

**Livestock Grazing Authorization
South Ash Valley Allotment #0316
Anderson Allotment #0318
North Dibble Allotment #0223
Radio Hill #0225
Loomis #0200
Environmental Assessment
CA320-NEPA 07-02**

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CHAPTER 1: INTRODUCTION

The Bureau of Land Management (BLM) is proposing to issue 10 year fully processed grazing permits for 5 grazing allotments. The South Ash Valley and Anderson Allotments are located in the Madeline Planning Unit and Radio Hill, Dibble and Loomis are in the Hayden Hill Planning Unit of the Alturas BLM Resource Area.

The South Ash Valley Allotment (#0316) lies entirely within Lassen County, CA (T36&37N, R11&12E) and is comprised of 26,724 acres of which 15,467 acres (58%) is Bureau of Land Management (BLM) lands and 11,257 acres (42%) of private lands. The allotment lies approximately seven miles west/southwest of Madeline, CA and is adjacent to the Modoc National Forest and other BLM lands. The Anderson Allotment (#0318) is composed of 610 public land acres (57%) and 453 private acres (43%) for a total of 1,063 acres. It is contiguous to the So. Ash Valley Allotment and is managed as part of it. South Ash Valley precipitation is approximately 14-16 inches per year and falls mainly as winter snow and spring rain. Elevation ranges from 5,300 feet in the south to 6,900 feet in the northwest.

Livestock are currently permitted from May 1 to August 1 but during the last several years have been turning out in mid-June after the cows are trucked in from the Sacramento Valley and processed at the Ash Valley Ranch. There is no internal fencing within the allotment and as a result, livestock are turned out in small groups in different areas throughout the allotment. Cattle are pushed back to higher elevations throughout the grazing season as they drift back down to the ranch.

The eastern half of the allotment has had the juniper woodland reduced significantly as a result of the 1973 Nine-Mile Burn. However, the juniper woodlands on the western half of the allotment have become older and denser thus contributing to a distribution problem particularly in the Spooner Trough drainage. Wildfire suppression and lack of juniper treatment on the allotment has influenced the native vegetation by moving it towards a community dominated by juniper and a reduction in native grasses and forbs.

The following allotment listed in the proposed action has had Land Health Assessments completed.

Allotment	All Standards Met	Standard(s) Not Met	Impacts from Livestock	Remarks
South Ash Valley #316	No	Soils, Riparian/Wetlands and Streams	Historically heavy livestock grazing	Most reservoirs in the Allotment are placed in the riparian/wetland areas thus creating high livestock impacts.

South Ash Valley Actual Use Summary: Permitted use is 1624 AUMs (Animal Unit Months) and Five Year Utilization Levels in those areas assessed in the 2000 Rangeland Health Assessment

Season of Use	2001 5/3 -8/19	2002 6/13 - 9/25	2003 6/24 - 9/7	2004 6/14 -9/15	2005 6/9 - 9/8	2006 5/21 - 8/19
AUMs	1105	1103	835	905	733	802
Numbers	700 H	612 H	468 H	510 H	420 H	606 H
Spooner Trough						
Height	3.6" – 2.4"	6.7" – 2.3"	2.7"	5.2" - 2.9"	6.8" - 2.3"	7.4"- 2.3"
Date Monitored	4/30 -10/25	7/3 - 9/5	8/12	5/20 - 8/17	9/7 - 9/26	6/22 – 8/7
Sagebrush Flat						
***% utilization	2.0" - 3.0"	**33.7% (light)	27% (light)	57% - 52% (moderate)	49% - 30% (moderate)	21% - 36% (light)
Date Monitored	6/13 - 10/25	9/5	8/1/03	7/12 - 8/17	7/7 - 9/21	7/12 – 8/7

* The 1998 Rangeland Health Standards and Guidelines require a five inch stubble height and 40% utilization in the uplands.

** Changed to an Upland Assessment.

This Environmental Assessment (EA) will also include the North Dibble Allotment (# 0223), Radio Hill Allotment (# 0225) (T39N R22&23E sections 15,21,22,23) located east of Adin, CA; and the Loomis Allotment (# 0200) (T37N, R8E sec 8,9,17,18,19,20,30) located west of the town of Adin and south of Bieber, CA. The North Dibble, Radio Hill and Loomis Allotments are grazed as part of the surrounding base property, as indicated by the minimal permitted Animal Unit Months (AUM's); 53, 4 and 84 respectively. Recent documented observations by the BLM Rangeland Management Specialist suggest that all three allotments are in an acceptable condition, and utilization remains light to moderate. These allotments are listed as Category "C" or in "custodial" status. With the advent of the 1999 Rangeland Health Standards and Guidelines (S&G), a category rating of three (3) was assigned to these allotments indicating the status of one or more of the standards was not known. In accordance with 43CFR 4180-1 an S&G assessment will be conducted within the next few years. However, due to the small acreage and the lack of identified resource issues these allotments are a low management priority.

Need for the Proposed Action

The proposed action is needed to authorize grazing 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.

Plan Conformance

The proposed action is subject to the following plan(s):

Alturas Resource Management Plan & Environmental Impact Statement 1983 and as further amended for Northeastern California Rangeland Health Standards and Guidelines for Livestock Grazing (2000).

The proposed action has been determined to be in conformance with these plans as required by regulation (43 CFR 1610.5-3(a)).

Relationship to Statutes, Regulations, and Plans

Cultural Resources

California BLM has explicit responsibility to manage cultural resources on public lands consistent with applicable procedures and agreements.

Background site record and literature review will be conducted as a minimum level of review as part of the permit/lease renewal Environmental Assessment (EA). Present inventory will focus on known or suspected areas of historic ground disturbing activities associated with livestock grazing such as water sources, corrals, supplemental feeding areas, bedding areas, salt block stations, cattle grates and fence lines. The results of this analysis will be used to modify grazing permits/leases. If cultural resources are identified under an existing grazing permit/lease, the stipulations of the grazing permit should be modified to reflect comply with the Bureau's responsibility to manage cultural resources.

All cultural resources sites will be subject to review and evaluation for listing in the National Register of Historic Places. Pursuant to California protocol cited above, supporting documentation will be submitted to the California Office of Historic Preservation for review and concurrence to be submitted to the Keeper of the National Register. All cultural resources will be afforded protection consistent with law and policy, including appropriate mitigation measures.

Threatened or Endangered Species

Several of the allotments within the Alturas BLM Resource Area are within the range of federally listed threatened or endangered species. Pursuant to Section 7 of the Endangered Species Act, formal consultation with the Fish and Wildlife Service (FWS) was conducted on all allotments for which livestock grazing may affect listed species.

Wilderness

In general, the wilderness act prohibits roads, motorized equipment, mechanical transport, landing of aircraft, and placement of new structures and installations. The Wilderness areas are managed primarily to preserve natural features. For allotment containing wilderness areas, allotments are required to be managed under the provisions of the 1964 Wilderness Act and enabling legislation for the wilderness area.

Congress provided additional guidance for managing livestock within wilderness areas through the Congressional grazing guidelines found in the 1980 Colorado wilderness legislation. A regulation to manage livestock in wilderness is found in 43 CFR 6300. Allotments within Wilderness Study Areas shall be managed consistent with the direction found in the Interim Policy Management Handbook 8550.

Water Quality

All allotments are within watersheds governed by basin plans subject to California's or Nevada's clean water acts. Executive Order # 12088 directs federal agencies to comply with state administrative procedures. Recently, Standards and Guidelines reiterated the intent of the Federal Clean Water Act (CWA) and States' water quality plans. An MOU (BLM Manual Supplement 6521.11) with the California Department of Fish and Game describes how BLM and DF&G will coordinate where activities could affect aquatic or riparian habitat. The Unified Federal Policy to Insure a Watershed Approach in Federal Land and Resource Management (UFP) requires 1) all plans and activity management be conducted on a watershed basis, that all land owners/managers within a watershed be solicited for participation in the planning and management of the watershed, 3) that citizens and officials are better informed of planning and management, 4) that best science is used. The EA should analyze grazing within the

Watershed Concept described in the UFP. Where there is a threat to water quality or where water quality does not meet state standards coordination must occur with the regional water quality control board(s) and where aquatic or riparian habitat may be impacted CDF&G coordination must occur. All allotments that contain any water bodies (streams, lakes, springs, etc.) must have adopted Best Management Practices (BMP) for all activities associated with livestock management that could affect water quality.

Air Quality

Livestock grazing on public lands generally conforms to federal and state air quality standards. Where livestock grazing occurs within an area classified as a federal non-attainment/maintenance area, BLM will make a determination whether the action is in conformance with the applicable State Implementation plan (SIP) requirement.

BLM Standards and Guidelines for Livestock Grazing Management

The Record of Decision was signed in June 1999 for the Environmental Impact Statement (EIS) documenting the effects of adopting regional Standards for Rangeland Health and Guidelines for Livestock Grazing Management on BLM-administered lands in parts of California and NW Nevada. The Record of Decision covers that part of California and Nevada formerly known as the Susanville District. Standards were established for Upland Soils, Streams, Water Quality, Riparian, Wetland Sites and Biodiversity. Guidelines for livestock grazing were developed to ensure that standards are met or that significant progress is made toward meeting the standards.

The proposed action will occur in an area identified for livestock grazing in the Resource Management Plan. The proposed action is consistent with the land use decisions and resource management goals and objectives of the plan.

CHAPTER 2: Proposed Action and Alternatives

Proposed Action

The proposed action is to issue 10 year fully processed grazing permits to qualified current permit holders. Once the EA (environmental assessment) has been completed and FONSI (finding of no significant impact) and DR (decision record) has been signed and gone into effect, following the legal protest and appeals periods, grazing permits shall be issued for all eligible allotments. In the case of leased base property for eligible allotments, where leases are less than 10 years, these allotments shall have grazing permits issued coinciding with attached base property leases. These base property leases and subsequent grazing permits shall be for a minimum of 3 years or any length of time less than 10 years. Grazing permits less than 10 years may be automatically reissued upon base property lease renewal, or may be subject to additional environmental, and or, resource assessment at the determination of the BLM after consulting and coordinating with affected parties. At the end of the 10 year period from the date the DR goes into effect and prior to any grazing permits renewals, all allotments determined eligible for grazing in the DR shall be reevaluated in an EA, with no exceptions.

