United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Caliente Field Station
P.O. Box 237 (1400 South Front St.)
Caliente, Nevada 89008-0237
http://www.blm.gov/nv/st/en.html

TAKE PRIDE IN AMERICA

NOV 30 2007

In Reply Refer to:
4160 (NV-045)

Lake Valley Cattle LLC
P.O. Box 266
Fallon, NV 89407

Certified Mail 7006 0810 0005 7113 5417
Return Receipt Requested

FINAL DECISION

Background Information

On August 12, 2007 the Finding of No Significant Impact (FONSI) for the Lake Valley Cattle LLC. (Geyser Ranch Allotment) term permit renewal (EA No. NV-040-07-028) was signed. The Environmental Assessment (EA) and the FONSI is attached. This final decision is issued in accordance with 43 CFR 4160.3. The proposed decision was issued on September 12, 2007.

This decision complies with BLM Nevada Instruction Memorandum (IM) No. NV-2006-034 which provides guidance to facilitate the preparation of grazing permit renewal Environmental Assessments (EAs) as per the requirement set forth in BLM Washington Office IMs WO 2003-071 and WO 2004-126.

The proposed action associated with EA No. NV-040-07-028 is to issue a new term permit to Lake Valley Cattle LLC. The term grazing permit under consideration is for Geyser Ranch Allotment (01101 The term grazing permit under consideration is for Geyser Ranch Allotment (01101) and portions of the Wilson Creek Allotment (01201). Geyser Ranch Livestock Operation is 18,972 active AUM's and 1,601non-use AUM's for resource conservation. The current season of use is from March 1 to February 28 Geyser Ranch was ranked as an "I" (Improve) category allotment in the Schell Rangeland Program Summary (P., May 1988). The current term permit for the Geyser Ranch Allotment has been issued for the period 3/1/2003 to 2/28/12. The new grazing permit will reflect terms and conditions in accordance with the EA.

Fully processing and renewing the term permit for Lake Valley Cattle LLC. for the Geyser Ranch Allotment provides for a legitimate multiple use of the public lands and includes terms and conditions for grazing use that conform to Guidelines and will achieve significant progress toward the Standards for Nevada's Great Basin Area in accordance with all applicable laws, regulations, and policies and in accordance with Title 43 CFR 4130.2(a) which states "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land management that are designated as available for livestock grazing through land use plans". This decision specifically identifies management actions and terms and conditions to be appropriate to achieve management and

resource condition objectives. The proposed actions that were developed under the proposed and final decisions execute management actions that would ensure that Standards for Rangeland Health and multiple use objectives continue to be met and that significant progress is made towards those that are currently not met.

The standards were assessed for the Geyser Ranch Allotment by a BLM interdisciplinary team consisting of rangeland management specialists, wildlife biologist, weeds specialist, and watershed specialist. Documents and publications used in the assessment process include the Soil Survey of Lincoln County Nevada, North Part, and Ecological Site Descriptions for Major Land Resource Area 29 and 30, Interpreting Indicators of Rangeland Health (USDI-BLM et al. 2000), Sampling Vegetation Attributes (USDI-BLM et al. 1996) and the National Range and Pasture Handbook (USDA-NRCS 1997). All are available for public review in the Ely BLM Field Station. The interdisciplinary team used rangeland monitoring data, professional observations, and photographs to assess achievement of the Standards and conformance with the Guidelines. The "Standard Riparian Functioning Condition Checklist" (USDI-BLM 2000) was completed for the riparian areas in the Geyser Ranch Allotment.

The assessment of rangeland health for the Geyser Ranch Allotment was conducted in March, 2007. It was determined that the Standards were being achieved and grazing management is in complete conformance with the Guidelines. A review and analysis of the monitoring data was conducted. As a result of this review, no changes to the management of livestock were proposed. The complete standards determination is located in Appendix I of the EA (EA-NV-040-07-028). A summary of the findings for the allotment are as follows:

1. Soils Standard: Meeting the Standard.

2. Ecosystem Components: Meeting the Standard.

3. Habitat and Biota: Meeting the Standard

Conclusions of the Standard Determination:

Standard 1. Soils: Standard met. Cover is very adequate to support functioning soil conditions. The ratio of woody, herbaceous and forbs is appropriate considering crested wheat seedings was implemented during the 1960's. Monitoring data shows that native grasses, forbs and woody species are moving into the areas at acceptable rates.

Biological crust formations are present within the allotment but only one to two percent in composition.
Compaction/infiltration rates are within acceptable limits and are not a concern due to the soil types within this allotment. Freezing and thawing cycles are present within these soils and act as inhibitors to compaction.

Standard #2: Riparian and Wetland Sites: Standard met. There are 102 water sources within the Geyser Ranch Allotment, of which 31 of them are deep water wells, and 15 of them are

reservoirs. There are two lotic riparian systems within the allotment; they are North Creek and Geyser Spring. Proper functioning Condition (PFC) was conducted during the late summer of 2004 and both were found to be in proper functioning condition. North Creek is in an upward trend. Geyser spring is functioning at risk due to a large precipitation event that occurred during the summer of 2003. This event caused stream banks to be blown out and existing sand bars to be removed and removed what small amount of sinuosity occurred within the stream channel. Currently the stream riparian area is used heavily by elk and deer. Cattle use here is not an issue.

Stream bank stability is present but needs to be monitored in the future due to multiple uses of animals domestic and non-domestic. Sinuosity lacks in the lotic systems due extreme elevational changes in the flow patterns. As a result of this large precipitation events have the potential to strip stream banks and widen as well as deepen flow areas.

There are several springs or lentic systems within this allotment. Not all were monitored for PFC. Several springs within the allotment are fully developed and could not be monitored for PFC. Of those that were monitored, they were determined to be functioning properly but functioning at risk

Standard #3: Habitat and Biota: Standard Met Current vegetation communities are meeting the standard. Vegetative composition is appropriate for the potential of the site and the site characteristics. Sagebrush communities exhibit a healthy herbaceous understory. Percent composition for the shrub component is higher than what is appropriate at some sites. Percent composition for the shrub, grass and forb components are appropriate to the site. Vegetation distribution with respect to patchiness, are present, this is due to natural wildfires that occurred within the community types. Some of the areas in this allotment have crossed the threshold as exhibited by rabbitbrush and cheatgrass components in the plant community. The vegetative diversity of the salt desert shrub communities is high due to precipitation and lack of grazing by domestic and wild ungulates. The resilience of the wet saline bottom communities is high.

Historic livestock grazing is not an issue due to the large number of acres of crested wheat seedings. This grass specie is able to handle the grazing pressure especially during the critical growing season which allows the native to rest each year. Some of the plant communities are in a state requiring additional disturbance such as mechanical and fire to make change improving age structure and vegetation distribution.

Standard #4. Cultural Resources: Standard Met This standard is being met based on the evaluation of existing information pertaining to range improvements and grazing, cultural resources are being recognized within the context of multiple use management in the Geyser Ranch Allotment. A cultural resources report will be completed associated with issuance of the term permit during the NEPA process.

The project proposal was posted on the Ely Field Office web site, January 25, 2007; at http://www.nv.blm.gov/ely/nepa/ea_list.htm comments from two parties were received.

The preliminary EA was posted on the Ely external webpage on 6/20/2007 for a thirty day comment period. A hard copy of the preliminary EA was mailed to the permittee and those

publics who have specifically requested one and who have expressed an interest in range management actions on the Geyser Ranch Allotment. Comments were received from tow interested publics. They were reviewed and considered associated with completing the final EA. A protest to the proposed decision to renew a grazing permit for Lake Valley Cattle LLC on the Geyser Ranch Allotment was received from Western Watersheds Project on October 2, 2007. A written response to the substantial protest points was prepared on October 26, 2007 and will be placed in the BLM administrative record for this permit renewal. Based upon the substantial protest points and a range team review of the protest points, this final decision has not been changed from the proposed decision.

LIVESTOCK MANAGEMENT DECISION

In accordance with 43 CFR 4110.3, 4110.3-2(b) and 4130.3-1 permitted use for Lake Valley Cattle LLC. on the Geyser Ranch Allotment, will be as follows:

Table 1. Current Term Permit for Lake Valley Cattle LLC. (#275050)

Allotment	Livestock Number & Kind	Period of Use	Active AUMs	Suspended AUMs	Permitee	Permitted Use (AUMs)
Geyser Ranch	1025 cattle	03/01 – 02/28	12,308 AUM's	2,703	Lake Valley Cattle LLC.	15,011
Pastures	**Wilson Creek Allotment**					
Fairview	136 cattle	04/16 – 10/31	890 AUM's	533	Lake Valley Cattle LLC.	1,423
Muleshoe	680 cattle	11/01 – 04/15	3,711 AUM's	533	Lake Valley Cattle LLC.	4,244
Muleshoe	1,531 sheep	11/01 – 05/01	1,832 AUM's	0	El Tejon Cattle Co.	1,832
Pony Seeding	430 cattle	04/01 – 06/30	1,286 AUM's	0	Lake Valley Cattle LLC.	1,286
Atlanta	120 cattle	04/16 – 10/31	785 AUM's	533	Lake Valley Cattle LLC.	1,318

The renewal of the term grazing permit would be for a period of ten years from 9/30/2007 to 09/29/2017. Proposed changes to the permit terms and conditions would affect the overall management of livestock based on timing and duration of grazing, and allowable use levels on perennial native plants.

Terms and conditions for grazing use which would become pertinent to the Lake Valley Cattle LLC. permit are proposed as follows:

1. Allowable use levels within the crested wheat seedings will not exceed 60% of the current year's growth. Use levels within the native portions of the permitted area will not exceed 50% of the current year's growth. Use levels on browse species will not exceed 40% of the current year's growth.

Stipulations Common to All Allotments:

1. Livestock numbers identified in the term grazing permit are a function of seasons of use and permitted use for each allotment. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations would not prevent attainment of the multiple-use objectives for the allotment.

2. Deviations from specified grazing use dates will be allowed when consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

3. The authorized officer is requiring that an actual use report (form 4130-5) be submitted within 15 days after completing your annual grazing use.

4. The payment of your grazing fees is due on or before the date specified in the grazing bill. This date is generally the opening date of your allotment. If payment is not received within 15 days of the due date, you will be charged a late fee assessment of $25 or 10 percent of the grazing bill, whichever is greater, not to exceed $250. Payment with Visa, Mastercard or American Express is accepted. Failure to make payment within 30 days of the due date may result in trespass action.

5. Pursuant to 43 CFR 10.4(G) the holder of this authorization must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CRF 10.2). Further, pursuant to 43 CFR 10.4 (C) and (D), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.

6. Grazing will be in accordance with the Northeastern Great Basin Area Standards and Guidelines for grazing administration as developed by the Northeastern Great Basin Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for grazing administration.

7. If future monitoring data indicates that Standards and Guidelines for Grazing Administration are not being met, the permit will be reissued subject to revised terms and conditions.

AUTHORITY: The authority for this decision is contained in Title 43 of the Code of Federal Regulations. which states in pertinent part:

4100.0-8: "The authorized officer shall manage livestock grazing on public lands under the principle of multiple-use and sustained yield and in accordance with applicable land use plans. Land use plans shall establish allowable resource uses (either singly or in combination), related levels of production or use to be maintained, areas of use, and resource condition goals and objectives to be obtained. The plans also set forth program constraints and general management practices needed to achieve management objectives. Livestock grazing activities and management actions approved by the authorized officer shall be in conformance with the land use plan as defined at CFR 601.0-5(b)."

4110.3: "The authorized officer shall periodically review the permitted use specified in a grazing permit or lease and shall make changes in the permitted use as needed to manage, maintain or improve rangeland productivity, to assist in restoring ecosystems to properly functioning condition, to conform with land use plans or activity plans, or to comply with the provisions of subpart 4180 of this part. These changes must be supported by monitoring, field observations, ecological site inventory or other data acceptable to the authorized officer."

4110.3-2 (b): "When monitoring or field observations show grazing use or patterns of use are not consistent with the provisions of subpart 4180, or grazing use is otherwise causing an unacceptable level or pattern of utilization, or when use exceeds the livestock carrying capacity
as determined through monitoring, ecological site inventory or other acceptable methods, the authorized officer shall reduce permitted grazing use or otherwise modify management practices."

4130.3: "Livestock grazing permits and leases shall contain terms and conditions determined by the authorized officer to be appropriate to achieve the management and resource condition objectives for the public lands and other lands administered by the Bureau of Land Management, and ensure conformance with the provisions of subpart 4180 of this part."

4130.3-1(a): "The authorized officer shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months,
for every grazing permit or lease. The authorized livestock grazing use shall not exceed the livestock carrying capacity of the allotment."

4130.3-2: "The authorized officer may specify in grazing permits or leases other terms and conditions which will assist in achieving management objectives provide for proper range management or assist in the orderly administration of the public rangelands."

4130.3-3: "Following consultation, cooperation, and coordination with the affected lessees or permittees, the State having lands or responsible for managing resources within the area, and the interested public, the authorized officer may modify terms and

conditions of the permit or lease when the active use or related management practices are not meeting the land use plan, allotment management plan or other activity plan, or management objectives, or is not in conformance with the provisions of subpart 4180 of this part..."

4160.3 (a) "In the absence of a protest, the proposed decision will become the final decision of the authorized officer without further notice unless otherwise provided in the proposed decision.
(b) Upon the timely filing of a protest, the authorized officer shall reconsider her/his proposed decision in light of the protestant's statement of reasons for protest and in light of other information pertinent to the case. At the conclusion to her/his review of the protest, the authorized officer shall serve her/his final decision on the protestant or her/his agent, or both, and the interested public.
(c) A period of 30 days following receipt of the final decision, or 30 days after the date the proposed decision becomes final as provided in paragraph (a) of this section, is provided for filing an appeal and petition for stay of the decision pending final determination on appeal. A decision will not be effective during the 30-day appeal period, except as provided in paragraph (f) of this section. See Sec. Sec. 4.21 and 4.470 of this title for general provisions of the appeal and stay processes."

4180.1: "The authorized officer shall take appropriate action under subparts 4110, 4120, 4130, and 4160 of this part as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified to ensure that the following conditions exist.

(a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species."

Appeal

Appeal

In accordance with 43 CFR 4.470 and 4160.4, any person who wishes to appeal or seek a stay of a BLM grazing decision must follow the requirements set forth in 4.470 through 4.480 of this title. The appeal or petition for stay must be filed with the BLM office that issued the decision within 30 days after its receipt or within 30 days after the proposed decision becomes final as provided in 4160.3 (a).

The appeal and any petition for stay must be filed at the office of the authorized officer William E Dunn Assistant Field Manager for Renewable Resources, Ely Field Office Box 33500 702 North Industrial Way HC33 Ely, Nevada 89301. Within 15 days of filing the appeal and any petition for stay, the appellant also must serve a copy of the appeal and any petition for stay on any person named in the decision and listed at the end of the decision, and on the Office of the Solicitor, Regional Solicitor, Pacific Southwest Region, U.S. Department of the Interior, 2800 Cottage Way, Room E-1712, Sacramento, California 95825-1890.

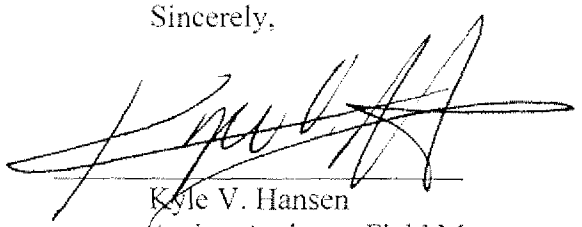
Pursuant to 43 CFR 4.471(c), a petition for stay, if filed, must show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied;
(2) The likelihood of the appellant's success on the merits;
(3) The likelihood of immediate and irreparable harm if the stay is not granted; and,
(4) Whether the public interest favors granting the stay.

43 CFR 4.471(d) provides that the appellant requesting a stay bears the burden of proof to demonstrate that a stay should be granted.

Any person named in the decision from which an appeal is taken (other than the appellant) who wishes to file a response to the petition for a stay may file with the Hearings Division in Salt Lake City, Utah, a motion to intervene in the appeal, together with the response, within 10 days after receiving the petition. Within 15 days after filing the motion to intervene and response, the person must serve copies on the appellant, the Office of the Solicitor and any other person named in the decision (43 CFR 4.472(b)).
At the conclusion of any document that a party must serve, the party or its representative must sign a written statement certifying that service has been or will be made in accordance with the applicable rules and specifying the date and manner of such service (43 CFR 4.422(c)(2)).

Sincerely,



Kyle V. Hansen
Acting Assistant Field Manager
Renewable Resources

Enclosures:

1. Finding of No Significant Impact (FONSI)
2. EA NV-040-05-028 (including the standards determination document)
3. Allotment Map(s)

cc:

Mr. Demar Dahl, Lake Valley Cattle LLC.	7006 0810 0005 7113 5622
Curtis A. Baughman, Nevada Division of Wildlife	7006 0810 0005 7113 5400
Mr. Steve Foree, Nevada Division of Wildlife	7006 0810 0005 7113 5394
Lincoln County Commissioners	7006 0810 0005 7113 5387
Betsy Macfarlan, ENLC	7006 0810 0005 7113 5370
Cindy MacDonald	7006 0810 0005 7113 5363
John McLain, Resource Concepts, Inc.	7006 0810 0005 7113 5349
Nevada State Clearinghouse	7006 0810 0005 7113 5356
Western Watersheds Project, Katie Fite	7006 0810 0005 7113 5332

Appendix 1

		Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
2006																
Management Unit 1	AUM's	392														
Pasture 1	1381		6/17-8/15,,10/15-12/01	1,392						X	X	X		X	X	
Pasture 2	1130		12/02-2/28	1,147	X	X										X
Pasture 3	1585		N/A	0	Rest											
Pasture 4	1394		3/01-6/16	1,392			X	X	X	X						
	5,490			3,932												
2007																
Management Unit 1	AUM's	*438*		*AUM's*	Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		11/24-2/28	1,396	X	X									X	X
Pasture 2	1130		N/A	0	Rest											
Pasture 3	1585		3/01-6/18	1,584			X	X	X	X						
Pasture 4	1394		6/19-8/15,,10/15-11/23	1,411						X	X	X		X	X	
	5490			4,391												
2008																
Management Unit 1	AUM's	412			Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		N/A	0	Rest											
Pasture 2	1130		3/1-5/22	1,124			X	X	X							
Pasture 3	1585		5/23-8/15,,10/15-11/16	1,693					X	X	X	X		X	X	
Pasture 4	1394		11/17-2/28	1,409	X	X									X	X
	5,490			4,220												
2009																
Management Unit 1	AUM's	411			Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		3/1-6/10	1,378			X	X	X	X						
Pasture 2	1130		6/11-8/15,,10/15-11/02	1,135	X					X	X	X		X	X	
Pasture 3	1585		11/03-2/28	1,594	X	X									X	X
Pasture 4	1394		N/A	0	Rest											
	5,490			4,107												

Repeat 2010 cycle at 2006

			X= Active Use Perios	AUM,s
Total Active Use		12,090		

2006

Management Unit 2	AUM's	Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850	244	5/22-8/15,,10/15-11/04	858					X	X	X	X		X	X	
Pasture 6	924		11/05-2/28	931	X	X									X	X
Pasture 7	1229		N/A	0	Rest											
Pasture 8	660		3/01-5/21	658			X	X	X							
	3,663		total	2,438												

2007

Management Unit 2	AUM's	*275*	Livestock Use Dates	Act. Use *AUM's*	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		11/26-2/28	859	X	X									X	X
Pasture 6	924		N/A	0	Rest											
Pasture 7	1229		3/01-7/14	1,230			X	X	X	X	X					
Pasture 8	660		7/15-8/15,,10/15-11/25	669							X	X		X	X	
	3,663		Total	2,758												

2008

Management Unit 2	AUM's	282	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		N/A	0	Rest											
Pasture 6	924		3/01-6/08	927			X	X	X	X						
Pasture 7	1229		6/06-8/15,,10/15-12/18	1,789						X	X	X		X	X	X
Pasture 8	660		12/19-2/28	668	X	X										X
	3,663		total	3,384												

2009

Management Unit 2	AUM's	301	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		3/01-5/25	841			X	X	X							
Pasture 6	924		5/26-7/25	604					X	X	X					
Pasture 7	1229		7/26-8/15,,10/15-2/28	1,564	X	X					X	X		X	X	X
Pasture 8	660		N/A	0	Rest											
	3,663		total	3,009												

Repeat 2010 cycle at 2006

X= Active Use Perios

2006

Management Unit 3	AUM's	Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb	Mar	Apr	May	June	July	Aug.	Sep	Oct	Nov	Dec.
Pasture 9	770	216	5/28-8/15,,10/15-11/12	774					X	X	X	X		X	X	
Pasture 10	758		11/13-2/28	767	X	X									X	X
Pasture 11	788		N/A	0	Rest											
Pasture 12	625		3/01-5/27	625			X	X	X							
	2,941		**Total**	2,159												

2007

Management Unit 3	AUM's	*219*	Livestock Use Dates	Act. Use *AUM's*	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 9	770		11/13-2/28	778	X	X									X	X
Pasture 10	758		N/A	0	Rest											
Pasture 11	788		3/01-6/17	770			X	X	X	X						
Pasture 12	625		6/18-8/15,,10/15-11/12	634						X	X	X		X	X	
	2,941		**Total**	2,182												

2008

Management Unit 3	AUM's	218	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 9	770		N/A	0	Rest											
Pasture 10	758		3/01-6/14	760			X	X	X	X						
Pasture 11	788		6/15-8/15,,10/15-12/02	796						X	X	X		X	X	X
Pasture 12	625		12/03-2/28	631	X	X										X
	2,941		**Total**	2,187												

2009

Management Unit 3	AUM's	232	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 9	770		3/01-6/09	770			X	X	X	X						
Pasture 10	758		6/10-8/15,,10/15-11/16	763					X	X	X			X	X	
Pasture 11	788		11/17-2/28	793	X	X									X	X
Pasture 12	625		N/A	0	Rest											
	2,941		**Total**	2,326												

Repeat 2010 cycle at 2006

X= Active Use Perios

FINDING OF NO SIGNIFICANT IMPACT
FOR
Lake Valley Cattle Co. (Geyser Ranch Allotment)
EA # NV-040-07-028

I have reviewed Environmental Assessment (EA) NV-040-07-028. After consideration of the environmental effects as described in the EA, and incorporated herein, I have determined that the proposed action associated with fully processing the term permit renewal identified in the EA will not significantly affect the quality of the human environment and that an Environmental Impact Statement (EIS) is not required to be prepared.
Environmental Assessment (EA) NV-040-07-028 has been reviewed through the interdisciplinary team process

I have determined the proposed action is in conformance with the Schell Management Framework Plan (MFP) (1983). Standards and Guidelines for Grazing Administration were developed by the Northeastern Great Basin Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997.
This finding and conclusion is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA.

