened and endangered species.

## **Range Improvement Projects**

Range improvement recommendations from the permittee included: Cavalry Camp Seeding sagebrush removal (beating, spray) for the purpose of increasing grass production; construction of a larger gathering field near Massacre Corrals to facilitate gathering and shipping of cattle.

Response: These projects are outside the scope of this EA, which would be addressed by separate site specific environmental review. Projects proposed as stated in the proposed action are essential to implement the proposed livestock management and to progress towards achievement of rangeland health standards.

### **Relationship to Statutes, Regulations, and Plans:**

Agreement between State Director and State Historic Preservation Officer Protocol Amendment for Renewal of Grazing Permit and Leases.

The BLM has explicit responsibility to manage cultural resources on public lands consistent with applicable procedures and agreements. To comply with the National Historic Preservation Act the BLM is required to assess the condition of cultural resources on each grazing allotment prior to the renewing of grazing allotment permits. In August 2004, the State Director, California Bureau of Land Management, the California State Historic Preservation Officer (SHPO) and the Nevada SHPO addressed the issue of the National Historic Preservation Act (NHPA) Section 106 compliance procedures for processing grazing permit lease renewals for livestock as defined in 43 CFR 4100.0-5. The State Director and the SHPOs amended the 2004 State Protocol Agreement between California Bureau of Land Management and The California State Historic Preservation Officer with the 2004 Grazing Amendment, Supplemental Procedures for Livestock Grazing Permit/Lease Renewal. This amendment allows for the renewal of existing grazing permits prior to completing all NHPA compliance needs as long as the 2004 State Protocol direction, the BLM 8100 Series Manual Guidelines, and specific amendment direction for planning, inventory methodology, tribal and interested party consultation, evaluation, effect, treatment, and monitoring stipulations are followed.

Each grazing allotment assessment will be completed on a specified date. The results of the assessments may be used to modify grazing permits. If cultural resources are identified as receiving impacts as a result of livestock management or grazing on a specific allotment, the stipulations of the grazing permit will be modified to reflect compliance with the Bureau's responsibility to manage and protect cultural resources. Consultation regarding affected cultural resources will take place with the appropriate Native American tribe and the California and/or Nevada State Historic Preservation Office(s). All cultural resources will be afforded protection consistent with law and policy, including appropriate mitigation measures.

## ***Wilderness***

The Wilderness areas are managed primarily to preserve natural conditions. The Wilderness Act prohibits commercial enterprises, permanent and temporary roads, the use of motor vehicles, motorized equipment, or mechanical transport, landing of aircraft, and placement of new structures and installations. Each of these prohibitions are subject to special provisions provided both in the Wilderness Act and the Act designating the area as wilderness.

For allotments within wilderness areas, the management provisions of the 1964 Wilderness Act and/or the enabling legislation for the wilderness area shall apply. Congress provided additional guidance for managing livestock within wilderness areas through the Congressional grazing guidelines found in the 1980 Colorado wilderness legislation. Regulations to manage livestock in wilderness are found in 43 CFR 6300.

For allotments that contain Wilderness Study Areas, livestock management must be consistent with the direction found in the Interim Management Policy for Land Under Wilderness Review H-8550-1.

## ***Plan Conformance:***

### **Determination:**

The proposed action is in conformance with the Surprise Resource Management Plan (RMP), and as adopted by the Record of Decision (April 2008), and the NW Nevada and NE California Rangeland Health Standards and Guidelines for Livestock Grazing. The Standards and Guidelines for Livestock Grazing can be found on the Surprise Field Office web site.

The Proposed Action is also in conformance with the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Resource Management Plan (July 15, 2004).

### **Rationale:**

The proposed action would occur in an area identified as available for livestock grazing in the Resource Management Plans and is consistent with the land use decisions and resource management goals and objectives.

The Surprise Field Office RMP applicable goals and objectives for livestock grazing as described on pages 2-34 to 2-35 are as follows:

- 1) Sustainable, ecologically sound, and economically viable livestock grazing opportunities would be provided, where suitable, in the Surprise Field Office management area,
- 2) Adequate forage would be produced to support sustainable levels of livestock grazing where

compatible with objectives for other resources and resource users,  
3) Continue to modify and adjust grazing management within individual grazing allotments to ensure that a vigorous plant community is sustained in combination with livestock grazing.

Black Rock Desert – High Rock Canyon Emigrant Trails National Conservation Area (NCA)  
Resource Management key decisions, goals, and objectives include (page 2-23):

- To promote healthy sustainable rangeland ecosystems and maintain or restore public rangelands consistent with Land Health Standard indicators in conformance with the procedures in the Rangeland Health Standards handbook (H-4180-1).
- To provide forage suitable for livestock on a sustainable basis for the foreseeable future, consistent with other resource objectives and with public land use allocations.

Vegetation Objectives, page 2-19

- To consider the maintenance and enhancement of natural ecological processes as the dominant factor in determining the composition and distribution of plant communities in the Wilderness Zone.
- To retain sagebrush communities on at least 75 percent of the potential sagebrush habitat in the planning area with sagebrush cover sufficient to support sagebrush-dependent wildlife species.

Grazing Management, pages 2-23 to 2-25

- The current livestock grazing use authorizations will be maintained until evaluations identify the need for adjustments of livestock grazing practices to meet Land Health Standards or other objectives. Changes in livestock management will conform to regulations and land use plans, monitoring, field observations, ecological site inventories, or other BLM acceptable data will support management changes (GRAZ-1).
- Existing authorized structural rangeland projects will be maintained where beneficial to resource values. New rangeland projects may be developed when consistent with achieving land Health Standards and the objectives of the plan. Projects no longer needed to meet livestock and other resource management objectives will be removed and the sites restored (GRAZ-6).
- All spring developments will be modified where necessary to maintain, improve or restore the biotic integrity of the spring system in accordance with BLM Technical Reference 1737-17. These spring developments will also be modified to provide water for wildlife at ground level adjacent to the spring source (GRAZ-7).
- Authorizations of grazing use including multiple use decisions and activity plans will incorporate specific grazing management prescriptions (covering, but not limited to, timing, duration, intensity, and frequency of livestock use) that an evaluation showed will provide the best opportunity to meet objectives of the plan and the applicable Land Health Standards (GRAZ-8).
- Adjustments in livestock and /or wild horse and burro forage will be implemented in an

equitable manner on the basis of monitoring data or site-specific resource evaluations. If monitoring data indicate that impacts on resources are occurring as a result of livestock, or wild horse and burro use, appropriate adjustments will be made to the specific class of use. In the absence of monitoring data, adjustments in available forage will be proportional to the applicable livestock active animal unit months (AUM) and wild horse and burro AMLs (GRAZ-9).

***Rangeland Health***

The Rangeland Health Assessment and Determination was completed in February 2009. Areas of allotment that meet/do not meet the Secretary of the Interior Approved Rangeland Health Standards are as follows:

**Table 1. 1 Achievement of Rangeland Health Standards Nut Mountain Allotment**

Rangeland Health Standard	Meets Standard	Does Not Meet Standard	Current livestock are a causal factor for not meeting Yes or No	Remarks (locations, etc.)
<b>Upland Soils</b>	✓			<b>Data from five representative Upland Health Assessments rated Soil/Site Stability as stable and Hydrologically functioning. Transect data collected at the upland health assessments support the determination that the allotment has an abundance of total cover to protect the soil from wind and water (raindrop and surface flow) impacts and the Soil Stability ratings are well within the range of variability for the reference sites.</b>
<b>Stream Health</b>		✓	<b>YES</b>	<b>The Standard for Stream Health is met in the two lower reaches and not met in the upper reach of Hanging Rock Creek, the only perennial stream within the allotment. Streambanks are either deeply incised or shallow with little or no vegetation and sediments are not being trapped by vegetation. Livestock and wild horse grazing is a contributing factor to these conditions. The functioning lower reaches have diverse vegetation that is shading the stream, protecting streambanks from high flows and creating undercuts that further shade the stream and provide hiding cover for fish.</b>

Riparian/ Wetland	✓	✓	YES	The Standard for Riparian Wetland Areas is not met. Rock Spring was functioning at risk with an upward trend. The middle and lower reaches of Hanging Rock Creek are properly functioning. The upper reach of Hanging Rock Creek is functional at risk with a downward trend. Miller and Lux Spring and Trough Spring were non-functional. Livestock and wild horse grazing is a contributing factor to these conditions. Riparian areas which were not enclosed by fences within the allotment are showing negative impacts from cattle and wild horse grazing due to heavy use and adjacent water developments.
Water Quality	✓			One water quality station for the allotment is located at the spring source at the head of Hanging Rock Creek. Baseline water quality was established in 2002 and 2003 and is currently meeting the State Numeric and Narrative Standards, Beneficial Use needs and BLM Standards. Neither surface water nor groundwater within the allotment has been listed for exceeding State water quality standards.
Bio- diversity		✓	YES	The Standard for Biodiversity is not met. Riparian areas outside of exclosures observed in 2008 are being negatively impacted by current livestock and/or wild horses. These sites have not improved since the 1980s and are not providing important food, cover, or nesting substrates for wildlife. Livestock and wild horse grazing is a contributing factor to these conditions. Perennial water at Miller and Lux, Rock Spring, and Trough Spring occur within about 1.25 miles of each other and about 3.5 miles from upper Hanging Rock, all in the Mountain Pasture. These riparian areas are important in terms of providing season-long water and wildlife habitat since stock reservoirs in the general area are not considered reliable. Upland areas of the allotment generally have good cover and diversity of shrubs and forbs but some sites are lacking native bunchgrasses. This condition is a result of historic grazing not current grazing practices. This conclusion is based on data collected from bitterbrush and upland utilization monitoring and documented actual use records in the Hanging Rock Use area, Upper Field and Mountain Pastures.

## CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

### *Alternative 1 - Proposed Action*

The Proposed Action is to authorize cattle grazing on the Nut Mountain Allotment with a 10 year livestock grazing permit with applicable provisions as discussed further in this section. This action also includes measures (range improvement projects) which are essential to mitigate impacts from cattle and wild horses to riparian areas on public land. An interim grazing system would be implemented to prevent further impacts to affected riparian areas until the essential projects are complete. Once the projects are complete, a rest/rotation grazing system will be put in place along with more intensive herding to improve livestock distribution throughout the allotment and decrease cattle concentration in areas that have frequently been heavily grazed.

Terms and conditions, range improvements, and monitoring requirements are as follows:

#### A. Mandatory Terms and Conditions under the Proposed Action

**Table 2.1 Authorized Use Summary**

Allotment	Number of Livestock	Kind	Class	From	To	AUMs
Nut Mountain	815	Cattle	Cow	4/16	10/15	4893

#### B. Grazing Management

The proposed rest/rotation system will create three (unfenced) use areas within the Mountain Pasture. The system would provide rest on alternate years for all pastures/use areas except the Mountain (North) and Cavalry Camp Seeding. Furthermore, the proposed grazing system would now provide rest to Mountain East and West instead of deferred use as in the previous system. Additionally, the new system would shorten the season of use in the Hanging Rock and Mountain East use areas to 30 days. Table 2.2 displays the proposed grazing system.

**Table 2.2 Proposed (Final) Grazing System (once essential range improvements are constructed)**

Use Area/Pasture	YEAR 1		YEAR 2	
	No. of cattle	Use dates	No. of cattle	Use dates
Upper Field	100	5/16 – 6/30		REST
Mountain (north)	715	5/16 – 6/30	815	8/1 – 8/30
Mountain (east)		REST	815	7/1 - 7/30
Hanging Rock		REST	815	6/1 – 6/30

Mountain (west)	815	7/1 – 8/31		REST
Massacre Lakes	815	9/1 – 10/15		REST
Cavalry Camp Seeding	815	4/16 – 5/15	815	4/16 – 5/30 9/1 - 10/15

C. Interim Grazing System

**Table 2.3 Interim Grazing System**

Use Area/Pasture	YEAR 1		YEAR 2	
	No. of cattle	Use dates	No. of cattle	Use dates
Upper Field	100	5/16 – 6/30		REST
Mountain North	715	5/16 – 6/30	815	8/1 – 8/30
Mountain East		REST	815	7/1 - 7/30
Hanging Rock		REST	815	6/1 – 6/30
Mountain West	815	7/1 – 7/31		REST
Massacre Lakes	815	8/1 – 9/15		REST
Cavalry Camp Seeding	815	4/16 – 5/15 9/16 – 10/15	815	4/16 – 5/30 9/1 - 10/15

D. Other Terms and Conditions

1. All use will be in accordance with the Field Office Manager’s Final Decision. Billing will be based on actual use reports submitted 15 days following the last authorized take off date for your permit. Actual use report will be submitted no later than October 30. If no actual use report is submitted, permittee(s) will be billed and liable for their full permitted active use.
2. An annual pre-season livestock turn-out meeting will be held with the permittee(s) to discuss previous years use and document current years grazing schedule. Livestock may not be turned out before this meeting has been conducted without prior written approval from the authorized officer.
3. Flexibility includes adjustments to livestock numbers; however, adjustment may not exceed permitted active use and must retain permitted season of use in any given pasture.
4. Any adjustments in move dates or numbers must be communicated to BLM within 7 days of the change and shall be recorded accurately on the actual use report.

5. Additional adjustments in livestock use may be required by BLM annually based on utilization, drought, water availability or other conditions.
6. During the interim management period, use areas in the Mountain Pasture must be 95% clean by the move date and 100% clean within 5 days of the move date. For movements of livestock between the Upper Field, Massacre Lakes and Cavalry Camp Seeding pastures, 95% of livestock must be removed within 5 days of the move date and 100% removed within 10 days of the move.
7. Once essential projects are constructed, use areas in the Mountain Pasture and between the Mountain Pasture and the other pastures must be 95% clean of livestock within 5 days of the move date and 100% clean within 10 days of the move.
8. To improve livestock distribution, salt and mineral supplements may be used in the allotment. These must not be located closer than ¼ mile from any natural or artificial water source, archaeological site, aspen stand or riparian area.
9. Protein supplements are not authorized on the allotment.
10. Range improvements assigned to you must be maintained prior to livestock turnout and inspected periodically throughout the period of scheduled use to ensure livestock are restricted to those areas they are scheduled to be in.
11. Maximum allowable use for key upland native grasses is 60% in all use areas and pastures except Hanging Rock use area which is 40%.
12. No livestock may be placed at either of the unfenced public springs or the upper reach of Hanging Rock Creek.
13. During the interim management period, permittee shall continue to ride and check the use areas in the Mountain Pasture to ensure no livestock drift either into areas previously used or areas not yet scheduled for use.
14. Use areas in the Mountain Pasture including the upper reach of Hanging Rock Creek should be ridden and checked a minimum of three times weekly to remove any drifting cattle. Cattle found in the creek should be removed from the allotment to avoid recurrent use.
15. Permittee will keep track of checks he makes during the entire Mountain Pasture use period and shall provide record of these compliance rides when he turns in his actual use report at the end of the grazing season.

16. Permittee is responsible for determining when annual allowable use has been reached and for moving livestock into the next scheduled use area or off the allotment within five days. Permittee is advised that allowable use may be reached before the scheduled move date and should act accordingly. BLM will monitor annual performance at the end of the grazing season.
17. During the interim management period, if monitoring determines that **livestock use** exceeds either the stubble height or utilization objectives in public riparian areas and the Mountain West and Hanging Rock use areas, Permittee and BLM will determine appropriate changes in the next years scheduled use to ensure achievement of objectives. If agreement cannot be reached, scheduled use will be reduced by 1 week.
18. Gates into adjacent pastures may be opened (no more than 2 days prior) to facilitate livestock movement to the next scheduled use area if the permittee determines utilization levels are approached or exceeded, or in preparation of normally scheduled moves. Gates may not be opened more than 2 days prior to these scheduled moves. The scheduled period of use (number of days) may not be exceeded in any pasture or use area as a result of early moves.

#### E. Range Improvements

Only those projects considered essential to the implementation of the final grazing system are included. All projects would include SOPs for construction and maintenance; include thresholds for continued relevance of the analysis (example; adjustments in boundaries or footprints not larger than 500 feet are considered in this alternative to still be within the scope of the action and the subsequent analysis.

The following changes (new improvements) are essential to the grazing system and would be implemented as part of this alternative:

- **Hanging Rock Creek riparian protection fence**

Most of Hanging Rock Creek flows through fenced private land on the allotment. A small unfenced public portion of the upper reach is receiving heavy impacts from wild horses and cattle.

The project would consist of approximately ¼ mile of barbed wire fence (built to BLM specs) between two 40 acre parcels of private land (refer to Map 3). A solar pump would deliver water from the creek through a pipeline to a trough outside the enclosure to provide water for wild horses and livestock. The pipeline would be buried to prevent damage and reduce maintenance.

- **Hanging Rock drift fence**

No division fence exists between the Mountain Pasture and Hanging Rock use area. Because of this, excessive drift occurs from the west side of Hanging Rock, north to the west side of

the Mountain Pasture; specifically in the Rock, Nut (private), and Miller & Lux Spring areas. A drift fence running east/west (approximately 1.5 miles) from Hanging Rock Reservoir to the western allotment boundary fence would greatly reduce or eliminate cattle movement to the north. A cattleguard and gate would be installed on the improved road to Stevens Camp. In addition, horse gates would be installed to allow for wild horse movement between the Hanging Rock use area and northern portions of the allotment (refer to Map 4).