At a minimum all eligible allotments identified in the DR will have the following “Terms and Conditions”:
This grazing permit/lease is subject to modification, and or, cancellation based on findings, monitoring, and management objectives associated with, but not limited to, the forthcoming Alturas Resource Management Plan, Sage Grouse Conservation Plans, Rangeland Addendum to the California State Historic Preservation Office and California BLM Protocol, and Land Health Standards as determined by Land Health Assessments.
Archeological sites shall be identified and evaluated for National Register of Historic Places (NRHP) eligibility and may require additional mitigation/protection to maintain NRHP integrity. Potential mitigation measures include, but are not limited to, modification of livestock numbers, and or, season of use, protective exclosures, additional fencing, etc. Salting locations will be identified by grazing permit holders on an annual basis for the purpose of evaluating potential cultural resource impacts in close proximity to identified salting locations. When completed, the results of these evaluations may require relocation of salting sites, and or, additional mitigation as listed above.

All eligible allotments identified in the DR are subject to additional individual “Terms and Conditions”.

Under the proposed action all grazing permits will be reissued continuing previously authorized livestock grazing (Table A)

Table A

Allotments (current status)	Livestock Numbers	Season of Use	% public land	Active AUM's	Suspended AUM's	Authorization
S. Ash Valley #0316 15,467 acres public	916	5/1 to 8/1	58	1,624	0	#0403055 M&A Livestock
Anderson #318 610 acres public	22	5/1 to 9/1	100	90	0	#0403055 M&A Livestock
N. Dibble* #0223 590 acres public	35	9/1 – 10/31	75	53	0	#0403062 Gerald Owens
Radio Hill #0225 80 acres public	2	9/1 to 10/31	100	4	0	#0403062 Gerald Owens
Loomis #0200 615 acres public	44	5/1 to 11/30	27	84	0	#0403061 Joe Anderson

* North Dibble has 17 acres Forest Service land within administrative boundaries which is not included in % Public Land.

Alternative A (Preferred)

Same terms and conditions as the Proposed Action with the following modifications:

This alternative reduces livestock numbers and changes season of use on the South Ash Valley allotment, both these changes are to help mitigate for land health criteria not meeting standards (Table B)

The preferred alternative would also include merging the Anderson Allotment with the South Ash Valley Allotment and the Radio Hill Allotment with the North Dibble Allotment. In both cases these allotments are contiguous with each other and do not have fences or other physical boundaries to divide them. This would contribute to the efficiency of administering these allotments. Changes in acreages and AUM's would be minimal.

Table B

Allotments	Livestock Numbers	Season of Use	% public land	Active AUM's	Suspended AUM's	Authorization
S. Ash Valley #0316 (combined with Anderson)	816	5/15 to 8/30	58	1,447	267	#0403055 M&A Livestock
N. Dibble* #0223 (combined with Radio Hill)	37	9/1 – 10/31	75	57	0	#0403062 Gerald Owens
Loomis #0200	44	5/1 to 11/30	27	84	0	#0403061 Joe Anderson

Proposed Range Improvements

Project Name/No.	Location Township/Range/ Section	Comments ie. General Condition	Mitigation Description (indicate resource benefit of improvement)
Spooner Trough Hazardous Fuel Project	T38, R11E, Section 3	The 1973 Nine Mile reduced juniper in the east half of the allotment but continued to impact the west half by encroaching on the Spooner Trough Drainage.	Improve riparian health by implementing juniper treatment projects; lop and scatter juniper branches to protect and enhance understory
Spooner Trough Drainage Protection/Restoration	T38, R11E, Section 3	The Spooner Spring Reservoir is placed directly in the Spooner drainage contributing to FAR assessment.	Pipe water from Spooner Trough reservoir into troughs away from the drainage; fence a portion of the drainage including the reservoir.
Allotment Division Fence	T36N R12E Sections 31	Improve management.	Improve grazing system.
Land Exchange	Assess entire allotment.	Consolidate public lands and private lands	Create a two pasture system to implement a deferred grazing or rest-rotation grazing system once division fence is installed. As part of the proposed exchange obtain the Oxendine Spring area.

Implementing a proposed land exchange to consolidate public and private land within the South Ash Valley allotment would go a long way to more effectively manage livestock grazing in the South Ash Valley allotment. In 2003 Gary Johns and Tom Esgate presented an allotment management plan that would consolidate their private land within the allotment while also consolidating public lands. This would result in public land being combined on the southeast side of the allotment near the Brockman road area and private lands being consolidated on the northwest side above the Ash Valley Ranch. The Oxendine Spring area, which is a large spring area that lies north and west of the South Ash Valley Allotment between USFS and BLM, was included as part of the proposed exchange.

By implementing a land exchange to consolidate public lands a new pasture/boundary fence could be created in cooperation with the permittee thereby creating a two pasture system between BLM on the southeast end and private pasture on the northwest end of the present allotment. A two pasture system would provide more flexibility in implementing a rest-rotation or a deferred grazing system.

Alternative B (No Grazing Alternative)

This alternative would cancel the grazing authorizations on all allotments listed under the proposed action. As a result, grazing would not be authorized on these allotments. If this is to be a permanent cancellation, BLM would initiate a process in accordance with the 4100 regulations to permanently eliminate grazing on these allotments.

CHAPTER 3: ENVIRONMENTAL ANALYSIS

The required elements of analysis are listed below:

1. Air Quality (critical)	11. Soil
2. Areas of Critical Environmental Concern (ACEC) (critical)	12. Waste, Hazardous or Solid (critical)
3. Cultural Resources (critical)	13. Water Quality, Surface and Ground (critical)
4. Environmental Justice (critical)	14. Wetlands/Riparian Zones (critical)
5. Farmlands, Prime or Unique (critical)	15. Wild and Scenic Rivers (critical)
6. Flood plains (critical)	16. Wilderness (critical)
7. Invasive, Non-native Species (critical)	17. Wildlife - Threatened or Endangered Species (critical)
8. Native American Concerns (critical)	18. Wild Horses and Burros
9. Recreation	19. Vegetation
10. Social and Economic	

1. AIR QUALITY

There would be no affect to air quality under any of the alternatives.

2. AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

There would be no affect as there are no ACEC's within the areas of proposed action.

3. CULTURAL AND PALEONTOLOGICAL RESOURCES

The South Ash and Anderson allotments lie within territory ascribed to the Hammawi Band of the Achomawi Tribe, and the Aporige Band of the Atsugewi Tribe (Kniffen 1928, Garth 1953). The Radio Hill and North Dibble allotments lie within the Astariwi Band's ethnographic territory. The Loomis allotment lies within Atwamsini Band territory. All of these bands are considered part of a larger group termed the Pit River tribes. Primary villages of the Hammawi were located to the northeast of the South Ash/Anderson area in the vicinity of the town of Likely. Primary villages of the Aporige were located to the southwest, near Eagle Lake and west in Dixie and Little Valleys. Primary villages of the Astariwi were located near the towns of Canby, Adin and throughout Big Valley, and primary villages of the Atwamsini were located near Bieber. Achomawi and Atsugewi people followed a seasonal subsistence round that saw them venturing out from winter villages in the early spring to hunt and collect plant foods as they became available. Collecting and processing certain key resources that made up the bulk of the stored winter diet occupied much of their time in the spring and summer months. Chief among these important resources was yampa, or epos (*Perideridia* spp.) as well as biscuitroot (*Lomatium* spp.), wild onion and plum. Later in the year, people spent time visiting relatives and participating in fall ceremonies and game drives. After the fall hunts, people

returned to their winter villages, to repair or rebuild their winter homes, check their stores, and get ready for the deep winter snows.

The following discussion reviews additional cultural and paleontological resource information available for each allotment.

South Ash/ Anderson Allotments

Historic use of the South Ash/Anderson allotments focused primarily on livestock, with homesteads and ranches being established as a result. Historic resources in the area related to ranching activities typically consist of rock and barbed wire fences, various structures and outbuildings, such as corrals and barns associated with ranches and homesteads, and historic roads.

Other Historic resources found in the Madeline Plains area are related to transportation. The narrow gauged NCO railroad began its northward movement out of Reno in the early 1900's creating the towns of Ravendale, Termo and Madeline as each became the new railhead. Homesteading in the Madeline area reached its peak from 1910 to 1918 (Maniery and Baker 2004) after the construction of the rail line. Prior to the introduction of rail travel, the only way to reach the area was by the stage coach route that ran south to Susanville, or by horseback.

Ethnographic accounts of Native American subsistence point to the Madeline Plains as an important area for the collection of plant materials as well as sage grouse (Kniffen 1928). Trips to the Madeline Plains for these specific pursuits were undertaken every year and formed a critical part of the storable diet. Prehistoric use of the uplands within the South Ash and Anderson allotments, likely focused on the seasonal exploitation of both large game and important plant resources.

In the Madeline Plains area, several large sites and numerous smaller ones have been documented as a result of the Alturas Intertie and the Tuscarora Pipeline projects (Delacorte 1997, McGuire 2000). These sites range from sparse lithic scatters to Early Holocene encampments that are typically found along the relict shoreline adjacent to the Plains.

The South Ash allotment encompasses over 15,000 acres of public lands. Cultural resource surveys for Section 106 compliance have examined approximately 300 acres in this allotment with an additional 200 acres surveyed for Section 110 compliance in 2006. Overall the allotment is considered to have low to moderate sensitivity and as of this date, only twelve sites have been recorded. All of these sites were recorded during field surveys for the Alturas Transmission line in 1998 by Kautz Environmental. Problems with relocating sites recorded by this company in other areas along the Transmission line have been noted. During the 2006 field season, only one site in the South Ash allotment could be relocated; this is likely due to improper recordation, and not from sustained impacts to the sites.

However, site records for archaeological properties recorded in the Sagebrush Flat area, note varying degrees of impacts as a result of livestock grazing on all sites. It is reasonable therefore to assume that impacts to as yet undiscovered archaeological resources is occurring, as cultural properties are often located in or near riparian areas and on soils that are at risk. Due to the fact that South Ash is a Category 1 allotment, it is recommended that future survey focus on the high probability areas (i.e. springs, seasonal water courses, etc.) to locate additional cultural resources and determine the level of impacts (if any) at sites.

The Anderson allotment has had approximately 20 acres surveyed for Section 106 compliance, which was completed as a result of the Alturas Transmission line project. Five sites were recorded in this allotment by Kautz Environmental; however four of these lie on private property. There has been no monitoring of these sites since their original recordation. It is recommended that future surveys are focused in sections three and four, due to the presence of a seasonal drainage and relatively low topography that overlooks the Madeline Plains.