Context:
The Geyser Ranch Allotment (01101) encompasses approximately 539,941 federal acres in the allotment, 16 fenced pastures that are both crested wheat seedings and native range. The Wilson Creek Allotment portion of the Geyser Ranch operation include; Muleshoe Pasture, Fairview, Pony Seeding and Atlanta Pastures. The allotment is situated in Lake Valley. The allotment is located within White Pine and Lincoln County, in the south east central portion of the Ely BLM District approximately 68 miles south east of Ely, Nevada. The allotment is situated on the west side of the Grafton Mountain Range and East of the Fortification Range. Lincoln and White Pine Counties are sparsely populated, with approximately less than one person per square mile. Although the acreage involved is extensive, impacts from livestock grazing are dispersed, and compatible with the rural, agricultural setting throughout most of the Counties.

Intensity:

1) ***Impacts that may be both beneficial and adverse.***

The Environmental Assessment considered both beneficial and adverse impacts of the proposed action. None of the impacts disclosed in the EA approach the threshold of significance, i.e. exceeding air or drinking water quality standards, contributing a decline in the population of a listed species, etc

2) ***The degree to which the proposed action affects public health or safety.***

The Proposed Action will not result in potentially substantial or adverse impacts to public health and safety.

3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

There is prime or unique farmland on the allotment, there are no parks, wetlands, wild and scenic rivers, or ecologically critical areas (ACECs) within the area of analysis. Cultural and historic resources typical of the general area may occur on the allotment, but there are no known sites of particular importance or interest.

4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

The effects of livestock grazing on public lands have become more controversial in the past several years. However, most effects were disclosed in the Schell MFP. Although public input has been sought for the proposed action, there has been little public interest and only a few comments on effects analyzed in the attached EA.

5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

The effects of livestock grazing are well known and documented. Management practices are employed to meet resource objectives. The effects analysis demonstrates the effects are not uncertain, and do not involve unique or unknown risk

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

The Proposed Action will not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration. Renewing the grazing permit does not establish a precedent for other Rangeland Health Assessments and Decisions. Any future projects within the area or in surrounding areas will be analyzed on their own merits and implemented or not, independent of the actions currently selected.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

No significant cumulative impacts have been identified in the EA. Past, present, and reasonably foreseeable future actions on-going in the cumulative impact assessment area would not result in cumulatively significant impacts For any actions that may be propose in the future, further environmental analysis, including the assessment of cumulative impacts, will be required.

8) *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.*

No districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) were identified in the project area and EA. The proposed action will not cause the loss or destruction of significant scientific, cultural or historical resources.

9) ***The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.***

The BLM is required by the Endangered Species Act of 1973, as amended, to ensure that no action on the public lands jeopardizes a threatened, endangered, or proposed species. The action complies with the Endangered Species Act, in that potential effects of this decision on listed species have been analyzed and documented (EA Chapter IV). The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973, as amended.

10) ***Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.***

The proposed action will not violate or threaten to violate any Federal, State, or local law or requirement imposed for the protection of the environment.

/S/ Chris Mayer (for) 9/26/2007

William E. Dunn Date
Assistant Field Manager Renewable Resources
Ely Field Office

FINAL ENVIRONMENTAL ASSESSMENT

NV-040-07-028

GRAZING PERMIT ISSUANCE FOR LAKE VALLEY CATTLE LLC. ON THE GEYSER RANCH ALLOTMENT

United States Department of the Interior
Bureau of Land Management
Ely Field Office

Prepared By: Troy Grooms
August 27, 2007

(MFP) (1983). Standards and Guidelines for Grazing Administration were developed by the Northeastern Great Basin Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997.

The term grazing permit under consideration is for Geyser Ranch Allotment (01101) and portions of the Wilson Creek Allotment (01201) (see general location map). Geyser Ranch Livestock Operation is 18,972 active AUM's and 1,601non-use AUM's for resource conservation. The current season of use is from March 1 to February 28 Geyser Ranch was ranked as a "I" (Improve) category allotment in the Schell Rangeland Program Summary (P. ,May 1988). The current term permit for the Geyser Ranch Allotment has been issued for the period 3/1/2003 to 2/28/12.

An assessment of the rangeland health was conducted during the permit issuance process. A review of the monitoring data was conducted. As a result of this review, no change in the livestock management practices has been identified.

Monitoring data would continue to be collected for the allotment including utilization (use pattern mapping and key area), ecological condition, trend and cover. If a future assessment results in a determination that changes are necessary for compliance with the Standards and Guidelines, the permit or lease will be reissued subject to revised terms and conditions.

An allotment evaluation was conducted using monitoring data collected between 1988 and 2005 and a Final Multiple Use Decision (FMUD) on the Geyser Ranch Allotment was completed July 11th, 1990. The FMUD indicated changes in permitted livestock use and management were needed. Changes that took place were a four pasture rest rotation system over a 16 pasture use area. Identified concerns were wild horse use in the southern portions of the use area along the Fairfield and Muleshoe pastures. This area lies within the Dry Lake HMA and has a heavy concentration of wild horses due to water and feed. No livestock grazing takes place there due to heavy utilization by horses. Also identified is the continual encroachment of pinyon and juniper into sagebrush communities along both the east and west benches. An assessment of the rangeland health was conducted and completed during the permit issuance (renewal) process. The assessment was based on rangeland monitoring data that is summarized within the standards determination. As a result of the assessment and monitoring data review, it has been determined that the Standards and Guidelines for Rangeland Health are being achieved or making progress toward being met on the Geyser Ranch Allotment. A summary of this finding for the allotment

follows:

1. Upland Sites Standard (Meeting the Standard).
2. Riparian and Wetland Sites Standard (Meeting the Standard).
3. Habitat Standard (Meeting the Standard).

Conclusions:

Standard #1: Soils

Cover is very adequate to support functioning soil conditions. The ratio of woody, herbaceous and forbs is appropriate considering crested wheat seedings was implemented during the 1960's. Monitoring data shows that native grasses, forbs and woody species are moving into the areas at acceptable rates.

Biological crust formations are present within the allotment but only one to two percent in composition.
Compaction/infiltration rates are within acceptable limits and are not a concern due to the soil types within this allotment. Freezing and thawing cycles are present within these soils and act as inhibitors to compaction.

Standard #2: Riparian and Wetland Sites.

There are 102 water sources within the Geyser Ranch Allotment, of which 31 of them are deep water wells, and 15 of them are reservoirs. There are two lotic riparian systems within the allotment; they are North Creek and Geyser Spring. Proper functioning Condition (PFC) was conducted during the late summer of 2004 and both were found to be in proper functioning condition. North Creek is in an upward trend. Geyser spring is functioning at risk due to a large precipitation event that occurred during the summer of 2003. This event caused stream banks to be blown out and existing sand bars to be removed and removed what small amount of sinuosity occurred within the stream channel. Currently the stream riparian area is used heavily by elk and deer. Cattle use here is not an issue.

Stream bank stability is present but needs to be monitored in the future due to multiple uses of animals domestic and non-domestic. Sinuosity lacks in the lotic systems due extreme elevational changes in the flow patterns. As a result of this large precipitation events have the potential to strip stream banks and widen as well as deepen flow areas.

There are several springs or lentic systems within this allotment. Not all were monitored for PFC. Several springs within the allotment are fully developed and could not be monitored for PFC. Of those that were monitored, they were determined to be functioning properly but functioning at risk

Standard #3: Habitat and Biota

Current vegetation communities are meeting the standard. Vegetative composition is appropriate for the potential of the site and the site characteristics. Sagebrush communities exhibit a healthy herbaceous understory. Percent composition for the shrub component is higher than what is appropriate at some sites. Percent composition for the shrub, grass and forb components are appropriate to the site. Vegetation distribution with respect to patchiness, are present, this is due to natural wildfires that occurred within the community types. Some of the areas in this allotment have crossed the threshold as exhibited by rabbitbrush and cheatgrass components in the plant community. The vegetative diversity of the salt desert shrub communities is high due to precipitation and lack of grazing by domestic and wild ungulates. The resilience of the wet saline bottom communities is high.

Historic livestock grazing is not an issue due to the large number of acres of crested wheat seedings. This grass specie is able to handle the grazing pressure especially during the critical growing season which allows the native to rest each year. Some of the plant communities are in a state requiring additional disturbance such as mechanical and fire to make change improving age structure and vegetation distribution.

Standard #4. Cultural Resources:

This standard is being met based on the evaluation of existing information pertaining to range improvements and grazing, cultural resources are being recognized within the context of multiple use management in the Geyser Ranch Allotment. A cultural resources report will be completed associated with issuance of the term permit during the NEPA process.

Need for the Proposal

The proposal is needed to renew the term grazing permit for Lake Valley Cattle LLC. on Geyser Ranch and portions of the Wilson Creek Allotment in accordance with all applicable laws, regulations, and policies with terms and conditions of grazing use that achieve, or make significant progress towards achieving, the Standards and Guidelines for Grazing Administration and the other pertinent land use objectives for livestock use. In accordance with Title 43 CFR 4130.2(a), "Grazing permits or leases authorize use on the public lands and other BLM-administered lands that are designated in land use plans as available for livestock grazing."

Relationship to Planning

The proposed action is in conformance with the Schell Management Framework Plan (MFP) (approved June 1, 1983) and the Final Schell Grazing EIS (July 1, 1983). The proposed action would implement the livestock management decisions from the Grazing EIS. The proposed action would also be in conformance with the White Pine (1999) and Lincoln County (Revised 2006) Elk Management Plans. The project is also consistent with the White Pine County Land Use Plan of May, 1998 which states in part "The federal government should continue to make the public rangelands economically and realistically available for livestock grazing, along with the other multiple use objectives." The proposed action is also consistent with the Lincoln

County Public Land and Natural Resource Management Plan (1997) Although not specifically provided for, this plan generally supports "multiple use public land management policy [to] ensure future stability of communities" (p. 11). The proposed action is consistent with Federal, State, and local laws, regulations and plans to the maximum extent possible.

Relationship to Bureau Guidance

The Proposed Action also complies with BLM Nevada Instruction Memorandum (IM) No. NV-2006-0034, which provides guidance to facilitate the preparation of grazing permit renewals Environmental Assessments (EAs) as per the requirement set forth in BLM Washington Office IMs WO 2003-071 and WO 2004-126.

Identification of Issues

This permit renewal proposal was scoped by resource specialists during a meeting held January 30, 2007 at the Ely BLM Field Office. No issues were identified for this proposed term grazing permit renewal.

II. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The proposed action is to issue a new term grazing permit for Lake Valley Cattle LLC. (operator # 2700016) and authorize livestock grazing on the Geyser Ranch Allotment. The Geyser Ranch Allotment has been categorized by land use planning documents as (I – Improve Category). There are 539,941 federal acres in the allotment, 16 fenced pastures that are both crested wheat seedings and native range. The Wilson Creek Allotment portion of the Geyser Ranch operation include; Muleshoe Pasture, Fairview, Pony Seeding and Atlanta Pastures.

The current term permit and allotment information follows:

Allotment	Livestock Number & Kind	Period of Use	Permitted Use (AUMs)	Historical Suspended Use	Permitee	Total Use (AUMs)
Geyser Ranch Managemtent Units 1,2 and 3	1025 cattle	03/01 – 02/28	12,308 AUM's	2,703	Lake Valley Cattle LLC.	15,011
Pastures						
Fairview	136 cattle	04/16 – 10/31	890 AUM's	533	Lake Valley Cattle	1,423

					LLC.	
Muleshoe	680 cattle	11/01 – 04/15	3,711 AUM's	533	Lake Valley Cattle LLC.	4,244
Pony Seeding	430 cattle	04/01 – 06/30	1,286 AUM's	0	Lake Valley Cattle LLC.	1,286
Atlanta	120 cattle	04/16 – 10/31	785 AUM's	533	Lake Valley Cattle LLC.	1,318

The allotment summary is as follows:

Allotment Number/Name	Active Use	Suspended	Grazing Preference
01101 / Geyser Ranch	15,011	2,703	12,308
01201 / Wilson Creek Pastures	8,307	1,601	6,706

The issuance of the term grazing permit would be for a period of ten years from 9/30/2007 to 09/29/2017. . There are no proposed changes to the terms and conditions, therefore the no action alternative is the same as the proposed action alternative and will not be further addressed (see Terms and Conditions, Appendix II).

The term permit renewal area would also be monitored on a regular basis for noxious weeds or non-native invasive species. Further mitigation measures for weeds are identified in the Noxious Weed Risk Assessment in Appendix 3.

Other Alternatives

The Schell MFP/FEIS addressed several alternatives. The No Grazing alternative was addressed in the Egan RMP-FEIS. Not issuing term grazing permits was considered but eliminated from detailed analysis because the Code of Federal regulations at CFR 4130.2 requires the issuance of grazing permits to qualified applicants. No additional site specific alternatives are necessary for analysis since there are no unresolved conflicts concerning alternative uses of available resources.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Site specific descriptions of portions of the affected environment are included, as needed, in the Environmental Consequences section of this EA to facilitate understanding of anticipated impacts. The affected environment is described in Chapter 3 of the Schell MFP/FEIS.

The Geyser Ranch Allotment (01101) encompasses approximately 539,941 federal acres in the allotment, 16 fenced pastures that are both crested wheat seedings and native range. The Wilson Creek Allotment portion of the Geyser Ranch operation include; Muleshoe Pasture, Fairview, Pony Seeding and Atlanta Pastures. The allotment is situated in Lake Valley. The allotment is located within White Pine and Lincoln County, in the south east central portion of the Ely BLM District approximately 68 miles south east of Ely, Nevada. The allotment is situated on the west side of the Grafton Mountain Range and East of the Fortification Range (see General Location Map). Elevations range from approximately 5000 feet in Lake Valley along the bottom to over 10,000 feet in the Mt Grafton Mountain Range. Average annual precipitation is 10-12 inches on the lower bench and bottoms to 20-24 inches in the mountains. The majority of the allotment consists of sagebrush/perennial grass communities and pinyon/juniper woodlands on the benches and higher elevation sites. The allotment also occurs within the Central Nevada Basin and Range (028B) Major Land Resource Area (MLRA).

Critical Elements of the Human Environment

The Critical Elements of the Human Environment, which must be considered because of requirements specified in statute, regulation, or executive order, are listed in Table 1. Elements that may be affected are further described in this EA. Those elements that are not present or would not be affected are also listed in Table 1, but will not be considered further in this document.

Table 1. Critical Elements of the Human Environment

Critical Element	No Effect	May Affect	Not Present	Rationale
Air Quality		X		Minor dust is associated with normal livestock trailing to/from water locations.
Areas of Critical Environmental Concern (ACEC)			X	There are no areas of critical environmental concern within the Geyser Ranch or Wilson Creek Allotment
Cultural Resources	X			The Wilson Creek Allotment is predominately within a medium to high cultural sensitivity level. Prehistoric cultural resources (habitation/non-habitation sites; lithic scatter, projectile points and camp areas) may be found in areas adjacent to spring sites, ridge tops and adjacent hillsides throughout the allotments and district. There are numerous prehistoric sites within the allotment boundaries.
Environmental Justice	X			No minority or low-income groups would be affected by disproportionately high and adverse health or

				environmental effects identified in the Proposed Action Area.
Farmlands (Prime or Unique)	X			There is prime or unique farmland on the allotment. Livestock grazing will not impact prime farmlands because it will not change soil characteristics that affect farmland status.
Floodplains			X	There are no floodplains or wetlands associated with the Geyser Ranch Allotment that occur on public lands.
Migratory Birds		X		Several species of migratory birds have a distribution that overlaps with the Proposed Action Area.
Native American Religious Concerns	X			During a Native American coordination meeting January 17, 2007 no religious concerns were identified for Geyser Ranch Allotment
Noxious weeds and non-native, invasive species		X		Surface disturbance may increase the risk of non-native, invasive species establishment.
Special Status Species		X		Bald eagles, golden eagles, and peregrine falcons may be observed in the allotment at varying times of the year.
Wastes (hazardous or solid)	X			No hazardous or solid would be introduced by the proposed action.
Water Quality (drinking/ground)	X			No surface water within the area is used for domestic drinking water.
Wetlands/Riparian	X			There are no floodplains or wetlands associated with Geyser Ranch Allotment
Wild Horses and Burros		X		The Geyser Ranch and Wilson Creek portion of the Allotments fall within two Herd Management Areas (HMA's). They are the Dry Lake HMA and the Wilson Creek HMA.
Wild and Scenic Rivers			X	There are no wild and scenic rivers within the allotment.
Wilderness Values		X		There are two Wilderness Areas within the use areas. They are the Mt. Grafton Wilderness and Fortification Range Wilderness

In addition to the critical elements of the human environment, the BLM considers other resources and uses that occur on public lands and the issues that may result from the

implementation of the Proposed Action. The potential resources and uses, or non-critical elements that may be affected are listed in Table 2. A brief rationale for either considering or not considering the non-critical element further is provided. The non-critical elements that are considered in the EA are described in the Affected Environment (Section 3) and are analyzed in the Environmental Consequences (Section 4).

In addition to the Critical Elements of the Human Environment, the BLM considers other resources or uses that occur on public lands, or issues that may result from the implementation of the Proposed Action.

Table 2. Other Resources and Uses

Resource or Issue	No Effect	May Affect	Not Present	Rationale
Soils		X		Cryptogrammic crusts exist in the Proposed Action Area.
Socioeconomics		X		The Proposed Action would provide stability to livestock operator
Vegetation		X		The Proposed Action would improve vegetation.
Wildlife		X		There is yearlong habitat and no identified corridors or crucial habitat for Rocky Mountain elk within the allotment. The allotment has mule deer winter range and no migration corridors or crucial habitat. There is yearlong pronghorn antelope habitat and no identified corridors or crucial habitat. Geyser Ranch Allotment is within the "Antelope" Sage Grouse Population Management Unit (PMU)
Range/Livestock Grazing/Standards and Guidelines		X		Standards and Guidelines are being met
Recreation	X			Dispersed recreation in this area includes large and small game hunting, wildlife observation and photography, hiking and general off highway vehicle use.
Visual Resources	X			The area is currently unclassified. The proposed term permit renewal is consistent with the Visual Resource Management (VRM) Class III or IV objectives.