- **Miller & Lux Spring riparian enclosure**

Miller & Lux Spring is one of the four public springs on the allotment. A small reservoir was constructed below the spring to catch and provide water for livestock. The reservoir is now very shallow and will need to be cleaned out and the levee repaired.

The area is receiving heavy impacts from wild horses and cattle and the creation of a fenced, 40 to 50 acre riparian enclosure is proposed to protect the site.

The spring source would be developed with a head box and pipeline to divert and supply water to a trough outside the enclosure (refer to Map 5). Water not diverted will flow into the reservoir and overflow back into the original riparian channel.

- **Rock Spring riparian enclosure**

Rock Spring is another of the four public waters on the allotment being impacted by wild horses and livestock. Like Miller & Lux, a reservoir was constructed below the spring source to catch and provide water for livestock. Overflow from the reservoir currently runs north down a drainage for a very short distance before it dissipates. A two-track road accessing the reservoir crosses the overflow channel which is being entrenched by vehicles.

The proposed project would consist of an enclosure to protect riparian habitat and cultural resources from wild horse and livestock impacts. Water would be gravity fed through a pipeline from the reservoir to a water trough outside the enclosure. In addition, a culvert would be installed where the two-track road crosses the overflow channel to prevent further damage (refer to Map 6).

- **Trough Spring development modification**

Trough Spring is public water that has been developed for livestock use. A reservoir was constructed below the spring source similar to Rock and Miller & Lux Springs. The Trough Spring development is completely fenced and acts as a water trap for two pastures in the Nut Mountain Allotment with a portion of the reservoir accessible to livestock and wildlife on the Massacre Mountain Allotment. Due to heavy impacts to the spring source and associated riparian, modification of the development is necessary. A preliminary proposal includes a pipeline and solar pump to deliver water from the reservoir to troughs outside the existing enclosure (refer to Map 7).

**The following Standard Operating Procedures (SOPs) will be adopted for all necessary range improvement projects:**

1. BLM will be responsible for survey and design of all projects. Once projects are completed, permittees will be responsible for annual maintenance.
2. An archaeological inventory will be conducted in compliance with 36 CFR 800.4 through 800.5 prior to the survey, design, or construction of the identified range improvement projects.
3. Any cultural resource sites located within project corridors will be avoided. If cultural resources are discovered in proposed pit reservoir locations, a determination of National Register significance will be made in consultation with the Nevada State Historic Preservation Office. If cultural resource sites are found to be not eligible to the National Register of Historic Places (NRHP) then the reservoir may be constructed, otherwise all NRHP eligible sites will be avoided.
4. Appropriate water rights or other permits would be secured before construction begins.
5. The Vya PMU sage-grouse strategy and guidelines for construction/maintenance of spring developments are as follows:

Construct new spring developments to maintain their free-flowing nature and wet meadow characteristics, install wildlife escape ramps in new water troughs, retrofit existing troughs with wildlife escape ramps”.

Construct new livestock facilities (troughs, fences, corrals) at least 0.6 miles (1 km) from leks, restrict new water developments, use “perch guards” on fence posts and rock cribs, and construct future livestock exclosures large enough to minimize raptor predation.

6. Fences, if necessary, will be built to pronghorn specifications. Top wires will be flagged the first year following construction to increase visibility and reduce the possibility for wild horse and wildlife collisions. Posts used for corner panels and gates will be steel pipe with domed caps to reduce wildlife entrapment.
7. Maintenance of new range improvements will be assigned to the permittee and Cooperative Agreements will be signed before construction begins.
8. Equipment used for construction will be cleaned of mud and debris before entering the construction site to reduce the possibility of introducing weeds.

9. New roads will not be established to sites. Disturbed access routes will be restored at the conclusion of the construction phase.
10. No new projects are proposed in wilderness areas, or WSA.
11. No fences are proposed that would impact wild horse seasonal distribution, migration patterns or limit wild horse use of public waters.

## F. Monitoring

### Monitoring Objectives

1. By 2011, in coordination with the permittee and the affected interests, evaluate the location of current key areas to determine if they are properly located to represent utilization and management in a given pasture/use area.
2. By 2011 establish new key areas for long and short term monitoring in coordination with the permittee and affected interests.
3. By 2011, establish production and frequency trend transects at key areas to provide for the conversion of desired plant community objectives from cover based to production based.
4. Continue to collect annual utilization data over the entire allotment. This data collection effort should include both pre and post-livestock use to discriminate between wild horse and cattle use.
5. Establish utilization cages at all long term key areas and at representative utilization monitoring sites.
6. Continue to monitor bitterbrush condition and utilization at selected sites.

Utilization data would be collected annually following removal of all cattle from the allotment. Utilization would be read on major ecological sites, and resulting data would be used to create use pattern maps. All monitoring would be performed in accordance to BLM policy following protocols from BLM approved manuals and technical references.

Trend transects (cover, frequency, composition) were established in 1983; data was last collected in 2000. Future trend monitoring would be performed in accordance to BLM policy following protocols from BLM approved manuals and technical references.

### Long Term Goals and Objectives (to be accomplished by 2019)

1. Improve riparian functionality on the upper reach of Hanging Rock Creek from functioning at risk with a downward trend to proper functioning condition.
2. Maintain proper functioning conditions at the middle and lower reaches of Hanging Rock Creek.
3. Improve riparian functionality on Miller & Lux and Trough Springs from non-functional

- to functional at risk with an upward trend.
4. Improve riparian functionality at Rock Spring from functional at risk with an upward trend to proper functioning condition.
  5. DPCs (Desired Plant Communities) will be defined for major ecological sites in each use area or pasture.

Short Term Objectives (measurable annually)

Riparian Objectives

1. In the interim management period, the permittee manages livestock distribution and use through herding or other measures to minimize cattle use on current year's growth of herbaceous riparian species.
2. In the interim management period, the permittee manages livestock distribution and use through herding or other measures to minimize cattle use on woody riparian species such as willow and aspen.
3. For the purposes of determining achievement of these objectives during the interim management period, No livestock may be placed at either of the unfenced springs or the upper reach of Hanging Rock Creek. Livestock use in Hanging Rock and Mountain West use areas does not exceed 30 days; livestock are 100% cleaned out of each use area at the end of the scheduled use period, and permittee continues to ride the use area a minimum of three times weekly to remove any cattle drifting back to these areas. Permittee will provide records of his compliance riding when he turns in his actual use report at the end of the grazing season.
4. Once proposed projects are constructed and final management is implemented, do not schedule use in the exclosures.

Upland Objectives

1. To promote the increases in cover of key upland perennial grass species (Idaho fescue, Thurber's needlegrass, bluebunch wheatgrass), utilization of current year's growth within the Claypan 14-16" PZ and Loamy 8-10" PZ ecological site in Hanging Rock use area does not exceed 40%. Utilization data to be collected at the end of the scheduled grazing period.
2. Utilization levels (livestock, wild horses, and wildlife) in other areas of the allotment will not exceed 40%–60% on key species of grasses, forbs, and shrubs. Data to be collected at the end of the grazing season.
3. Utilization of current year's leader growth of bitterbrush within the Nut Mountain Allotment does not exceed 20%.

## ***Alternative 2 - No Action (Current Management)***

This alternative involves issuing a new permit with the same terms and conditions as under the expired authorization.

### A. Existing Terms and Conditions

Mandatory terms and conditions currently in effect would continue as indicated in the following table; all other existing terms and conditions of the existing land use plan, or other source are the same as described for the proposed action.

<b>Allotment</b>	<b>Number of Livestock</b>	<b>Kind</b>	<b>Class</b>	<b>From</b>	<b>To</b>	<b>AUMs</b>
Nut Mountain	815	Cattle	Cow	4/16	10/15	4893

### B. Grazing System

The Nut Mountain Allotment is comprised of five use areas:

1. Cavalry Camp Seeding
2. Hanging Rock
3. Mountain
4. Massacre Lakes
5. Upper Field

The current grazing system is designed to provide each of the five areas at least one growing seasons rest every other year. April 16 is the anticipated date for range readiness in the allotment. Presently cattle are turned out on the lower elevation areas and are herded and/or allowed to drift to the mountain as the season progresses.

Table 2.4 Current Grazing System

Use Area	Number of Cattle	Year 1	Year 2
Cavalry Camp Seeding	815	Rest	April 16 – June 15
Hanging Rock	815	April 16 – June 15	Rest
Mountain	815	June 16 – August 15	August 16 – October 15
Massacre Lakes	715	August 16 – October 15	June 16 – August 15
Upper Field (used in conjunction with Massacre Lakes pasture)	100	August 16 – October 15	June 16 – August 15

From mid April to early May cattle are trucked to the Massacre holding corrals in the Cavalry Camp Seeding or to a private field (Coyote Camp). Cattle are either turned out directly into the seeding or held at Coyote Camp until they are trailed to the Hanging Rock use area.

### C. Range Improvements

No new range improvement projects are proposed.

### ***Alternative 3 - No Grazing***

This alternative would cancel the permit on the Nut Mountain Allotment. As a result, grazing would not be authorized on this allotment. Under this alternative, BLM would initiate the process in accordance with the 43 CFR parts 4100 and 1600 to eliminate grazing on the allotment and amend the resource management plan.

### ***Actions common to Alternatives 1& 2***

#### **Creation of Desired Plant Communities (DPC)**

Alternatives 1 and 2 include establishment of a DPC by BLM in coordination with interested publics. The DPC defines the vegetative community considering the site potential and the desired products of that site. The DPC may or may not be similar to the potential natural community as stated in the Ecological Site Description (ESD); however the ESD describes the potential capability of a site, as well as some of the inherent limitations, allowing DPCs to be created according to reasonably attainable goals. DPCs for the Nut Mountain Allotment were created for all major sites in each use pasture. These DPCs will be referred to in the EA, and can be found as Attachment 1 in Appendix B.

### ***Alternatives Considered but Dismissed from Further Analysis***

During the TRT process, review of Appropriate Management Level (AML) for wild horses in the Nut Mountain HMA was requested by NDOW and NV Commission for the Preservation of Wild horses. Since the AML for the Bitner HMA (which includes most of the Bitner allotment and a large percentage of the Nut Mountain Allotment) would need to be considered and analyzed in the proper context for both HMAs and allotments, BLM believes this process is outside the purpose and need of the proposed action and alternatives. The Bitner Allotment permit renewal is not scheduled in the immediate future. Therefore, an alternative evaluating only the Nut Mountain HMA will not be considered at this time.

Several non-essential range improvement projects were proposed by the permittees during TRT meeting; however, only those projects essential to implement the proposed livestock management and make progress toward achieving rangeland health standards will be considered at this time.

## CHAPTER 3: ENVIRONMENTAL ANALYSIS

A variety of laws, regulations, executive orders, and policy directives mandate that the effects of a proposed action and alternatives on certain supplemental authorities (formerly known as critical elements) of the human environment and several other resource elements commonly affected by livestock grazing be considered. Not all of the supplemental authorities that require consideration in this EA will be present, or if they are present, may not be affected by the proposed action and alternatives (see Table 3.1). Only those mandatory supplemental authorities that are present and affected, or need to be considered, are described in this section.

Background material related to other resources is available on the Surprise Field Office web site and is within the Surprise RMP Final Environmental Impact Statement and Proposed Resource Management Plan. An overview of resources and uses of the NCA area is contained in the BLM's 2003 for Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Land in Nevada (BLM 2003).

To comply with the National Environmental Policy Act (NEPA), the following supplemental authorities of the human environment are subject to requirements specified in statute, regulation or executive order and must be considered:

Table 3.1 Supplemental Authorities of the Human Environment

Supplemental Authority	Not present	Present Not Affected	Present and Affected
Livestock Management			✓
Air Quality**	✓		
Areas of Critical Environmental Concern (ACEC's)			✓
Cultural Resources			✓
Environmental Justice**	✓		
Essential Fish Habitat**	✓		
Farmlands, Prime and Unique**	✓		
Floodplains**	✓		
Invasive, Non-native Species			✓
Global Climate Change			✓
Native American Cultural Values**		✓	
Recreation**		✓	
Social and Economic Values			✓
Soils			✓

Wastes, Hazardous or Solid**	✓		
Water Quality, Drinking-Ground			✓
Wetlands /Riparian Zones			✓
Wild and Scenic Rivers**	✓		
Wilderness			✓
Wild Horse and Burros			✓
Wildlife/Threatened and Endangered Species			✓
Vegetation/Threatened and Endangered			✓

\*\* Supplemental Authorities that are either not present or present and not affected and will not be discussed further in this document.

## ***LIVESTOCK MANAGEMENT***

### **A. Affected Environment**

Nut Mountain Allotment is a perennial grazing allotment authorized for 815 cattle to utilize 4893 (Active) AUMs from April 16 to October 15 annually.

The Nut Mountain Allotment is comprised of five use areas:

1. Cavalry Camp Seeding
2. Hanging Rock
3. Mountain
4. Massacre Lakes
5. Upper Field

Table 3.2 Current Grazing System

Use Area	Number of Cattle	Year 1	Year 2
Cavalry Camp Seeding	815	Rest	April 16 – June 15
Hanging Rock	815	April 16 – June 15	Rest
Mountain	815	June 16 – August 15	August 16 – October 15
Massacre Lakes	715	August 16 – October 15	June 16 – August 15
Upper Field	100	August 16 – October 15	June 16 – August 15

The current grazing system is designed to provide each of the five areas at least one growing seasons rest every other year. April 16 is the anticipated date for range readiness in the allotment. Presently cattle are turned out on the lower elevation areas and are herded and/or allowed to drift to the mountain as the season progresses.

From mid April to early May cattle are trucked to the Massacre holding corrals in the Cavalry Camp Seeding or to a private field (Coyote Camp). Cattle are either turned out directly into the

seeding or held at Coyote Camp until they are trailed to the Hanging Rock use area. At the end of the grazing season cattle are gathered into the seeding and Massacre holding corrals before they are transported to winter pasture.

**Range Developments**

Range Developments (shown on Map 8) include developed springs, troughs, reservoirs, catchments, earth pits, earth tanks, wells, and windmills. Several of these projects are located within the Wilderness Areas/WSA. Existing fences include allotment boundary fences and pasture division fences. Range developments on public land were authorized through BLM permit or cooperative agreement. All or most of the authorized range developments are in good condition and generally maintained on an annual basis. The permittee has recently developed many of the springs on his private land.

New range developments may be authorized only if necessary for resource protection and the effective management of those resources.

***Actual Use History***

The table below displays actual use on the Nut Mountain Allotment from 1997 to 2008.

Table 3.3 Nut Mountain Allotment Actual Use History

Nut Mountain Allotment Actual Use History								
Year	Pasture/AUMs					Active AUMs 4,893		
	Hanging Rock	Mountain Pasture	Massacre Lakes	Cavalry Seeding	Upper Field	Total use	Percent of Active AUMs	No. of livestock
2008		1866	723	1248	79	3,916	80%	732
2007	457	2,853	51	142	190	3,693	75%	616
2006		1,984	298	428	161	2,871	58%	611
2005		2,487	80	41		2,608	53%	566
2004	999	1,203	563			2,765	56%	622
2003		808	791	172	38	1,809	37%	567
2002	1,061	1,453	1,619		247	4,380	89%	713
2001	919	2,007	752	378	247	4,303	87%	685
2000						3,574	73%	671
1999						4,316	88%	767
1998		3,662	281	965		4,908	100%	760
1997						5,180	105%	760

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The establishment of three unfenced use areas in the Mountain Pasture in addition to new utilization standards in the Mountain West and Hanging Rock use areas would require diligence from the permittee to actively ride the allotment and herd livestock on a more frequent basis. The proposed drift fence would alleviate the need for some herding by eliminating or reducing drift from the Hanging Rock use area north, to the west side of Nut Mountain.

The proposed final grazing system would provide rest or deferment for all pastures and use areas except the Cavalry Camp Seeding. The Mountain North has received little use in the past and will now be grazed annually from 5/16 to 6/30 in Year 1 and 8/1 to 8/30 in Year 2. The seeding would now be used each year to allow rest for native pastures.

Maximum allowable use for key upland native grasses would be 60% except in the Hanging Rock use area which would be reduced to 40%, requiring close monitoring by the permittee.

During the interim management period, the permittee would be required to ride and check the use areas in the Mountain Pasture to ensure no livestock drift either into areas previously used or areas not yet scheduled for use. In addition, scheduled use during the interim period in the Mountain West use area would not exceed 30 days to minimize livestock use in affected riparian areas. Further, if monitoring determines that livestock use exceeds either the stubble height or utilization objectives in public riparian areas in the Mountain West and Hanging Rock use areas, scheduled use could be reduced by one week the following grazing season.

The proposed riparian protection developments would provide water outside of exclosures to livestock (as well as wild horses and wildlife) and therefore, would not affect grazing use.

### **2. Impacts of No Action**

The No Action Alternative would maintain the current stocking rates and season of use. The existing permit would be re-issued under the same terms and conditions and the allotment would be managed under provisions of the 1983 Nut Mountain Allotment Management Plan (AMP) and Surprise RMP 2008. The permittee would continue his current livestock management practices.

### **3. Impacts of No Grazing**

Under the No Grazing Alternative, no permit would be issued; the permit would be cancelled. As a result, the permittee would not be authorized to graze livestock on the Nut Mountain Allotment.