Paleontological Resources

There are no known paleontological resources within the South Ash/Anderson allotments. The lithological structure of the area is comprised primarily of Pliocene and Miocene volcanic basalts, interspersed with restricted areas of

Quaternary alluvial deposits (Jenkins 1978). In general, volcanic deposits are not conducive to preserving paleontological resources, and the limited areas of alluvium within the allotment typically do not possess such resources. Along the eastern edge of the allotment, the Madeline Plains have Quaternary lake deposits that could possess paleontological resources.

Radio Hill/North Dibble

Historic use of the Adin area focused largely on homesteading and ranching activities. Resources related to these pursuits typically consist of various ranch buildings and outhouses, stone, wood and barbed wire fences, as well as corrals, barns and trash scatters. Historic roads can be found within the area, although none are documented within the allotment boundaries.

Mining also comprises a significant portion of the Adin area history with the initial prospecting for gold in 1869 at the Hayden Hill Mine. A small mining community was established at Hayden Hill, complete with stores, saloons, and hotels (Hardesty et al. 1985). At its peak, this little community reached a population of around 500 people, with the town of Adin becoming the main supply center for the mining camp. The camp and by default the town of Adin, went through several periods of “boom and bust” for approximately 70 years. The final boom came with the advent of cyanide recovery technology developed in the 1890’s, which led to a resurgence in activity at sites that were previously abandoned as unprofitable (Maniery and Baker 2004). This final period was ended by a fire that swept through the camp in 1910. After World War II, larger corporations tried their luck using more modern mining techniques to extract gold deposits in the area, with limited success.

All eighty public acres of the Radio Hill allotment have had cultural resource surveys and no future survey will be necessary. Only one historic site (a trash scatter) was located in this allotment, and has not been significantly impacted by livestock. This site is not eligible for the NRHP.

The North Dibble allotment is comprised of 590 acres of public lands, of which approximately 320 acres (primarily in Section 23) have been surveyed for Section 110 compliance. No cultural resources were recorded, and overall the allotment is considered to have low sensitivity, due primarily to the topography and general lack of water.

Paleontological Resources

There are no known paleontological resources within the Radio Hill or North Dibble allotments. The primary lithological structure of the area is Pliocene and Miocene volcanic basalts that typically do not have paleontological deposits (Jenkins 1978). There is a small area of Quaternary alluvium located on private property near the springs in Section 22 in the North Dibble allotment. These deposits may contain paleontological resources.

Loomis Allotment

The Loomis allotment lies south of the town of Bieber, which was established in the late 1870’s. Historic resources in the area are usually related to ranching and homesteading activities and typically consist of cabins, outbuildings, barbed wire and stone fences and other range improvements. Eventually several stores, a blacksmith shop, three saloons and two hotels were constructed to service the local ranching community and provide for travelers. Bieber gained in population in the 1930’s due primarily to the construction of two connecting rail lines (the Western Pacific in 1931 and the Great Northern in 1932) that completed what came to be known as the Inside Gateway (Fraser 1932). With the completion of the two lines, it was then possible to travel from Seattle to Los Angeles.

The Loomis allotment consists of approximately 615 acres of public lands. Until 2006 no documented cultural resource surveys had been conducted within the allotment. However, in July of 2006, lightning caused fire burned approximately 500 acres, 300 of which were located within the Loomis allotment. This area was subsequently surveyed for cultural resources, and resulted in the location of two prehistoric sites that were damaged by dozer line construction (Foster-Curley 2006). One of these sites was tested in August of 2006 and was determined eligible to the NRHP (Tiley and Jackson 2006). These are the only sites that have been properly recorded in the allotment. Other sites located within the burned area consisted of circular rock features that may be related to hunting (blinds) or plant gathering (caches). In general, the allotment is considered to have low to moderate sensitivity, due primarily to the rocky nature of the landscape.

Paleontological Resources

There are no known paleontological resources in the Loomis allotment. The primary lithological structure of the area is Pleistocene and Pliocene volcanic basalt that generally lacks paleontological deposits (Jenkins 1978). However, there are small pockets of undivided Pliocene non-marine sedimentary rock that may contain paleontological resources.

B. Environmental Consequences

Impacts to cultural resources as a result of livestock grazing, generally take the form of data loss through the trampling and dispersion of artifacts, features and cultural soils (Nielson 1991). The result of such action can make it difficult to interpret site use and extent, as well as poses a serious problem in accurately identifying cultural artifacts and features. Variables influencing the level of impact at any given site include: 1) soil type (e.g., hard or rocky soil substrates will lead to greater artifact damage and horizontal displacement); 2) soil moisture (e.g., wet soils will lead to greater vertical displacement and stratigraphic mixing); 3) vegetation type/ground cover (depending on site landform specifics, erosion may increase as vegetation cover decreases resulting in significant secondary impacts); and 4) intensity of grazing (Osborne et al 1987). Due to the lack of monitoring and survey data (especially in the South Ash allotment), there is a very real chance that significant impacts are currently occurring to archaeological sites, and would continue with the issuance of a ten-year permit.

C. Impacts of Proposed Action

South Ash

In the South Ash Allotment livestock would be permitted from 5/1 to 8/1 annually. The large number of AUM's coupled with poor livestock distribution would continue to adversely affect cultural resources within the allotments, especially in highly impacted areas such as Sagebrush Flat.

North Dibble/Radio Hill

Continued grazing at current levels would have no impact to cultural resources in these allotments. This is due to the low number of AUM's, and the general lack of cultural resources in either allotment.

Loomis

Continued grazing at current levels would have little effect on cultural resources within this allotment. This is due to the relatively low number of AUM's, the rocky terrain and the fact that most of the allotment is on private property.

D. Impacts of Alternative A

South Ash/Anderson

Under this alternative livestock use of the South Ash allotment would be delayed for two weeks, causing a later season of use, but overall AUM's would be reduced. Late season congregation near reliable water sources would prove to be extremely detrimental to cultural resources that are located near these areas. While impacts occur to sites during the wet season, it is the late season repeated trampling and wallowing near water developments, that potentially cause the most damage (Foster-Curley pers. observation).

The small reduction in livestock numbers (100 head) would have little to no effect on reducing impacts to cultural resources, especially in high impact areas like Spooner Trough. The implementation of the two projects proposed for the Spooner Trough area and the construction of an allotment division fence might help to offset these impacts. The merging of the Anderson and South Ash allotments may have a positive effect on livestock distribution which could act to reduce impacts to cultural resources.

North Dibble/Radio Hill/Loomis

Impacts to cultural resources in these allotments would be essentially the same as the proposed action.

E. Impacts Alternative B

In areas where there are significant known conflicts between livestock grazing and the condition of cultural resources, a "no grazing" alternative is preferred. Due to the large size of the South Ash allotment, there is a considerable lack of cultural resource monitoring and survey data. However, given the fact that rangeland health issues have been identified within the allotment, the "no grazing" alternative would provide the most protection to cultural resources.

There are no significant conflicts with cultural resources in the Radio Hill, North Dibble or Loomis allotments. Thus, a “no grazing” alternative would have little effect on cultural resource conditions.

F. Cumulative Impacts

Cumulative impacts were evaluated by considering past, present, and future use of the allotments and range improvement projects. These projects are considered as a sum to determine if significant impacts could occur when the projects are combined, that may not have been identified during the impact analysis of the proposed project.

South Ash

South Ash is listed as a Category 1 allotment that failed to meet range land health standards due to livestock grazing. It has seen heavy use over the last permit period (10 years), and has a considerable problem with the distribution of livestock. A number of range improvements including the construction and routine maintenance of reservoirs, pasture and boundary fences, and fire suppression as a result of the Nine Mile Fire have occurred within the allotment. Most of these projects were completed without the benefit of cultural resource evaluations. The cumulative effect to cultural resources as a result of these improvements, heavy grazing and fire suppression are increased ground disturbance, erosion and impacts related to the congregation of livestock near watered and shaded areas. The proposed action (continue current grazing practices) would likely result in continued deterioration of sites that are eligible for the NRHP. The cumulative effect would be the loss of data that contributes to NRHP eligibility, or the complete loss of sites.

North Dibble/Radio Hill/ Loomis

Cultural resources in these allotments are not experiencing cumulative impacts as a result of livestock grazing.

G. Recommendations/Mitigation

In order to protect fragile cultural resources, increased survey within the South Ash allotment needs to be conducted. Monitoring and documentation of recorded sites should be the first task in assessing ongoing impacts in the allotment. Exclosures or other mitigation measures as described in the rangeland amendment to the BLM-SHPO Protocol should be undertaken where significant resources are being seriously impacted.

H. Consultation

The Pit River Tribe was consulted in December of 2006 regarding the permit renewal process for the allotments discussed in this EA. A copy of the draft EA will be sent to the Tribe for review before the final draft will be issued.

F. References

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4. ENVIRONMENTAL JUSTICE

This project has been developed in accordance with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order requires each Federal agency to take the appropriate and necessary steps to identify and address 'disproportionately high and adverse' effects of federal projects on minority and low-income populations.

Environmental Justice analysis is applied in this EA due to the adverse effect current livestock grazing practices are having in the South Ash allotment. Adverse effects are defined as "having a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms" (Federal Interagency Working Group on Environmental Justice, 2006). Adverse human health effects include bodily impairment, infirmity, illness, or death. Adverse environmental effects may include ecological, cultural, human health, economic, or social impacts when interrelated to impacts on the natural or physical environment.

5. FARMLANDS, PRIME OR UNIQUE

No prime or unique farmlands occur within the areas of proposed action.

A. References

Soil Survey of Susanville Area, Parts of Lassen and Plumas Counties, California. 2004. United States Department of Agriculture and Natural Resource Conservation Service.

6. FLOOD PLAINS

There are floodplains associated with two main intermittent drainages that run through the South Ash allotment, Spooner Trough Canyon and Anderson Canyon. Spooner Trough Canyon was rated Functioning at Risk (FAR) with a downward trend in the 1999 riparian functional assessment. Problems contributing toward the downward trend are as follows: Upland species are invading the riparian zone; herbaceous vegetation is not sufficient to protect stream banks from erosion; and hoof damage is contributing toward streambank and meadow degradation. Channel incision has resulted in floodplain detachment and therefore the floodplain does not function to disperse high flow events. This exacerbates streambank erosion issues and water table lowering. Upland plant invasion is likely due to lowering of the water table. The main reason for damage in Spooner Trough Canyon is the positioning of reservoirs within the drainage itself. Damage to the drainage could be mitigated by distributing the water away from the drainage as proposed in the Allotment Management Plan. A floodplain associated with Ash Creek runs through Radio Hill allotment but it has yet to be assessed for proper functioning condition.