Potentially Affected Elements of the Human Environment

Based on the review of existing baseline data and surveys conducted in preparation of this EA, BLM specialists have identified the following as potentially affected elements of the human environment:

- Air Quality
- Migratory Birds
- Noxious Weeds and Non-native Invasive Species
- Special Status Species (Federally listed threatened or endangered, proposed, and candidate species; state protected species; and BLM sensitive species.
- Riparian
- Range/Livestock Grazing
- Soils
- Socioeconomic
- Vegetation
- Wildlife

Air Quality

It is expected that the current air quality within the proposed project area is within acceptable limits and meets State standards. The proposed project area is not within an area containing residential or industrial development. There are currently no activities occurring within the area which would affect air quality standards.

Migratory Birds

Migratory bird nesting habitat and other habitat is located through out the allotment.

Invasive, Non-Native Species (including Noxious Weeds)

Within the allotments:
Along Highway 93 there are infestations of Dalmatian toadflax (Linaria dalmatica), Diffuse knapweed (Centaurea diffusa), Russian knapweed (Acroptilon repens), Scotch thistle (Onorpodum acanthium), and Spotted knapweed (Centaurea stoebe). In the Geyser allotment, at Patterson Pass there are infestations of Spotted knapweed and Bull thistle (Cirsium vulgare) and just west of Dutch John Mtn there are infestations of Russian knapweed. Within the Fairview use area there is an infestation of Scotch thistle at Lower Fairview Spring and an infestation of Bull thistle at Meloy Spring.

Outside of the allotments:
Just outside the southeastern edge of the allotments there are infestations of Bull thistle, Dalmatian toadflax, Diffuse knapweed, salt cedar (Tamarix spp.), Scotch thistle and Spotted knapweed. North of Geyser along Highway 93 there are infestations of Dalmatian toadflax, Scotch thistle and Spotted knapweed. South of the allotments along Highway 93 there are infestations of Dalmatian toadflax, Russian knapweed, Scotch thistle and Spotted knapweed.

The proposed action could increase the populations of the noxious and invasive weeds already within the allotment. The vast majority of the allotments are relatively weed-free with the main infestations occurring around Highway 93.

Special Status Species (Federally listed, proposed or candidate Threatened or Endangered Species, and State sensitive species)

Peregrine falcons (*Falco peregrinus*) and bald eagles (*Haliaeetus leucocephalus*) are federally listed as threatened and listed by the State of Nevada in a category implying potential endangerment or extinction and may be found on the allotment any time of the year, but no special use areas have been identified. Pygmy rabbits may inhabit basin big sagebrush areas within the livestock operation.

Geyser Ranch Allotment is within the "Antelope" Sage Grouse Population Management Unit (PMU). Sage grouse nesting and early brood habitat, late summer habitat and winter habitat occur within the allotment. Nevada BLM Sensitive Species list are species designated by the State Director, in cooperation with the State of Nevada Department of Conservation and Natural Resources, that are not already included as BLM Special Status Species under (1) Federally listed, proposed, or candidate species; or (2) State of Nevada listed species. Species which were eliminated from the U. S. Fish and Wildlife Service's Category II candidate list in 1995 were maintained by BLM as per Instruction Memorandum No. NV-98-013. Nevada BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C. The Policy (BLM Manual section 6840.06 C) states in pertinent part "BLM shall carry out management, consistent with the principles of multiple use, for the conservation of candidate species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered."

Riparian

There are 102 water sources within the Geyser Ranch Allotment, of which 31 of them are deep water wells, and 15 of them are reservoirs. There are two lotic riparian systems within the allotment; they are North Creek and Geyser Spring. Proper functioning Condition (PFC) was conducted during the late summer of 2004 and both were found to be in proper functioning condition. North Creek is in an upward trend. Geyser spring is functioning at risk due to a large precipitation event that occurred during the summer of 2003. This event caused stream banks to be blown out and existing sand bars to be removed and removed what small amount of sinuosity occurred within the stream channel. Currently the stream riparian area is used heavily by elk and deer. Cattle use here is not an issue.

There are several springs or lentic systems within this allotment. Not all were monitored for PFC. Several springs within the allotment are fully developed and could not be monitored for PFC. Of the ones monitored they were determined to be functioning properly but functioning at risk.

Range

The Geyser Ranch Allotment is currently permitted for cattle grazing. Historically cattle grazing occurred on this allotment. The current permit for cattle use is described above under the Proposed Action. Geyser Ranch cattle operation is based on a four pasture rest rotation system. The ranch consists of 16 pastures on public lands with two pastures on private. It is a year round operation that rests three pastures each year. The Wilson Creek portion of the permit is scheduled to be grazed the same time every year with no rest cycle. Currently in working with the livestock operators we rest one pasture every year

The range vegetation for the Geyser Ranch Allotment is discussed below under the Vegetation heading.

Vegetation

Vegetation within the Geyser Ranch Allotment varies from elevation changes and soil conditions. The lower elevation consists of the allotment consists of sandy silty loam soils that are characteristic of a dry lake bed. The vegetation consists of grasses that are tolerant of sodic soil conditions. There are numerous seeps and springs along the bottom that have created a bog type condition. A majority of the slews or bogs are located on private property that acts as the base property associated with the permit. The public land portion of the lower elevation consists of sagebrush communities that have an understory of Indian ricegrass, Great basin wild rye, bottle brush squirrel tail and various forbs. The lowest elevations consist of Grease wood with minimum understory. During the 1960's a significant number of acres was converted to crested wheat seedings. This occurred predominantly along the benches just above the bottoms. They are naturally re-establishing with sagebrush, but with a predominant understory of Crested

wheatgrass. The cover density of sagebrush in relation to Crested wheatgrass varies by pasture but ranges from 5 to 10% sagebrush to 20 to 40% sagebrush cover.
The vegetative community above the crested wheat seeding is predominantly Wyoming sagebrush communities with a herbaceous understory consisting of Indian ricegrass and Bottle brush squirrel tail. This is where a majority of the rangeland encroachment by pinyon and juniper of various age classes is taking place. The mountain communities within the allotment have been marked with 3 major fires over the last 10 years. The resulting communities have responded with increased Bluebunch wheatgrass, Needle and thread grass and Indian ricegrass communities with Great basin wildrye in the lower draws. Cheatgrass has invaded as result of the fires but with no further disturbance the communities will out-compete the invasive annual.

Soils

Geyser Ranch and part of Wilson Creek are located in MLRA 28B. The southern portion of the Wilson Creek allotment is located in MLRA 29. The soils are predominantly aridisols, entisols and mollisols. Soils range from shallow in mountains to very deep on valley floors. Surface textures of many of the soils range from gravelly coarse sandy loams to gravelly sandy loams to gravelly loamy sands to gravelly loams to coarse sandy loams to sandy loams to fine sandy loams to silt loams to silty clay loams.

Wildlife

There is yearlong habitat for Elk and Deer and no identified corridors or crucial habitat for Rocky Mountain elk within the allotment. The allotment has mule deer winter range and no migration corridors or crucial habitat. There is yearlong pronghorn antelope habitat and no identified corridors or crucial habitat.

Prime or Unique Farmlands

Livestock grazing will not impact prime farmlands because it will not change soil characteristics that affect farmland status.

Wild Horses

The Geyser Ranch and Wilson Creek portion of the Allotments fall within two Herd Management Areas (HMA's). They are the Dry Lake HMA and the Wilson Creek HMA. The 1990 FMUD determined through monitoring that a thriving natural ecological balance will be obtained by maintaining wild horse use at the following levels:

HMA	# Animals	AUM's
Dry Lake	16	192
Wilson Creek	102	1,224

The Dry Lake HMA was gathered in 2007 and removed horses to 40% below Animal Management Level AML. The Wilson Creek HMA was gather in 2002 to AML and was gathered again in 2006.

IV. ENVIRONMENTAL CONSEQUENCES

The environmental consequences of grazing were analyzed in the Final Schell Grazing EIS (July 1, 1983). The proposed action is within the array of options identified for the alternatives and proposed action as analyzed in the EIS. There have been no major changes made associated with the proposed term permit issuance from the rangeland management actions presented in the EIS. The proposed action is not substantially different than the actions analyzed in the EIS. The following site specific analysis is in addition to that in the EIS.

Air Quality

The proposed term permit renewal may result in dust levels during trailing to and from water sources. Any increase in dust would be transitory and quickly dissipate. The dust emissions are not expected to exceed Nevada and National Ambient Air Quality Standards. In addition, it is expected that any emissions would not affect any Class I air quality areas.

Migratory Birds.

Impacts to migratory birds should be negligible and not have a detrimental effect on migratory bird populations.

Invasive, Non-Native Species (including Noxious Weeds)

The grazing permit renewal would not likely result in an increase in noxious weeds to the area of the permit renewal. The Risk Factor for spread of noxious weeds is moderate at the present time (See Appendix 3 for the Noxious Weed Risk Assessment). Localized areas of livestock concentration or disturbance may increase the distribution of noxious weeds. Grazing use may or may not cause an increase in invasive plants, depending on climate, stocking level, timing of grazing, presence or absence of fire, and other factors. The permit renewal area would be monitored on a regular basis for noxious or invasive weeds or nonnative species. Control treatments would be initiated on noxious weed populations that become established in the project area.

Special Status Species (Federally listed, proposed or candidate Threatened or Endangered Species, and State sensitive species)

Special status species would generally not be affected by the term permit renewal. No special status plants are located in the term permit renewal area, thus special status plants would not be affected by the proposal. .

Range/Livestock Grazing

Implementation of the proposed alternative would lead toward achieving the Standards and Guidelines for Grazing Administration. Improvement in cattle distribution and utilization would continue to make progress towards enhanced forage production, ground cover, vigor, species composition, diversity, range condition and trend, and watershed conditions. Forage availability should increase for livestock and wildlife.

Riparian

The proposed term permit renewal would not change the present condition of the riparian areas. Currently the natural springs and streams are primarily used by wildlife and wild horses. Livestock operation uses established wells and troughs.

Soils

Soil compaction will occur where livestock congregate in small areas.

Socioeconomic

Lifestyles of local residents would not be impacted. The proposed term permit renewal would provide economic benefits for the livestock permittee in this area. The proposed permit renewal would facilitate livestock management and could provide stability to the livestock operation

Vegetation

The term permit renewal would continue to improve composition and cover and forage availability, and result in an improved rangeland condition and trend.

Wildlife

Wildlife habitat would be continue to be enhanced and expanded by improved native vegetation ground cover and a better quantity and availability of forage.

Wild Horses

Geyser Ranch is within two Herd Management Areas. No impact is anticipated due to forage allocation within the HMA's. All fences within the HMA's were either there prior to the establishment of the HMA's or are open on the ends to allow for free movement of horses.

Cumulative Impacts

According to the 1994 BLM Handbook "Guidelines for Assessing and Documenting Cumulative Impacts," the analysis can be focused on those issues and resource values identified during

scoping that are of major importance. No issues or resource values of major importance were identified during the EA scoping period, thus no specific resource value is addressed below. A general discussion of past, present, and reasonably foreseeable future actions follows:

Past Actions

There have been limited previous actions occurring in the project area. There has been no historical oil or gas production and minimal oil exploration in the area. Woodcutting and pinyon nut gathering have been minimal on Geyser Ranch. Commercial pinyon nut harvesting has occurred within the Fairfield and Pasture 10 use areas. Hunting, trapping, wildlife viewing, and other recreational activities including OHV use have been minimal. Small two track roads associated with these activities are not extensive and have not altered the landscape. Wildfires have not been frequent or catastrophic. Wildlife use has not been intensive in the area and has not fundamentally altered the plant communities. There is numerous right of ways applications for water pipelines, deep water wells and power lines being proposed for the Lake Valley area. Livestock grazing has taken place in the valley since the late 1800's. There are numerous range improvements to distribute cattle use and improve forage utilization and rangeland health. Rangeland monitoring has occurred in the area.

Present Actions

Current activities or projects occurring in the project area are limited. There is no current mineral mining or oil and gas exploration. There is a proposed water pipeline being proposed to be routed through the east portion of the allotment by Southern Nevada Water Authority (SNWA) and proposed deep wells within the Dry Lake Valley. Woodcutting and pinyon nut gathering are minimal. Recreational activities including OHV use are currently minimal. The road up North Creek is used occasionally by local residence. There is only occasional use of the small two track roads in the area.

Reasonably Foreseeable Future Actions

No other significant public lands actions are planned for the project area in the near future. There are no anticipated increases in mining, woodcutting, pinyon nut gathering, or OHV use in the area in the reasonably foreseeable future. Lake Valley Cattle LLC. would be the permittee on Geyser Ranch Allotment it is reasonable that the permit would be active and that cattle would be permitted to graze on the allotment. Rangeland monitoring would be expected to continue at the present level and intensity on the allotment. Dozens of range permit renewals would occur each year through 2009 and subsequent years. A wind generating farm is being studied for the area in the Egan Mountain Range. Visitor use and general population would be expected to increase in this area if these proposed projects are implemented. With the increased awareness of the area, woodcutting, pinyon pine nut gathering and OHV use in the area would increase in the reasonably foreseeable future

A new resource management plan and environmental impact statement (RMP/EIS) is currently being developed for the Ely Field Office BLM area. The draft RMP/EIS was out for public comment closing in November 2005. According to the proposed RMP/EIS, resource

management would occur on a watershed basis.

Cumulative Impacts Summary

The proposed action in conjunction with the past, present, and reasonable foreseeable future actions would result in no noticeable overall changes to the affected environment. The proposed permit renewal would continue to meet or make progress toward meeting the rangeland health standards. There would be little cumulative visual impairment to the area as a result of the term permit renewal. There may be perceived increased conflicts between dispersed recreation and livestock grazing if recreation increases as a result of foreseeable future actions. The proposed action would improve grazing management. No cumulative impacts of major or minor concern are anticipated as a result of the proposed project

V. PROPOSED MITIGATION MEASURES

Appropriate mitigation has been included as part of the proposed action and no additional mitigation is proposed based on this environmental analysis.

VI. SUGGESTED MONITORING

Rangeland monitoring data would continue to be collected for the Geyser Ranch Allotment to determine if the livestock management practices are continuing to meet or making progress towards meeting the Standards for Rangeland Health and other vegetative objectives for the allotments.

Monitoring studies may include use pattern mapping, key forage plant method utilization transects (KFPM), cover studies, ecological condition studies, frequency trend studies, observed apparent trend studies, weed detection, professional observations, and photographs. Rapid riparian assessment (proper functioning condition studies) would be conducted on an as needed basis. Baseline monitoring (ecological condition, cover, utilization, and trend) may be conducted associated with watershed assessment.

Prior to authorizing annual grazing use, monitoring may be conducted to determine forage availability, grazing use areas and grazing management practices. Following the grazing period, monitoring may be conducted to determine overall utilization levels and grazing use patterns.

If a future monitoring assessment results in a determination that additional changes in grazing management practices are necessary for compliance with the Standards for Rangeland Health, the grazing permit or lease would be reissued subject to revised terms and conditions.

VII. CONSULTATION AND COORDINATION

Public Interest and Record of Contacts

There is a general public interest in the proper grazing management of public lands. Lake Valley Cattle LLC. has a strong interest in this term permit renewal.

On January 17, 2007 the Geyser Ranch Term Grazing Permit Renewal proposal was presented to a Tribal coordination meeting at the Ely BLM Field Office. No concerns were identified during this meeting. There were no questions or comments regarding the proposal from the Tribal participants.

On January 30, 2007 the project was presented to the scoping team and no issues were identified at that time. The project was posted on the Ely Field Office web site, January, 2007, http://www.nv.blm.gov/ely/nepa/ea_list.htm and no comments were received.

A preliminary EA will be posted for a thirty day public review and comment period on the Ely BLM external website. A hard copy of the EA will also be mailed to those interested publics who have requested it, and who have expressed an interest in range management actions on the Geyser Ranch Allotment. Changes in the EA based upon public input will be made as appropriate.

Interested publics will be notified by mail or email when the Decision Record and Finding of No Significant Impact (DR/FONSI) is signed. Before including addresses, phone numbers, e-mail

addresses, or other personal identifying information in comments, you should be aware that the entire comment – including personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. These documents will also be mailed to interested publics that request a hard copy. The signed DR/FONSI initiates a 15 day protest period and a 30 day appeal period.

The Ely Field Office mails an annual Consultation, Cooperation, and Coordination (CCC) Letter to individuals and organizations that have expressed an interest in rangeland management related actions. Those receiving the annual CCC Letter have the opportunity to request from the Field Office more information regarding specific actions. Those requesting notification of range improvement actions are requested to respond if they want to receive a copy of the final EA and signed Decision Record/Finding of No Significant Impact. The following individuals and organizations, who were sent the annual CCC letter in January, 2006, have requested additional information regarding rangeland related actions or programs within the Geyser Ranch grazing allotment:

To summarize, the following changes were made in the final EA in response to public review and comment: (1) comments about horses being trapped within the Dry Lake HMA due to fencing were addressed under environmental consequences for wild horses on page 14 and 15. (2) Appendix 4 was added to the document to review the comments received with responses.

Curtis A. Baughman, Nevada Division of Wildlife
Mr. Steve Foree, Nevada Division of Wildlife
Lincoln County Commissioners
Betsy Macfarlan, ENLC
Cindy MacDonald
John McLain, Resource Concepts, Inc.
Nevada State Clearinghouse
Western Watersheds Project, Katie Fite

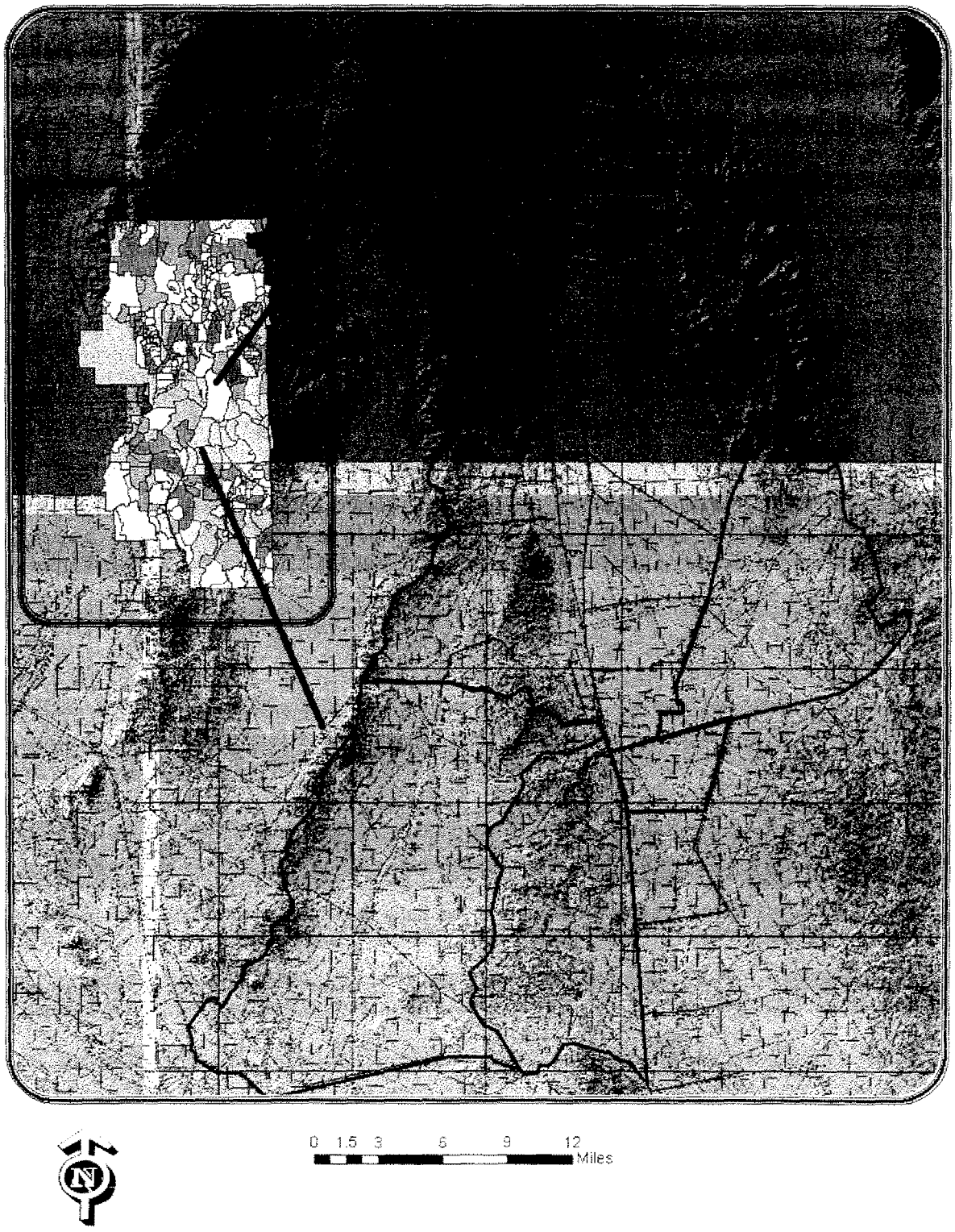
Record of Personal Consultation and Coordination

Lake Valley Cattle LLC.