## ***AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) (SUPPLEMENTAL AUTHORITIES)***

### **A. Affected Environment**

The Massacre Rim ACEC is 44, 870 acres in size and is located within the Massacre Rim

Wilderness Study Area (WSA). Approximately 6,859 acres of the Nut Mountain Allotment lie within this ACEC. The Massacre Rim ACEC was established through the Surprise Field Office, Resource Management Plan/Record of Decision of April 2008. The ACEC was designated to protect and enhance archaeological resources.

In 1984 the Surprise Field Office constructed an enclosure fence within the Nut Mountain Allotment in portions of the ACEC/WSA which contain a National Register of Historic Places (NRHP) Eligible Archaeological District. The intent of the enclosure was to eliminate cattle grazing from 1,836 acres of land within the Nut Mountain Allotment for the protection of non-renewable cultural resources. The enclosure fence has reduced impacts to cultural resources from cattle grazing. However, unauthorized cattle use has continued to occur within the enclosure on a near yearly basis. In addition, unauthorized Off-Highway Vehicle (OHV) use and artifact collection continue to occur within the ACEC/WSA, incrementally affecting cultural resource values within the enclosure. Additional cultural resources are located outside of the enclosure and within the ACEC, specifically in the Upper Field. Cattle use is light in this field and no known cultural resources are being affected by range management activities.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Under this alternative the duration of use for the Upper Field pasture, located within the ACEC, will increase by twenty days and be earlier in season, which could affect cultural resources (see impacts to cultural resource discussed under the Environmental Consequences, Cultural Resources section). However, under this action the Upper Field will be rested on the following year which would benefit cultural resources by eliminating any affects that could occur. The ACEC is unaffected by the remainder of the management actions under the Proposed Action.

### **2. Impacts of No Action**

Under the No Action Alternative cattle use could continue to be light in the Upper Field and would not likely affect cultural resources.

### **3. Impacts of No Grazing**

There would be no impacts from range management activities to resources located within the ACEC under this alternative, as there would be no cattle grazing.

## ***CULTURAL RESOURCES (SUPPLEMENTAL AUTHORITIES)***

### **A. Affected Environment**

There have been 28 archaeological inventories, totaling 13,360 acres, conducted on the Nut Mountain Allotment. The inventories were in preparation for the Cowhead/Massacre Planning Unit, Environmental Impact Statement, range improvement projects, and a land exchange. There were 246 prehistoric archaeological sites that were recorded during the inventories. The sites are associated with a number of activities such as long-term occupation associated with lake shore resources, hunting and game processing, temporary resource processing, Petroglyphs, tool stone

quarries, and the making of tools. National Register of Historic Places (NRHP) eligibility determinations have not been formally made on any of the 246 sites. However, three areas appear to be eligible to the National Register of Historic Places as Districts. The potentially eligible Districts contain a total of 45 sites. In addition, four individual archaeological sites appear to be NRHP eligible.

As discussed in the above ACEC section, an enclosure was built within the Nut Mountain Allotment in 1984 to protect a NRHP eligible archaeological district, which contains 24 prehistoric sites. Unauthorized cattle use has continued to occur within the enclosure on a near yearly basis. In addition, unauthorized Off-Highway Vehicle (OHV) use and artifact collection continue to occur within the enclosure and within other areas of the Nut Mountain allotment which contain cultural resources. The unauthorized activities incrementally affect cultural resource values within the allotment. In addition, impacts from wild horse use to the area on an annual basis are also affecting cultural resources within the allotment.

In preparation for this EA eight NRHP eligible sites were assessed for impacts from current range management activities. Three of the sites have been severely affected by the development of the water sources and are continuing to receive cattle impacts. Range management activities do not appear to be affecting the five remaining sites due to the nature of the sites and the soils in which they are located.

The condition of the remainder of the previously recorded sites within the Nut Mountain Allotment is unknown at this time. The remaining sites within the Nut Mountain Allotment will be assessed in 2015 in accordance with the Supplemental Procedures Developed for the Livestock Grazing Permit Renewals, An Amendment to the Protocol between the Bureau of Land Management and the California and Nevada State Historic Preservation Offices. In accordance with the protocol the permit may be renewed prior to the cultural resource assessment being completed.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Under the Proposed Action cultural resource sites have the potential to be affected by range management activities including cattle grazing. Sites that are located in areas where cattle tend to congregate are most vulnerable to livestock impacts. Areas of congregation tend to occur at both developed and undeveloped watering locations, salting locations, along fence lines, and in areas where shade is available. The types of impacts that can occur are: trailing, which can displace and/or break artifacts, and denude vegetation thereby destabilizing the soil causing erosion; wallowing, which causes subsurface disturbance to cultural resources containing buried deposits thereby compromising stratigraphic integrity of a site; and trampling, which causes artifact displacement and breakage.

Under the Proposed Action the number of cattle would remain the same. However, a seven pasture rest rotation would be used, with the Mountain Pasture divided into three unfenced use areas. Intensive herding is essential in this pasture to ensure that utilization levels are not exceeded. The proposed rest rotation system and intensive herding would likely improve

vegetation condition; stabilizing the soil and improving sites that could be indirectly affected by erosion. The three proposed riparian protection projects and the Trough Spring development modification could eliminate cattle impacts to three of the NRHP eligible sites discussed above by including the cultural resources within the exclosures.

## **2. Impacts of No Action**

Under the Current Management potential impacts to cultural resources, such as trailing, wallowing, etc., could continue to occur from range management activities, including cattle grazing. Under this alternative livestock numbers would remain the same. There is no pasture rest rotation under this alternative, therefore erosion issues associated with areas of heavy use, which can indirectly affect cultural resources, would continue to occur. In addition, no riparian exclosures would be built and cultural resources associated with these areas would continue to be affected by cattle impacts.

## **3. Impacts of No Grazing**

Under this alternative, there would be no impacts to cultural resources from range management activities.

# ***INVASIVE, NON-NATIVE SPECIES***

## **A. Affected Environment**

Weeds are defined in this EA as plants that are invasive, noxious or non-native. Invasive weeds have the ability to out-compete and replace native plants, often creating their own monotypic plant community. Uncontrolled invasive and noxious weed infestations can result in decreases in native vegetation diversity, reductions in forage and wildlife habitat, and declines in agricultural crop values. Once established, invasive and noxious weeds are extremely difficult to eradicate; and returning affected plant communities to their native state can be a challenge.

The Nut Mountain Allotment was last surveyed for the presence of noxious weeds in 2006. Few noxious weeds have been found within the allotment; however, bull thistle, musk thistle, Scotch thistle and perennial pepperweed were identified in small, localized patches. All known populations of weeds along roads and on public lands, and most known populations on unfenced intermingled private lands have been treated and monitored. Vehicles and OHV traveling on various routes and crossing the associated drainages along these routes, increase the likelihood that weeds will spread. Invasive and non-native plants include cheatgrass and Japanese brome, which were found in small amounts at three of the five evaluation sites during the 2008 rangeland health assessment.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Livestock grazing in this allotment has not resulted in the establishment of any invasive or noxious weed sites to date. Livestock grazing in general represents a low risk of introduction

and spread of invasive, non-native and noxious weed species; continued livestock use would be expected to produce similar low risks of introduction. Invasive, non-native and noxious species which are introduced or become established in the allotment would be expected to be detected early with continued vigilance, and these sites would be expected to be treated under the current weed management program. The implementation of SOPs during the construction of proposed range improvements would reduce the risk of introduction and/or spread of existing weeds. Upland areas in less than desired ecological condition are expected to improve under the proposed action, making these areas less susceptible to cheatgrass and invasive weed establishment and/or expansion in size. Implementation of the proposed action, including fencing would allow disturbed riparian sites to recover. The interim grazing system would have little to no effect on the introduction and spread of weeds.

## **2. Impacts of No Action**

Based on current distribution of weeds, livestock grazing in this allotment has not resulted in the establishment of any invasive/noxious weed sites to date. Livestock grazing in general represents a low risk of introduction and spread of invasive and noxious weed species; continued livestock use would be expected to produce similar low risks of introduction. Invasive, non-native species which are introduced or become established in the allotment would be expected to be detected early with continued vigilance, and these sites would be expected to be treated under the current weed management program.

## **3. Impacts of No Grazing**

Under the no grazing alternative, there would be no impacts from invasive and noxious weeds.

# ***GLOBAL CLIMATE CHANGE***

## **A. Affected Environment**

Rising greenhouse gas (GHG) levels are likely contributing to global climate change. In the project area, climate change is typically expected to result in warmer, drier conditions and potentially more extreme weather events. Natural processes such as volcanic eruptions contribute to the increasing levels of GHGs in the atmosphere. Human activities related to the proposed action, livestock grazing, also contribute GHGs in the form of methane.

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 in the project area. In addition, while the proposed action 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.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The amount of GHG emitted by livestock and their management under the Proposed Action is unknown. However, any contribution of GHG due to either alternative is not likely to have an effect on global climate.

### **2. Impacts of No Action (Current Management)**

The amount of GHG emitted by livestock and their management under this alternative is unknown. However, any contribution of GHG due to either alternative is not likely to have an effect on global climate.

### **3. Impacts of No Grazing**

As stated above, the amount of GHG contributed by human activities associated with cattle grazing is unknown; however, the GHG emitted by livestock (methane) would be eliminated in the project area due to the removal of cattle.

## ***SOCIAL AND ECONOMIC VALUES***

### **A. Affected Environment**

The Surprise Valley is a rural community with a strong commitment to the tradition of cattle ranching which is the dominant element of the local economy. Many of the ranches have been in operation for several generations and rely on cattle for their income. Local agri-business derives income from related goods and services as well.

Federal permits to graze livestock on public land are an important factor of production for cattle ranchers in the West. The permits are linked to privately-owned base property and enhance the productive capacity of private property by providing additional forage during certain seasons. This allows for rest, or production of hay or other forage on private property. A common practice is to produce alfalfa or grass hay on irrigated pastures during the summer when cattle are on public rangeland.

The current Nut Mountain Allotment permittee does not reside in the local area. His home ranch is located in northwestern California, a few hundred miles from Surprise Valley. He does however, employ local ranch hands to manage his cattle herd on the allotment.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

More intensive herding required in the new terms and conditions (during the interim and final system) would be an added expense for the permittee in the form of increased salary for ranch hands to ride the allotment more frequently. Increased wages could mean more dollars spent in the local community.

There could be a slight benefit to the local economy during construction of the proposed range improvements. Furthermore, the addition of these new improvements including water troughs, pipelines and fences would increase maintenance costs to the permittee.

## **2. Impacts of No Action**

The No Action Alternative would have no affect on social and economic values because livestock operations would continue without changes to authorized use.

## **3. Impacts of No Grazing**

If livestock grazing were eliminated, the permittee that relies on forage from the allotment would have negative economic impacts because he would have to locate other grazing land and forage for his cattle. The availability, location and cost of other land are unknown, but is likely to cost the operator significantly more.

The local economy would sustain negative economic impacts due to the loss of revenue from grazing fees and related goods and services. Local ranch hands employed by the operator could be negatively impacted from the loss of seasonal work.

## ***SOILS***

### **A. Affected Environment**

The soil classification for the Nut Mountain Allotment is contained in the Washoe County North Part Soil Survey, NV #759 (an Order III soil survey). The soil survey has been updated by the Natural Resources Conservation Service (NRCS) Reno State Office to current standards and can be found on the NRCS web site.

The primary soil series on the Nut Mountain Allotment that support low sagebrush include Devada, Tinpan, and Ninemile. Common soils supporting big sagebrush include Hart Camp, Westbutte, Ashtre and Tusune; Wyoming sagebrush sites are often located on the Hangrock, Saraph and Tuffo soils.

The BLM completed field assessments on the allotment in 2008 to determine if the rangeland health standards were being met. The allotment was found to meet the Rangeland Health Standards for soils. Data from five Upland Health Assessments rated Soil/Site Stability as stable and Hydrologic Function as functioning for all sites evaluated. Additional soils information is contained in the Nut Mountain Rangeland Health Determination.

### **B. Environmental Consequences**

#### **1. Impacts of Proposed Action**

The Proposed Action is expected to have positive effects on upland soils. The final grazing system would provide rest or deferred use and rotation for all use areas except the Cavalry Camp Seeding. Rest would allow key forage species to complete growth cycles which would result in increased cover, litter and soil organic matter. Although the 2009 Rangeland Health Assessment determined that upland soils throughout the allotment were stable, there is still an opportunity for improvement of ecological condition in the Mountain West and Hanging Rock use areas.

Soil disturbance from livestock management and the trampling action of 815 cows in the Nut Mountain Allotment would be light due to the distribution and livestock movement throughout the 75,000 acre allotment and 7 pasture grazing system. Soil compaction from cattle and wild horses would still be expected at water sources throughout the allotment as well as along newly constructed fences and exclosures. However, with the addition of short term objectives to limit use, more frequent herding to reduce livestock concentrations, and the implementation of proposed monitoring by the permittee and BLM, these effects should be reduced. The DPC objectives were meant to address both soil and vegetation health and the proposed Desired Plant Communities would result in increased cover. This coupled with attainment of use objectives which would increase cover and residual litter should result in more protection for soils over the current system in the long term.

## **2. Impacts of No Action**

Moderate utilization guidelines are intended to provide for adequate litter and decrease the likelihood of trampling and compaction of soils. However, under the No Action Alternative, heavy utilization is expected to continue in the vicinity of riparian areas and water sources without the proposed fencing. Furthermore, without more frequent herding, livestock distribution would continue to be uneven with some areas receiving heavier use than others. Soils around riparian areas and water sources would likely continue to be trampled and compacted. The erosion to the channel below Rock Spring would continue due to the culvert not being installed.

## **3. Impacts of No Grazing**

In the short term, plant vigor and litter would improve rapidly. Organic matter would increase but would not be incorporated into the soil as fast as the previous two alternatives. In the long term, plant vigor and litter could decline as the amount of standing dead litter is increased but is not being incorporated into the soil. However, wild horses will continue to impact soils and vegetation on and near riparian areas in the absence of cattle. Wild horse use will also cause trampling and compaction on riparian soils near watering sites.

## **C. References**

Soil Survey of Washoe County, Nevada, North Part - NV759, 1999

## ***WATER QUALITY, DRINKING-GROUND (SUPPLEMENTAL AUTHORITY)***

### **A. Affected Environment**

Water quality in the Surprise Field Office area is discussed in terms of water quality indicators and waterbodies listed as impaired. Primary indicators used for management of impacts on water resources are temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen (DO), and stream channel condition. Indicators were chosen based on the Standards and Guidelines.

The Nut Mountain Allotment falls within three watersheds; Massacre Lake # 16040204, Smoke Creek Desert #16040203 and Guano #17120008. The area is entirely within northwestern

Washoe County, Nevada.

Hanging Rock Creek is the only perennial stream within the Nut Mountain Allotment. One water quality station for the allotment is located at the spring source at the head of Hanging Rock Creek. Baseline water quality was established in 2002 and 2003 and is currently meeting the State Numeric and Narrative Standards, Beneficial Use needs and BLM Standards. Neither surface water nor groundwater within the allotment has been listed for exceeding State water quality standards. Below is water quality data collected in 2002 – 2003:

Spring Source at Hanging Rock Creek 2002-2003

Estimated discharge: 0.05 cfs  
Temperature (C°): 12.03 °C average  
DO (mg/l): 7.19 mg/L average  
Phosphate (mg/L): 0.26 average  
pH: 7.9 average  
Fecal coliform: 0

Nevada standard for Class A

Must not exceed 20 °C  
Must not be less than 6.0 mg/L  
Must not exceed 0.30 mg/L in streams  
Range between 6.5 to 8.5  
The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 colonies/100mL nor may more than 10 percent of total samples during any 30-day period exceed 400 colonies/100mL

**B. Environmental Consequences**

**1. Impacts of Proposed Action**

Only one water quality station has been established on the allotment at the source of Hanging Rock Creek. In 2003 when data was last collected, standards were being met. It is unknown whether standards on other portions (public and private) of the creek are being met due to the lack of data; however, the proposed action would improve water quality due to the exclusion of livestock and wild horses from the upper public portion of the creek.

**2. Impacts of No Action**

Since water quality standards on Hanging Rock Creek were met under current livestock management, standards would likely continue to be met under the No Action Alternative.

**3. Impacts of No Grazing**

As stated above, quality standards on Hanging Rock Creek were met under current livestock management; therefore water quality could improve further from the elimination of livestock grazing impacts under the No Grazing Alternative.

***WETLANDS/RIPARIAN ZONES (SUPPLEMENTAL AUTHORITY)***

**A. Affected Environment**

The following is summarized from the 2008 Rangeland Health Determination available at the Surprise Field Office website.

Lentic riparian areas on public land within the allotment consist of Rock Spring, Miller & Lux, and Trough Springs; lotic riparian habitat exists along Hanging Rock Creek. Lentic riparian sites all have ponds associated with them to provide water for livestock and wild horses. The ponds are livestock developments and therefore exempt from the standards for riparian and wetlands. Riparian Functional Assessments (RFA) were conducted on riparian habitats within the allotment based on 2008 site visits, aerial photos from 2001, NAIP 2005 digital aerial photos, water source inventory (WSI) data from 1985, 1993 RFA's, and 2006 NCA spring inventory data for Trough Spring.