B. Environmental Consequences

Background. Under Executive Order 11988, federal policy is to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practical alternative." Avoiding development and modification of floodplains is to (1) reduce the hazard and the risk of flood loss, (2) minimize the impact of floods on human safety, health, and welfare, and (3) restore and preserve the natural and beneficial floodplain values.

BLM Stream Health Standard. Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that:

Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

1. Impacts of Proposed Action

The proposed action emphasizes an earlier season of use which would allow for increased riparian regrowth (Leonard, 1995) relative to Alternative A, however soil conditions are likely to be moist during this time and may contribute to increased floodplain compaction and bank erosion due to hoof shearing. Until actions proposed in the Allotment Management Plan are implemented, floodplain condition and bank stability in the affected area may remain static or continue in a downward trend.

2. Impacts of Alternative A (Preferred)

This alternative emphasizes a later season of use which may contribute towards bank and floodplain stabilization as soils dry out, however establishment of riparian vegetation to stabilize banks may be hindered due to limited regrowth opportunity (Leonard, 1995). Though AUM's will be decreased under this alternative, it is not enough of a decrease to improve the current conditions. Until actions proposed in the Allotment Management Plan are implemented, floodplain conditions in the affected area will likely remain static or continue in a downward trend.

3. Impacts of Alternative B (No Grazing)

Floodplains and stream banks will gradually recover as riparian vegetation reestablishes and bank erosion from hoof shearing ceases.

C. References:

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7. INVASIVE, NON-NATIVE SPECIES

A. Affected Environment

Noxious and invasive non-native species are present in or adjacent to the project area. Listed noxious weeds (as defined by the California Department of Food and Agriculture-CDFG), include Scotch thistle (*Onopordum acanthium*), hoary cress (*Cardaria draba*), Dyer's woad (*Isatis tinctoria*), and medusahead (*Taeniatherum caput-medusa*). The CDFG rates these species as A, B, B, and C pests respectively (CDFG, 2006). Other invasives include cheatgrass (*Bromus tectorum*), Japanese brome (*B. japonicus*), bulbous bluegrass (*Poa bulbosa*) and dandelion (*Taraxacum officinale*). The Modoc County Department of Agriculture has been controlling noxious weeds on BLM administered lands since 1981 and the BLM has conducted its own control beginning in 2006. Lassen County Department of Agriculture stopped treating weeds on BLM administered lands in Lassen County in 2001. Modoc County crews have conducted inventory and control intermittently since then in Lassen County.

Kentucky bluegrass (*P. pratensis*) is considered a non-native or a naturalized alien found meadows and wetlands along with Baltic rush (*Juncus balticus*). These species can be found throughout the project area. An increase in these species indicates an early serial condition of the plant community and is usually equated with heavily grazed conditions or heavy disturbance of some kind. (Weixelman, et.al. 1999).

Scotch thistle is native to Europe and Asia and invades most habitats such as waste areas, roadsides, dry meadows, rangelands, pastures, and sometimes waterways. It favors habitats with high soil moisture, such as swales, gullies, draws, and roadside borrow pits, but is invading dry habitats (Selected Noxious Weeds, 1997; Beck, 1999). This biennial is widespread in NE California and is infesting pastures and rangelands throughout Modoc and Lassen County. Water, wind, wildlife, livestock, and human activities disperse Scotch thistle seed. Most of the seeds fall nearby the parent plant (Beck, 1999). Scotch thistle is found 2 miles away on the North Ash Valley allotment (adjacent to South Ash), and to the southwest on the Wing allotment. North Juniper has an infestation of Scotch thistle approximately 1 mile NW of the Loomis allotment; there are numerous Scotch thistle infestations on private lands to the west. Scotch thistle also occurs on the North Dibble allotment. Round Valley, north and east of North Dibble has dense infestations on private lands.

Hoary cress, also called whitetop, is a perennial forb from central Europe and western Asia. It is well adapted to moist habitats, especially sub-irrigated pastures, saline soils, rangelands, roadsides, and ditch banks. (Selected Noxious Weeds, 1997; Sheley & Stivers, 1999). It is found throughout northeastern California, especially in Big Valley, Madeline Plains, and Tulelake. Hoary cress can form monospecific mats that exclude most or all other herbaceous vegetation. Persistent root systems can spread to over 6 feet in one year and buds can develop along any point of the root system. Root fragments carried in mud by livestock and vehicles are another means of dispersal (Chipping & Bossard, 2000; Sheley & Stivers, 1999). Seed is commonly spread in hay and forage, in soil attached to livestock and farm equipment, and by flowing water. Plants are also dispersed by movement of root parts carried by road maintenance, tillage, and in mud carried by vehicles and livestock. Hoary cress has been located along county and BLM roads. It is found in scattered locations only.

Dyer's woad, also called marlahan mustard, is a winter annual, biennial or short-lived perennial that is native to Southeastern Russia. It infests rangelands, forests, pastures, alfalfa, waste areas, roadsides, railroad right-of-ways, and fencelines. A deep taproot accesses deeper nutrient and moisture reserves while shallower lateral roots take advantage of spring moisture and surface nutrients. Dyer's woad spreads mainly by seed, with wind and water the main factors of seed detachment. Contaminated hay (especially from Round Valley) is one of the major causes of this weed's expansion (Selected Noxious Weeds, 1997; McConnell, Evans, and Dewey, 1999). It is found throughout Northern California with large infestations from Tule Lake to New Pine creek, Davis Creek and Adin. It is estimated that Dyer's woad is spreading at an annual rate of 14 percent on BLM rangelands in the Pacific Northwest (McConnell, Evans, and Dewey, 1999). Dyer's woad is found on the NE side of North Dibble allotment. Large infestations of this weed are found on private lands throughout Round Valley. It has a high potential to move south along Highway 139.

Medusahead, native to Eurasia, is an extremely competitive, annual grass that crowds out many native and desirable plants, invading millions of acres of semi-arid rangelands. It appears most commonly on high shrink-swell clay soils. Medusahead has been observed moving onto the clay loam soils and is invading the dry portions of meadows

that have been heavily used by livestock. Infested rangelands have suffered up to 75% reductions in grazing capacity. Medusahead is found throughout most NE California's rangelands and is common throughout the Modoc Plateau, including the Fall River and Big Valley areas. Medusahead is located on all the grazing allotments covered in the Proposed Action. The worst infestations are on the North Dibble allotment.

Medusahead competes with native vegetation and increases the fire frequency. Increased fire frequency could have a negative impact to low sage communities that usually have a fire return intervals of 80 to 200 years. Perennial grass, forb, and shrub cover are all negatively correlated with medusahead cover in the western Great Basin (Young, J.A., 1992). Medusahead is not being actively being controlled by either BLM or the Counties because it is too widespread. The BLM will be conducting experimental studies in the Big valley area, to determine what control measures, if any, can be conducted on medusahead.

Cheatgrass is an invasive annual grass that is invading millions of acres of western rangelands. Although it has been present in the Great Basin for over 100 years, it is only in the past 20 to 40 years that it is becoming a serious problem in shrublands throughout the west (Monson, 1994). Many of these western plant communities are becoming closed to native perennials, have a fire cycle that has been substantially reduced, (Young, 1994; Pyke et. al. 2003), and where thresholds are being crossed not only to juniper woodlands but to communities dominated nearly exclusively by cheatgrass (Tausch, 1999).

Common crupina (*Crupina vulgaris*) is an annual native to the Mediterranean region of Europe. This is a CDFA "A" rated pest and federally listed noxious weed. Presently it is not located on BLM lands but is found on Modoc National Forest (Kelly Springs Road) and private lands in Round Valley NE of the Reclamation allotment; the infestation is approximately 4 miles NE of North Dibble allotment. The primary habitat is southern slopes on steep canyon grasslands and open forested areas, as is found in Round Valley. It can be found in waste areas dry hills rangelands, and grassy slopes. High seed production often produces dense patches that invade native plant communities quickly. Common crupina appears to be adapted to a wide range of edaphic and climatic conditions (Selected Noxious Weeds, 1997; Thill, Roché, and Zamora, 1999).

Eastside pine and mixed pine/bitterbrush plant communities are being heavily infested by post-settlement western juniper; these trees--less than 180 years old--are considered invasive. See Vegetation.

B. Environmental Consequences

1. Impacts of the Proposed Action

Invasive weeds continue to be a problem along all roads, which are the primary vectors, because the seeds are carried by vehicle traffic along the road. Paved highways such as Highway 299 will have greater problems due to the higher traffic levels. Weed problems can be greater in access roads crossing through highway edges, where vehicles may pick up weed seeds deposited along the sides of the highway. These weed problems are addressed to some extent through the standard CalTrans weed control measures implemented for all State highways. The proposed action indirectly encourages weeds to be spread via the road systems since all roads on Public Lands are open to vehicular access.

There is the potential for human activities and livestock to transport weed seeds and plant parts to areas not having noxious weeds. The BLM would consult with the permittee to insure that trucks used to haul livestock are weed seed and weed plant part free. If prevention measures are not incorporated with control measures, weeds could invade more sites. Otherwise, the present grazing management is not contributing to the spread of noxious weeds beyond their present range.

2. Impacts of Alternative A (Preferred)

Same as the Proposed Action but with the following additional impacts. Construction activities (range improvements) have the potential to introduce new noxious weeds into the project area and to cause the spread of medusahead from the project area to areas outside the project area. Because the Alturas Field Office has a weed prevention schedule, all activities would be implemented with weed prevention as standard operating procedure.

Washing of equipment before entering the project area and before it reaches the highway would help to prevent the spread of noxious weeds.

3. Impacts of Alternative B (No grazing)

The removal of livestock from the areas of proposed action would eliminate the possible spread of noxious weeds via livestock activities. In addition, removal of livestock may reduce management prioritization on federal lands within the areas of proposed action, thus, reducing the potential for vegetation management and noxious weed control that would be beneficial to ecosystem health. Medusahead will continue to infest the clayey soils and low sagebrush plant associations. There would still be opportunities to control weeds and restore degraded plant communities.