B. Internal District Review

Steve Abel	Wildlife/T & E Species/Riparian
Jared Bybee	Wild Horses
Bruce Winslow	Visual Resources/Wilderness/Recreation
Bonnie Waggoner	Noxious Weeds
Susan Howle	Environmental Coordination
Troy Grooms	Rangeland Resources
Gary Medlyn	Soil/Water/Air
Lorie Lesher	Cultural Resources

Figure 1: **Geyser Ranch Permit Area within the Ely District**



Northeastern Great Basin Standards and Guidelines
Assessment

Geyser Ranch Livestock Operation

Ely Field Office

I. Introduction:

The purpose of this assessment is to determine if livestock grazing within the Geyser Ranch Allotment is maintaining or progressing toward the achievement of Standards for Rangeland Health as developed by the Northeastern Great Basin Area Resource Advisory Council (RAC).

In accordance with 43 CRF 4180, the Ely Field Office is required to complete standards and guideline assessments on grazing allotments in order to determine whether or not existing grazing management practices are resulting in the attainment of the standards for rangeland health and are in conformance with the guidelines. This document fulfills the obligation of the Ely District, Bureau of Land Management to comply with Title 43 Code of Federal Regulations 4180 (Standards of Rangeland Health and Guidelines for Grazing Management) as described in the Rangeland Health Standards Handbook (H-8180-1). The Handbook defines three steps in the process: *assessment, evaluation, and determination.* The 'assessment' defines the current resource conditions by using historic and newly collected information. The 'evaluation' analyses all information – including information derived from monitoring, Ecological Site Inventory, Ecological Site Descriptions, and professional judgment – in relation to how well the Standards and Guidelines are being met. The 'determination' is the statement of achievement or non-achievement for each Standard, of causal factors if a Standard is not achieved or moving towards achievement, and of conformance or non-conformance with the Guidelines. Additional steps of planning and implementation may be required if determinations indicate problems with authorized livestock grazing. The following assessment is based on a review and analysis of monitoring information obtained between 1998 and 2004. This assessment is in accordance with BLM Manual 4180-1, Rangeland Health Standards, approved on January 19, 2001.

Furthermore, the Northeastern Great Basin Resource Advisory Council (RAC) has developed standards and guidelines to help balance sustainable development and multiple use while making progress towards attaining healthy, properly functioning rangelands. The Northeastern Great Basin Resource Advisory Council Standards and Guidelines were approved February 12, 1997. Standard and Guidelines for rangeland health were approved and published in 1997 for all three Nevada RACs. In December 2000, the Northeastern Great Basin RAC approved Wild Horse and Burro Standards and Guidelines and they were incorporated into the existing rangeland heath document. Vegetation Guidelines were approved in March 2004 and added as Appendix A. Off Highway Vehicle (OHV) Administration Guidelines were approved by all three Nevada RACs in September 2003 and are included in the Standards and Guidelines as well. These Standards and Guidelines reflect the stated objectives of improving rangeland health while providing for the viability of the livestock industry.

II. General Background and Geographic Information

The Geyser Ranch Livestock Operation is located approximately 68 miles south from Ely and is in White Pine County and Lincoln County. There are 247,714 federal acres in the allotment, 16 fenced pastures that are both crested wheat seedings and native range. The Wilson Creek Allotment portion of the Geyser Ranch operation include; Muleshoe Pasture, Fairview, Pony Seeding and Atlanta Pastures. The livestock operation has approximately 25% of dense pinion and juniper stands. The allotment reflects extremes in climate, geography, distribution of forage users, and topography. The allotment contains two major mountain ranges and two major valleys. It is within the Dry Lake HMA and the Wilson Creek HMA. Besides horses, significant populations of mule deer and Elk inhabit the allotment year round; sage grouse are present as well. The livestock preference for the Geyser Ranch Livestock Operation is 18,972 active AUM's and 1,601non-use AUM's for resource conservation. The vegetative communities within the Geyser Ranch Livestock Operation consist of but are not limited to wetlands, crested wheat grass seedings, sagebrush, pinion and juniper and aspen/white fur communities.

Current Livestock Management

Historical use has been made by cattle on the allotment. Lake Valley Cattle LLC obtained the grazing permit for Geyser Ranch in year 2001, and obtained the grazing permits for the Geyser Ranch and pastures within the Wilson Creek Allotment. The season of use for the Geyser Ranch and Wilson Creek Allotments is year round. El Tejon Cattle Company has historically made use in the Dry Lake Valley area since the 1960's. In 1992 a decision was issued which split the Dry Lake Valley area into pastures thus creating the Muleshoe pasture. El Tejon Cattle Co. has a sheep permit for the Muleshoe pasture of the Wilson Creek Allotment with 1,832 active AUM's. (See Appendix IV) This pasture is run in common by both cattle and sheep during the winter. The allotment currently has a permitted use of 18,972 active AUM's for cattle. The allotment Selective Management Criteria was assigned an Improve Category (I). Lake Valley Cattle LLC

has been the current permit holder since 2001 for the Geyser Ranch Allotment and owns the base property. Geyser Ranch cattle operation is based on a four pasture rest rotation system (see appendix 1). The ranch consists of 12 pastures on public lands with two pastures on private. It is a year round operation that rests three pastures each year. The Wilson Creek portion of the permit is scheduled to be grazed the same time every year with no rest cycle. Currently in working with the livestock operators we rest one pasture every year (See Appendix V for Grazing Rotation) To facilitate recovery of desirable perennials within the burn areas an agreement with the operators has been reached to graze these areas outside of the critical growing season for the next five years beginning in 2003. Utilization levels are being monitored regularly during the spring critical growing period and adjustments are made accordingly. (For actual use see Appendix 3)

Wildlife and other Resource Values

A. Wildlife

Mule deer and Elk occupy the Lake Valley watershed year round. There are no sagegrouse lek sites located on the allotment but there is a lek site within the Lake Valley watershed that is located north of Geyser Ranch allotment. Sagegrouse have been spotted within the allotment but is currently being studied by BLM and Nevada Division of Wildlife (NDOW).

B. Threatened and Endangered Species

Peregrine falcons (*Falco peregrinus*) and bald eagles (*Haliaeetus leucocephalus*) are federally listed as threatened and listed by the State of Nevada in a category implying potential endangerment or extinction and may be found on the allotment any time of the year, but no special use areas have been identified. Pygmy rabbits may inhabit basin big sagebrush areas within the livestock operation.

C. Weeds

There are noxious weeds within the Geyser Ranch Allotment area. They are as follows;
Spotted knapweed
Scotch thistle
White top
Salt cedar

D. Wild Horses

The Geyser Ranch and Wilson Creek portion of the Allotments fall within two Herd Management Areas (HMA's). They are the Dry Lake HMA and the Wilson Creek HMA. The 1990 FMUD determined through monitoring that a thriving natural ecological balance will be obtained by maintaining wild horse use at the following levels:

HMA	# Animals	AUM's
Dry Lake	16	192
Wilson Creek	102	1,224

The Dry Lake HMA was gathered in 2006 and removed horses to 40% below AML The Wilson Creek HMA was gather in 2002 to AML and is scheduled to be gathered again in 2007.

E. Migratory Birds

Migratory birds nest within all habitats in the watershed. The "no surface disturbance" rule for range improvements or other public land actions protects migratory birds during their nesting season from May 1 to July 15.

F. Wilderness Areas.

There are two Wilderness Areas within the use areas. They are the Mt. Grafton Wilderness and Fortification Range Wilderness. There are no wild or scenic rivers or areas of critical environmental concern within the Geyser Ranch or Wilson Creek Allotments.

G. Allotment Specific Objectives

Resource objectives are derived from the Geyser Ranch and Wilson Creek Allotment Final Multiple Use Decisions (FMUD).

Current Resource Condition:

Vegetation within the Geyser Ranch Allotment varies from elevation changes and soil conditions. The lower elevation consists of the allotment consists of sandy silty loam soils that are characteristic of a dry lake bed. The vegetation consists of grasses that are tolerant of sodic soil conditions. There are numerous seeps and springs along the bottom that have created a bog type condition. A majority of the slews or bogs are located on private property that acts as the base property associated with the permit. The public land portion of the lower elevation consists of sagebrush communities that have an understory of Indian ricegrass, Great basin wild rye, bottle brush squirrel tail and various forbs. The lowest elevations consist of Grease wood with minimum understory. During the 1960's a significant number of acres was converted to crested wheat seedings. This occurred predominantly along the benches just above the bottoms. They are

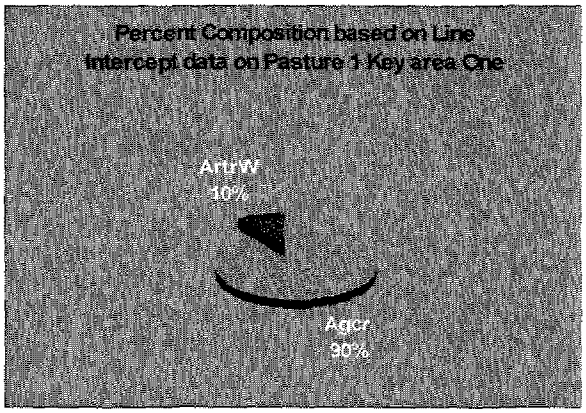
naturally re-establishing with sagebrush, but with a predominant understory of Crested wheatgrass. The cover density of sagebrush in relation to Crested wheatgrass varies by pasture but ranges from 5 to 10% sagebrush to 20 to 40% sagebrush cover.

The vegetative community above the crested wheat seeding is predominantly Wyoming sagebrush communities with a herbaceous understory consisting of Indian ricegrass and Bottle brush squirrel tail. This is where a majority of the rangeland encroachment by pinyon and juniper of various age classes is taking place. The mountain communities within the allotment have been marked with 3 major fires over the last 10 years. The resulting communities have responded with increased Bluebunch wheatgrass, Needle and thread grass and Indian ricegrass communities with Great basin wildrye in the lower draws. Cheatgrass has invaded as result of the fires but with no further disturbance the communities will out compete the invasive annual.

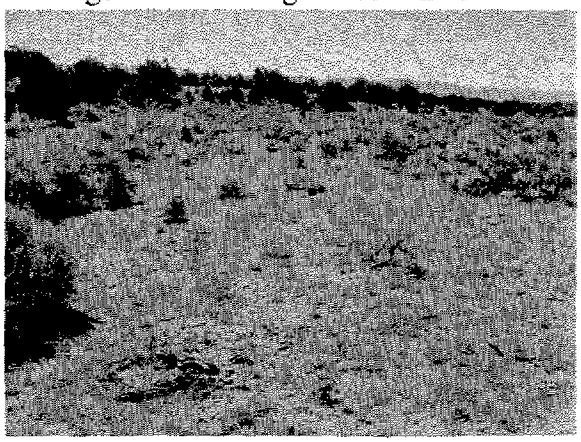
Summary of Vegetative Conditions by Pasture

Pasture 1.

Pasture 1 encompasses 18,176 acres in the North West portion of the Geyser Ranch Allotment on which 6,490 acres are crested wheat seeding that was put in back during the 1960's and 17,280 acres are native vegetation. The crested wheat seedings consist of 60% to 80% crested wheat plants with 2% to 5% Sandberg bluegrass (*Poa pratensis)* with 1% to 3% forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding but remains at 3% to 7% density. Utilization within the seedings has traditionally been within the 60% to 70% range.

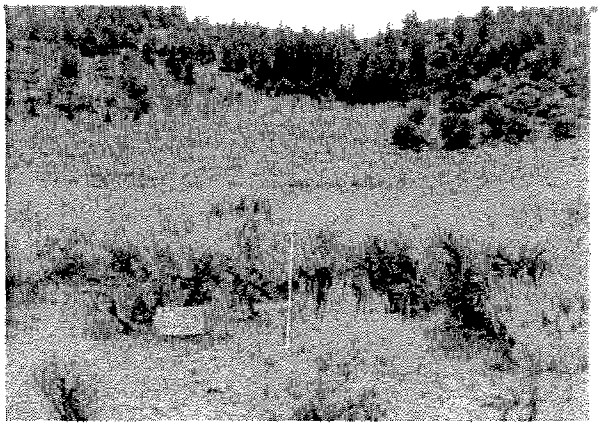


The native portion of pasture one is a diverse pasture of Sagebrush/mixed grass communities.

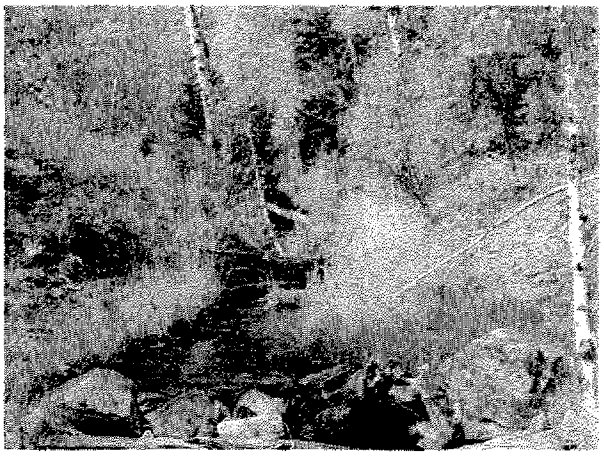


Wyoming big sagebrush is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa*

secunda). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon (*Pinus monophylla*) and juniper(*Juniperus osteosperma*). The soils are moderately deep to deep and well drained. The average annual precipitation is 8 to 10 inches annually. The elevations range from 5000 to 6500 feet.



At higher elevations (6500 to 8200 feet ASL) it is replaced by mountain big sagebrush (*Artemisia tridentata vaseyana*), which has more of a flat-topped appearance and similar in height. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. The average annual precipitation is 12 to 16 inches. Also found with mountain big sagebrush are snowberry (*Symphoricarpos*), bitterbrush (*Purshia*), serviceberry (*Amelanchier*), mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), lupine (*Lupinus*), larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).

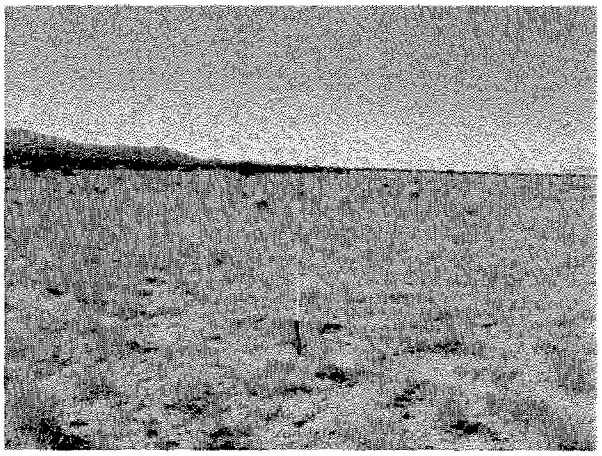


The higher elevations of pasture one consists of a woodland site that occurs on cool, moist, mountain sideslopes associated with rock outcrops and stony surfaces. Elevations range from 8500 feet to 10,000 feet ASL. The average annual precipitation is 20+ inches per year. These sites are dominated by White fir (*Pinus monticola*), Limber pine (*Pinus flexilis*) and Bristlecone pine (*Pinus longaeva*). Spike fescue (*Festuca kingii*), Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal understory grasses. Common juniper, serviceberry and mountain big sagebrush are the principal shrubs. Forbs consist of creeping barberry and goldenweed.

There are two major water sources within this pasture they are Campbell spring and North Creek. North Creek has a larger riparian area due to year round flows that supports Aspen (*Populus tremuloides*). Aspen require deep, loamy soils and additional moisture. Because the wind direction in this area is primarily out of the west and southwest, snow is deposited on north to east slopes, providing habitats with extra moisture that can support aspen. Understory species include serviceberry, snowberry, creeping juniper, rose, Oregon grape, mountain brome and other grasses and forbs. Rapid riparian assessment to measure proper functioning condition was conducted on North Creek during the fall of 2004 and it was found to be in proper functioning condition with an upward trend.

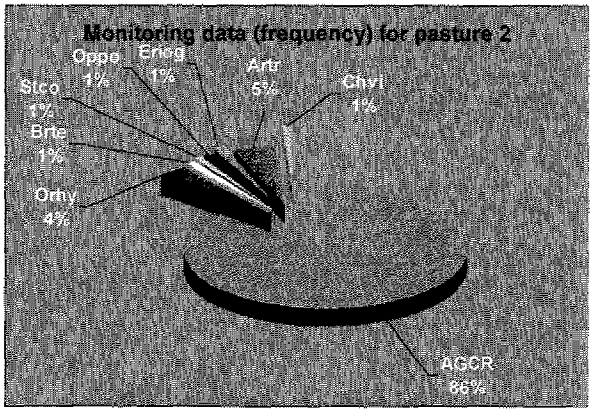
The primary water source for native the pasture portion of pasture one is Campbell spring which is located in the center of the pasture. It is a natural spring that has been fully developed since the 1970's.

The native portion of pasture one falls within the Ely districts natural fire management area. The purpose is to control pinyon and juniper encroachment onto native range sites and to maintain a diverse ecosystem of sagebrush with an herbaceous understory of native grasses and forbs

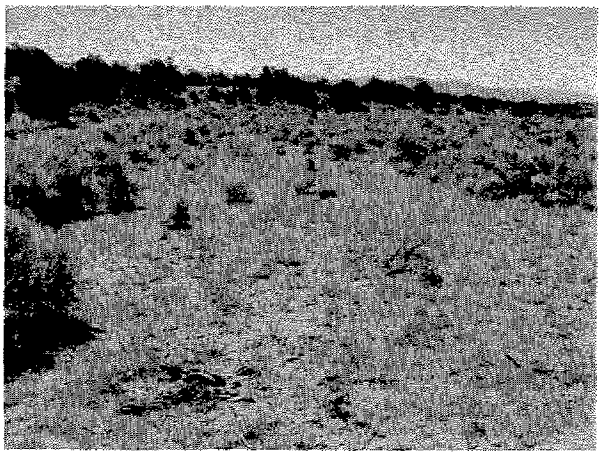


Pasture 2.

Pasture 2 encompasses 10,200 acres in the North East portion of the Geyser Ranch Allotment on which 7,040 acres are crested wheat seedings that was put in back during the 1960's and 3,160 acres are native pasture. The crested wheat seedings consist of 60% to 80% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding but remains at 3% to 10% density. Utilization within the seedings has traditionally been within the 60% to 70% range.



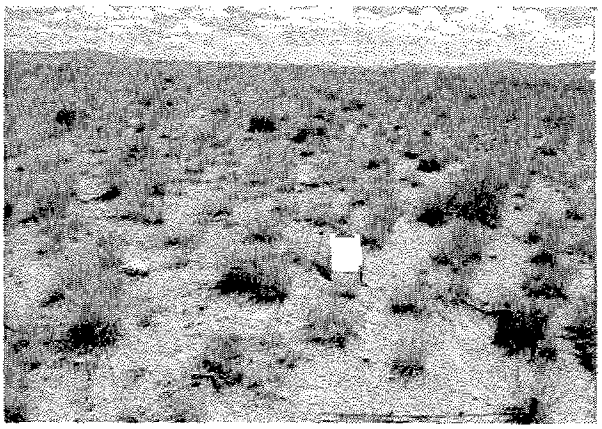
The native portion of pasture two is a diverse pasture of Sagebrush/mixed grass communities. Wyoming big sagebrush is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils are moderately deep to deep and well drained. The average annual precipitation is 8 to 10 inches annually. The elevations range from 5000 to 6500 feet. The perennial herbaceous understory



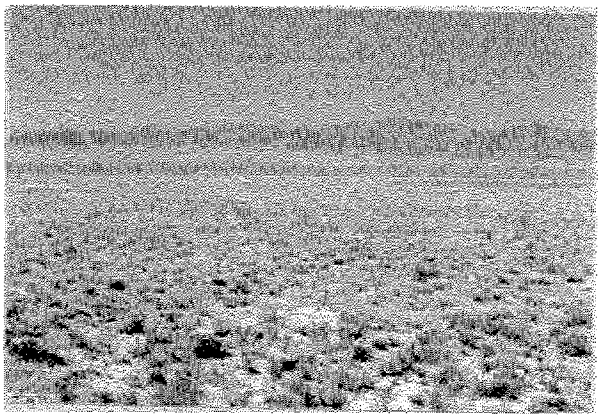
consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) Pinyon(*Pinus monophylla*) and Juniper(*Juniperus osteosperma*).
At higher elevations (6500 to 8200 feet ASL) it is replaced by mountain big sagebrush (*Artemisia tridentata vaseyana*), which has more of a flat-topped appearance and similar in height. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. The average annual precipitation is 12 to 16 inches. Also found with mountain big sagebrush are snowberry (*Symphoricarpos*), bitterbrush (*Purshia*), serviceberry (*Amelanchier*), mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), lupine (*Lupinus*), larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).