Miller & Lux Spring is located at NE ¼ Sec 9 T42N R22E and consists of approximately ¼ acre of riparian habitat above the development and approximately 1,000 feet of riparian habitat below the development (July 2001 aerial photo). In 2008 it was noted that this site was receiving trampling impacts from wild horses and cattle. The riparian habitat above Miller & Lux Spring was visited in 2008 and rated as non-functional based on the lack of vegetation necessary for the riparian to properly function.

Rock Spring is located at SW ¼ NW ¼ Sec 34 T43N R22E and consists of approximately 600 feet of riparian habitat below the pond (July 2001 aerial photo). The spring source is part of the Rock Spring development and was not rated in 2008. The original 1985 WSI noted wildlife and cattle use and that the area was "degraded". In 2008 it was noted that this site was receiving trampling impacts from wild horses and cattle. The 600 feet below Rock Spring was rated as functional at risk (FAR) with an upward trend.

Trough Spring is located at SW ¼ Sec 9 T42N R22E and consists of approximately 3,600 square feet of riparian habitat above the pond. Additional riparian vegetation exists downstream of the pond on the Massacre Mountain Allotment. The original WSI noted wildlife, cattle, and wild horse use. In 2008 wild horse and cattle impacts were noted. Trough Spring was rated as non-functional based on the lack of vegetation necessary for the riparian system to properly function.

Hanging Rock Creek is the only perennial flowing creek on the Nut Mountain Allotment. The creek flows through both public and private lands. Private segments of the stream as well as some public segments totaling approximately 1.1 miles (6,000 feet) are completely fenced and grazing by cattle and wild horses is limited or restricted. Riparian functioning condition was assessed in August of 2008. Based on the land status and geography, the stream was divided into three reaches for assessment purposes. Private segments of the stream comprising approximately 6,300 feet (62%) of the overall length of perennial flow were not assessed; however a public stream segment flowing between two private parcels was evaluated. This approximately 650 foot reach has herbaceous and woody riparian vegetation which is being heavily grazed by livestock and wild horses. Aspen occur in pockets within the reach and suckers and young trees are not being recruited due to the heavy use. The stream channel is narrow and downcut up to approximately 4 feet in some places. Water temperature at the spring source was recorded at 61° F on 20 August 2008; water at temperature at the bottom of the reach (about 1/3 mile downstream) was recorded at 62° F on 19 August 2008. Results from a Lotic Functional Assessment indicated the reach was functioning at risk with a downward trend.

The Middle reach lies entirely within a fenced private field and consists of approximately 600

feet of public stream situated at the lower end of an approximately 3,800 foot stream segment. This area is not grazed by livestock and the permittee actively works to keep grazing use out of this reach. However, limited wild horse use and unplanned livestock use does occur. The reach terminates at the mouth of Hanging Rock Canyon where a drift fence splits the private lands. This reach is characterized by a narrow riparian zone dominated by herbaceous and woody vegetation. Aspen, choke cherry, *Ribes* sp., and rose are scattered throughout this reach. Pioneering aquatic vegetation is present within the channel and along streambanks. In many instances, due to past downcutting, sagebrush and other upland plant species extend to the water's edge; however this occurrence is frequently associated with the exposed banks where the stream is actively widening the floodplain. This reach of the stream is negatively affected by frequent scouring by seasonal runoff originating from side drainages and the narrowness of the valley bottom. Exposed banks with coarse rocky debris and sand/silt deposits are common in the pools. A small population of brook trout and speckled dace persists throughout the reach but are isolated to scattered pools during base flow conditions in the summer. Water temperature was measured within the approximately 600 foot public segment and recorded at 57° F on 19 August 2008. The 2008 RFA resulted in a rating of properly functioning.

The Lower public reach consists of two separate segments totaling approximately 2,000 feet of perennial flow divided by a segment of stream occurring on private land. Like the middle reach, the permittee actively works to prevent unplanned livestock use in this pasture, and wild horse use is limited. Vegetation along this reach is dominated by herbaceous riparian vegetation. The stream channel is confined in the upper public segment and unconfined in the lower public and private segments. The permittee periodically diverts the water in this reach onto the uplands to irrigate the seeding. Stream bottom substrates in this reach are dominated by smaller diameter rock and sand/silt deposits. There is abundant evidence of frequent high flows outside the channel and floodplains are well established or developing. Only the upper public segment was rated in 2008 for functionality; however observations confirmed that the lower public segment was in a similar condition. The lotic functional assessment for this reach resulted in a rating of properly functioning.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The construction of the proposed projects would have positive impacts to riparian resources in the allotment. By protecting riparian habitat at Miller & Lux, Trough Spring, Rock Spring, and Hanging Rock Creek, the Proposed Action would improve conditions and allow these systems to progress toward properly functioning condition. Construction of the drift fence would further reduce livestock pressure on Rock and Miller & Lux Springs with positive impacts to riparian and upland habitats at these sites. The use of standard operating procedures, including ensuring that water diversions maintain free flowing surface water at riparian sites, would ensure that potential impacts from water diversion would be reduced or eliminated. Greater benefits to species diversity are anticipated at Hanging Rock Creek due to expected increases in herbaceous and woody species. Additional habitat would become available for fish and other aquatic species with improvements along Hanging Rock Creek.

The shortened season of use in the Mountain West use area during interim management would be most beneficial to riparian systems at Rock Spring, Trough Spring, and Miller & Lux.

Herding and turnout procedures outlined in the “Short Term – *Riparian Objectives*” section would contribute to decreased use of all riparian sites including use of riparian woody and herbaceous vegetation along Hanging Rock Creek during interim management. These interim management actions would not impact horses which would be expected to continue using riparian sites in the allotment until the proposed projects are constructed.

## **2. Impacts of No Action**

Under this alternative, the number of livestock and the total amount of use would remain the same with continued uneven distribution and heavy use in certain areas. There would be no new projects constructed to protect riparian areas (including the Hanging Rock Drift Fence). Impacts to riparian areas at Miller & Lux, Trough Spring, Rock Spring, and Hanging Rock Creek would continue and progress toward achievement of proper functioning condition would not be realized.

## **3. Impacts of No Grazing**

Under this alternative there would be no new projects constructed to protect riparian areas. Impacts to riparian resources from cattle and wild horses would continue; however, there would be less combined impacts from wild horses and livestock. Achievement of proper functioning condition would not be realized due to potential season long use from wild horses.

## ***WILDERNESS (SUPPLEMENTAL AUTHORITY)***

### **A. Affected Environment**

Approximately 16,550 acres of the Massacre Rim Wilderness Study Area (WSA) are located in the northern portion of the allotment. The southern part of the allotment includes 11,915 acres of the Black Rock Desert-High Rock Canyon Emigrant Trails NCA and 3,505 acres of the East Fork High Rock Canyon Wilderness Area (refer to Map 1).

Wilderness Areas are to be managed to preserve and protect their wilderness character, provide for their use and enjoyment by the American people in such a manner that will leave them unimpaired for future use and enjoyment as wilderness, and allow for recreational, scenic, scientific, educational, conservation, and historical use (43 CFR 6300). Actions proposed within wilderness are evaluated on the basis of their possible direct and indirect impacts on wilderness values of naturalness, solitude and primitive or unconfined recreation, and special features. Several special features were specifically mentioned for the Wilderness Areas in the NCA Act of 2000; they are: prehistoric Native American sites, untouched segments of the historic California Emigrant Trails, wagon ruts, historic inscriptions, a largely untouched emigrant trail viewshed, threatened fish and sensitive plants, and some of the largest natural potholes in North America.

The Wilderness Act of 1964 and the NCA Act of 2000 allowed grazing to continue in wilderness areas where it was established prior to designation, subject to reasonable regulations that are deemed necessary by the Secretary of the Interior. Congress gave additional insight/interpretation (of the Wilderness Act) in House Report 96-1126. Current livestock grazing within the wilderness area on the Nut Mountain Allotment was addressed in the Black Rock Desert-High Rock Canyon NCA Resource Management Plan (NCA RMP). This EA is being prepared to analyze the impacts associated with grazing on the Nut Mountain allotment.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Impacts from livestock use to the small portion of the East Fork High Rock Canyon WA located within the allotment would decrease due to a shortened season of use in the Hanging Rock use area. The deferment in both the final and interim grazing system for the Mountain Pasture would reduce impacts to vegetation and associated naturalness, while the objectives and monitoring would ensure continuing progress toward achieving land health standards. Other terms and conditions provide a mechanism to adjust management appropriately in response to unacceptable levels of use in sensitive areas.

No new range improvements are proposed within wilderness or wilderness study areas; however, the proposed drift fence is located within the NCA. The drift fence would have slight impacts to the naturalness of the area and potentially hinder activities such as hunting, hiking and horseback riding.

### **2. Impacts of No Action**

Grazing management would remain unchanged under this action and no new range improvements would be constructed. Therefore, there would be no new impacts to wilderness areas.

### **3. Impacts of No Grazing**

No new impacts to wilderness areas are expected under this alternative as cattle would be removed from the allotment and no new range improvements would be constructed.

## ***WILD HORSES AND BURROS***



## **A. Affected Environment**

Two Herd Management Areas (HMAs) lie within the boundaries of the Nut Mountain Allotment. The Nut Mountain HMA lies entirely within the allotment south of NV 8A; a portion of the Bitner HMA lies within the allotment north of NV 8A (refer to Map 2 Appendix A). Excess

wild horses were gathered from both HMAs in 2007 which brought numbers into Appropriate Management Level (AML); AML is 15-20 horses for the Bitner herd and 30-55 for the Nut Mountain herd.

Based on post census and follow-up census in March 2008 and projected recruitment rates of 20% per year, the current estimated wild horse populations on the Nut Mountain HMA is 42 horses, well within established AML ranges (30-55 horses). The Bitner HMA population is currently estimated at 39 horses, moderately above the AML range of 15 to 25 animals. During the September 2007 and on previous gathers on the adjacent High Rock and Wall Canyon HMA, marked horses from the Nut Mountain HMA were gathered indicating there is various levels of horse movement between all of these HMAs.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

The Proposed Action would not affect the wild horse population because the permitted livestock use on the allotment would remain unchanged. Proposed range improvements would be designed to provide water to wildlife and wild horses as well as livestock. The construction of the enclosures and a drift fence would slightly reduce the free-roaming behavior of wild horses in the HMA, but fences would be constructed in manner to minimize impacts to wild horses. Spring developments would be constructed to allow for year-around water.

### **2. Impacts of No Action**

There would be no impacts to the free-roaming behaviors of wild horses in the HMAs, since the drift fence and enclosure would not be constructed. However, without implementation of the proposed projects riparian conditions would remain in the non-functioning conditions, or functioning at risk in a static or downward condition.

### **3. Impacts of No Grazing**

Implementation of the No Grazing Alternative may benefit the wild horse population by having no livestock competition for water and forage. The lack of competition from livestock may result in higher annual population increases. Subsequent wild horse removals would still be required to maintain animal populations in a thriving natural ecological balance and would contribute to maintaining ecological sites in good condition. Yearlong wild horse impacts to unprotected riparian areas would still continue, although impacts are likely at a reduced level without cattle grazing.

## ***WILDLIFE/THREATENED AND ENDANGERED SPECIES (T&E SUPPLEMENTAL AUTHORITY)***

### **A. Affected Environment**

Although some saltgrass is found in the Nut Mountain Allotment, the habitat is not suitable for Carson wandering skipper due to the lack of nectar sources. Potentially suitable habitat was surveyed in the adjacent Massacre Lakes Allotment in 2008 and no Carson wandering skippers were found. Three more surveys were conducted in the same area in 2009 with similar results; however weather conditions delayed surveys to the latter part of the flight season. Additional

potential habitat sites for Carson wandering skipper have been surveyed for on the Surprise Field Office but no Carson wandering skipper have been identified. This species will not be discussed further.

Prairie falcons and golden eagles are known to nest within the allotment. Data from NDOW indicates that about 9,000 acres of public land in the eastern half of the allotment are occupied by bighorn sheep. Antelope can be found throughout the allotment yearlong and are known to kid in the higher elevations (office and NDOW data). Mule deer use occurs during the summer at the higher elevations of the allotment. Other species known to occupy the allotment include black-tailed jackrabbit, ground squirrel, lizards, coyote, raven, northern harrier and various songbirds. Two data points from survey blocks conducted by the Great Basin Bird Observatory on similar habitats adjacent to the allotment indicate that several sage-steppe obligate birds besides Greater sage-grouse are found within the allotment including Brewer's sparrow, sage thrasher, and sage sparrow. These birds require a mix of open, patchy sagebrush, tall sagebrush, and grass cover for nesting and foraging. Active rodent burrows and ant hills were found during 2008 field tours.

Brook trout have recently been identified in Hanging Rock Creek with other trout species having been found in the creek over the last two decades. Local knowledge indicates that various trout species have been planted in the creek in past years.

### BLM Sensitive Species

The 2006 Larrucea survey detected two active pygmy rabbit burrows in the allotment, one located within the 1,480 acre cultural resource protection enclosure and the second located in the Mountain Pasture. Two active Greater sage-grouse leks exist in the allotment, one being a new lek found during 2009 surveys by the Nevada Department of Wildlife (NDOW). Golden eagles regularly forage in the allotment and have been found nesting on cliffs and rimrocks.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

Sage-grouse and other ground nesting sagebrush obligate species would be expected to benefit from residual and new grass cover as a result of rest/rotation grazing and intensive herding which reduces the potential for heavy grazing and negative impacts to sagebrush stands. Direct impacts to wildlife including trampling of nests and burrows (such as pygmy rabbit) from livestock grazing would be much less in use areas rested. In pastures used, after the growing season, around the middle of July, residual grass cover for the following year would still be reduced but over a smaller area than with the current grazing system. The current grazing system authorizes late season grazing every year in the Mountain, Massacre Lakes, and Upper Field pastures (approximately 75% of the allotment) while the Proposed Action would authorize late season grazing in smaller pastures/use areas (approximately less than 50%) only every other year. Negative impacts to sage-grouse and pronghorn antelope from late season grazing and loss of residual cover would occur every other year in the Mountain North and West Pastures; these areas have most of the allotment's riparian sites, known antelope kidding areas, and sage-grouse use. Under the Proposed Action, residual grass cover would provide adequate hiding and thermal cover for most wildlife including sage-grouse and antelope over a larger area than the

current system allows. Wildlife would benefit from improvements in riparian vegetation and hiding cover at Rock Spring, Miller & Lux, Trough Spring, and Hanging Rock Creek; with large increases in structural diversity of woody plants expected at Hanging Rock. Aquatic species at these sites, including brook trout in Hanging Rock Creek, would benefit from the availability of higher quality water. Negative impacts to wildlife from additional fences would be mitigated by the larger sized enclosures and the implementation of SOPs during project construction, which would reduce the likelihood of birds (such as cliff, bank and barn swallow) and bats impacting fences near open water. Upland vegetation would benefit along former trailing routes used by livestock drifting between the springs in the Mountain West use area and Hanging Rock. Building fences to BLM standards would reduce possible impacts to pronghorn antelope and deer using the same area. No impacts are expected to bighorn sheep since their use is on the east side of the allotment. Establishment of DPCs and moving plant communities to higher herbaceous cover would benefit sage-grouse nesting and brood rearing, and big game foraging. Hiding cover would be expected to increase for many species including big game. Increased grass cover within the Hanging Rock use area could increase use by cottontail and displace known use by pygmy rabbit (Larrucea and Brussard 2008). Increased cover would be expected to benefit rodents and cottontail habitats. Golden eagles and other raptors may benefit from increased food sources depending on the density of cover. Shrub cover would remain within the range suitable for sage-grouse. Increases in forbs would benefit multiple species including sage-grouse, bighorn sheep, and antelope.

Interim management would lessen impacts to riparian areas prior to the construction of proposed range developments by reducing the season of use in the affected areas. Additional residual forage and cover would be available in the Mountain West use area for wildlife due to the shorter period of use. Any pygmy rabbits in the Cavalry Camp Seeding would be directly impacted by having cattle in this pasture for an additional month; however surveys indicate that there are no pygmy rabbit in the seeding (Larrucea 2006).

## **2. Impacts of No Action**

Impacts to riparian areas would continue. Sage-grouse brood rearing habitat as well as summer range for mule deer, bighorn sheep, and antelope would not improve and could worsen depending on wild horse numbers. Fewer areas of increased cover and forage would be available without the rest/rotation and herding built into the Proposed Action; therefore important bird sage-steppe upland habitats would not benefit and negative impacts from direct competition for forage or potential trampling of nests or burrows would occur over a larger area in any given year.

## **3. No Grazing**

The No Grazing Alternative would be expected to achieve similar results as the Proposed Action although probably on public lands only. Since this action only affects public lands, fenced private lands could see an increase in use to make up for the loss cattle forage. Private lands make up approximately 10 % of the allotment with only a small portion being fenced. Minor benefits would be seen by limiting fence-associated problems for wildlife.

Lack of cattle would cause some shifts in habitat use over both the short term and long term. If species components are available, immediate increases in forage and cover for wildlife would be expected with increases in upland vegetative species diversity occurring slightly faster than the

Proposed Action. Short-term shifts in habitat use would be seen with sage-grouse use of meadows and riparian areas and long-term shifts could be expected with nesting habitat. Upland bird species breeding densities should increase with higher grass cover and vegetation volume (Mills et al. 1991) and rodent and raptor populations would experience localized increases in numbers. Pronghorn antelope and mule deer use would also be expected to increase with improving condition of upland transition and summer habitats. Higher quality kidding and fawning habitat should result over time, with increased opportunities for use and dispersal.