4. Mitigation

The BLM would consult with the permittees to insure that trucks used to haul livestock are free of weed seed and weed plant parts. The BLM will encourage livestock permittees to document locations of noxious weeds they encounter. Salting, unloading animals, or trailing would be avoided in and near known occurrences of noxious weeds. The BLM will continue to work with the Modoc County Department of Agriculture to control noxious weeds on Public Lands. The BLM will further efforts to work with the permittees to cost-share for weed control, especially in Round Valley and to continue to fund a BLM Weed Crew to control noxious weeds in Northern Lassen County.

C. References

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8. NATIVE AMERICAN CONCERNS

There are no known Native American Traditional Cultural Properties within the project area. The Pit River Tribe was consulted in December of 2006, and did not identify any other concerns.

9. RECREATION

A. Affected Environment

The main recreation activities in the allotments under the proposed action are large game hunting, upland game hunting, bird watching, horseback riding and driving for pleasure with four-wheel drive vehicles. Pronghorn antelope and mule deer numbers have declined dramatically in the west as well as on the Juniper Creek Tablelands, due mainly to decline in habitat conditions and quality of forage. Fish and Game and BLM biologists have noted that the amount and quality of vegetation is marginal at the end of the grazing season, with little high quality forage left available for pronghorn and mule deer going into winter conditions. The South Ash allotment has an abundance of primitive traditional deer hunting camps associated with the aspen groves in the southwest portion of the allotment.

B. Environmental Consequences

1. Impacts of Proposed Action (No Action)

Impacts to recreation resources as a result of livestock grazing, are associated with vegetation loss which also relates to; visual quality and aesthetics, and hunting activities. Plants utilized by a variety of wildlife on the Juniper Creek Tablelands have changed over the years, thus effecting the numbers and habitats of various terrestrial species. Permits issued for big game hunting from California Department of Fish and Game have declined due to poor habitat conditions, and has moderate adverse effects on hunting and tourism. Concentrated livestock use that occurs along seasonal water courses can have moderate negative effects from lack of vegetation and fewer game species associated with these special habitats. Effects to visual quality are negligible to minor when vegetation is removed and a homogenous landscape that lacks diversity and texture occurs. Aesthetics and visual quality would suffer minor to moderate adverse effects from the removal of riparian vegetation. For purposes of analysis it is assumed that the impacts of livestock use are distributed across the landscape where access is unhampered, and would have the most intense impacts where livestock is concentrated in areas where water and riparian vegetation are unprotected. In these areas livestock remove most of the riparian vegetation which is important to hunting, wildlife observation, and visual quality. The vegetation of these special habitats that is lost would have minor to moderate adverse effects to recreational activities.

2. Impacts of Alternative A (Preferred)

Concentrated livestock use would still occur along seasonal water courses with minor to moderate negative effects from lack of vegetation and fewer game species associated with these special habitats. Primitive deer hunting camps would continue to be negatively impacted visually by removal of vegetation in and around the camps, as aspen groves are also a favorite area for livestock congregation. Effects to visual quality are negligible to minor when vegetation is removed and a homogenous landscape occurs that lacks diversity and texture. Aesthetics and visual quality would suffer minor to moderate adverse effects from the removal of riparian vegetation.

3. Impacts of Alternative B (No Grazing)

Vegetation and habitat that occurs along seasonal water courses can have moderate beneficial effects from no grazing. A small amount of game species associated with these special habitats would be increased. Beneficial effects to visual quality are minor to moderate when vegetation is left in place, as the landscape would have more diversity, structure, and texture. Aesthetics and visual quality of riparian areas would have minor to moderate beneficial effects with the riparian vegetation left in place.

C. Cumulative Impacts

Although livestock numbers are slightly less, cumulative impacts would continue at incremental levels in all allotments, with hunting activities declining and corresponding to the present downward trend in wildlife numbers. Special habitats and riparian areas would still be impacted negatively by concentrated livestock numbers. Overall visual resources would have slightly less adverse effects due to fewer livestock, but the special habitats would continue to suffer.

10. SOCIAL AND ECONOMIC VALUES

The proposed action under alternatives A and B could have a positive economic effect to the person(s) in which a grazing lease is issued. If the No Grazing Alternative were to be chosen, canceling the grazing lease for all or any lessee(s) under the proposed action, this would have a negative economic affect upon the owners or lessors of the base property in which grazing preference is attached, and would possibly have a negative economic impact within the local community.

11. SOILS

A. Affected Environment

South Ash Valley/Anderson Allotments

Soil Mapping Unit	Soil Description	Management Considerations
505 - Puls very cobbly loam; 2-9% slope. Included are 20% Dunnlake very cobbly loam, Longcreek very cobbly loam on the upper slopes, Deepcut cobbly sandy loam. (Spooner Trough)	Puls is shallow, well-drained soil on old alluvial fans and gently sloping plateaus. It formed in alluvium and residuum weathered from basalt and andesite. Permeability is very slow and water capacity is very low or low. Runoff is slow to medium and water erosion is slight.	Production of forage is limited by shallow soil depth, resulting in droughtiness, stones on the surface, which increases runoff and duripan, which restricts the movement of water and rooting depth.
210 – Ravendale silty clay; 0-2% slope; areas of Gerlach silty clay, Ravendale clay, ponded, Schamp very cobbly sandy loam, and Longcreek very cobbly loam, (Sagebrush Flat)	Ravendale is formed in alluvium weathered from basalt and andesite. Slopes are smooth and slightly hummucky because of gilgai microrelief (high shrink-swell capacity). Permeability is slow and water capacity is high. Runoff is slow and water erosion is slight.	This soil is subject to ponding once in 2 years or more often for brief to very long periods in January to May. Where this unit is used as rangeland, the production of forage is limited by the silty clay surface. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.
707 - Hagata-Playa complex; 0-2% slope; 60% Hagata silt loam and similar inclusions; 30% Playa*; 10% Contrasting inclusions.	Hagata soil is weathered from tuff and lacustrine sediments. It is moderately deep and well drained; permeability is very slow; runoff is slow and water erosion is slight. Included areas: Ravendale silty clay;	When the soil is saturated, equipment use and livestock trampling can damage the soil and vegetation. Surface crusting can greatly reduce water infiltration and seedling emergence. Livestock

(Sagebrush Flat)	Saddlerock silty clay and Truax sandy loam on fans.	management can be used to reduce crusting. Forage production is limited by shallow rooting depth. Maintaining good soil cover reduces frost heaving damage to seedlings.
159- Devada-Petes creek-Fiddler assoc., 2-30% slope. 45% Devada very stony loam; 20% Petes creek gravelly loam; and 20% Fiddler very stony loam. (Spooner Trough)	Devada is formed from weathered andesite or tuff. It is shallow and well drained; permeability is slow; runoff is medium and water erosion is moderate. Petes creek soil is formed from andesite or basalt; it is moderately deep and well drained. Permeability is moderate; runoff is medium and water erosion is moderate. Fiddler soil is moderately deep and well drained. Formed from basalt or andesite. Permeability is slow. Runoff is rapid and water erosion is moderate.	Where the Devada soil is used as rangeland, the production of forage is limited by shallow soil depth, stones on the surface, and a claypan. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock. Plant community includes bluebunch wheatgrass, Idaho fescue and low and black sagebrush. Where the Petes creek is used as rangeland, forage production has few limitations. There are few limitations for seeding. Potential plant community consists primarily of bluebunch wheatgrass, Idaho fescue and mountain big sage. This area may be used as a fawning area by mule deer if plant community is dominated by big sage.

*Playas consist of level, barren saline silt and clay in closed basins.

Radio Hill Allotment

Soils Mapping Unit	Soil Description	Management Considerations
102,103,104-Adinot	Shallow Very Cobbly Loam commonly dominated by Bluebunch wheatgrass, Thurber needlegrass, and low sagebrush. An important feature of these soils is the 20 to 40 percent surface coverage of cobbles and stones. These soils have a perched water table, very low available water capacity, and forage production limited by shallow rooting depth.	Because of the limited forage production and very low available water capacity, plant community composition can be readily impacted by heavy grazing or long duration use. The high water table saturates the soil in spring, making soil and vegetation susceptible to damage caused by livestock trampling. When soils are dry however, the substantial cover of rock fragments provide significant armoring for the site.

North Dibble Allotment

Soils Mapping Unit	Soil Description	Management Considerations
102,103,104 -Adinot (90% of allotment)	Shallow Very Cobbly Loam commonly dominated by Bluebunch wheatgrass, Thurber needlegrass, and low sagebrush. An important feature of these soils is the 20 to 40 percent surface coverage of cobbles and stones. These soils have a perched water table, very low available water capacity, forage production limited by shallow rooting depth, and low to moderate erosion hazard.	<p>Because of the limited forage production and very low available water capacity, plant community composition can be readily impacted by heavy grazing or long duration use.</p> <p>The high water table saturates the soil in spring, making soil and vegetation susceptible to damage caused by livestock trampling.</p> <p>When soils are dry however, the substantial cover of rock fragments provide significant armoring for the site.</p>
246 - Malinda very cobbly loam, 30% to 50% slope (5% of allotment)	A shallow very cobbly loam site, these soils are largely dominated by grasses, mountain big sagebrush, antelope bitterbrush, and western juniper. About 30 to 50 percent of the site is covered with cobbles and stones. These are well drained soils, with low available water capacity, and a moderate to high erosion potential.	<p>Maintaining a cover of vegetation, such as grass and brush, on about 60 percent of the surface helps to control erosion during periods of intense rainfall and spring snowmelt, primarily spring and winter.</p> <p>Because of the limited forage production and very low available water capacity, plant community composition can be readily impacted by heavy grazing or long duration use.</p> <p>When soils are dry however, the substantial cover of rock fragments provide significant armoring for the site.</p>
273 - Oxendine –Sweagert complex (5% of allotment)	This is a shallow, moderately drained complex with a very low to moderate available water capacity and 20 to 50 percent surface coverage of cobbles and stones. Common vegetation is low sage and grasses. Erosion hazard is low ; and a cemented pan common at 13 to 20 inches.	<p>Because of the limited forage production and low available water capacity, plant community composition can be readily impacted by heavy grazing or long duration use.</p> <p>When soils are dry however, the substantial cover of rock fragments provide significant armoring for the site.</p>

Loomis Allotment

<p>168 - Fiddler-Whiting very cobbly and stony loam; 15 to 30% slope.</p>	<p>This is a moderately deep, moderately well drained soil consisting of 15 to 30 percent cobbly to stony clay loam. Erosion hazard is moderate with low water holding capacity. Common understory plants include rubber rabbitbrush, mountain big sage, Thurber needlegrass and bluebunch wheatgrass.</p>	<p>Maintaining a cover of vegetation, such as grass and brush, on about 60 percent of the surface helps to control erosion during periods of intense rainfall and spring snowmelt, primarily spring and winter.</p> <p>Because of the limited forage production and very low available water capacity, plant community composition can be readily impacted by heavy grazing or long duration use.</p> <p>When soils are dry however, the substantial cover of rock fragments provide significant armoring for the site.</p>
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B. Environmental Consequences

Proposed Action (No Action)

Continued soil disturbance associated with livestock grazing is anticipated to continue to occur particularly in the Spooner Trough drainage and Sagebrush Flat areas.