The primary water source for pasture two is the east bench well. This well was put in during the 1960's. There is no water hauling in this pasture due to its proximity to private pasture which is directly south of this pasture and is tied together by a fence. There is above ground water on the private side as well as the above mentioned well to achieve cattle distribution.

Pasture 3.

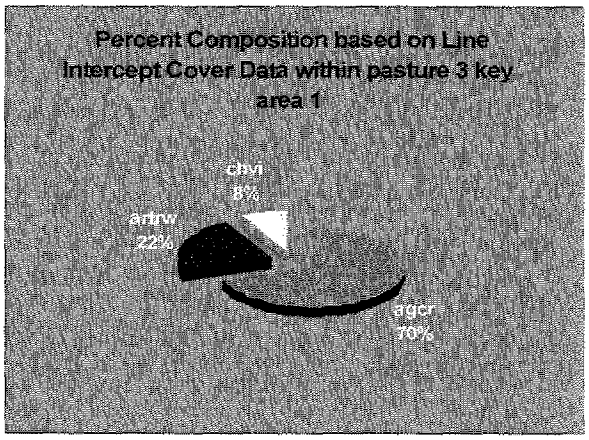


Pasture 3 encompasses 56,704 acres in the North East portion of the Geyser Ranch Allotment on which 24,960 acres are crested wheat seedings that was put in back during the 1960's and 31,744 acres are native pasture. The crested wheat seedings consist of 60% to 80% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding but remains at 3% to 10% density. Utilization within the seedings has traditionally been within the 60% to 70% range.
The native portion of pasture three is a diverse pasture of salt desert shrub community, sagebrush/mixed grass and mountain sagebrush.

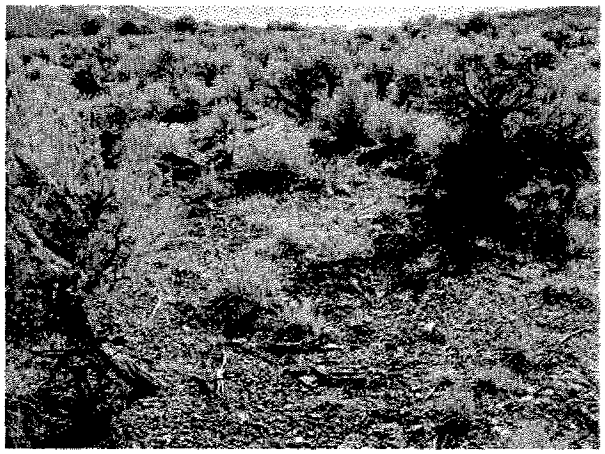


The salt desert shrub communities are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper

profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The Salt Desert Shrub communities make up approximately 9,920 acres of pasture 3 of the Geyser Ranch Allotment. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: Black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).



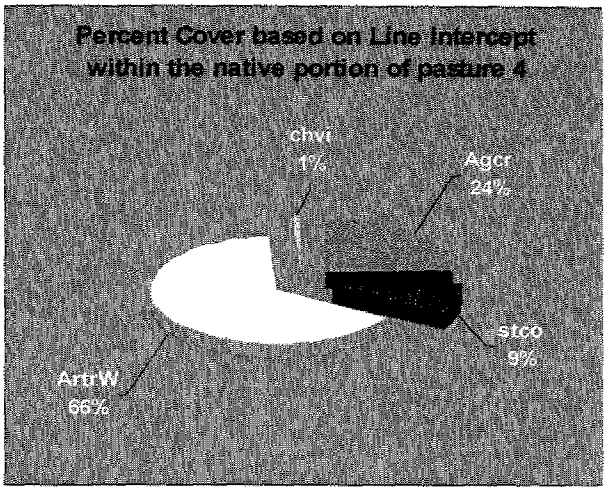
Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) and black sagebrush (*Artemisia tridentate nova*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils are moderately deep to deep and well drained. The average annual precipitation is 8 to 10 inches annually. The elevations range from 5000 to 6500 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass (*Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia*), western and Bluebunch wheatgrass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon (*Pinus monophylla*) and juniper (*Juniperus osteosperma*).



The pasture is serviced by three wells located at the north center and south center of the pasture. They are the North Lake Valley Well No. 3, Gouge Eye Well, and South Gouge Eye Well. There is no water hauling within this pasture due to the water distribution that is currently available.

Pasture 4.

Pasture 4 encompasses 15,360 acres in the North West portion of the Geyser Ranch Allotment on which 8,320 acres are crested wheat seedings that was put in back during the 1960's and 7,040 acres are native pasture. The crested wheat seedings consist of 30% to 60% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 15% to 30% density. Utilization within the seedings has traditionally been within the 60% to 70% range.



The native portion of pasture four is a diverse pasture of Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. A combination of impermeable bedrock at a shallow depth and the swelling of the heavy textured subsoil when wet, results in poor soil aeration and a perched water table within the root zone during the spring. The average annual precipitation is 12 to 16 inches annually. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).

At higher elevations (6500 to 8200 feet ASL) it is replaced by mountain big sagebrush (*Artemisia tridentata vaseyana*), which has more of a flat-topped appearance and similar in height. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. The average annual precipitation is 12 to 16 inches. Also found with mountain big sagebrush are snowberry (*Symphoricarpos*), bitterbrush (*Purshia*), serviceberry (*Amelanchier*), mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), lupine (*Lupinus*), larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).

The higher elevations of pasture one consists of a woodland site that occurs on cool, moist, mountain sideslopes associated with rock outcrops and stony surfaces. Elevations range from 8500 feet to 10,000 feet ASL. The average annual precipitation is 20+ inches per year. These sites are dominated by White fir (*Pinus monticola*), Limber pine (*Pinus flexilis*) and Bristlecone

pine (*Pinus longaeva*). Spike fescue, Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal understory grasses. Common juniper, serviceberry and mountain big sagebrush are the principal shrubs. Forbs consist of creeping barberry and goldenweed.

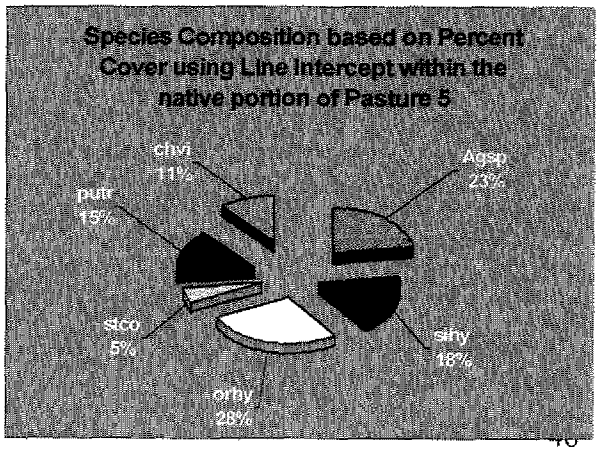
There are numerous water sources within this pasture the main water source for the pasture is Geyser Spring. It flows year round into a pond located on private property that supports the base property of the Geyser Ranch Allotment. Riparian vegetation species include serviceberry, snowberry, creeping juniper, rose, Oregon grape, mountain brome and other grasses and forbs. The water source is used heavily by both domestic and native ungulates. Rapid riparian assessment to measure proper functioning condition was conducted on Geyser Spring during the fall of 2004 and it was found to be functioning at risk with an upward trend. The at risk determination was due to Geyser Spring experiencing a natural event in August of 2003. impacted some stream banks and removed previously vegetated sand bars. The stream is restoring itself. Without further disturbance it should reestablish woody vegetation and natural sand bars. There is heavy elk and deer use along the entire system.

The native portion of pasture four falls within the Ely districts natural fire management area. The purpose is to control pinyon and juniper encroachment onto native range sites and to maintain a diverse ecosystem of sagebrush with an herbaceous understory of native grasses and forbs.

Geyser Spring within pasture 4 of the Geyser Ranch Allotment.

Pasture 5.

Pasture 5 encompasses 17,280 acres in the Center West portion of the Geyser Ranch Allotment on which 7,680 acres are crested wheat seedings that was put in back during the 1960's and 9,600 acres are native pasture. The crested wheat seedings consist of 60% to 85% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and



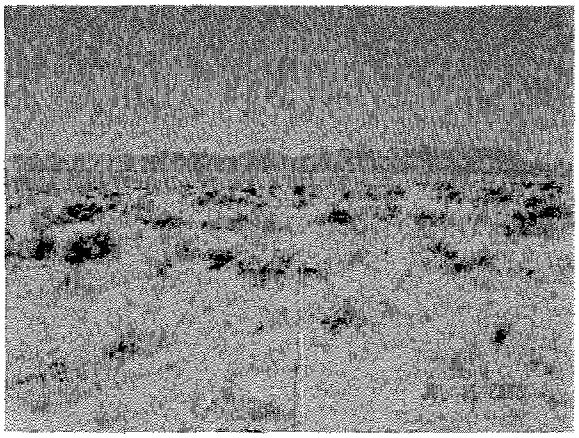
Penstemon (*Penstemon*). Sage brush occurs within the seeding at 5% to 15% density. Utilization within the seedings has traditionally been within the 60% to 70% range.

The native portion of pasture five is a diverse pasture of Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. A combination of impermeable bedrock at a shallow depth and the swelling of the heavy textured subsoil when wet, results in poor soil aeration and a perched water table within the root zone during the spring. The average annual precipitation is12 to 16 inches annually. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).

At higher elevations (6500 to 8200 feet ASL) it is replaced by mountain big sagebrush (*Artemisia tridentata vaseyana*), which has more of a flat-topped appearance and similar in height. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. The average annual precipitation is 12 to 16 inches. Also found with mountain big sagebrush are snowberry (*Symphoricarpos*), bitterbrush (*Purshia*), serviceberry (*Amelanchier*), mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), lupine (*Lupinus*), larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).

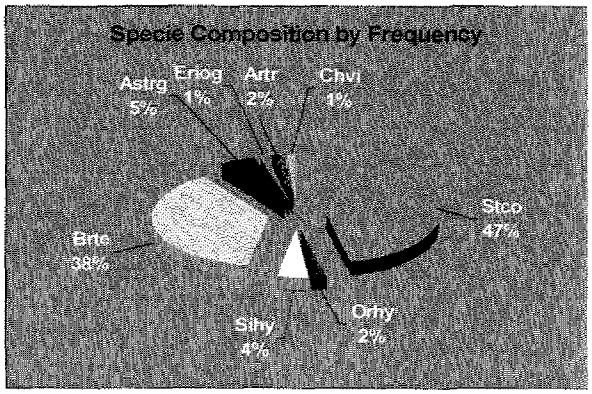
The higher elevations of pasture five consists of a woodland site that occurs on cool, moist, mountain sideslopes associated with rock outcrops and stony surfaces. Elevations range from 8500 feet to 10,000 feet ASL. The average annual precipitation is 20+ inches per year. These sites are dominated by White fir (*Pinus monticola*), Limber pine (*Pinus flexilis*) and Bristlecone pine (*Pinus longaeva*). Spike fescue, Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal understory grasses. Common juniper, serviceberry and mountain big sagebrush are the principal shrubs. Forbs consist of creeping barberry and goldenweed.

Cattle distribution is done through water hauling and supplements feeding.
The native portion of pasture five falls within the Ely districts natural fire management area. The purpose is to control pinyon and juniper encroachment onto native range sites and to maintain a diverse ecosystem of sagebrush with a herbaceous understory of native grasses and forbs.



Pasture 6.

Pasture 6 contains 8,320 acres of crested wheat seedings on the extreme western portion of the pasture. The crested wheat seedings consist of 60% to 75% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 5% to 15% density. Utilization within the seedings has traditionally been within the 60% to 70% range.



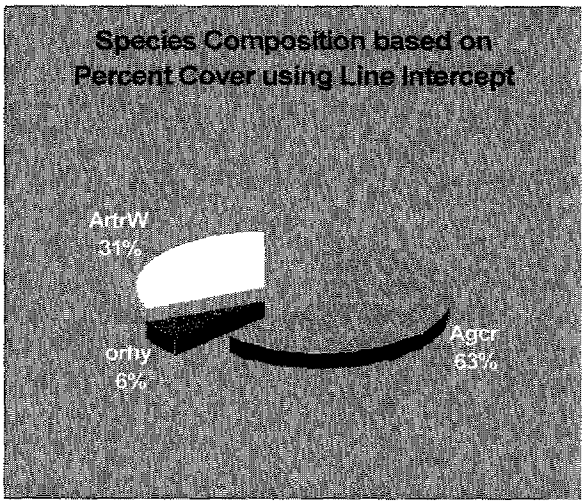
The middle of the pasture is 12,800 acres of salt desert shrub communities that are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).

The pasture is a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are

well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).

The pasture is serviced by two wells located at the center and north center of the pasture. They are the South Lake Valley Well No. 1, and Bitter Well. There is no water hauling within this pasture due to the water distribution that is currently available.

Pasture 7.



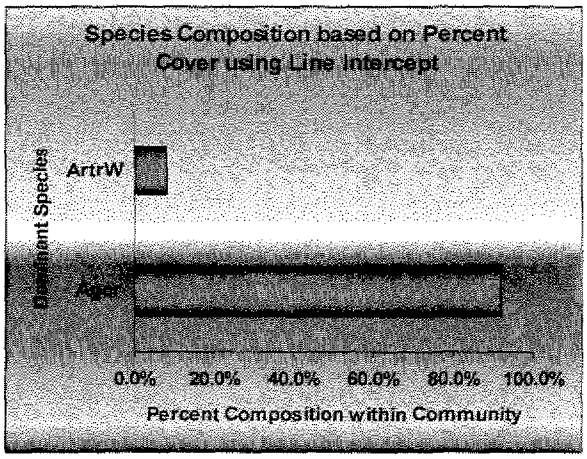
Pasture 7 is 14,720 acres that contains little to no crested wheat seeding. The existing crested wheat within the seeding is introduced through historic grazing by cattle. The pasture is dominated by salt desert shrub communities that are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).

The native portion of the pasture is 7,680 acres in the eastern portion of the pasture. The pasture is a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat

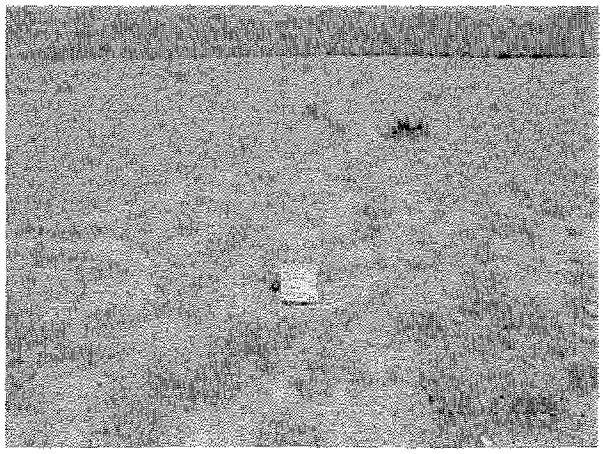
(*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).

The pasture is serviced by three wells located at the west center, north center and extreme east portion of the pasture. They are the Dutch John Well, and South Well No. 3 and the Mustang Well. There is no water hauling within this pasture due to the water distribution that is currently available.

Pasture 8.



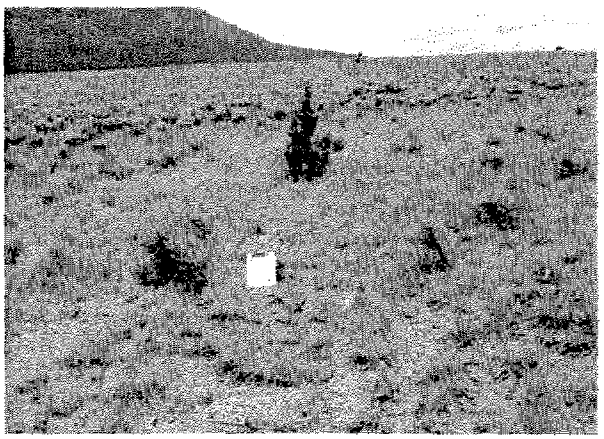
Pasture eight encompasses 12,480 acres in the western portion of the Geyser Ranch Allotment on which 4,800 acres are crested wheat seedings that was put in back during the 1960's and 7,680 acres are native pasture. The crested wheat seedings consist of 70% to 80% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 1% to 8% density. Utilization within the seedings has traditionally been within the 60% to 70% range.
The native portion of the pasture is 7,680 acres in the western portion of the pasture.
The pasture is a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).



The higher elevations of pasture eight consists of a woodland site that occurs on cool, moist, mountain sideslopes associated with rock outcrops and stony surfaces. Elevations range from 8500 feet to 10,000 feet ASL. The average annual precipitation is 20+ inches per year. These sites are dominated by White fir (*Pinus monticola*), Limber pine (*Pinus flexilis*) and Bristlecone pine (*Pinus longaeva*). Spike fescue, Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal understory grasses. Common juniper, serviceberry and mountain big sagebrush are the principal shrubs. Forbs consist of creeping barberry and goldenweed.

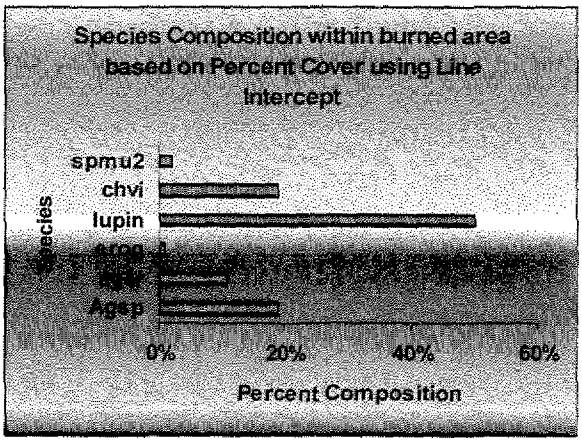
The pasture is serviced by two wells located at the west center, and south boundary portion of the pasture. They are the North Dutch John Well, and South Milk Ranch Well. Water is hauled into the native portion of the pasture to ensure equal distribution for utilization purposes.

The native portion of pasture eight falls within the Ely districts natural fire management area. The purpose is to control pinyon and juniper encroachment onto native range sites and to maintain a diverse ecosystem of sagebrush with a herbaceous understory of native grasses and forbs.



Pasture 9.

Pasture 9 has no crested wheat seedings within its boundary. However, the pasture has had several natural burns over the last 20 years that has resulted in a natural substantial native grass component. The pasture is 16,640 acres in the southwestern portion of the pasture. The pasture is a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush (*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass (*Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia*), western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*). Utilization within the pasture is between 40% and 60%.



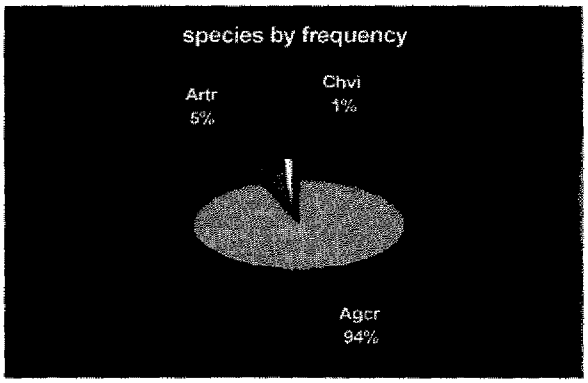
The higher elevations of pasture 9 were burned over during the 1980's caused by lightening. The fires have resulted in the reduction of timber and woody species. The grass component is substantial due to a precipitation zone of 20+ inches per year of precipitation in the form of both rain and snow. These sites are dominated by Spike fescue, Russian wildrye (*Elymus junceus*), Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal grasses. Utilization is between 30% and 50%.