### **C. References**

Mills, G. S., J. B. Dunning jr, and J. M. Bates. 1991. The relationship between breeding bird density and vegetation volume. *Wilson Bull.* 103:468-479.

Larrucea, Eveline; 2006; Bureau of Land Management Surprise Field Office Pygmy Rabbit (*Brachylagus idahoensis*) Survey.

Larrucea, E. S., & Brussard, P. F. (2008). Habitat Selection and Current Distribution of the Pygmy Rabbit in Nevada and California, USA. *Journal of Mammology*, 89(3) , 691-699.

## ***VEGETATION/THREATENED AND ENDANGERED (T&E SUPPLEMENTAL AUTHORITY)***

### **A. Affected Environment**

Common soils in the lower elevations of the allotment near Massacre Lake (5600') include Langston gravelly sandy loam and Longdis-Updike association. Ecological sites associated with these soils include Loamy 8-10" P.Z. which supports Wyoming big sagebrush/Thurber's needlegrass dominated communities and Sodic Terrace 8-10" P.Z. dominated by black greasewood/basin big sagebrush/basin wildrye and bottlebrush squirreltail.

The mid elevations (5700 -6500') occupy the largest portion of the allotment. Soil series include Saraph-Hangrock-Tuffo association and Ninemile-Hart Camp association. Ecological sites on these soils are Loamy 8-10" P.Z. (Wyoming big sagebrush/Thurber's needlegrass) and Claypan 10-14" P.Z. dominated by low sagebrush, bluebunch wheatgrass, Thurber's needlegrass and Sandberg's bluegrass. The mid-elevation soils also support antelope bitterbrush and mountain big sagebrush.

The dominant soil series in the upper elevations of the allotment around Nut Mountain (above 6500') is the Westbutte-Ashtre-Tusune association. Ecological sites include Loamy 14-16" P.Z. dominated by mountain big sagebrush, antelope bitterbrush, Idaho fescue, bluebunch wheatgrass and Thurber's needlegrass; Steep North Slope which is capable of supporting mountain big sagebrush, mountain snowberry, Idaho fescue and bluebunch wheatgrass; and Ashy Slope 12-14" P.Z. which supports mountain big sagebrush, Idaho fescue, needlegrass and Poa's.

The majority of the drainages and springs at the mid and lower elevations support herbaceous plant communities, including grasses, forbs, sedges, and rushes. Most of the higher elevation

drainages and a few of the most perennial lower elevation drainages, especially Hanging Rock Creek, also contain some woody riparian vegetation, including willow, rose, and aspen.

**Special Status Plant Species**

Special status species that occur within the analysis area include those terrestrial species listed or proposed for listing under the Endangered Species Act, species designated by the USFWS and candidates for listing and species contained in the BLM’s Nevada Species of Concern list. There are three special status plant species that occur within the allotment. The following table lists the affect environmental and potential impacts from implementation of an alternative.

**TABLE 3.4 Special Status Plants –Nut Mountain Allotment July 2009**

Plant Name	Status <sup>1</sup>	Locations <sup>2</sup>	Habitat	Threats	Needs/Remarks
<i>Astragalus tiehmii</i> Tiehm’s milk-vetch Fabaceae ASTI3	G3/S3 NNPS W	Wall Canyon; Hanging Rock Canyon; S-38	Grows on white ashy barren outcrops and lacustrine soils in sagebrush scrub hills.	None known but monitor grazing practices. Could be impacted by livestock concentrations, mining activity, road maintenance, fire suppression. Potential for OHV impacts.	Continue inventories, & ocular monitor occurrences regularly for potential impacts. This is a short lived perennial and population numbers can vary greatly. Some years produce many seedlings.
<i>Cryptantha schoolcraftii</i> Schoolcraft’s cryptantha Schoolcraft catseye Boraginaceae CRSC3	G3Q/NV S3 NNPS W	Butcher Flat area. S-56- potential habitat in the far southeast corner of Nut Mountain Allotment	Grows on white ashy barren outcrops in sagebrush scrub hills.	None at present. Potential impacts from OHV and mining.	Continue to inventory for in both CA & NV. Ocular monitor occurrences regularly for potential impacts. Note: Jepson Manual combined this sp with <i>C. sobolifera</i> . See Brittonia 38(2): 104. 1986.
<i>Eriogonum crosbyae</i> Crosby’s buckwheat Polygonaceae ERCR10	G3/S3 NNPS W OR – G3/S2, List 1	Butcher Flat area, and High Rock Canyon. S- +/- 40 potential habitat in the south side of Nut Mountain Allotment	Grows on white ashy outcrops and gravelly clay sites in sagebrush scrub hills.	Not grazed by livestock but could be impacted by trampling. Has been some damage from rodent activity - eating roots. Potential impacts from mining activity, OHV & fire suppression impacts.	Continue to inventory for in NV. Ocular monitor occurrences regularly for potential impacts. Recommend for input into WFSAs.

1. Status refers to federal and state element ranking (Natureserve) and CA or NV Native Plant Society rarity rankings. California source: California Natural Diversity Data Base (CNDDB), CA Dept of Fish & Game July 2007. CNPS = California Native Plant Society. For CNPS codes see <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf>; NNPS = Nevada Native Plant Society, 2007 list; NNPS W = NV watch species, NNPS T = NV threatened, NV CE = critically endangered, species threatened with extinction in Nevada.(Nevada Natural Heritage Program, 2007; see <http://heritage.nv.gov/spelists.htm>). FT = Federally Threatened, FE = Federally Endangered, FC = Federal Candidate, CE = California Endangered, OR = Oregon Natural Heritage Information Center (ONHIC) Lists 1, 2, 3, 4.  
2. Locations and number of known occurrences on BLM lands - a number given, or S for suspected.

## **B. Environmental Consequences**

### **1. Impacts of Proposed Action**

All elements of the Proposed Action are expected to have positive effects on upland and riparian vegetation. In order to maintain or improve healthy native vegetative communities, it is essential that plants periodically complete their life cycles. The proposed grazing system provides upland vegetation this opportunity with rest or deferred use for all pastures/use areas except the Cavalry Camp Seeding. Intensive herding will improve livestock distribution throughout the allotment and reduce concentrations in those areas of the Mountain West and Hanging Rock use areas that have frequently been heavily grazed. Furthermore, the proposed drift fence in the Hanging Rock use area would reduce or eliminate livestock drift northward to the Mountain West and decrease the potential of heavy livestock utilization. The proposed projects would allow for improvement in riparian conditions and progress toward achieving the standards for rangeland health. The development of new terms and conditions for the allotment would establish measurable objectives for the vegetation resource and allow the BLM to more thoroughly evaluate livestock and wild horse use on the allotment.

The rangeland health determination indicated that upland sites are functioning properly; however, the Claypan 14-16” and Loamy 8-10” ecological sites in the Hanging Rock use area are deficient in deep rooted perennial grasses. The proposed rest and shortened season of use in the Hanging Rock use area would improve vigor and reproductive capability of all perennial grasses as well as bitterbrush.

The three special status plants found on the allotment grow on ashy barren outcrops and are not likely to be impacted by livestock grazing.

### **2. Impacts of No Action**

With the No Action Alternative, proposed projects would not be constructed and riparian areas will continue to receive negative impacts from wild horses and livestock. The lack of new terms and conditions under this alternative would reduce the ability of the BLM, interested publics and permittee to monitor long term progress and utilization from wild horses. Key grass species on the west side of Nut Mountain and portions of the Hanging Rock use area would continue to receive heavy utilization from livestock and wild horses; vigor and reproductive capability of perennial grasses in these areas could decline.

Since most upland sites on the allotment are functioning properly and meeting rangeland health standards, the No Action Alternative is expected to maintain these conditions. However, portions of the Hanging Rock use area would still see declines in deep rooted perennial grasses. Riparian area vegetation would continue to be negatively affected by livestock and wild horses.

Use pattern maps dating back to 1984 clearly show areas of repeated heavy use by cattle and wild horses over the years. These areas are generally associated with water developments and riparian areas. Map 9, Livestock Concentration Areas which was derived from use pattern maps and observations, illustrates these heavily utilized areas.

The three special status plants found on the allotment grow on ashy barren outcrops and are not

likely to be impacted by livestock grazing.

### 3. Impacts of No Grazing

Upland vegetation conditions are expected to improve in the short under the No Grazing Alternative, if wild horse numbers stay within AML. If AML is exceeded, impacts similar to the No Action Alternative are expected to occur in the Hanging Rock use area. In the long term, plant vigor and litter would decline as the amount of standing dead litter is increased but is not being incorporated into the soil. Riparian vegetation would continue to receive year-round negative impacts from wild horses. Impacts to special status plants are not expected with this alternative.

### ***CUMULATIVE IMPACTS***

Cumulative impacts are the “incremental impacts of a proposal when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes them” (40 Code of Federal Regulations 1508.7)

Of the affected resources analyzed in this section, livestock and rangeland health will be the focus of the cumulative analysis. Other affected resources are not specifically analyzed in this Chapter because the potential cumulative impacts are directly related to livestock grazing management and their cumulative impacts on vegetation (habitat) quantity and quality.

Table 3.5 Summary of Cumulative Effects Expected to Resources from Each Alternative Compared to Existing Conditions.

- = Negative Impact 0 = No Expected Impacts + = Positive Impacts			
Resource	Alternative 1- Proposed Action	Alternative 2- No Action	Alternative 3 No Grazing
LIVESTOCK MANAGEMENT	0	0	-
AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)	0	0	+
CULTURAL RESOURCES	+	-	+
INVASIVE, NON-NATIVE SPECIES	0	0	0
SOCIAL AND ECONOMIC VALUES	0	0	-
WETLANDS/RIPARIAN ZONES	+	-	+
WILDERNESS	0	0	+
WILD HORSES AND BURROS	0	0	+
WILDLIFE/THREATENED AND ENDANGERED SPECIES	+	-	+
VEGETATION/ SOILS/ THREATENED AND ENDANGERED PLANTS	+	0	+

For this analysis the following Past, Present and Reasonable Foreseeable Future Actions were considered:

Past Actions	Present Actions	Reasonable Foreseeable Future Actions
<ul style="list-style-type: none"> <li>• Livestock grazing</li> <li>• Range Improvement &amp; road construction/maintenance</li> <li>• Recreation use</li> <li>• Off-road vehicle use</li> <li>• Wild horse management</li> </ul>	<ul style="list-style-type: none"> <li>• Livestock grazing</li> <li>• Range Improvement &amp; road construction</li> <li>• Recreation use</li> <li>• Off-road vehicle use</li> <li>• Unauthorized grazing in exclosures</li> <li>• Wild horse management</li> </ul>	<ul style="list-style-type: none"> <li>• Livestock grazing</li> <li>• Range Improvement &amp; road construction/maintenance</li> <li>• Recreation use</li> <li>• Off-road vehicle use</li> <li>• Ruby Pipeline construction</li> <li>• Wild horse management</li> <li>• Wind energy</li> <li>• Mining</li> <li>• Vegetation management</li> </ul>

## Cumulative Impacts to Affected Resources

### LIVESTOCK MANAGEMENT

#### Past and Present Actions

Livestock grazing has had a long history in the region dating back to the late 1800's. Today, it remains the dominant use in the cumulative impact assessment area. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use. Impacts of past actions include generally over-utilization of forage resources that resulted in a decrease in the composition and production of native bunchgrass, and the loss of riparian vegetation. To implement provisions of the Taylor Grazing Act and Nut Mountain Allotment management plan, a mixture of range improvements projects were constructed on the allotment. The projects include fences, cattleguards, wells, springs developments, reservoirs, and corrals.

Impacts of present actions include the maintenance of existing projects, and continued grazing as authorized.

#### Reasonable Foreseeable Future Actions

Since the life of the Proposed Action is ten years, the time frame is considered to be most appropriate for considering the incremental effect of reasonably foreseeable future actions. Many of the past and present actions discussed above are expected to persist through this time frame, though the relative intensity of these actions could vary depending on a variety of economic factors.

The Ruby Pipeline is expected to begin construction in the spring of 2010. This is a natural gas pipeline that will bisect the allotment through the Mountain Pasture. The reclamation plan for the pipeline route requires reseeding and other measures to allow for soil and vegetation recovery. The details have not been finalized, but the affected pastures/use areas may be rested from livestock grazing for several years until vegetation recovery objectives are met.

There are no planned or proposed mineral exploration or wind energy test sites.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to livestock grazing: recreation, off-road vehicle use, unauthorized grazing in exclosures, mining, and wind energy.

### **Alternative 1 - Proposed Action**

Due to the probability of rest required following reseeding on the Ruby Pipeline corridor, there is a possibility that the livestock operator would need to locate other spring/summer pasture for his cattle for several grazing seasons.

### **Alternative 2 - Current Management (No Action)**

The cumulative effects under the Current Management Alternative would be similar to the Proposed Action.

### **Alternative 3 - No Grazing**

The cumulative effect of this Alternative would be that the operator would no longer manage his cattle on public lands in the Nut Mountain Allotment.

## **AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) (SUPPLEMENTAL AUTHORITIES)**

### **Past and Present Actions**

Since many Great Basin prehistoric sites are surface or near surface sites, any ground disturbing activities destroy site integrity, spatial patterning and ability to determine site function. Datable organic features are either destroyed or contaminated. Previous localized grazing, range improvements, road construction/maintenance and gravel pits have caused these types of impacts to cultural resources. Grazing has probably affected a larger number of cultural sites than is documented. Looting sometimes occurs but inadvertent actions from recreation, rock hounding and other off-road activities affect cultural resources as well.

### **Reasonable Foreseeable Future Actions**

Recreational use is expected to increase and these activities sometimes coincide with sensitive cultural resources causing displacement and mixing deposits of prehistoric/historic and modern debris.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to ACECs: Ruby Pipeline construction, vegetation management, unauthorized grazing in exclosures, mining and wind energy.

### **Alternative 1 - Proposed Action**

The cumulative effects of the Proposed Action on cultural resources should be an incremental reduction in the rate of disturbance to site integrity, spatial patterning, and site function. Impacts to datable organic features would also be reduced. This reduction in impacts would be a result of

the expected improvement in ecological condition over an extended period of time as concentrated grazing in sensitive riparian zones would be reduced. However, continued unauthorized use of the archaeological enclosure would result in incremental cumulative effects to cultural resources.

### **Alternative 2 - Current Management (No Action)**

The cumulative effects of this alternative on cultural resources within the ACEC would be a continued rate of disturbance to sites and organic features as a result of the no change in management. Continued unauthorized use of the archaeological enclosure would result in incremental cumulative effects to cultural resources.

### **Alternative 3 - No Grazing**

Alternative 3 would not contribute to cumulative effects to ACEC resources, because no grazing would be authorized under this alternative.

## **CULTURAL RESOURCES (SUPPLEMENTAL AUTHORITIES)**

### **Past and Present Actions**

Since many Great Basin prehistoric sites are surface or near surface sites, any ground disturbing activities destroy site integrity, spatial patterning and ability to determine site function. Datable organic features are either destroyed or contaminated. Previous localized grazing, range improvements, road construction/maintenance and gravel pits have caused these types of impacts to cultural resources. Grazing has probably affected a larger number of sites than is documented. Looting sometimes occurs but inadvertent actions from recreation, rock hounding and other off-road activities affect cultural resources as well.

### **Reasonable Foreseeable Future Actions**

Recreational use is expected to increase and these activities sometimes coincide with sensitive cultural resources causing displacement and mixed deposits of prehistoric/historic and modern debris. The proposed Ruby Natural Gas Pipeline would affect a significant number of cultural resources by damaging or destroying site integrity. Vegetation management activities could increase the visibility of cultural sites potentially exposing them to increased looting. Inventories associated with planning for vegetation management would increase the state of knowledge concerning the local and regional cultural setting.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to cultural resources: wind energy and mining.

### **Alternative 1 - Proposed Action**

The cumulative effects of the Proposed Action on cultural resources should be an incremental reduction in the rate of disturbance to site integrity, spatial patterning, and site function. Impacts to datable organic features would also be reduced. This reduction in impacts would be a result of

the expected improvement in ecological condition over an extended period of time as concentrated grazing in sensitive riparian zones is reduced. However, continued unauthorized use of the archaeological enclosure would result in incremental cumulative effects to cultural resources. Local and regional knowledge regarding the cultural setting would be increased as a result of implementation of the standard operating procedures which would require that all projects be preceded by inventory and site evaluation. The completion of inventories and evaluations would result in incorporation of mitigation measures which would act to further reduce long term cumulative impacts.

### **Alternative 2 - Current Management (No Action)**

The cumulative effects of this alternative on cultural resources would be a continued rate of disturbance to sites and organic features as a result of no change in management. Continued unauthorized use of the archaeological enclosure would result in incremental cumulative effects to cultural resources. The failure to construct range improvement projects could contribute to continued cumulative effects to cultural resources associated with riparian areas.

### **Alternative 3 - No Grazing**

Alternative 3 would not contribute to cumulative effects to cultural resources, because no grazing is being proposed under this alternative.

## **INVASIVE, NON-NATIVE SPECIES**

### **Past and Present Actions**

Past ground disturbing activities are mechanisms for the transport and introduction of weeds; however, these actions have not led to the spread of invasive and non-native species in the allotment. The inventory and treatment of weeds has been on-going in the allotment, which has reduced the spread of invasive species.