Alternative A (Preferred Alternative)

The failure of the South Ash Valley Allotment to meet the Rangeland Health soils standards was not entirely due to current livestock use, but is in combination with past season-long grazing and the effects of an expanding juniper community. Shallower soils with duripans or claypan, are more likely to be saturated during spring snowmelt and rainfall. When soil is saturated, livestock use could compact soil and trample vegetation. If livestock are not distributed across the allotment and are allowed to congregate in one or a few localized areas – those areas of livestock congregation could receive heavy grazing pressure with insufficient litter accumulation as a result. The lack of litter or other vegetation could then cause frost heaving of shallow rooted perennial grasses such as Sandberg’s bluegrass. The compacted areas would be more prone to invasion by exotic annuals; cheatgrass could dominate the more loamy soils and there could be reductions in soil fertility.

It is proposed that the South Ash Valley Allotment turnout date be changed from May 1 to May 15 with the off date changed from August 1 to August 30 and numbers reduced from 916 to 816. The change in the season of use would reduce grazing in the Sagebrush Flat area when the soil is wet and continued grazing can cause compaction of the surface layer, poor tilth, and excessive runoff. Reduced numbers would limit the amount of impact on these areas and deferred further in those areas where turnout is alternated between the southeast end and the northwest end of the allotment every other year. It is felt that this would maintain good soil cover and encourage seedling establishment that was identified in the Rangeland Health Assessment.

The impact of implementation of these alternatives on soils and associated vegetation on the Radio Hill and North Dibble Allotments would be negligible. The systems currently in place, employ short duration, late season grazing and enjoy light to moderate grazing utilization. The current system fully addresses the management considerations shown above.

3. Impacts of Alternative B (No Grazing)

This alternative would cancel all grazing leases. As a result, livestock grazing would not continue. This alternative would provide the benefits consistent with the absence of livestock disturbance to soils and vegetation. The removal of livestock from the areas of proposed action would have the potential to limit active management prioritization on

BLM lands within the areas of proposed action. This would reduce the potential for soil and vegetation management that would benefit ecosystem health.

C. References:

Soil Survey of Lassen County, California. USDA; March 4, 1988.
South Ash Valley Rangeland Health Assessment, 1999.
Soil Survey of Intermountain Area, California,
Parts of Lassen, Modoc, Shasta and Siskiyou Counties, 2003

12. WASTE, HAZARDOUS OR SOLID

There would be no affect because there are no known hazardous or solid waste issues in or around the Allotment.

13. WATER QUALITY, SURFACE AND GROUND WATER

A. Affected Environment

Water quality in Ash Creek in the Radio Hill allotment has not been tested, but has it been tested in an upper reach. Most water quality constituents in the upper reach met standards except for temperature. Ash Creek provides habitat for the endangered species Modoc sucker and it is, therefore, crucial to maintain good water quality (see Wildlife section for more on Modoc Sucker). Spooner Trough Canyon, in the South Ash allotment, and an unnamed spring on private land were both rated FAR indicating the possibility of water quality impairment due to livestock impacts. High concentrations of livestock in the area produce a substantial probability of nutrient loading, increased turbidity, increased sedimentation, and fecal coliform contamination. Waste from livestock introduces high nutrient concentrations, which stimulate algal blooms. Algal decomposition decreases dissolved oxygen levels and increases stream temperatures, both harmful to aquatic species (US-EPA 1995). Moreover, waste from livestock carries bacteria that may be accompanied by pathogenic organisms and viruses (Bohn and Buckhouse 1985b, George 1996). These organisms may contaminate swimming areas or human drinking water sources (Gary et al. 1983, Owens et al. 1989, George 1996).

The guiding document for ensuring compliance with water quality law and regulation is the *Standards for Rangeland Health and Guidelines for Livestock Grazing Management on BLM-Administered Lands in Northeastern California and Northwest Nevada – Record of Decision. (1998).*

Water will have characteristics suitable for existing or potential beneficial uses. Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California and Nevada State standards, excepting approved variances.

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened, and restore them where they are currently degraded. This objective is of even higher priority in the following situations:

- a. where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;
- b. where aquatic habitat is present, has been present, or is potentially present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and
- c. in designated water resource sensitive areas such as riparian and wetland areas.

B. Environmental Consequences

1. Impacts of Proposed Action

The proposed action emphasizes a earlier season of use relative to Alternative A, however it still encompasses the hottest summer months. Air temperatures will be at their highest thus compounding water quality impacts of livestock. Riparian regrowth has greater potential relative to the proposed action and may provide better shading for

temperature control later in the season. Until actions proposed in the Allotment Management Plan are implemented, however, water quality in the affected area may remain static or continue in a downward trend.

2. Impacts of Alternative A (Preferred)

This alternative emphasizes a later season of use, however it still includes grazing in the hottest summer months which may contribute towards degraded water quality relative to the proposed action. Air temperatures will be at their highest thus compounding water quality impacts of livestock and seasonal low flow conditions. Moreover, riparian vegetation will have less regrowth potential and may not provide shading for temperature control in later months (Leonard, 1995). Though AUM's will be decreased under this alternative, it is not enough of a decrease to improve the current conditions. Under this alternative it is unlikely that water quality will significantly progress towards meeting standards until actions proposed in the Allotment Management Plan are implemented. Until then, water quality in the affected area may remain static or continue in a downward trend.

3. Impacts of Alternative B (No Grazing)

Water quality will quickly recover as impacts from grazing pressure are eliminated and riparian vegetation conditions improve.

C. References:

- Bohn, C.C., and J.C. Buckhouse. 1985b. Coliforms as an indicator of water quality in wildland streams. *J. Soil and Water Cons.* 40:95-97.
- Gary, H.L., S.R. Johnson, and S.L. Ponce. 1983. Cattle grazing impact on surface water quality in a Colorado front Range stream. *J. Soil Water Cons.* 38:124-128.
- George, M.R. 1996. Creating awareness of clean water issues among private landowners. p. 96-100. In: W.D. Edge, S.L. Olson-Edge (eds.), *Sustaining rangeland ecosystems*. Oregon State Univ. Extension Service, Special Rep. 953, Corvallis, OR.
- Leonard, Stephen G. and Michael G Karl. 1995. Review Draft: Livestock Grazing in Riparian Areas in the Interior Columbia Basin and Portions of the Klamath and Great Basin. www.icbemp.gov/science/leonard4.pdf
- U.S. Environmental Protection Agency. 1995. National Water Quality Inventory, 1994 Report to Congress Executive Summary. Office of Water, Washington DC 20460.

14. WETLANDS AND RIPARIAN ZONES

A. Affected Environment

Spooner Trough Canyon, in the South Ash allotment, and an unnamed spring evaluated on private land were both rated FAR. Problems contributing toward the downward trend are as follows: Upland species are invading the riparian zone; herbaceous vegetation is not sufficient to protect stream banks from erosion; and hoof damage is contributing toward streambank and meadow degradation. The main reason for damage in Spooner Trough Canyon is the positioning of reservoirs within the drainage itself. Damage to the drainage could be mitigated by distributing the water away from the drainage as proposed in the Allotment Management Plan. Ash Creek runs through Radio Hill allotment, but it has yet to be assessed for proper functioning condition. Roads and reservoirs located within the riparian areas contribute towards heavy use.

Recent studies show that livestock grazing is still a key factor in the continued degradation of riparian areas (US-GAO 1988, Szaro 1989, Platts 1991, Elmore and Kauffman 1994, Fleischer 1994, McIntosh et al., 1994, USDI 1994a, Ohmart 1996). It is important to properly manage our riparian areas due to their abundant productivity and biodiversity. Riparian and stream ecosystems represent only 0.5-1 percent of arid lands in the western United States (U.S. General Accounting Office (US-GAO) 1988, Chaney et al. 1990, Ohmart 1996), and less than 20 percent of potential riparian habitat in the western United States still exists (USDI 1994a). Properly functioning stream riparian zones contribute to the "sponge effect" during high flow events by raising water tables and maintaining a supply of stream water during dry seasons. The result is a more stable streamflow throughout the year (US-GAO

1988). Riparian areas also act as filter to trap fine sediments out of the water column and absorb nutrients. Rooted streamside vegetation will filter sediments out of the water, build up and stabilize streambanks and streambeds, protect streambanks from high flows, provide shade, and habitat for aquatic and riparian species (Winegar 1977, Thomas et al. 1979, Kauffman and Krueger 1984).

According to BLM's Standards and Guidelines (1998) BLM will take action to ensure that: *Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.*

Meaning that:

The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

B. Environmental Consequences

1. Impacts of Proposed Action

The proposed action emphasizes an earlier season of use which would allow for increased riparian regrowth (Leonard, 1995) relative to alternative A. Due to existing riparian and unstable soil conditions, however, riparian areas may continue to degrade until actions proposed in the Allotment Management Plan are implemented.

2. Impacts of Alternative A (Preferred)

A later season of use under this alternative may contribute towards maintaining soil structure in meadow areas thus, providing a better growing medium, relative to the proposed action, for riparian vegetation. Unfortunately, this will not mitigate for impacts directly to the riparian vegetation. Riparian vegetation will have less regrowth potential after being grazed and, therefore, is unlikely to function as a riparian area should. Though AUM's will be decreased under this alternative, it is not enough of a decrease to improve the current conditions. Until actions proposed in the Allotment Management Plan are implemented, riparian structure may continue to degrade, especially in drainages, during the active grazing season.

3. Impacts of Alternative B (No Grazing)

Riparian areas will quickly recover as grazing pressure is eliminated.