The pasture is serviced by one well located at the north end of the pasture. It is the Muleshoe Well. There are two natural springs within the pasture that is used by both domestic and native wildlife. They are Jasper spring, and Chris spring. Water is hauled from the one well within the pasture to ensure equal distribution of cattle for utilization purposes.
Pasture 9 also falls within the Dry Lake Herd Management Area (HMA), which has an Animal Management Level (AML) of 44 horses year round with 530 AUM's.

Pasture 9 within the Muleshoe Burn Area

Pasture 10.

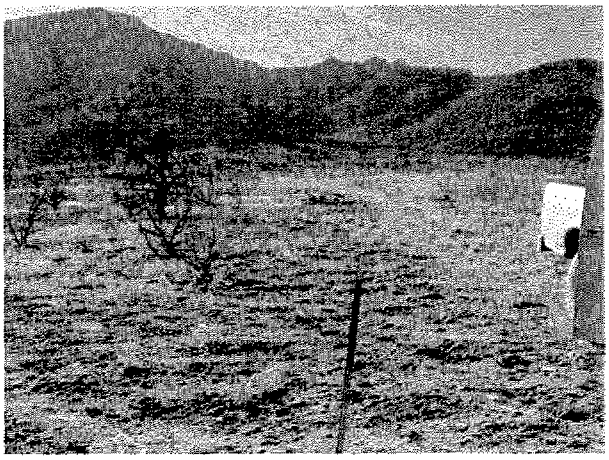
Pasture ten encompasses 20,182 acres in the south western portion of the Geyser Ranch Allotment on which 3,943 acres are crested wheat seedings that was put in back during the 1960's and 16,239 acres are native pasture. The crested wheat seedings consist of 70% to 90% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 1% to 8% density. Utilization within the seedings has traditionally been within the 60% to 70% range.

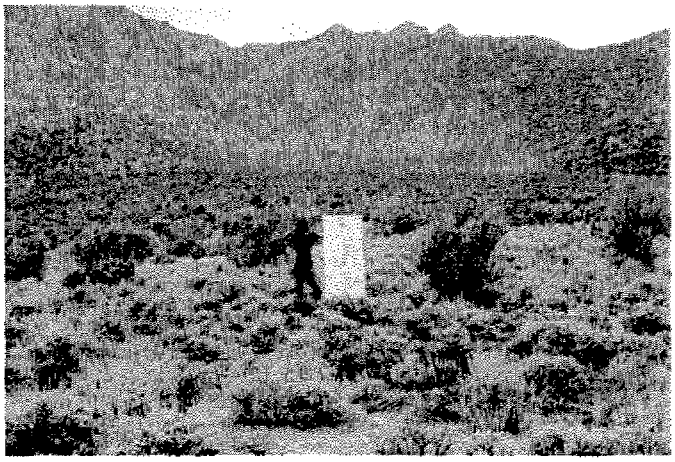


The native portion of the pasture is 16,239 acres in the western portion of the pasture.
The pasture is a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), Low sagebrush (*Artemisia arbuscula*) and Antelope bitterbrush

(*Purshia tridentate*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*).

The higher elevations of pasture ten were burned over during the late 1990's caused by lightening. The fires have resulted in the reduction of timber and woody species. The grass component is substantial due to a precipitation zone of 20+ inches per year of precipitation in the form of both rain and snow. These sites are dominated by Spike fescue, Russian wildrye (*Elymus junceus*), Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal grasses. Utilization is between 40% and 60%.



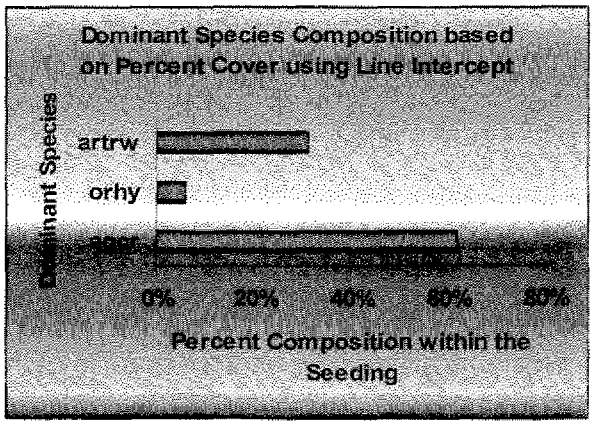


The pasture is serviced by three wells; they are the North Dutch John Well, Shaffer Well and the Pony Springs Well. There are two natural springs within the pasture that is used by both domestic and native wildlife. They are Choke Cherry spring, and Grassy spring. There is no water hauling within this pasture due to the water distribution that is currently available.

Before and after the fire that occurred 2001 in Pasture 10.

Pasture 11.

Pasture eleven encompasses 9,837 acres in the southeastern portion of the Geyser Ranch Allotment on which 6,538 acres are crested wheat seedings that was put in back during the 1960's. 7,680 acres are native pasture. The crested wheat seedings consist of 60% to 80% crested wheat plants with 2% to 5%



This standard is being met or progress toward the standard is being achieved. Based on the evaluation of existing information pertaining to range improvements and grazing, cultural resources are being recognized within the context of multiple use management in the Geyser Ranch Allotment. A cultural resources report will be completed associated with issuance of the term permit during the NEPA process.

Determination:

X Meeting the Standard

□ Not Meeting the Standard, but making significant progress towards

□ Not Meeting the Standard, not making significant progress toward standard

Causal Factors

□ Livestock are a contributing factor to not meeting the standard.

□ Livestock are not a contributing factor to not meeting the standard

□ Failure to meet the standard is related to other issues or conditions

VI. Guideline Conformance Review

Conformance with Guidelines for Livestock Grazing Management

□ **Conforms with Guidelines for Livestock Grazing Management.**

□ Does not conform with Guidelines for Livestock Grazing Management (list Guidelines No(s) in non-conformance)

Conformance for livestock grazing management is partially met through the continuation of the implementation of a deferred rest rotation grazing system using the 14 pastures within the allotment. The system allows each pasture to receive rest during the critical spring growing period for two consecutive years after being grazed in the spring. The system also eliminates year-round within the Geyser Ranch Allotment.

Permitted active use AUM's were not exceeded on Geyser Ranch Allotment during the grazing periods. This grazing system was established to facilitate recovery of perennial vegetation on poor condition allotments and maintain or improve good condition allotments since most of the grazing use would occur on crested wheat seedings or while vegetation is dormant. Managing the allotment on a deferred rest rotation basis is intended to benefit the overall ecological condition of the allotment and obtain multiple use objectives.

The permittee for the allotment is ensuring that minimal disturbance occurs in sage grouse habitat by pushing cattle away from known strutting and nesting habitat through the use of herding and utilizing the extensively fenced pasture system. Utilization levels are being monitored regularly during the spring growing period and adjustments are made accordingly.

VIII. Management Practices to Conform with Guidelines and Achieve Standards.

Continue the deferred rest rotation grazing system using the allotment. Winter use has been changed to winter/spring use in a rest rotation grazing system which provides two years of

consecutive rest during the critical growing period. Adjust grazing use on an annual basis if needed to achievement allotment specific objectives.

Flexibility and deviations in livestock numbers, areas of use and periods of use may be determined on a seasonal basis where such deviations are warranted. Authorization of deviation would not prevent attainment of shared goals, the multiple-use objectives and the standards for grazing administration.

Allowable use levels are as follows: Utilization on grasses and forbs will not exceed 60% of current years growth. If utilization levels are reached, cattle will be moved to areas where utilization levels have not reached the above level. The location of salt and/or mineral supplements for cattle is no closer than one mile from water sources. These practices along with water hauling will continue to assist in the maintenance and/or improvement of the native range and maintain the meeting of Standards.

Continue herding practices and continue to mitigate grazing use in sage grouse areas after April 15th.

Institute a rotation system within the Muleshoe pasture that allows cattle and sheep to switch areas of use due to lack of dietary overlap between the consumers.

Remove the four pastures that are currently within the Wilson Creek Allotment which are Muleshoe/Maloy, Pony Seeding, Fairview and Atlanta and place them with the Geyser Ranch Allotment.

Treat and monitor noxious weeds and if possible, cheatgrass through selective herbivory treatments.

Monitor use levels and herd livestock and salt/mineral supplement away from riparian areas.

Standards and Guidelines for Grazing Administration will be implemented through the terms and conditions of the grazing permit. The grazing management practices identified in the terms and conditions are designed to ensure significant progress towards fulfillment of the Northeastern Great Basin Standards and Guidelines for Grazing Administration.

Summary of Monitoring Data:

Monitoring data includes utilization, use pattern mapping, frequency trend, ecological condition, cover and riparian area proper functioning condition (PFC). Current management practices have resulted in all allotment specific objectives being met. Use pattern mapping during the 2002 grazing year indicated that there was heavy grazing along pastures 1, 4 and 5. This was due to the first year that Lake Valley Cattle LLC. was in operation and was subsequently due to their inexperience with this grazing system. The following years have yielded light to moderate utilization levels on both the seedings and native range portions of the allotment. Monitoring data was taken in 2003 on pastures 2, 6 and 10 and the rest of the allotment during the summer of 2005. Cover and frequency indicates that the seedings are about 73% crested

wheat grass with a small mixture of native grasses that are less than 5% of the overall composition. The sagebrush component of the seedings is varied from 2% to 40% within the seedings. Above the seedings on the native range the sagebrush is dominant with a herbaceous understory of native perennials that range in composition from 3% to 25% of frequency. Cover data indicates that the seedings are predominately herbaceous in cover with the dominant grass being Crested wheatgrass. However, Needle and thread, Indian ricegrass and Bottle brush squirrel tail are components (2 to 5%) within the seedings. They are showing an increase over time. The mountain communities are predominantly native grasses consisting of Bluebunch wheat grass, Indian ricegrass,
Mutton grass and Bottle brush squirrel tail. Due to cattle grazing on the native range there is a component of Crested wheatgrass within the native stands. The frequency of this non-native is less than 5%. Monitoring data indicates management objectives are being met across the allotment. Livestock use on the remainder of the allotment is being properly managed and should continue to prove beneficial to maintaining healthy range conditions. (See Appendix II Monitoring Data.)

Ecological condition at key areas indicates that the allotment is below the threshold for crossing over into a woody dominated site that would significantly reduce the herbaceous portion of the understory. However, there are areas of concern that should be taken into account for future management. These areas are small in acres when looking at the overall operation.

Management Practices Applicable to Geyser Ranch Allotment

Flexibility and deviations in livestock numbers, areas of use and periods of use may be determined on a seasonal basis where such deviations are warranted. Authorization of deviation would not prevent attainment of shared goals, the multiple-use vegetative objectives and the standards for grazing administration.

Salt and/or mineral supplements for livestock should be located no closer than one mile from water sources. This practice will continue to assist in the maintenance and/or improvement of the native range and attainment of the standards.

If possible, control cheatgrass through selective herbivory treatments.

Standards and Guidelines for Grazing Administration will be implemented through the terms and conditions of the grazing permit. The grazing management practices identified in the terms and conditions are designed to ensure significant progress towards fulfillment of the Northeastern Great Basin Standards and Guidelines for Grazing Administration.

Grazing will be in accordance with the Northeastern Great Basin Area Standards and Guidelines for grazing administration as developed by the Northeastern Great Basin Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for grazing administration.

Livestock numbers identified in the term grazing permit are a function of seasons of use and permitted use for each allotment. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations would not prevent attainment of the multiple-use objectives for the allotment.

Deviations from specified grazing use dates will be allowed when consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

The authorized officer is requiring that an actual use report (form 4130-5) be submitted within 15 days after completing your annual grazing use.

The payment of your grazing fees is due on or before the date specified in the grazing bill. This date is generally the opening date of your allotment. If payment is not received within 15 days of the due date, you will be charged a late fee assessment of $25 or 10 percent of the grazing bill, whichever is greater, not to exceed $250. Payment with visa, mastercard or American express is accepted. Failure to make payment within 30 days of the due date may result in trespass action.

Pursuant to 43 CFR 10.4(G) the holder of this authorization must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural partimony (as defined at 43 CRF 10.2). Further, pursuant to 43 CFR 10.4 (C) and (D), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.

Prepared by:

RMS		
	Title	Date
Lead RMS		
	Title	Date

I concur:

Authorized Officer	Date

Appendix II, Monitoring Data

Pasture	Key Area	Frequency By Specie		Cover By Line Intercept		#'s per acre (percent Composition)	
1	GSR 1 (1)			2005	AgCr = 90% ArTrW = 10%	2005	AgCr = 1,580 lbs (100%)
1	GSR 1 (2)			2005	ArtrW = 81% Chvi = 3% Orhy = 2% Pose = 7% Agcr = 7%	2005	ArtrW = 1014 lbs (83.2%) Chvi = 47 lbs (3.9%) Phlox = 1 lb (.1%) Pose = 69lbs (5.7%) Agcr = 86 (7.1%) Spmu2 = 2lbs (.2%)
2	GSR 2 (1)	2003	AgCr = 90% Orhy = 2% Brte = 1% Stco = 1% Oppo = 1% Eriog = 1% Artr = 4% Chvi = 1%	2003	AgCr = 77% Orhy = 6% Artr = 3% Chvi = 1% Eula = 12%	2003	AgCr = 473 lbs (100%)
3	GSR 3 (1)			2005	AgCr = 70% ArTrW = 22% Chvi = 8%	2005	AgCr = 798 lbs (78%) ArtrW = 145bs (14%) Chvi = 83 lbs (8%)
4	GSR 4 (1)			2005	AgCr = 24% ArTrW = 64% Chvi = 1% Stco = 9%	2005	AgCr = 289 lbs (55%) ArtrW = 181bs (34.5%) Chvi = 20 lbs (4%) Stco = 34 lbs (6.5%)
4	GSR 4 (2)			2005	AgCr = 78% ArTrW = 21% Stco = 1%	2005	AgCr = 881 lbs (93%) Stco = 66 lbs (7%)
5	GSR 5 (1)			2005	AgCr = 83% Orhy = 1% Sihy = 3% Hija = 1% ArTrW = 9% Phlox = 1% Spmu2 = 2%	2005	AgCr = 650 lbs (92%) Sihy = 3 lbs (.4%) Orhy = 4 lbs (.6%) Hija = 6 lbs (.8%) ArtrW = 45 lbs (6.4%)
5	GSR 5 (2)			2005	Agsp = 22% Orhy = 27% Sihy = 17% Stco = 5% Pofe = 2% Putr = 15% Chvi = 11%	2005	Agsp = 63 lbs (10.6%) Sihy = 63 lbs (11%) Orhy = 96 lbs (16%) Stco = 355 lbs (60%) Pofe = 1 lbs (.2%) Agsm = 17 lbs (3%)
6	GSR 6 (1)	2003	Sihy = 4% Orhy = 2% Brte = 37% Stco = 45% Oppo = 1% Eriog = 1% Astrg = 5% Artr = 2% Chvi = 1%	2003	Orhy = 5% Brte = 7% Stco = 68% Artr = 4% Chvi = 5%	2003	Sihy = 15 lbs (9%) Orhy = 15 lbs (9%) Stco = 133 lbs (80%) Chvi = 2.4 lbs (1.5%)
7	GSR 7 (1)			2005	AgCr = 62% Orhy = 6% ArTrW = 31%	2005	AgCr = 657 lbs (63%) ArtrW = 341 lbs (33%) Chvi = 52 lbs (5%)

8	GSR 8 (1)			2005	AgCr = 92% ArTrW = 8%	2005	AgCr = 675 lbs (100%)
9	GSR 9 (1)			2005	Agsp = 11% Orhy = 2% Sihy = 21% Stco = 2% Spmu2 = 11% Chvi = 51%	2005	Agsp = 74lbs (12%) Sihy = 77 lbs (13%) Orhy = 89 lbs (15%) Stco = 204 lbs (34%) Spmu2 = 80 lbs (13%) Chvi = 74 lbs (12%)
9	GSR 9 (2)			2005	Agsp = 19% AgCr = 11% Erog = 1% Lupin = 50% Spmu2 = 2% Chvi = 19%	5005	Agsp = 254lbs (27%) AgCr = 466 lbs (50%) Stco = 42 lbs (4.5%) Sihy = 14 lbs (1.5%) Lupin = 60 lbs Chvi = 104 lbs (11%)
10	GSR 10 (1)	2003	AgCr = 82% ArTrW = 4% Chvi = 1%	2003	AgCr = 91% Chvi = 9%	2003	AgCr = 308 lbs (95%) ArtrW = 10 lbs (3%) Chvi = 6 lbs (2%)
10	GSR 10 (2)	1981	Sihy = 77% Pose = 53% Brte = 20% Arno = 57% Astrag = 8% Chvi = 41% Haplo = 9% Pimo = 1% Orhy = 5% Pose = 23% Lygod = 1% Erige = 6% Agos = 2% Crypt = 8%			1981	Sihy= 6% Brte = 1% Arno = 67% Chvi = 5% Haplo = 10% Pimo = 1% Orhy = 2% Poa = 6% Crypt = 1%
10	GSR 10 (2)	1986	Pose = 48% Brte = 35% Arno = 46% Chvi = 29% Haplo = 6% Pimo = 1%			1986	Pose = 1% Brte = 10% Arno = 60% Chvi = 10% Haplo = 1% Juno = 1%
11	GSR 11 (1)			2005	AgCr = 62% Orhy = 6% ArTrW = 31%	2005	AgCr = 765 lbs (48%) ArtrW = 787 lbs (49%) Chvi = 55 lbs (3%)
12	GSR 12 (1)			2005	AgCr = 73% Orhy = 2% Erog = 1% ArTrW = 24%	2005	Orhy = 105 lbs (10%) AgCr = 474 lbs (45%) ArtrW = 479 lbs (45%)
Wilson Cr.	WCPS 1			2005	AgCr = 23% Bogr = 33% Lupin = 6% Chvi = 38%	2005	AgCr = 461 lbs (95%) Chvi = 17 lbs (3%) Spmu2 = 3 lbs (1%)
Wilson Cr.	WCMS 1			2005	Orhy = .3% Sihy = .5% Hija = 6% Spmu2 = 7% Erog = 1% Eula = 41% Atca = 11% Chvi = 33%	2005	Orhy = 6 lbs (1%) Stco = 9 lbs (1%) Hija = 158 lbs (23%) Spmu2 = 198lbs (28%) Eula = 65 lbs (9%) Chvi = 261 lbs (38%)
Wilson Cr.	WCMS 2			2005	Orhy = .4% Eula = 99%	2005	Orhy = 5 lbs (1%) Eula = 370 lbs (97%) Sihy = 7 lbs (2%)

Wilson Cr.	WCMS 3			2005	Sihy 1% Hija = 1% Spmu2 = 6% Erog = 1% Eula = 90% Bud Sage = 1%	2005	Orhy = .5 lbs (.2%) Hija = 2 lbs (.6%) Spmu2 = 49 lbs (15%) Sihy = 2 lbs (.5%) Erog = 24.7 lbs (7.5%) Eula = 228 lbs (70%) Bud Sage = 22 lbs (7%)
Wilson Cr.	WCMS 4			2005	Orhy = 12% Sihy = 1% Hija = 1% Pose = 2% Stco = 5% Chvi = 33% Ephedra = 27% Asrtag = 3% ArTrW = 17%	2005	Orhy = 22 lbs (11%) Hija = 28 lbs (14%) Stco = 26 lbs (13%) Erog = 22 lbs (11%) Chvi = 77 lbs (39%) Arlo = 21 lbs (11%)

Appendix III

Actual Use:

Year	Operator Name	Active AUM's	Used	Actual Use by Use Area	Voluntary non-use
2004	Lake Valley Cattle LLC.	19,014	6,059 AUM's 32%	East Bull = 124 AUM's West Bull = non-use Pasture 1 = Rested Pasture 2 = 538 AUM's Pasture 3 = 1,576 AUM's Pasture 4 = 288 AUM's Pasture 5 = Rested Pasture 6 = 376 AUM's Pasture 7 = 306 AUM's Pasture 8 = 559 AUM's Pasture 9 = Rested Pasture 10 = 371 AUM's Pasture 11 = 400 AUM's Pasture 12 = 209 AUM's Muleshoe = 1,021 AUM's Pony Seeding = 291 AUM's Fairview = non-use Atlanta = non-use	12,955 AUM's 78%
2004	El Tejon Cattle Co.	3,482	274 AUM's 7%	Muleshoe = 274 AUM's Atlanta = non-use	3,208 AUM's 93%
2003	Lake Valley Cattle LLC.	19,014	8,155 AUM's 43%	East Bull = 56 AUM's West Bull = 61 AUM's Pasture 1 = 395 AUM's Pasture 2 = Rested Pasture 3 = 1,359 AUM's Pasture 4 = 596 AUM's Pasture 5 = 1,029 AUM's Pasture 6 = Rested Pasture 7 = 700 AUM's Pasture 8 = 1,045 AUM's Pasture 9 = 485 AUM's Pasture 10 = Rested Pasture 11 = 790 AUM's Pasture 12 = 209 AUM's Muleshoe = 1,021 AUM's Pony Seeding = 291 AUM's Fairview = non-use Atlanta = 118 AUM's	10,859 AUM's 57%