### **Reasonable Foreseeable Future Actions**

While currently invasive weeds are limited in number and distribution, future increases in recreation are likely to increase the risk of spreading invasive species to the allotment, and adjacent areas. Recreation and other activities could also introduce new species not currently found on the allotment.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to invasive, non-native species: road maintenance, gravel pits, recreation, OHV use, unauthorized grazing in enclosures, and livestock grazing.

### **Alternative 1 - Proposed Action**

Improvements in rangeland health conditions, including adherence to utilization guidelines would decrease the likelihood of invasive species becoming established. However, there would continue to be a risk of invasive species becoming established along roads by non-grazing activities such as vehicles and OHVs.

### **Alternative 2 - Current Management (No Action)**

Increases in the proliferation of invasive, non-native species is not expected to increase over existing levels. Other non-grazing activities within the allotment could lead to the spread or introduction of new species in the allotment. Proliferation and the spread of invasive species is likely to continue without inventory and treatment of known populations.

### **Alternative 3 - No Grazing**

The No (livestock) Grazing Alternative is expected to result in incremental improvement in ecological condition over the long term, which should decrease the likelihood of invasive, non-native species becoming established.

## **WETLANDS/RIPARIAN ZONES (SUPPLEMENTAL AUTHORITY)**

### **Past and Present Actions**

Wetlands and riparian areas prior to the mid-1980s were considered “sacrifice areas” which were expected to be used severely in order to achieve proper use of the uplands. As a result, wetlands and riparian areas did not receive management emphasis except in relation to their ability to provide needed water for domestic animal use.

In 1991 the BLM implemented the “Riparian – Wetland Initiative” for the 1990s which, for the first time, established national goals and objectives for management of riparian and wetland resources on BLM administered public lands. Chief among these objectives was the mandate that 75 percent or more are in proper functioning condition by 1997. Since the launching of this initiative, the BLM has provided management focus on achieving this goal, and many areas were improved. Some areas continue to not achieve the goal of properly functioning condition. Livestock use is one of the activities which can negatively impact wetlands and riparian areas. As riparian zones decline, riparian vegetation is less capable of dissipating energy and filtering sediment. Erosion increases and water storage capacity is reduced. In the Nut Mountain Allotment, most riparian areas are not properly functioning.

### **Reasonable Foreseeable Future Actions**

Future activities from livestock grazing management, dispersed recreation and transportation would continue to impact riparian areas within the assessment area. Under all alternatives, a reduction in impacts to riparian areas from livestock grazing management would be expected with more intensive and continued adjustment. Impacts to wetland riparian areas from dispersed recreation and transportation is low, but would be expected to continue in some areas, with some reductions over time. There would not be any expected impacts to wetlands and riparian areas from vegetation management or the Ruby Pipeline.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to wetland/riparian zones: wind energy, mining, Ruby pipeline and vegetation management.

### **Alternative 1 - Proposed Action**

The cumulative impact of the Proposed Action would be long term improvements in local riparian systems. Interim management would also provide benefits. Riparian areas in the Mountain West and Hanging Rock use areas would see the greatest benefits given their current

conditions.

### **Alternative 2 - Current Management (No Action)**

Cumulative impacts of current management would not provide long term benefits to riparian systems in the general area.

### **Alternative 3 - No Grazing**

Alternative 3 would not contribute to cumulative effects to riparian resources, because no grazing is being proposed under this alternative.

## **WILDERNESS (SUPPLEMENTAL AUTHORITY)**

### **Past and Present Actions**

In the 1980s Wilderness Study Areas (WSA) were designated within the analysis area. WSAs have been managed similar to wilderness under Interim Management Policy to protect their wilderness values until Congress decides to designate them as wilderness or releases them for other purposes. Impacts to these areas have been primarily limited to unauthorized motorized traffic. The NCA Act of 2000 changed the status of some areas, including East Fork High Rock Canyon to designated Wilderness Areas. Since this enactment, management of Wilderness Areas has improved, resulting in increased boundary identification, route rehabilitation, and compliance checks. These management actions have improved wilderness values for those seeking naturalness, solitude, and a primitive or unconfined type of recreational experience.

### **Reasonable Foreseeable Future Actions**

The NCA RMP proposes a wilderness management plan for the Wilderness Areas within its scope, including the East Fork High Rock Canyon Wilderness Area. When completed, such a plan would improve management of this and other Wilderness Areas to achieve the goals set out in the Wilderness Act of 1964 – i.e., provide for wilderness values and opportunities for solitude and primitive or unconfined types of recreational activities.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to wilderness areas: range improvement and road construction/maintenance, recreation use, unauthorized grazing in exclosures, Ruby Pipeline construction, wind energy, mining, vegetation management.

### **Alternative 1 - Proposed Action**

Incremental impacts to the East Fork High Rock Canyon Wilderness have remained relatively consistent since the early to mid 1980s as special designations continue to offer some management guidelines and protection for wilderness values.

None of the proposed projects or any of the reasonable foreseeable future actions are within the Wilderness areas/WSAs; therefore there would be no cumulative impacts related to project implementation. Management changes over the long-term would slightly decrease impacts to forage utilization of native grasses within the wilderness areas and WSAs thereby maintaining

vegetative cover and natural conditions.

### **Alternative 2 - Current Management (No Action)**

The No Action Alternative impacts represent continued degradation of riparian natural conditions, which are inconsistent with current policy for the rangeland health standards within wilderness/wilderness study areas.

### **Alternative 3 - No Grazing**

The No Grazing Alternative impacts would result in degradation of riparian natural conditions from the year-round presence of wild horses only, due to the removal of livestock from the allotment. Allowing continued degradation of resources is inconsistent with current policy for the rangeland health standards within wilderness/wilderness study areas.

## **WILD HORSES AND BURROS**

### **Past and Present Actions**

The herd areas within the Nut Mountain Allotment were designated by the former Management Framework Plan (MFP) Record of Decision (ROD), and carried forward in the Surprise RMP as the Nut Mountain and Bitner Herd Management Areas as suitable for the long-term management of wild horses. There have been several gathers and removals since the 1970s. The last gather occurred in 2007, which reduced the population down to the low AML range. Past movement of wild horses from nearby HMAs and present management, including gathers, removals and released horses, has led to the representation of age and sex classes and the genetic diversity evident in the herd today.

### **Reasonable Foreseeable Future Actions**

The population would reach the high limit of AML in about 2011 or 2012. Future wild horse gathers would be conducted about every 3-4 years over the next 10-15 year period in order to continue to manage the HMA within the established AML. Fertility control may also be applied in future gathers in an effort to slow population growth. Cumulatively over the next 5-15 years, these actions should result in fewer gathers and less impacts to the soil and vegetative resources in the allotment and HMAs.

If wild horse AMLs continue to be achieved in the future, monitoring of resource conditions would provide data to reaffirm or reestablish AML numbers to achieve and maintain a thriving natural ecological balance and multiple-use relationship. Any adjustments to AML would be accomplished with sufficient utilization, trend, actual use, and seasonal production data through a reasoned interdisciplinary analysis and Environmental Assessment, including public involvement and appropriate coordination (4710 Handbook). Downward adjustments to AML would be necessary if monitoring indicates wild horses or burros to be a causal factor in non-attainment of resource objectives.

Any future proposed projects within these HMAs would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to wild horses and burros: recreation use, off road vehicle use, unauthorized grazing in exclosures, wind energy, mining, Ruby Pipeline construction, vegetation management.

### **Alternative 1 - Proposed Action**

This alternative proposes fencing three spring sources and associated meadows currently used by wild horses for water and forage. The proposed drift fence would limit wild horse movement between the Hanging Rock and Mountain West use areas during periods of scheduled livestock use when horse gates are closed.

Perennial waters and water production are limited on public lands in this area, and they become particularly important during drought conditions when reservoirs or dirt catchments are dry. Implementation of the Proposed Action would develop nearly all of the perennial water sources on public lands in the allotment. While water would be provided outside the improvements, these projects are dependent on the maintenance of functioning structures (pipelines, valves, and troughs). Water may not be available if the structures become non-functioning. Limiting access to any current watering sites would increase the use on remaining available sites. It is not uncommon to observe several bands of horses watering at numerous small dirt catchments in late spring. When these water sources dry up in the summer, pressure on natural springs increases. This is especially true if any of the few developed waters become non-functioning during the summer/fall seasons. The result would be to decrease summer/fall water availability in the drier portions of the HMA. In functioning condition, the water volume at the 4 sites proposed for development is capable of supporting the 30 to 55 horses with the AML for the Nut Mountain HMA.

### **Alternative 2 - Current Management (No Action)**

Under the No Action Alternative, grazing impacts would continue at riparian water sources, and ecological habitat resources would not improve. Riparian standards would not be met, and sites functioning at risk could degrade further, possibly below biological thresholds, making recovery periods longer.

### **Alternative 3 - No Grazing**

Impacts to the riparian areas from the No [livestock] Grazing Alternative would be similar to the No Action Alternative. But because wild horse grazing would continue, their impacts would continue at riparian water sources; however, upland health would be expected to improve. Habitat would not improve at riparian areas, and riparian standards would not be met. Sites functioning at risk could degrade, possibly below biological thresholds. Reduced competition on the uplands from a lack of cattle grazing may improve wild horse health, which could result in increased wild horse herd growth rates.

## **WILDLIFE/THREATENED AND ENDANGERED SPECIES (T&E SUPPLEMENTAL AUTHORITY)**

### **Past and Present Actions**

Minor to moderate amounts of displacement have resulted from disturbances to habitat for wildlife, including sage grouse, associated with livestock grazing management, transportation and access management, and dispersed recreation use. There are no known federally listed Threatened or Endangered Species in the allotment. Long term benefits to wildlife have been realized as watershed conditions have been stabilized. This has been as a result of the replacement of lost vegetation by plant species which are more desirable than invasive and noxious weeds and which are more effective at stabilizing watershed conditions.

### **Reasonable Foreseeable Future Actions**

The proposed Ruby Pipeline is scheduled to begin construction in the spring of 2010. This is a natural gas pipeline that will bisect the allotment, running roughly east to west through the Mountain Pasture, and Cavalry Camp Seeding. The reclamation plan for the pipeline route will require reseeding and other measures to allow for soil and vegetation recovery. The details have not been finalized, but the affected pastures may be rested from livestock grazing for several years until vegetation recovery objectives are met.

It is expected that wildlife would be impacted directly via noise and the presence of equipment and personnel during construction of the pipeline and rehabilitation along the right of way which would be expected to last several months within the allotment. Temporary wildlife corridors, use of limited operating periods, and buffer zones are proposed to mitigate this impact. Indirect impacts could occur from temporary and permanent loss of vegetation and vegetation changes along the 115 foot wide construction right of way.

The last horse gather in the allotment was in 2007 with the next gather of excess horses scheduled to occur in 2011 or 2012. A horse gather would take additional pressure off of public and private riparian areas in the allotment and reduce direct and indirect competition for forage. Additional cover would also be made available for nesting birds and small mammals.

Livestock management, dispersed recreation, and transportation and access would continue displacing wildlife in areas immediately adjacent to these activities. Livestock management activities would benefit the majority of wildlife species by improving water distribution and availability. Vegetation management via pasture rotation would benefit wildlife by restoring vegetative conditions and diversity and reducing direct impacts to wildlife.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to wildlife/threatened and endangered species: unauthorized grazing in exclosures, wind energy and mining.

### **Alternative 1 - Proposed Action**

Livestock and wild horse grazing in upland habitats would continue to impact wildlife directly through competition for food and water; however, most impacts to wildlife occurred in the past

with changes in deep rooted perennial grasses. Impacts would be lessened in the current Mountain Pasture with more nesting opportunities, cover and forage available for birds and mammals in the surrounding area. Improvement of riparian areas to properly functioning condition and beyond will benefit wildlife in the area by providing higher quality water sources with more adjacent hiding cover and more diverse availability (ground, troughs). With water sources in close proximity to each other, improvements of riparian sources in the Mountain West use area may alter, to some extent, local migration patterns of big game.

### **Alternative 2 - Current Management (No Action)**

Cumulative impacts from livestock and wild horse use would continue, negatively impacting water sources within the allotment. Cattle would not be as easily controlled and negative impacts would be more widespread in the Mountain Pasture.

### **Alternative 3 - No Grazing**

Under the No Grazing Alternative, grazing management would be eliminated as a reasonably foreseeable future action. All cumulative effects to wildlife habitat in the analysis area that are associated with livestock use would cease.

## **VEGETATION/SOILS/THREATENED AND ENDANGERED (T&E SUPPLEMENTAL AUTHORITY)**

### **Past and Present Actions**

Prior to the Taylor Grazing Act (TGA) of 1934, forage utilization was high when thousands of cattle, sheep, and horses grazed lands in northern Nevada. The TGA for the first time regulated grazing on public lands, required ranchers who met base property qualifications to have a permit and to pay a grazing fee. Also during this period, thousands of horses roamed the Nevada desert unbranded and unclaimed. Prior to the Taylor Grazing Act grazing practices contributed to significantly to impacting the soil and vegetation resources. The soil tolerance was exceeded and the soil medium for plant growth was not maintained. Grazing impacts include a significant reduction of understory plants on some sites. Cheatgrass was also believed to have been introduced into the area in the early 1900s.

In order to support and distribute livestock, a variety of range improvement projects have been implemented through the years dating back to the 1930s. While past livestock grazing decisions have resulted in adjustments of livestock numbers and seasons of use for the livestock grazing allotments, carrying capacities were not established until the late 1960s on the Nut Mountain Allotment. Also, there was little interest to improve wetland and riparian zones until the 1990s, and therefore riparian systems generally continued to decline through this period.

The present livestock grazing system and efforts to manage livestock grazing within the Nut Mountain Allotment has reduced past historic soil impacts and improved current soil resource conditions; however, current management is continuing to contribute to heavy utilization in some areas affecting vegetation and soils. This is resulting in trailing and trampling damage to riparian areas, and is slowing potential vegetation recovery. Special status plants are not expected to be impacted under any of the alternatives.

### **Reasonable Foreseeable Future Actions**

The proposed Ruby Pipeline is scheduled to begin construction in the spring of 2010. This is a natural gas pipeline that will bisect the allotment, running roughly east to west through the Mountain Pasture, and Cavalry Camp Seeding. The reclamation plan for the pipeline route would require reseeding and other measures to allow for soil and vegetation recovery. The details have not been finalized, but the affected pastures may be rested from livestock grazing for several years until vegetation recovery objectives are met.

### **Cumulative Impacts**

Analysis has determined the following Past, Present and Reasonable Foreseeable Future Actions have no cumulative impacts to vegetation/soils/threatened and endangered plant species: recreation use, off-road vehicle use, wind energy and mining.

### **Alternative 1 - Proposed Action**

Cumulative effects from the Proposed Action would include continued improvement of upland and riparian vegetation conditions and should offset impacts from Ruby Pipeline, past, present and reasonable foreseeable future actions.

### **Alternative 2 - Current Management (No Action)**

Riparian standards would not improve and some sites functioning at risk could possibly degrade below biological thresholds, making recovery unlikely. Livestock concentration areas may see increases in cheatgrass and other annuals within the vegetation understory.

### **Alternative 3 - No Grazing**

Cumulative impacts of the No Grazing Alternative coupled with impacts from past, present, and reasonably foreseeable future actions would result in foregoing an opportunity to improve rangeland health on the uplands, provided wild horses are managed in balance with the available water and forage. Since range improvement projects would not be constructed, over-utilization of vegetation and other habitat resources would continue to occur by wild horses. Furthermore, impacts from wild horses would be expected to continue on riparian areas, particularly during the hot season. Rangeland health riparian standards would not be met and resources may degrade even in the absence of cattle grazing.

## CHAPTER 4: CONSULTATION AND COORDINATION

### *Persons, Groups, and Agencies Consulted*

Modoc/Washoe Experimental Stewardship Program (ESP) Technical Review Team  
representative agencies and groups:

Natural Resources Conservation Service (NRCS)

Nevada Department of Wildlife (NDOW)

Friends of Nevada Wilderness

Western Watersheds Project

Nut Mountain Allotment Permittees

Ft. Bidwell Tribal Council

Cedarville Rancheria

As previously mentioned, a Technical Review Team (TRT) was established by ESP to review resource conditions on the allotment as well as findings from the 2008 Rangeland Health Assessment. The team visited the allotment including affected riparian areas and met to discuss and propose alternatives for mitigating impacts to riparian areas, meeting rangeland health standards, and future grazing management.

BLM met with local tribal groups to discuss this grazing permit renewal and other projects being proposed.