C. References:

- Chaney, E., W. Elmore, and W.S. Platts. 1990. Livestock grazing on western riparian areas. Northwest Resource Information Center, Inc. Eagle, Idaho.
- Elmore, W., and B. Kauffman. 1994. Riparian and watershed systems: degradation and restoration. p. 212-231. In: M. Vavra, W.A. Laycock, and R.D. Pieper (eds.), Ecological implications of livestock herbivory in the West. Soc. Range Management, Denver, CO.
- Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. *Cons. Biol.* 8:629-644.
- Kauffman, J.B., and W.C. Krueger. 1984. Livestock impacts on riparian ecosystems and streamside management implications...a review. *J. Range Manage.* 37:430-437.13.
- McIntosh, B.A., Sedell, J.R, Smith, J.E., Wissmar, R.C., Clarke, S.E., Reeves, G.H., and L.A. Brown. 1994. Historical changes in fish habitat for select river basins of eastern Oregon and Washington. *Northwest Sci.* 68:36-53.
- Ohmart, R.D. 1996. Historical and present impacts of livestock grazing on fish and wildlife resources in western riparian habitats. p. 245-279. In: P.R. Krausman (ed.), *Rangeland wildlife*. Soc. for Range Manage., Denver CO.

Platts, W.S. 1991. Livestock grazing. p. 389-424. In: W.R. Meehan (ed.), Influences of forest and rangeland management on salmonid fishes and their habitats. Amer.Fisheries Soc. Sp. Publ. 19:389-423.

Szaro, R.C. 1989. Riparian forest and scrubland community types of Arizona and NewMexico. Desert Plants 9(3-4):72-138.

Thomas, J.W., C. Maser, and J.E. Rodiek. 1979. Wildlife habitats in managed rangelands--The Great Basin of southeastern Oregon: riparian zones. USDA Forest Serv. Gen.Tech. Rep. PNW-80.

U.S. Department of Interior. 1994a. Rangeland reform '94, Draft environmental impact statement. Bureau of Land Management, Washington, D.C.

U.S. General Accounting Office. 1988. Public rangelands: some riparian areas restored by widespread improvement will be slow. GAO/RCED-88-105.

Winegar, H.H. 1977. Camp Creek channel fencing -- plant, wildlife, soil, and water response. Rangeman's J. 4:10-12.

15. WILD AND SCENIC RIVERS

There would be no affect as there are no Wild & Scenic River Designations in or near the areas of proposed action.

16. WILDERNESS

There would be no affect as there are no Wilderness Designations in or near the areas of proposed action.

17. WILD HORSES AND BURROS

A. Affected Environment

There would be no affect, because there are no wild horses or burros in the area of proposed action.

18. WILDLIFE

Threatened and Endangered Species

There are no federally listed threatened or endangered species territories or areas of critical habitat in the proposed project area. The BLM initiated informal consultation and submitted a biological assessment and request for concurrence on the Alturas Field Office Grazing Program for the shortnose and Lost River suckers, bald eagle, peregrine falcon, Shasta crayfish, and slender Orcutt grass on June 14, 1999. Reply 1-10-99-I-106 from the USFWS concurred with the "may affect, not likely to adversely affect" determination.

Terrestrial Wildlife

Mule Deer

Deer utilizing this area are part of the Adin Deer Herd. The Adin herd is largely migratory, summering at higher elevations on National Forest lands and wintering on Bureau of Land Management and private lands at lower elevations (Thayer and Hall, 1984). In the area of proposed action, mule deer are known to occur year round but not in large numbers. Much of the area is consider deer winter range with a significant portion considered critical deer winter as designated by the 1984 Resource Management Plan. In general, deer numbers have been declining in this area for nearly 40 years, but have been stable for the past decade. Increasing juniper in this area is one major contributor to the decline of healthy shrub lands and understory forage available to wildlife.

Severity of winter conditions dictates dispersal and concentration of these animals. The winter range component provided by the public lands is browse in the form of sagebrush, and bitterbrush. Though much of this browse is overgrown and in decadent condition, it still provides cover and provides important winter food. With the heavy juniper encroachment, the area is deficient in forbs. Juniper out competes forbs and shrubs for available moisture in the soil profile. Juniper also overshadows shrubs in the vegetation canopy and hastens the decline of the shrub component in juniper/shrub communities. Juniper density is increasing throughout the allotments.

Pronghorn Antelope

Pre-settlement, pronghorn were one of the most abundant game species in California; around 1923 there only about 1,000 animals due to “adverse land use and unregulated hunting (Pyshora 1977). According to Robert Schaefer, Modoc County Department of Fish and Game Biologist, after a precipitous decrease in pronghorn numbers in 1992 after a severe winter, the current population has been roughly stable at 4,000 animals locally (R. Schaefer, pers. comm.). The winter 2003 survey found that the current population for this region is down to about 3,000; the lowest ever recorded (Shinn pers. comm.)

The above allotments are considered year round habitat for pronghorn, but is not a major use area. Some important summer and winter ranges occur throughout this area. Pronghorn using this area are part of the Likely Tables Pronghorn Antelope herd. The pronghorn population is relatively low, but can be consistently observed on the flats near water sources. They are also found in the juniper/shrub habitat during summer after the pronghorn come up from feeding on nearby alfalfa and other agricultural fields.

Antelope use is greatest in areas where the juniper is least dense and where decent browse occurs. Many of the pronghorn in this area migrate towards the alfalfa fields on privates adjacent to BLM administered lands.

Sage Grouse

Three historic leks occur in the Ash Valley area but not been occupied in the past 20 years. Sage grouse once numbered in the thousands in this area but severely altered habitats throughout northeast California have led to dramatic declines. Sage grouse are currently listed as Bureau sensitive and recognized as a sensitive species by the State of California. Sage grouse have long history Modoc and Lassen counties (Frank Hall pers. Comm.) Sage grouse are commonly found throughout the range of big sagebrush, but numbers have been declining throughout the West for many years. Historic strutting grounds occur in and around these allotments, but sage grouse area not currently found in this area. Helicopter surveys the past 10 years have failed to locate new strutting grounds. Habitat conditions in these allotments for sage grouse are currently well below the standards listed for ideal sage grouse habitats in the recently published “Guidelines to manage sage grouse populations and their habitats” (Connely et.al. 2000). Severe juniper encroachment into big and low sagebrush areas, heavy grazing of meadows and springs, and lack of fire has contributed to the low quality sagebrush grasslands that are less than optimum for grouse and other sagebrush obligate species.

Golden Eagle

Golden eagles are common throughout the area. There are no known nesting territories in these allotments, but the area provides a variety of foraging opportunities for eagles. Habitats range from pure stands of low sage, mixed big sage and bitterbrush, standing juniper, and areas that have been cleared of juniper or small burned areas. The presence of heavy juniper has lowered the quality of sagebrush habitat, which the golden eagle prefers for foraging. Rabbits, squirrels, and birds are main prey species for goldens in these allotments.

Swainson’s Hawk

Although not as common, the state listed Swainson’s hawk is found throughout Lassen and Modoc counties. This bird relies on open rangelands, large sagebrush stands, meadows and valleys for hunting and foraging. This species nests in juniper and individual conifer and hardwoods, especially along agricultural fields. Normally found in grassland and forest interface. No known nesting territories exist within this allotment but Swainson’s hawks are frequently seen in the allotments. Burning and other projects designed to reduce juniper and enhance sagebrush/grasslands would benefit this species.

Ferruginous Hawk

Not common in this area, but this Bureau sensitive species are occasionally seen in the area, mainly during winter. No known nesting territories exist in the area described in this environment assessment. A large reduction in juniper cover could improve habitat for this species.

Other Raptors

Many different raptors utilize this area for nesting and foraging. Red-tail hawks occur within the project area as well as possible Kestrel and prairie falcon. A variety of owls are found within this allotment as well, but no nesting sites have been found.

Aquatic Species

There are no perennial streams but a few ephemeral exist in the allotments. Tree frogs occur in and around the ephemeral streams and stock ponds, but no survey for amphibians have been completed. There will not be further analysis on aquatic species.

B. Environmental Consequences

1. Impacts of Proposed Action

The no action alternative would result in continued presence of dense juniper and a potential increase in juniper canopy, which would further reduce the quality of wildlife habitat for many species. Loss of forage and reduced quality of shrubs in this allotment due to juniper is already a limiting factor.

Juniper reduction would be critical for making significant improvement for big game, sage grouse, raptor foraging and other wildlife utilizing these allotments. Heavy livestock grazing around water sources would continue to have potential negative impacts on water quantity and quality for wildlife.

2. Impacts of Alternative A (preferred)

Reducing livestock AUMs is a good first step in moving these allotments towards meeting *Standards*. If land exchanges and fencing proposals move forward; these allotments should show benefits to vegetation structure and diversity, which in-turn would be good for big game foraging, and small mammal and bird cover.

The reduced juniper cover would allow more water into springs, seeps, and ephemeral streams. The prolonged effect is more water would be available longer into the summer for wildlife. The cut junipers and slash would become habitat for small mammals and birds, which would benefit from this action. Long term goals for habitat improvement should focus on further decreasing juniper, which could possibly increasing healthy sagebrush areas for re-introduction of sage grouse into this area. Raptor foraging habitat should increase due to the open environment and increase mammal population.

3. Impacts of Alternative B (no grazing)

The no grazing alternative would greatly improve habitat conditions for many wildlife species and allow for the wet spring areas to recover from livestock use. There would be better selection of fawning and kidding areas for big game and more forage availability. The continued presence of juniper and annual grasses would further reduce the quality of wildlife habitat for many species, but spread of annual weeds and grasses could be reduced from lack of livestock.

Mitigation Measures

Periodic monitoring of vegetation, especially shrubs, should occur within designated winter habitat for big game. Important shrub habitat within winter range should not exceed 30 percent utilization.

Several fences in these allotments are in of modification to meet the needs of big game passage. These modifications should be done to as well as implementing juniper reduction, re-vegetating areas dominated by medusahead, cheatgrass, and other weeds.

References

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Hall, Frank. Personal communication. Wildlife Biologist, California Department of Fish and Game. Susanville, California.

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Thayer, D. J, Hall, Frank 1984. Adin Deer Herd Management Plan. California Department of Fish and Game. Alturas, California.