2003	El Tejon Cattle Co.	3,482	387 AUM's 11%	Muleshoe = 310 AUM's Atlanta = 77 AUM's	3,095 AUM's 89%
2002	Lake Valley Cattle LLC.	19,014	8,467 AUM's 44%	East Bull = 105 AUM's West Bull = 32 AUM's Pasture 1 = 836 AUM's Pasture 2 = 997 AUM's Pasture 3 = Rested Pasture 4 = 130 AUM's Pasture 5 = 1,230 AUM's Pasture 6 = 884 AUM's Pasture 7 = Rested Pasture 8 = 670 AUM's Pasture 9 = 823 AUM's Pasture 10 = 638 AUM's Pasture 11 = Rested Pasture 12 = 908 AUM's Muleshoe = Rested Pony Seeding = 754 AUM's Fairview = non-use Atlanta = 460 AUM's	10,859 AUM's 56%
2002	El Tejon Cattle Co.	3,482	0 AUM's 0%	Muleshoe = non-use Atlanta = non-use	3,482 AUM's 100%

Appendix IV

The permitted use on Geyser Ranch Allotment is as follows:

Allotment	Livestock Number & Kind	Period of Use	Permitted Use (AUMs)	Historical Suspended Use	Permitee	Total Use (AUMs)
Geyser Ranch Managemtent Units 1,2 and 3	1025 cattle	03/01 – 02/28	12,308 AUM's	0	Lake Valley Cattle LLC.	12,3081
Pastures						
Fairview	136 cattle	04/16 – 10/31	890 AUM's	0	Lake Valley Cattle LLC.	890
Muleshoe	680 cattle	11/01 – 04/15	3,711 AUM's	0	Lake Valley Cattle LLC.	3,711
Pony Seeding	430 cattle	04/01 – 06/30	1,286 AUM's	0	Lake Valley Cattle LLC.	1,286
Atlanta	120 cattle	04/16 – 10/31	785 AUM's	0	0 Lake Valley Cattle LLC.	785

TERMS AND CONDITIONS

Allotment	Livestock Number & Kind	Period of Use	Permitted Use (AUMs)	Historical Suspended Use	Permitee	
Geyser Ranch Managemtent Units 1,2 and 3	1025 cattle	03/01 – 02/28	12,308 AUM's	0	Lake Valley Cattle LLC.	12,3081
Pastures						
Fairview	136 cattle	04/16 – 10/31	890 AUM's	0	Lake Valley Cattle LLC.	890
Muleshoe	680 cattle	11/01 – 04/15	3,711 AUM's	0	Lake Valley Cattle LLC.	3,711
Pony Seeding	430 cattle	04/01 – 06/30	1,286 AUM's	0	Lake Valley Cattle LLC.	1,286
Atlanta	120 cattle	04/16 – 10/31	785 AUM's	0	0 Lake Valley Cattle LLC.	785

In accordance with 43 CFR 4130.3-2, the following terms and conditions will be included in the grazing permit for Lake Valley Cattle LLC..

1. Grazing will be in accordance with the Northeastern Great Basin Area Standards and Guidelines for grazing administration as developed by the Northeastern Great Basin Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for grazing administration.

2. Livestock numbers identified in the term grazing permit are a function of seasons of use and permitted use for each allotment. Deviations from those livestock numbers and seasons of use

may be authorized on an annual basis where such deviations would not prevent attainment of the multiple-use objectives for the allotment.

3. Deviations from specified grazing use dates will be allowed when consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

4. Allowable use levels within the crested wheat seedings will not exceed 60% of the current year's growth. Use levels within the native portions of the permitted area will not exceed 50% of the current year's growth. Use levels on browse species will not exceed 40% of the current year's growth.

5. The authorized officer is requiring that an actual use report (form 4130-5) be submitted within 15 days after completing your annual grazing use.

6. The payment of your grazing fees is due on or before the date specified in the grazing bill. This date is generally the opening date of your allotment. If payment is not received within 15 days of the due date, you will be charged a late fee assessment of $25 or 10 percent of the grazing bill, whichever is greater, not to exceed $250. Payment with visa, mastercard or American express is accepted. Failure to make payment within 30 days of the due date may result in trespass action.

7. Pursuant to 43 CFR 10.4(G) the holder of this authorization must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural partimony (as defined at 43 CRF 10.2). Further, pursuant to 43 CFR 10.4 (C) and (D), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.

Appendix 3

Noxious Weed Risk Assessment
Geyser Ranch Term Permit Renewal

On July 31, 2005 a Noxious Weed Risk Assessment was completed for a proposed grazing term permit renewal, located on public lands in White Pine County, within the Ely Field Office Area of the Ely District Bureau of Land Management. The proposed term permit renewal occurs in Lake Valley within the Geyser Ranch Allotment. The permit renewal covers approximately 539,941 acres of public land. The legal location of the term permit renewal area is as follows:

T. 5,6,7,8 and 9 N., R. 64, 65, 66 and 67 E., Multiple Sections within MDBM.

Factor 1 assesses the likelihood of noxious weed species spreading to the project area.

None (0)	Noxious weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious weed species in the project area.
Low (1-3)	Noxious weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area.
Moderate (4-7)	Noxious weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious weeds within the project area.
High (7-10)	Heavy infestations of noxious weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious weeds on disturbed sites throughout much of the project area.

For this project, the factor rates as moderate (4) at the present time. Noxious weed species are located within the project area, as verified by the Ely Field Office Weeds Inventory. Invasive annuals include cheatgrass (*Bromus tectorum*) and occur sporadically throughout the allotment. Noxious weed species are know to occur within the allotment. Noxious weed species occurring within the allotment include Dalmatian toadflax (Linaria dalmatica), Diffuse knapweed (Centaurea diffusa), Russian knapweed (Acroptilon repens), Scotch thistle (Onorpodum acanthium), and Spotted knapweed (Centaurea stoebe).

The term permit renewal is not likely to result in the establishment of noxious weeds in the allotment area. However, the proposed term permit renewal could result in the spread and further establishment of halogeton and cheatgrass.

Factor 2 assesses the consequences of noxious weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (7-10)	Obvious adverse effects within the project area and probable expansion of noxious wee infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

For this term permit renewal, the factor rates as moderate (4) at the present time. This means that there are possible adverse effects of noxious weeds becoming established in the native plant community in the term permit renewal area. Cumulative effects on the native plant communities are likely but limited. The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.

For this term permit renewal, the Risk Rating is moderate (16) at the present time. Preventive management measures for noxious weeds need to be developed to reduce the risk of introduction or spread of noxious weeds into the permit renewal area. These measures (mitigation) are as follows:

1. Lake Valley Cattle LLC. and BLM would watch for and report or eradicate any small noxious weed patches in the project area.

2. The range specialist for the Geyser Ranch Allotment would include weed detection with normal rangeland monitoring activities.

3. The term permit renewal area would be monitored for noxious weeds for at least three consecutive years following renewal of the permit.

The term permit renewal can proceed as planned. Control treatments would be initiated on noxious weed populations that establish in the area.

Reviewed by: _____ _____

Bonnie Waggoner — Date
Ely District Weed Coordinator

Appendix IV

Detailed Summary of Public Comments Received in Response to Review of the Preliminary EA and How BLM Use Those Comments in Finalizing the EA.

As discussed in the EA (page 17), written comments were received from two individuals. The table below also summarizes how BLM used these comment in preparing the final environmental assessment.

No.	Commenter Name	Comment	BLM Response
1.	Cindy MacDonald	The proposed action is cited as in conformance within an array of options identified as alternatives the Environmental Impact Statement issued for the Final Schell Grazing EIS in July 1983. Please provide which option is being utilized through this proposal and the complete outline of its implementation and the associative impacts as provided within the 1983 Schell EIS	The Schell EIS is available for public review at the Ely Field Office in Ely Nevada. The office hours are 7:30 am to 4:30pm. Options were also discussed within the EA associated with the renewal of the permit for Lake Valley Cattle LLC.
2.	Cindy MacDonald	What is "heavy use"?	Heavy use is 60 to 80% utilization of current years growth.
3.	Cindy MacDonald	What are the recorded forage utilization levels and how has BLM determined what the consumption rate of each species is?	Combined use within pasture 4 is moderate to heavy within the crested wheat seedings while light to moderate outside of the seedings.
4	Cindy MacDonald	Why is cattle use not an issue for the Geyser spring area? Has the area been subject to fencing to exclude livestock or wild horses?	Geyser Spring is outside of the HMA and has no horse use that far north. The area is fenced and is heavily encroached upon by pinyon and juniper trees. The herbaceous forage base is minimal in the area due to the encroachment of trees. Livestock use is not a factor within the riparian area due to lack of forage. The cattle

			stay within the creasted wheat seedings lower on the bench below the springs. Water for the livestock is supplied for that area on private property.
5	Cindy MacDonald	BLM cites that in some of the pastures within the proposal area, a 60-80% resource utilization level is expected when all species and their combined use is taken into account. This utilization level is extremely high and leaves little room for variance, recovery, or compliance with accepted healthy rangeland utilization levels.	The pastures within question are within the Dry Lake HMA mainly within the Fairview and Muleshoe pastures. Livestock use within the Fairview pasture has not taken place within the last 7 years. Livestock use within the Muleshoe pasture generally takes place within the southeastern portions of the pasture in order to reduce cattle-horse competition. The horse use within this pasture stays within the Grassy Mountain area in close proximity to the natural waters within that area. No livestock use occurs within the Grassy Mountain portion of the Muleshoe pasture due to this. The 60 to 80% utilization is predominantly horse use.
6.	Cindy MacDonald	Is BLM able to assert this because wild horses can't get out and livestock can't get in?	Horses are free to move about within the Dry Lake HMA; however they stay very close to the natural waters within the Grassy Mountain area. Livestock use in this area does not occur.
7.	Cindy MacDonald	BLM states that, "cattle use is not an issue" in the Geyser spring area nor do they make any mention that the area has any wild horse utilization. Geyser spring is also cited as the main water source for pasture 4.	0, it is outside of the Dry Lake HMA

		What is the current allowable wild horse utilization of this pasture and spring?	
8.	Cindy MacDonald	What factors determine the exclusive citation of the presence of merely elk and deer? More fencing?	The presence of scat and numerous elk wallows within the riparian area, also visual observations.
9	Cindy MacDonald	BLM states that the allowable use levels are as follows: Utilization on grasses and forbs will not exceed 60% of current years growth. Since BLM has also determined that combined utilization levels of all rangeland users may exceed this to a projected 80% use level, what methods does or will BLM employ that differentiate between wild horse, elk and cattle use since all species have overlapping diets?	Utilization levels are set for combined use, not just livestock use. When utilization levels are met livestock use will cease in that area. If use continues to be heavy then other options are looked at such as horse gathers or in working with NDOW increase hunting tags for an area.
10		Furthermore, the monitoring data from pasture 10 is being reported from 1981 and 1986, obviously much too old to be of any use in determining any current trends or possible necessary adjustments. Current monitoring data is necessary before approval of the issuance of ten more years of utilization	Monitoring data was collected through 2003 within pasture 10.
11	Cindy MacDonald	BLM also needs to provide the *purpose, impacts and details* of the current proposals intention to remove the four pastures that are currently within the Wilson Creek Allotment which are Muleshoe/Maloy, Pony Seeding, Fairview and Atlanta and place them with the Geyser Ranch Allotment. These pastures are cited as the areas being utilized by wild horses. Will rearranging their jurisdiction invalidate the 1990 FMUD decisions?	No. Nor affect the Dry Lake HMA or AML.

12	Cindy MacDonald	Please provide specific details as to what the actions are being approved of within the management practices cited above and clearly define what rights to public resources are being authorized through the approval of this proposal.	All that is being changed is the allotment boundary to include those portions of the Wilson Creek Allotment that are part of the Geyser Ranch Permit. There will be no change to the FMUD for the use areas
13.	Katie Fite	Where is the Fundamentals of Rangeland Health Assessment, Determination, and systematic and science-based examination	Appendix I of the EA
14	Katie Fite	many of the areas with bare soils at present are at grave risk of cheatgrass, white top, knapweed expansion and other invasive species moving into these sites.	A noxious weed risk assessment was completed for this EA. Please see appendix 3
15	Katie Fite	How has BLM separated out the grazing effects that various permittees and livestock are having here?	The only portion of the allotment that is run in common is the Muleshoe pasture of the Wilson Creek Allotment. Lake Valley Cattle runs cattle within this pasture on the east side of the coyote wash during the winter months while EI Tejon runs sheep runs within the south west comer of the pasture only during the late winter months into the early spring. Dietary overlap is minimal during this time so livestock vegetated preferences are vastly different.
16	Katie Fite	Is this allotment owned, controlled or inn any way related to the developer Harvey Whittemore, or Las Vegas, or any de-watering or water export actions that may be occurring on private lands,	BLM does not manage private property

17	Katie Fite	how many of the ponds are dug into springs, or are otherwise affecting flows or watershed processes	No ponds are dug into springs within this permitted area.
18	Katie Fite	The BLM woefully fails to assess the effects of livestock grazing and trampling disturbance in damage or alteration of cultural sites	A cultural resource review of the permitted area was completed on March 28,2007
19	Katie Fite	Please provide all the information and data described in EA at 47 "utilization levels are being monitored regularly" and cattle are being moved. Where is this information?	The grazing rotation system is described at appendix 5 in the standards and determination document which is appendix 1 on the EA. Utilization levels are monitored as the cattle move throughout the allotment according to the schedule.
20	Katie Fite	What is meant on EA at 49, describing "winter use has been changed to winter-spring use"? Is this change occurring under this decision? Where?	This is describing the rest rotation system currently in place with a rest cycle of the pastures one in four years. This is described within the Geyser Ranch FMUD. This is occurring for pastures 1 through 12.
21	Katie Fite	An EIS is required to address the tremendous ecological footprint of livestock grazing and other activities occurring on these vast public lands.	We have already prepared EISs and the purpose of this document is to address new information and circumstances that have come about since the RODs were signed. There are several alternatives analyzed in the EISs.
22	Katie Fite	The cursory and general recitation of vegetation communities does not constitute a thorough and systematic FRH evaluation. The FRH process here is also not in compliance with the Fundamentals of Rangeland Health as found in the BLM grazing	A standards determination was conducted for the term permit renewal. We agree that there is no assurance that ecological processes, watersheds, water quality, etc. will be properly

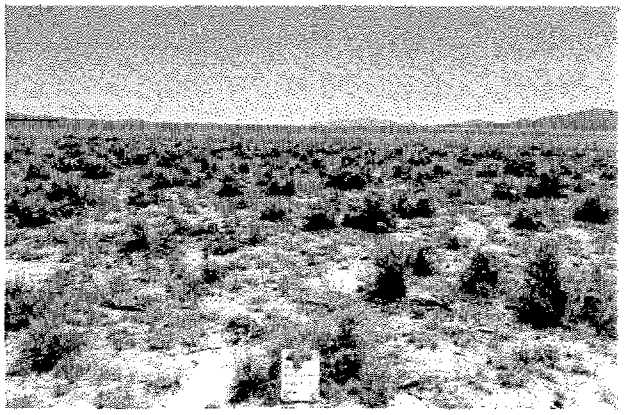
		regulations. There is no assurance that ecological processes, watersheds, water quality, etc. will be properly protected, maintained, or enhanced - as there it little to no site-specific data at all on these important parameters and processes	protected, maintained, or enhanced. Management practices to conform with guidelines and achieve standards are identified in the standards determination report and carried forth into terms and conditions of the term permit.
23	Katie Fite	We are strongly opposed to the extreme flexibility and deviations in use that BLM proposes. This will have significant adverse effects to important and sensitive species habitats, waters, native vegetation communities and many other important features of these public lands. BLM provides no reasoned basis for claims that authorizing large deviation swill not have serious adverse effects -ranging from collapsing shallow pygmy rabbit natal burrows to	Livestock numbers identified in the term grazing permit are a function of seasons of use and permitted use for each allotment. Deviations and flexibility from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations would not prevent attainment of the Multiple-Use Objectives for the allotment.
24	Katie Fite	The proposed allowable use levels on native vegetation are excessive - especially for the growing season use that is proposed. Use at such level swill not provide necessary nesting cover for Sage Grouse, or habitat components required by many other species see Connelly et al. 2004.	Exactly what levels to use as "proper use" for a given species and season of use have been debated for years. In general restricting utilization to moderate levels is widely recommended. Utilization levels are based on the Key Forage Plant Method.
25	Katie Fite	Where are mandatory BMPs such as not allowing livestock to graze weed areas until infestations are eradicated, quarantining livestock before entry into an allotment or pasture if the are coming from an area with weeds, etc.?	The weed risk assessment assesses the likelihood of noxious/invasive weed species spreading to the project area. It also assesses the consequences of noxious weed establishment in the project area.

The remaining comments are considered general statements and opinions regarding the processes and methodologies employed by BLM or statements of range conditions,

resources and resource uses across the west. These have been reviewed. The relevant portions of these comments have been presented in the above comments in a context specific to the particular term permit renewal.

native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 1% to 35% density. Utilization within the seedings has traditionally been within the 60% to 70% range.

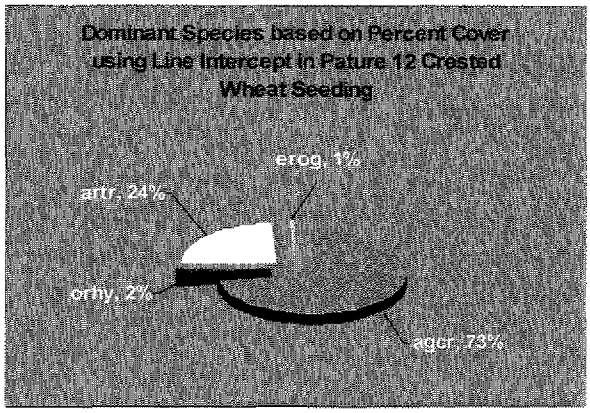
The native portion of the pasture is 3,299 acres in the southeastern portion of the pasture. The salt desert shrub communities are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The Salt Desert Shrub communities make up approximately 9,920 acres of pasture 3 of the Geyser Ranch Allotment. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).



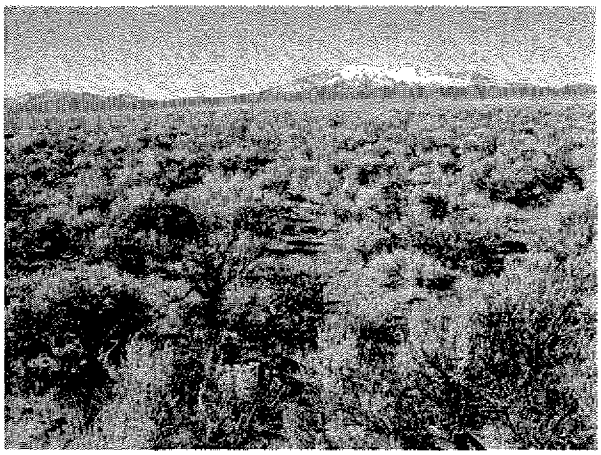
The pasture is serviced by one well which is the Grassy Well. There are no natural springs within the pasture. There is no water hauling within this pasture due to the one existing well being located within the center of the pasture.

Pasture 12.