#### List of Preparers

#### Title

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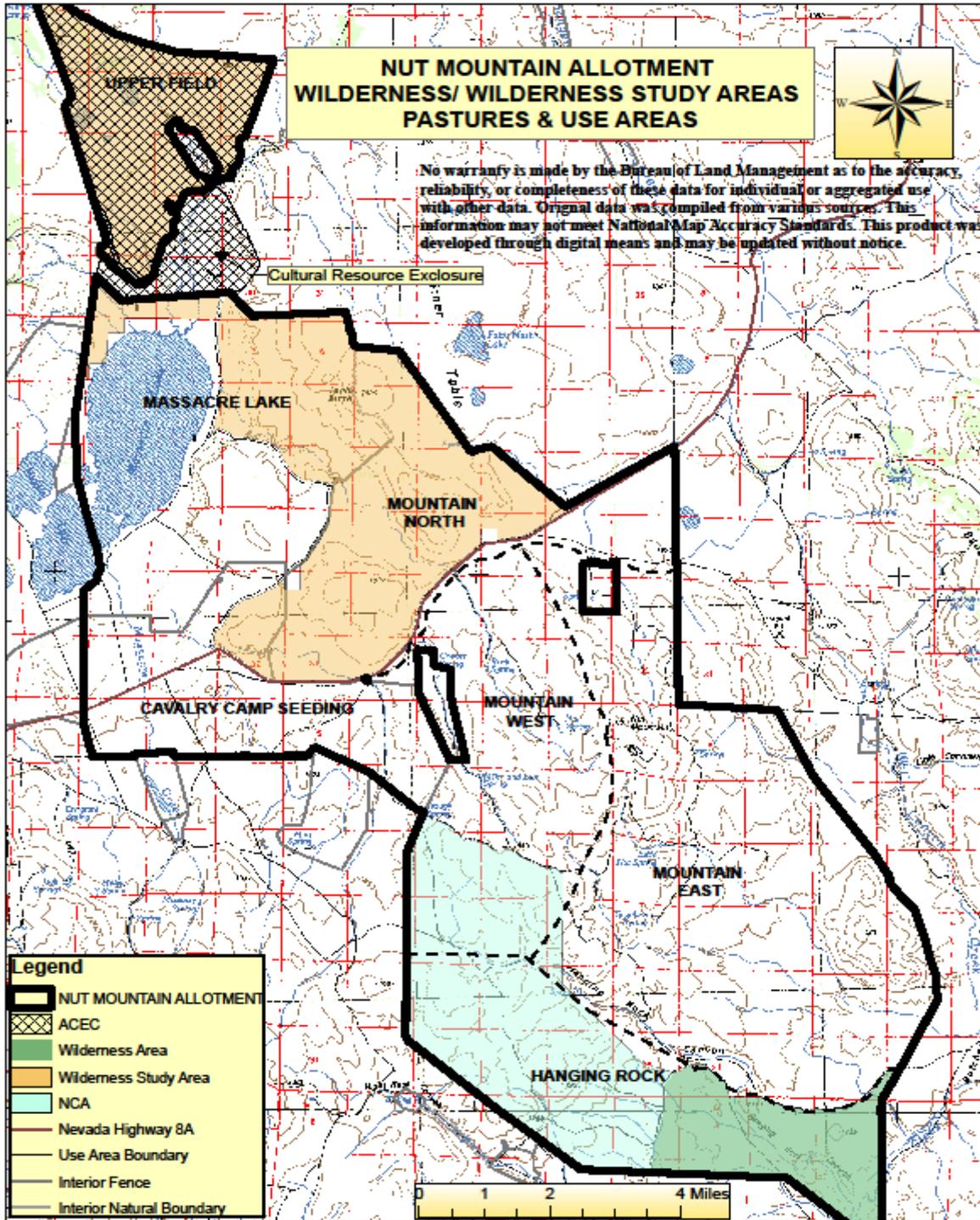
Supervisory Rangeland Management /Wild Horse and Burro Specialist