19. VEGETATION

A. Affected Environment

Vegetation communities contain floristic elements from the Modoc Plateau--Great Basin Floristic Province (Hickman, 1993) and are a mix of juniper woodlands, ponderosa pine, eastside pine, juniper/sage steppe, some pine-oak woodlands (Jeffrey pine with black and Oregon white oak) on the eastern edge of North Dibble, sagebrush/perennial grassland, and annual grasslands. Some of the common vegetation series include western juniper (*Juniperus occidentalis* ssp. *occidentalis*), ponderosa pine (*Pinus ponderosa*), Eastside pine--ponderosa pine, Jeffrey pine (*P. jeffreyi*), and black oak (*Quercus kelloggii*)--mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), low sagebrush (*A. arbuscula*), bitterbrush (*Purshia tridentata*) and medusahead. Silver sagebrush (*A. cana* ssp. *bolanderi*) is found in Sagebrush Flat of South Ash Valley allotment.

The vegetation in the project area consists of two dominant types. The *sagebrush steppe type* is characterized by the following dominant shrub species--mountain big sage, grey and green rabbitbrush, bitterbrush, snowberry, serviceberry and curl-leaf mountain mahogany. The *woodland type* consists of scattered stands of western juniper of varying sizes, densities and age classes. Old growth western juniper stands have a canopy cover ranging from 1 to 20% cover (generally 5%) with low sagebrush and bitterbrush the dominant shrub species and soils with a hardpan, bedrock, or other restrictive layer within 18 inches of the surface.

Specific noteworthy herbaceous species are Malpais or pine bluegrass (*Poa scabrella*), Sandberg's bluegrass (*P. secunda*), Nevada bluegrass (*P. nevadensis*), Thurber's needlegrass (*Achnatherum thurberianum*), Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), one-spike oatgrass (*Danthonia unispicata*), cheatgrass, bulbous bluegrass, *Penstemon* sp., paintbrush's (*Castilleja* sp.), low pussytoes (*Antennaria dimorpha*), Hood's phlox (*Phlox hoodii*), milkvetch (*Astragalus* spp.), woolly mulesear (*Wyethia mollis*) and mosses (Oswald, 1998).

Common vegetation series by allotment (taken in part from Smith, 1994).

South Ash Valley – Western juniper/mountain big sagebrush/Idaho fescue, western juniper/mountain big sagebrush/bluebunch wheatgrass, western juniper/Sandberg's bluegrass, western juniper/cheatgrass, western juniper/low sagebrush/(bluebunch wheatgrass)-Sandberg's bluegrass, curl leaf mountain mahogany-mountain big sagebrush/Idaho fescue, curl leaf mountain mahogany/Idaho fescue, mountain big sage-bitterbrush/Idaho fescue, mountain big sage/bluebunch wheatgrass-Idaho fescue, mountain big sage/Thurber's needlegrass, mountain big sage/Idaho fescue-squirreltail, mountain big sage/Sandberg's bluegrass, mountain big sage/perennial grass-cheatgrass, low sagebrush/bluebunch wheatgrass, low sagebrush/Idaho fescue, low sagebrush/Sandberg's bluegrass, low sagebrush/Sandberg's bluegrass-annual grass (Japanese brome, cheatgrass, medusahead), silver sage/Nevada bluegrass, silver sage/Douglas sedge, mat muhly/bighead clover. There are stands of quaking aspen (*Populus tremuloides*) on Whitinger Mountain as well as scattered trees of white fir (*Abies concolor*).

Loomis – Western juniper, western juniper/low sagebrush, western juniper/bitterbrush, western juniper/low sagebrush/(bluebunch wheatgrass)-Sandberg's bluegrass, ponderosa pine-black oak, mountain big sagebrush-bitterbrush/perennial grass, low sagebrush/Sandberg's bluegrass, low sagebrush/ medusahead.

North Dibble – Western juniper/low sagebrush, western juniper/mountain big sagebrush, western juniper/curl leaf mountain mahogany/arrowleaf balsamroot, Ponderosa pine-western juniper-black oak-Oregon white oak, mountain big sagebrush, low sagebrush/Sandberg's bluegrass, low sagebrush/medusahead, annual grass (mix of medusahead and Japanese brome).

Radio Hill – Western juniper/mountain big sagebrush, low sagebrush/Sandberg's bluegrass, and perennial forb-volcanic gravels.

Many of the plant associations listed above are at risk of being converted to either juniper dominated woodlands in the mountain big sagebrush communities or medusahead dominated plant associations in the low sagebrush sites. Western juniper and sagebrush canopies are approaching closure in many locations, inhibiting the productivity of the existing mountain shrubs, perennial grasses and forb understory. As the herbaceous understory was selectively grazed the normal fire regime was altered, more sites for juniper establishment existed, and the competition from the herbaceous species was reduced (Miller and Tausch, 2001).

Native perennial grasses and sagebrush species are slowly being replaced by medusahead and juniper in Round Valley and Big Valley, over much of the shrub steppe in the uplands north of the Madeline Plains and particularly in the middle portion of the South Ash valley allotment. Juniper encroachment has decreased available upland forage and browse for wildlife as well as livestock, increased the grazing pressure on riparian areas and encourages overuse in easily accessible sagebrush/grass communities. The rangeland and riparian health assessments conducted in 1999 on South Ash Valley and Anderson found most of the allotment trending towards a juniper woodland and Spooner Trough Canyon rated as functioning at risk (FAR). Western juniper is also invading the riparian areas and is increasing into sagebrush communities on the Loomis and North Dibble allotments.

The reasons for juniper expansion are attributed to a combination of overgrazing and subsequent reduced herbaceous layers, a wet climate from 1870 to 1916, increased CO² levels, increased seed dissemination of juniper and other unknown factors, increases in MFRI's and past fire suppression (Miller and Tausch, 2001), moderate to heavy spring and summer long grazing, a decrease in the fire return interval (FRI) where medusahead is present, an increase in the FRI where post settlement juniper occurs in excess of 25% cover, and aggressive competition by both medusahead and western juniper. For a discussion of annual grass invasion see Invasive Species, above.

Threatened and Endangered Species

No T&E plant species are present in the project area. Three BLM Special Interest Plants (occur in the project area. They are volcanic daisy (*Erigeron elegantulus*), Cusick's stickseed (*Hackelia cusickii*), and Plummer's clover (*Trifolium gymnocarpon* var. *plummerae*). They are California Native Plant Society List 4.3, 4.3, and 2.3 plants (CDF&G, 2007). There will only be minor impacts to these Special Interest Plants – limbing of a tree for fence alignment and some trampling of a few plants. There would be no loss of reproductive viability to either of these species.

B. Environmental Consequences

1. Impacts of the Proposed Action

No adverse impacts are anticipated beyond the current conditions that are a result of and associated with authorized livestock grazing. The beneficial impacts of animals include preventing perennial grass decadence through removal of old growth and increasing the amount of surface cover by creating a desirable seedbed and by planting seed through feeding and trampling. These benefits would be less under this alternative than under the preferred alternative.

2. Impacts of Alternative A

There would be short-term negative impacts to vegetation. Trampling of vegetation would occur with actual fence construction and by fence building crews walking and/or driving to and from the actual fence line. Some shrubs

could be cut to allow for the construction of the fence. There would be minimal and short-term negative impacts to vegetation due to construction of livestock water developments and juniper removal at Spooner trough. The native vegetation should recover within one year of fence construction and riparian area restoration. The impacts from the proposed projects would have a minimal negative impact and should not fragment the shrub communities.

The combination of an allotment division fence, a grazing system and juniper removal at Spooner trough could lead to future proposed juniper removal or hazardous fuels reduction treatments, such as prescribed fire, woodcutting and chipping, that could be included as part of each years' project implementation. The proposed grazing system will reduce livestock use along the roads, reservoirs and riparian areas and provide rest during the growing season for plants and shrubs, especially bitterbrush, on a regular basis.

3. Impacts of Alternative B

There would be no impacts from livestock grazing. Undesirable plants, such as medusahead would continue to spread on the allotment due to weed biology and current land uses. Western juniper would continue to expand into adjacent plant communities with a potential for a decrease in understory species, including mountain big sagebrush, bitterbrush, and native perennial grasses. The cover of existing post-settlement juniper would increase in situ. This, alone, will continue to affect the diversity and habitat of riparian and shrub communities and affect livestock numbers as well as wildlife diversity.

Eliminating grazing would potentially increase the grass, forb and shrub component in some areas and would result in either increased plant diversity and recovery of micro-biotic crusts or an increase in fine flashy fuels in shrub/grass communities and a subsequent increase in wildland and wildland urban interface fire potential. The removal of livestock from the areas of proposed action would have the potential to reduce active management prioritization on federal lands within the areas of proposed action, thus, reducing the potential for vegetation management that would be beneficial to ecosystem health.

4. Mitigation

In the event of any known or discovered endangered, threatened, sensitive, or special status species occurring on or in close proximity to individual allotments that the proposed action, under any alternative, will result in direct, or foreseeable cumulative impacts detrimental to such species shall be subject to further evaluation and additional mitigation measures. Potential mitigation measures include, but are not limited to, modification of livestock numbers, and or, season of use, protective exclosures, additional fencing, etc.

C. References

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CHAPTER 4: CUMULATIVE IMPACTS

The areas of proposed action have been impacted to some degree by various actions, including but not limited to road construction, land clearing, livestock grazing, various recreational activities, and range improvement construction. The present condition of resources analyzed in this document indicates the level of past impacts from livestock grazing and all other land use activities. The results of the Rangeland Health Standards and Guidelines assessment plus other monitoring and evaluations presented in this environmental assessment indicate where standards are not being met (if any) or other resources impacted. The analysis of the required elements evaluates the overall effect on the environment from livestock grazing. Since there are no anticipated increases in other land uses within the grazing allotment or surrounding areas that would cumulatively interact with livestock grazing to create additional impacts on the resources and land uses analyzed in this environmental assessment, the cumulative impacts would be negligible.

CHAPTER 5: CONSULTATION AND COORDINATION/PREPARERS

A. Consultation

The BLM initiated informal consultation and submitted a biological assessment and request for concurrence on the Alturas Field Office Grazing Program for the Shortnose and Lost River suckers, bald eagle, peregrine falcon, Shasta crayfish, and slender Orcutt grass on June 14, 1999. Reply 1-10-99-I-106 from the USFWS concurred with the “may affect, not likely to adversely affect” determination.

B. Coordination

M & A Livestock
Gerald Owens
Joe Anderson
Gary Johns
CDF&G (Alturas & Redding Offices)
Pit River Tribe
Center for Biological Diversity

C. Preparers

Marti Butow - Rangeland Management Specialist
Mark Lowrey – Rangeland Management Specialist
Jami Ludwig – Hydrologist
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Claude Singleton – Recreation Planner
Paul Schmidt – Wildlife Biologist
Mike Dolan - Botanist