## *APPENDICES*

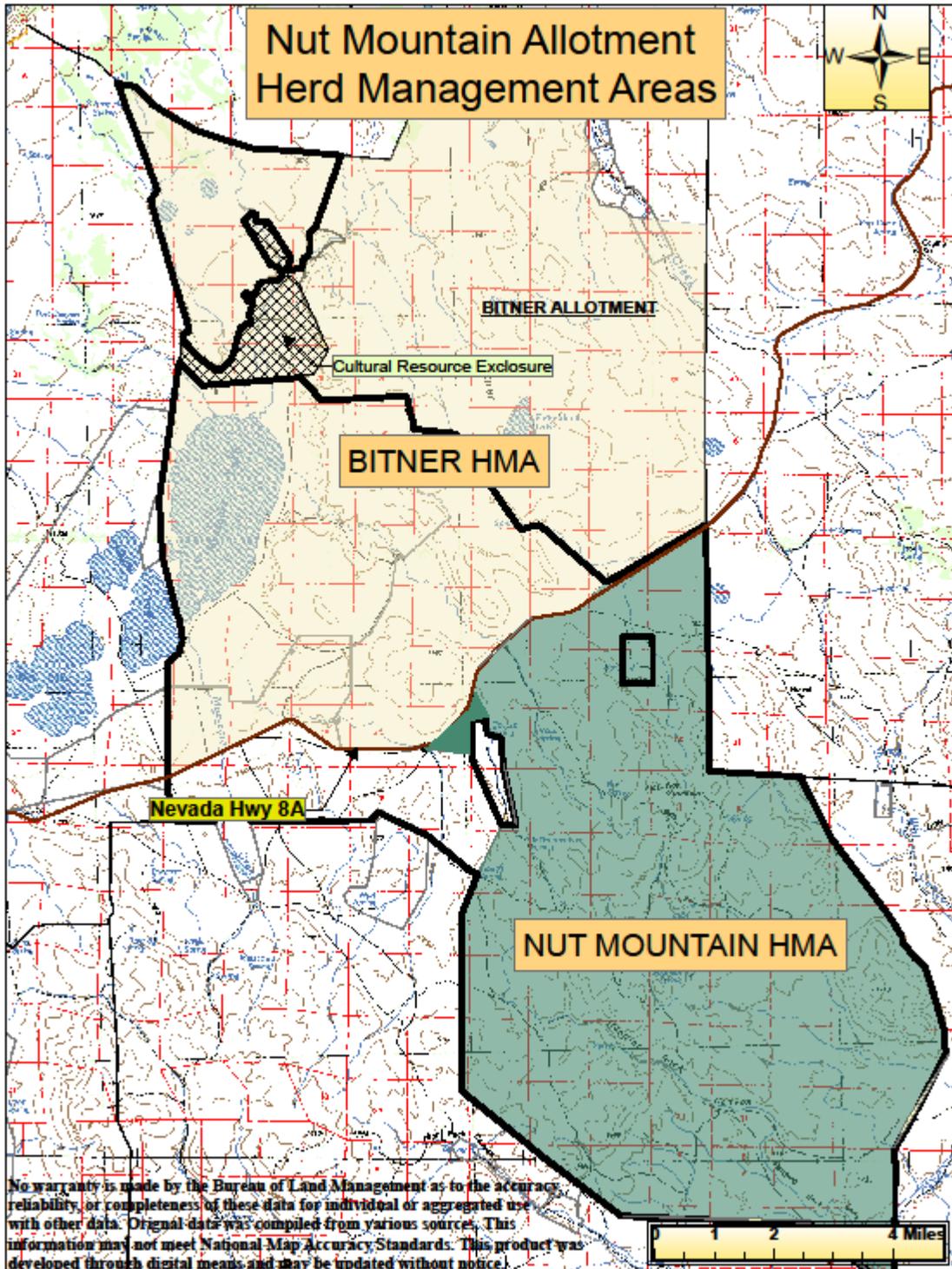
APPENDIX A: ALLOTMENT MAPS

APPENDIX B: TABLES

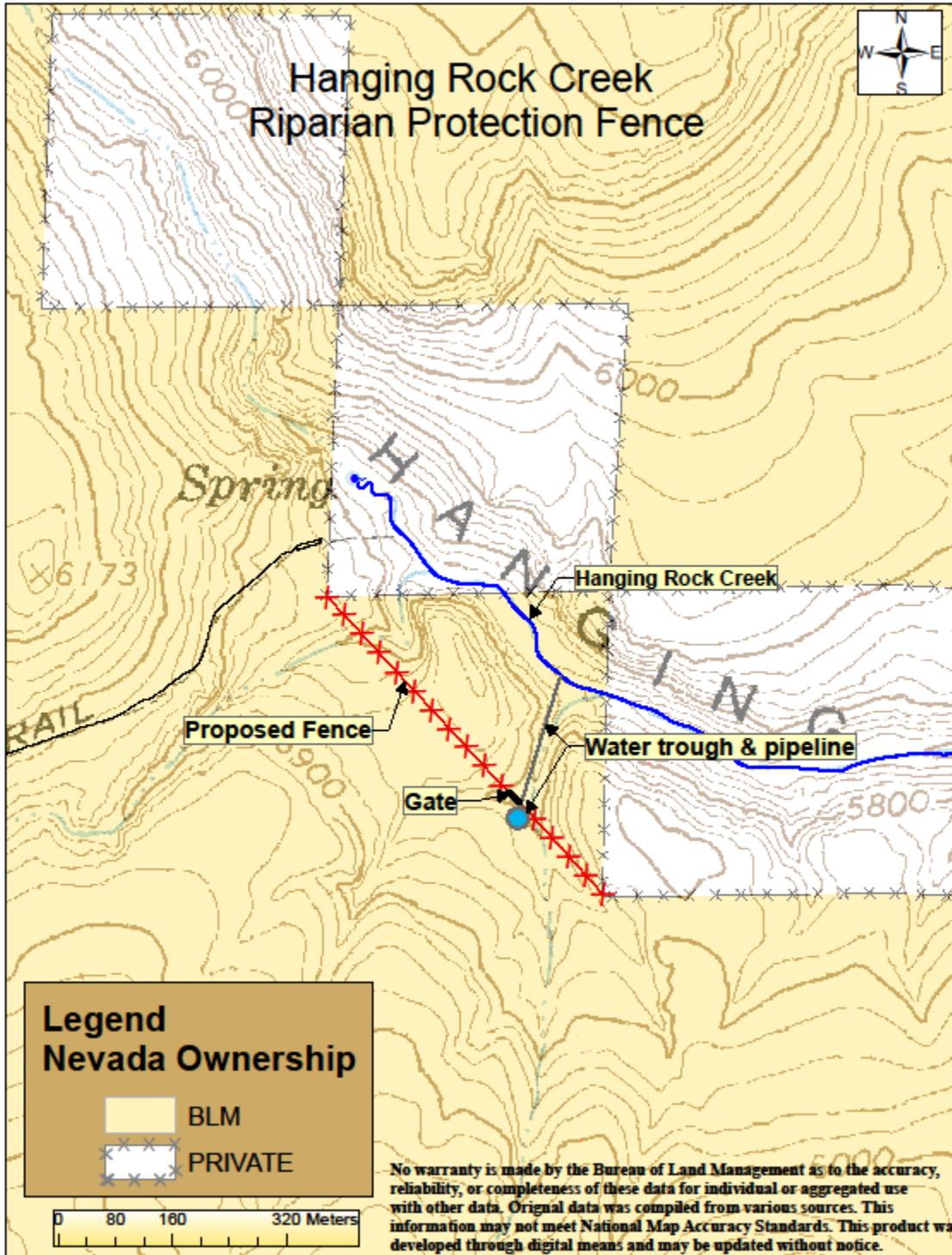
MAP 1 WILDERNESS/WILDERNESS STUDY AREA/ACEC & PASTURES



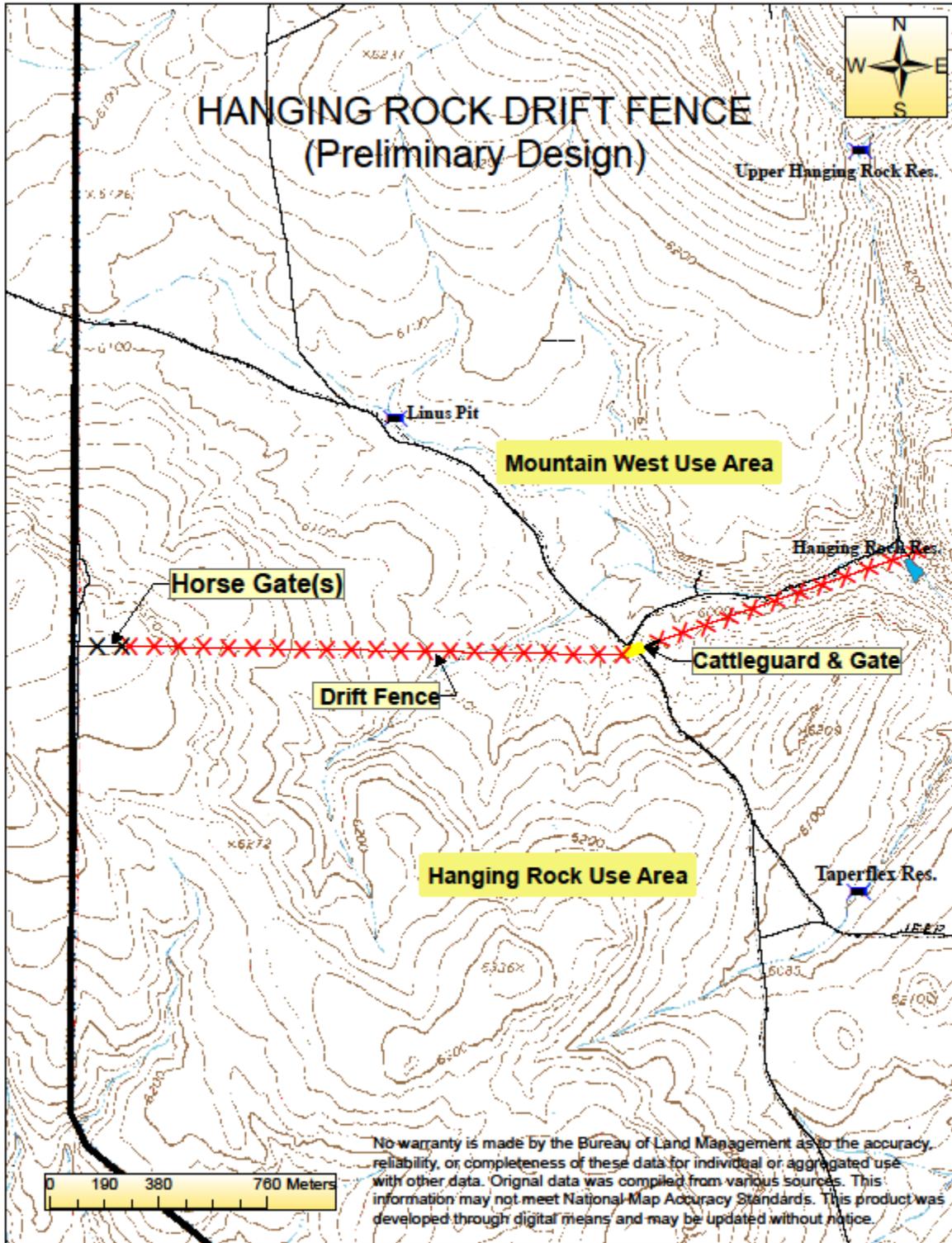
MAP 2 HERD MANAGEMENT AREAS

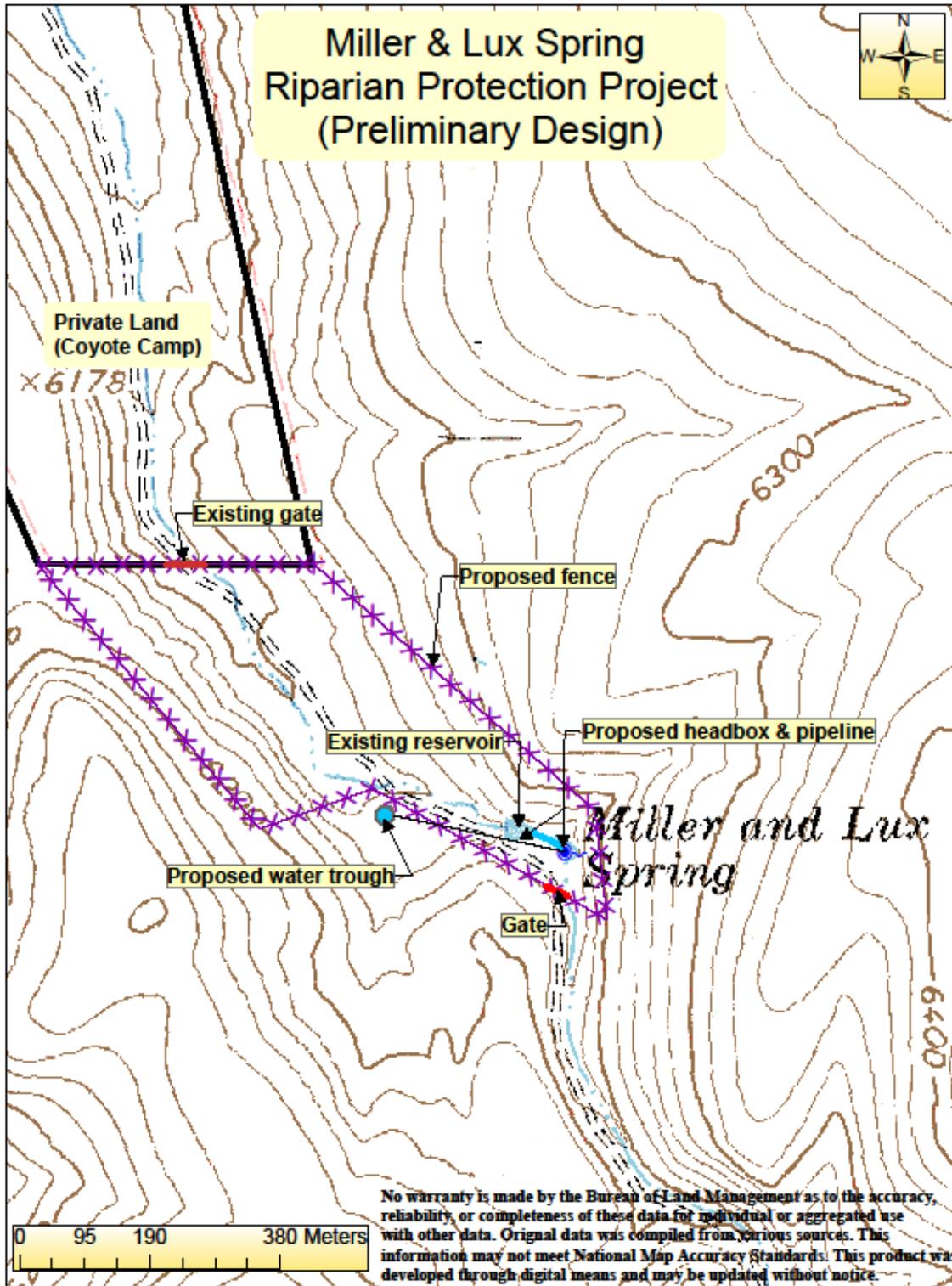


MAP 3 HANGING ROCK CREEK PROTECTION FENCE

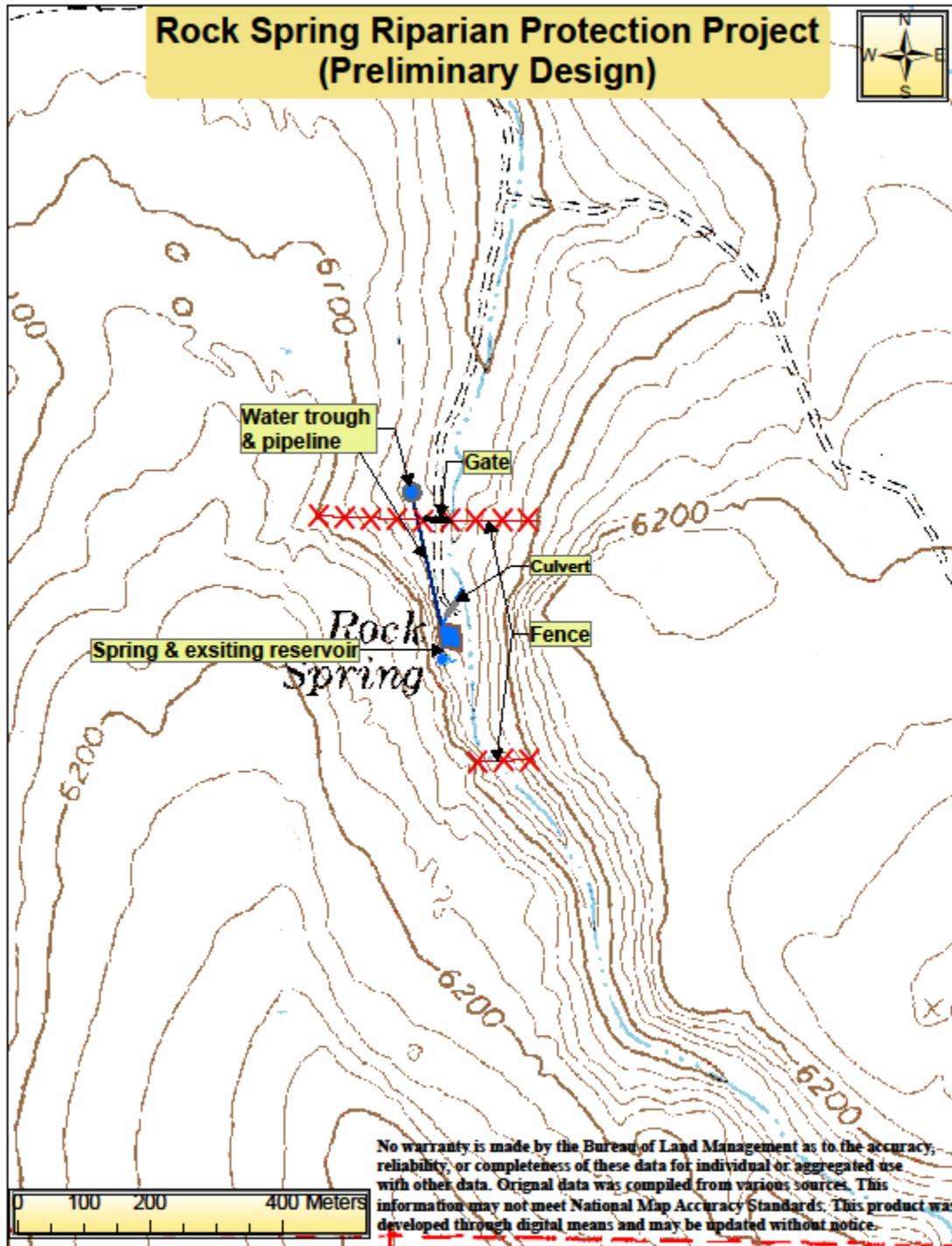


MAP 4 HANGING ROCK DRIFT FENCE

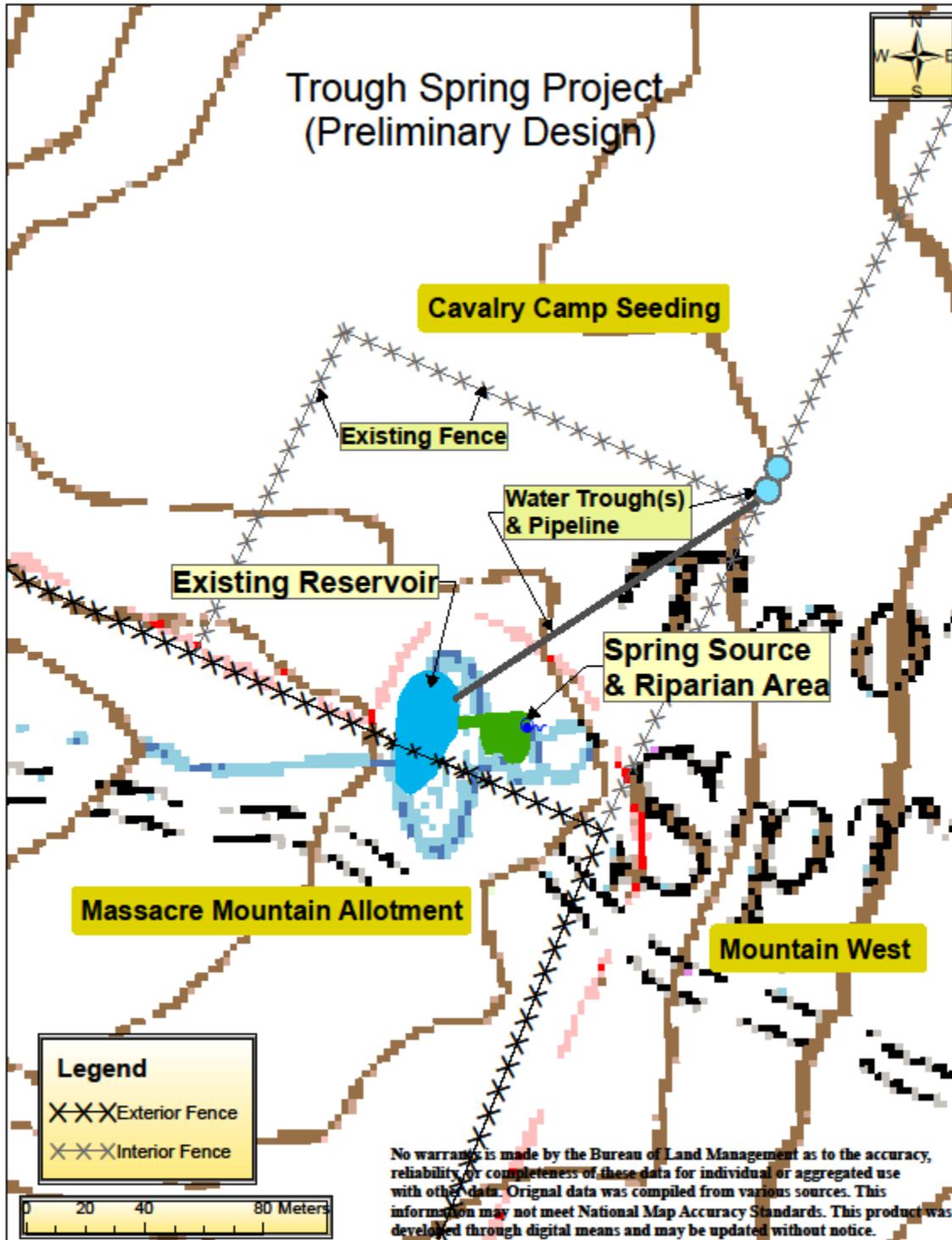




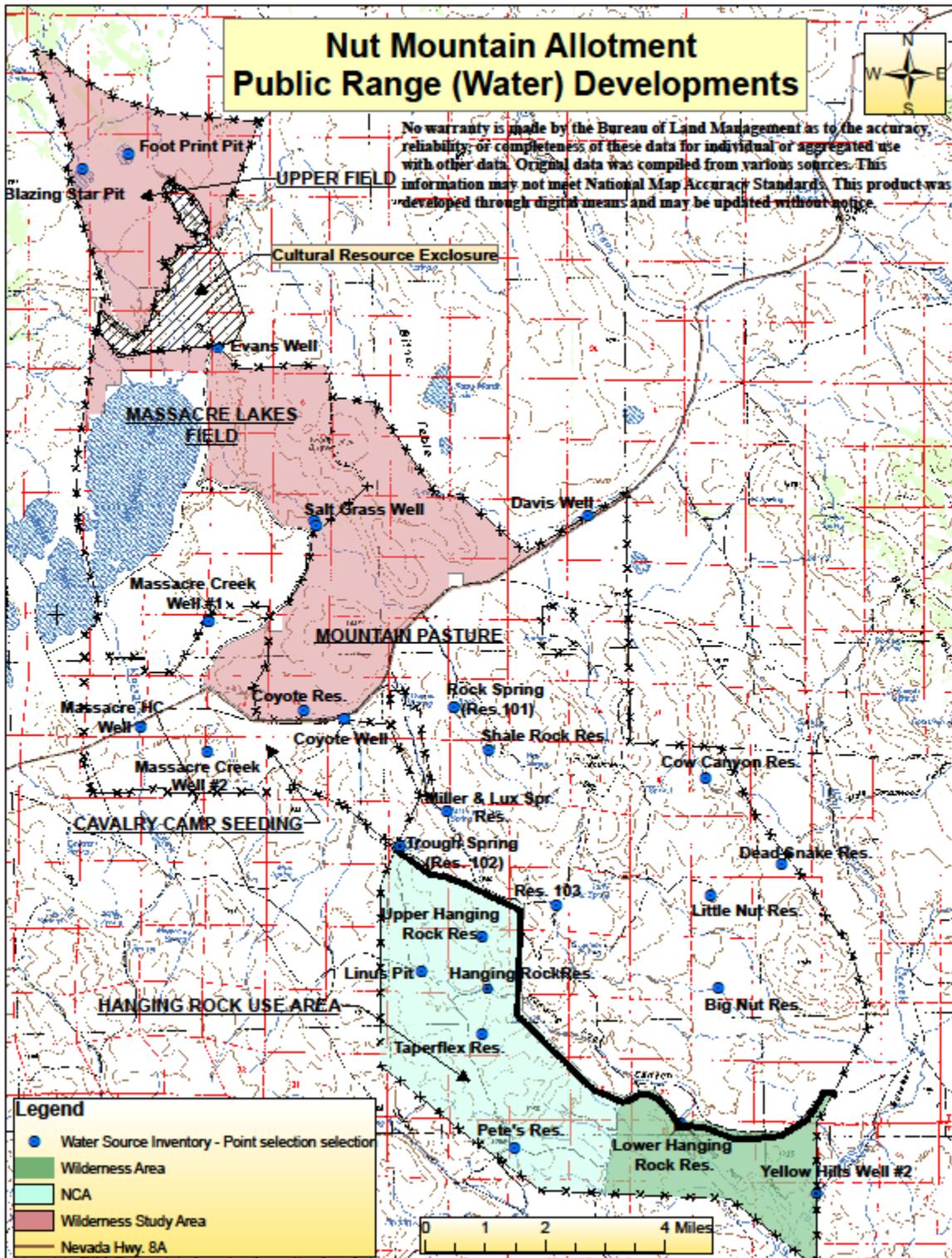
MAP 6      ROCK SPRING PROJECT

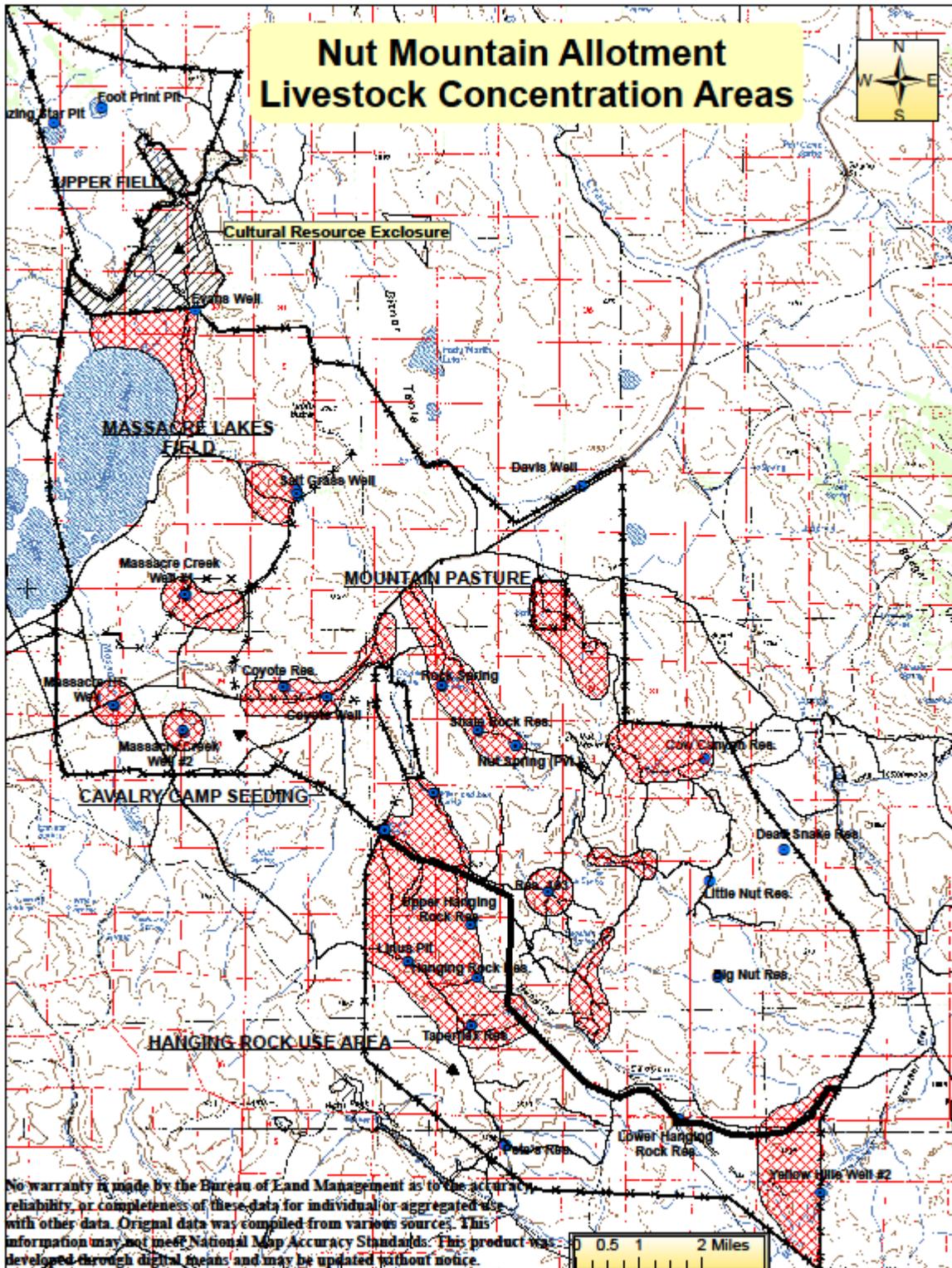


MAP 7 TROUGH SPRING DEVELOPMENT



MAP 8 EXISTING WATER DEVELOPMENTS





APPENDIX B

**TABLE 1 DESIRED PLANT COMMUNITIES**

The table below displays current vegetative cover and desired plant community (by % cover). Existing condition figures from 2008 line-point intercept monitoring.

Pasture/ Ecological Site	Existing Conditions			DPC		
	% Total Shrub Cover	% Total Grass Cover	% Total Forb Cover	% Shrub Cover	% Grass Cover	% Forb Cover
Hanging Rock Loamy 8-10	21	8	3	21	12	5
Hanging Rock Claypan 14-16	30	24	9	25	30	10
Mountain Ashy Slope	40	35	4	30	40	10
Massacre Lakes Loamy 8-10	20	17	2	18	25	5
Upper Field Claypan 10-14	25	30	0.33	20	30	5