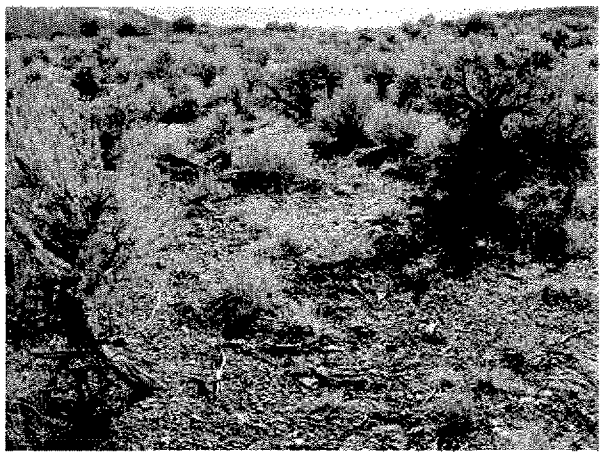
Pasture twelve encompasses 7,613 acres in the southeastern portion of the Geyser Ranch Allotment on which 4,878 acres are crested wheat seedings that was put in back during the 1960's. The crested wheat seedings consist of 70% to 80% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 1% to 8% density. Utilization within the seedings has traditionally been within the 60% to 70% range.



The native portion of the pasture is 2,735 acres in the southeastern portion of the pasture. The salt desert shrub communities are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The Salt Desert Shrub communities make up approximately 9,920 acres of pasture 3 of the Geyser Ranch Allotment. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).



There are numerous wells within pasture twelve on both public and private lands. The wells on the private portion are used for a private pivot system to irrigate alfalfa fields as well as provide water for domestic livestock. There is no water hauling within pasture twelve due to the number of wells on both public and private.

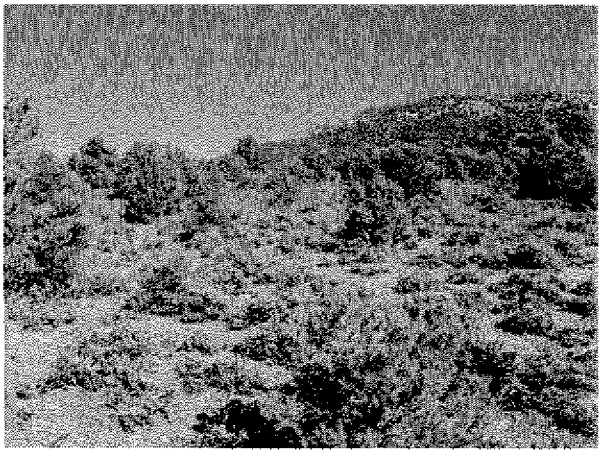


Atlanta Pasture.

Atlanta pasture has no crested wheat seedings within its boundary. The pasture encompasses 57,279 acres of various vegetative communities. The lower portion of the pasture is within a 12-16 inch precipitation zone that is predominantly a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needlandthread (*Stipa comata*) and Sandberg's bluegrass (*Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia*), western and Bluebunch wheat grass (*Agropyron*

smithii, Agropyron spicatum) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*). Utilization within the pasture is between 40% and 60%.

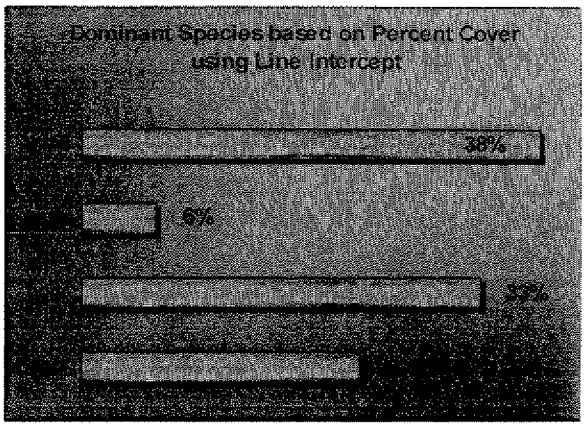
At higher elevations (6500 to 8200 feet ASL) it is replaced by mountain big sagebrush (*Artemisia tridentata vaseyana*), which has more of a flat-topped appearance and similar in height. The annual precipitation within this area is 16 to 20 inches annually. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. Also found with mountain big sagebrush are snowberry (*Symphoricarpos*), bitterbrush (*Purshia*), serviceberry (*Amelanchier*), mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), lupine (*Lupinus*), larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).



The higher elevations of the Atlanta pasture consists of woodland sites that occurs on cool, moist, mountain sideslopes associated with rock outcrops and stony surfaces. Elevations range from 8500 feet to 10,000 feet ASL. The average annual precipitation is 20+ inches per year. These sites are dominated by White fir (*Pinus monticola*), Limber pine (*Pinus flexilis*) and Bristlecone pine (*Pinus longaeva*). Spike fescue, Mutton grass (*Poa fendleriana*) and Bluebunch wheatgrass are the principal understory grasses. Common juniper, serviceberry and mountain big sagebrush are the principal shrubs. Forbs consist of creeping barberry and goldenweed.

There are numerous wells within this pasture for watering purposes. The pasture is run in common by both Geyser Ranch and El Tejon Cattle Co. It is used by cattle and sheep as well as native animals. Water is hauled within this pasture due to its size and multiple use. Utilization levels within this pasture are 60% to 80% when combined use is taken into account. This pasture falls within the Wilson Creek HMA, which has an AML of 160 horses.

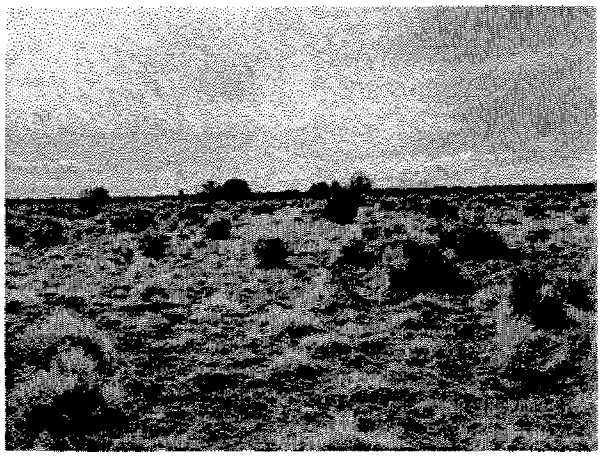
The Atlanta pasture is currently in a state and transition of sagebrush range sites converting to pinyon and juniper sites with minimum to no herbaceous understory.



The Atlanta pasture is used during the same season of use each year. The period of use is April 16 to October 31 utilizing 785 AUM's. The Sheep use occurs November 1 to January 31 utilizing 746 AUM's. 163 AUM's are held in suspension for wild horse use.
Pony Seeding.

The Pony seeding encompasses 10,412 acres in the south west portion of the Geyser Ranch Allotment all of which is a crested wheat seedings that was put in back during the 1960's. The crested wheat seedings consist of 60% to 75% crested wheat plants with 2% to 5% native grasses with 1% to 3% forbs that include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*), Buckwheat (*Erigonum*) and Penstemon (*Penstemon*). Sage brush occurs within the seeding at 5% to 15% density. Utilization within the seedings has traditionally been within the 60% to 70% range.

The pasture is serviced by two wells; they are the Spotlight Well and the Pony Well. There are one natural springs within the pasture that is used by both domestic and native wildlife. It is Pony Springs. There is no water hauling within this pasture due to the water distribution that is currently available. The pony seeding is used during the same season of use each year. The period of use is April 1 to June 30 utilizing 1,286 AUM's.



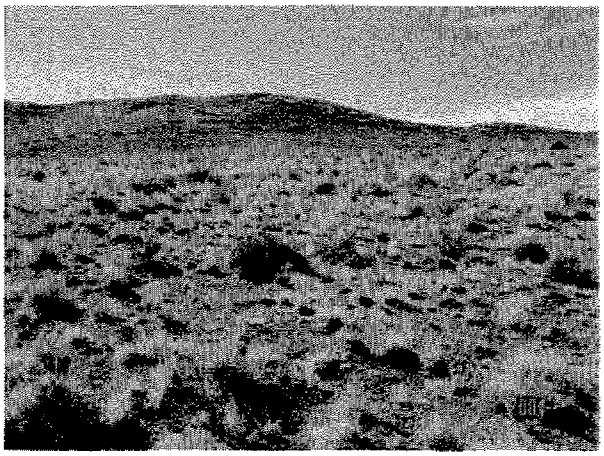
Fairview Pasture.

Fairview pasture has no crested wheat seedings within its boundary. The pasture encompasses 57,667 acres of various vegetative communities. The dominate portion of the pasture is within a 12-16 inch precipitation zone that is predominantly a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Needleandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia),* western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*) and Mutton grass (*Poa fendleriana*) pinyon(*Pinus monophylla*) and juniper(*Juniperus osteosperma*). Utilization within the pasture is between 40% and 60%. The pasture has been rarely used over the last ten + years due to heavy pinyon and juniper encroachment which has substantially reduce the herbaceous understory.

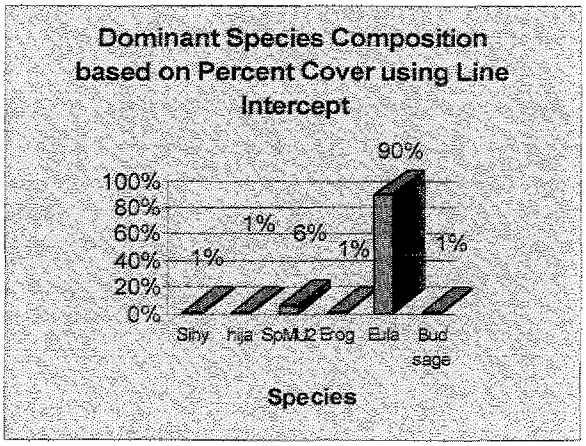
There are numerous spring within the Fairview range. However, use by domestic livestock is minimal to none existent. The primary user of the Fairview allotment and the numerous springs is wild horses. The Fairview allotment falls within the Dry Lake HMA. (See above HMA description with AML for pasture 9).

The permitted period of use for the pasture is April 16th to October 31st, with 890 AUM's authorized.

Muleshoe/Maloy Pasture.



The Muleshoe/Maloy pasture has no crested wheat seedings within its boundary. The pasture encompasses 121,421 acres of various vegetative communities. The salt desert shrub communities are characterized as lakeplain terraces with deep calcareous soils. These soils are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth. These soils are poorly drained and have a seasonally high water table. The slopes range from 0 to 4 percent and elevations are from 5300 to 6200 feet above sea level (ASL), the average annual precipitation is 6 to 10 inches. The vegetative community is predominantly made up of grasses and shrubs. The shrub component consists of: black greasewood (*Sarcobatus vermiculatus*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Shadscale (*Atriplex confertifolia*), Graymolly kochia (*Kochia americana*), Winterfat (*Eurotia lanata*), Sickle saltbush (*Atriplex falcata*) and Four wing saltbush (*Atriplex canescens*). The grass component consists primarily of: Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirreltail (*Sitanion hysterix*), Basin wildrye (*Leymus cinereus*) and Nevada bluegrass (*Poa nevadennsis*).



The 10-12 inch precipitation zone of the pasture is predominantly a Sagebrush/mixed grass communities. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) is the principal shrub, growing from six inches up to two feet in height at low to mid-elevations. The soils in this site are well drained and have a shallow effective rooting depth. The elevations range from 6800 to 8000 feet. The perennial herbaceous understory consists of Indian ricegrass (*Oryzopsis hymenoides*),

Bottlebrush squirreltail (*Sitanion hysterix*), Needleandthread (*Stipa comata*) and Sandberg's bluegrass *(Poa secunda*). Forbs include Globemallow (*Sphaeralcea*), Phlox (*Phlox*), Indian paintbrush (*Castilleja*) and Penstemon (*Penstemon*). Also found are Douglas rabbitbrush (*Chrysothamnus viscidiflorus*), Winterfat (*Eurotia lanata*), Prickly pear cactus (*Opuntia)*, western and Bluebunch wheat grass (*Agropyron smithii, Agropyron spicatum*), Galleta (*Hilaria jamesii*) and Mutton grass (*Poa fendleriana*) pinyon (*Pinus monophylla*) and juniper (*Juniperus osteosperma*). Utilization within the pasture is between 40% and 60%.

The lower portion of the bench but above the salt desert community is predominantly a black sagebrush grass mix community. The elevation ranges from 4800 to 6500 feet above (ASL). The average precipitation along this zone is 8 to 10 inches annually. The soils are shallow to moderately deep to a restrictive layer that impedes plant rooting depth. The available water holding capacity is low to moderate. The soils are well drained, runoff is slow to medium and the potential for sheet and rill erosion is slight to moderate. The dominate vegetation is Black sagebrush (*Artemisia tridentate nova*) with an herbaceous perennial understory of Indian ricegrass (*Oryzopsis hymenoides*), Bottlebrush squirrel tail (*Sitanion hysterix*) and Sandberg's bluegrass *(Poa secunda*)

At higher elevations (6500 to 8200 feet ASL) it is predominatly a woodland community consisting of primarily pinyon and juniper with an understory of wyomingensis sagebrush. The annual precipitation within this area is 12 to 16 inches annually. The soils are usually moderately deep to deep and well drained. Runoff is medium to rapid and the erosion hazard is moderate. Also found with sagebrush are snowberry (*Symphoricarpos*), Bitterbrush (*Purshia*), cliffrose (*Cowania mexicana*), Serviceberry (*Amelanchier*), Mountain mahogany (*Cercocarpus ledifolius*), Rubber rabbitbrush (*Chrysothamnus nauseosus*), Lupine (*Lupinus*), Larkspur (*Delphinium*) and Yarrow (*Achillea*). The grass component consists of Bluebunch wheatgrass (*Agropyron spicatum)*, Mutton grass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), Sandburg bluegrass (*Poa secunda*) and Basin wildrye (*Leymus cinereus*).

The pasture is run in common by both Geyser Ranch and El Tejon Cattle Co. It is used by cattle and sheep as well as native animals. Water is hauled within this pasture due to its size and multiple use. Utilization levels within this pasture are 60% to 80% when combined use is taken into account.

Due to continual grazing with little to no rotation of sheep or cattle within the Muleshoe pasture of the Wilson Creek Allotment hedging is apparent on browsed species by sheep. The browsed species which include Winterfat, Fourwing saltbush, Ephedra, and Black sagebrush are the primary forage for browsers within this use area. The herbaceous component shows little to no use due to reduced stocking by cattle over the last 10 years and little to no use by sheep over the last 10 years.

There is one well and one spring within the Muleshoe/Maloy pasture of the Wilson Creek Allotment. The Coyote well is located on the very southern edge of the pasture along the Bristol wells road. Mud Spring is located on the very western portion of the pasture and is fully developed with water remaining at the source for wildlife purposes.

The Muleshoe/Maloy pasture is currently in a state and transition of sagebrush range sites converting to pinyon and juniper sites with minimum to no herbaceous understory.

The Muleshoe/Maloy pasture is used during the same season of use each year. The period of use is November 1st to April 15th utilizing 3,711 AUM's. Sheep use occurs November 1 to May 1 utilizing 1,832 AUM's. 530 AUM's are held in suspension for wild horse use.

Evaluation and Determination of Rangeland Health Standards

STANDARD 1. **UPLAND SITES**: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form

As indicated by:

- Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to the potential of the site.

Determination:

X Meeting the Standard

□ Not Meeting the Standard, but making significant progress towards

□ Not Meeting the Standard, not making significant progress toward standard

Causal Factors

□ Livestock are a contributing factor to not meeting the standard.

□ Livestock are not a contributing factor to not meeting the standard

□ Failure to meet the standard is related to other issues or conditions

Evaluation:

Valley soils are generally salt and sodium affected in the upper profile. A seasonably high water table is generally present. Soils are occasionally flooded for brief periods in spring. The surface layer of clay solid will crust and bake upon drying, inhibiting water infiltration and seedling

emergence. Due to the saline condition of soils, seed viability, germination, and water holding capacity is reduced. Slow runoff and ponding in depressional areas is common.

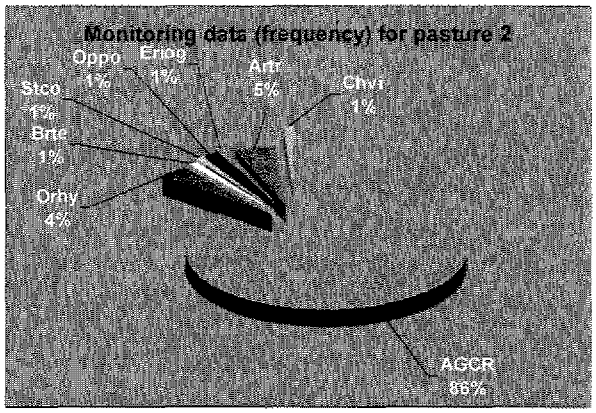
The soils on the valley terrace and benches are gravelly silts, gravelly sandy loams, sandy loams, gravelly loams, or loams. Soil properties vary with range site as follows:

028AY010NV (Course Gravelly Loam 10-12") – Soils are moderately deep to deep and will to excessively-well drained. Available water holding capacity is low to moderate. Soil textures are coarse and gravels are present throughout the profile. Infiltration is rapid and runoff is slow to medium. The potential for sheet and rill erosion varies with slope gradient.

028AY017NV (Shallow Loam 8-10") – Soils of this site have an effective rooting zone depth of less than 20 inches. Soil surfaces may be gravelly, stony, or cobbly (often with inclusions of bedrock). Available water holding capacity is low, runoff is moderate to rapid, and the soils are will drained.

028AY075NV (Coarse gravelly loam 6- 8") – Soils are typically shallow and well drained. Available water capacity is very low, but trees and shrubs extend their roots in fractures in the bedrock allowing them to utilize deep moisture. There are high amounts of rock fragments at the soil surface which occupy plant growing space, yet help to reduce evaporation and conserve soil moisture. Runoff is rapid and potential for sheet and rill erosion is slight to moderate depending on slope. Soil temperature regime is frigid and soil moisture regime is an ustic intergrades.

Current resource conditions related to watershed soils within this allotment



Rangeland monitoring studies indicate that the amount of vegetative canopy and ground cover is appropriate to the potential for the site at 18 of the upland key areas in the allotment (see monitoring data appendix II). Sagebrush cover density is low compared to the potential native vegetation. This is due to major disturbance of putting in the crested wheat seedings in the 1960's. The cover density of sagebrush ranges from 3% to 40%. Herbaceous cover ranges from 10% to 70%, forb composition ranges from 0% to 5%. Utilization data indicates a general pattern of moderate grazing use during the evaluation years with heavy use during the 2002 grazing year. This was due to the change in leasee who was unfamiliar with the grazing plan. Microphytes (lichens and mosses) are present at all key upland areas, however they generally covered less than 1% of the soil surface.

On pastures 9 and 10 there were severe fires during the late 1990's that removed pinyon and juniper encroachment. This resulted in a significant increase in desirable native herbaceous component. However, there was also an increasing in undesirable non-native annual (cheatgrass)

grasses. The overall range trend for the allotment is improving and moving towards a balanced ecology, with appropriate balance of sagebrush, grasses and forbs.
Cover is very adequate to support functioning soil conditions. The ratio of woody, herbaceous and forbs is appropriate considering crested wheat seedings was implemented during the 1960's. Monitoring data shows that native grasses, forbs and woody species are moving into the areas at acceptable rates.

Biological crust formations are present within the allotment but only one to two percent in composition.
Compaction/infiltration rates are within acceptable limits and are not a concern due to the soil types within this allotment. Freezing and thawing cycles are present within these soils and act as inhibitors to compaction.
Stream bank stability is present but needs to be monitored in the future due to multiple use of animals domestic and non-domestic. Sinuosity lacks in the lotic systems due extreme elevational changes in the flow patterns. As a result of this large precipitation events have the potential to strip stream banks and widen as well as deepen flow areas.

STANDARD 2. **RIPARIAN AND WETLAND SITES**: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.
As indicated by:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
- Width/Depth ratio; Channel roughness; Sinuosity of stream channel; Bank stability; Vegetative cover (amount, spacing, life form); and other cover (large woody debris, rock).
- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
- Chemical, physical and biological water constituents are not exceeding the state water quality standards.

Determination:

X Meeting the Standard

□ Not Meeting the Standard, but making significant progress towards

□ Not Meeting the Standard, not making significant progress toward standard

Causal Factors

□ Livestock are a contributing factor to not meeting the standard.

□ Livestock are not a contributing factor to not meeting the standard

□ Failure to meet the standard is related to other issues or conditions

Evaluation:

There are 102 water sources within the Geyser Ranch Allotment, of which 31 of them are deep water wells, and 15 of them are reservoirs. There are two lotic riparian systems within the allotment; they are North Creek and Geyser Spring. Proper functioning Condition (PFC) was conducted during the late summer of 2004 and both were found to be in proper functioning condition. North Creek is in an upward trend. Geyser spring is functioning at risk due to a large precipitation event that occurred during the summer of 2003. This event caused stream banks to be blown out and existing sand bars to be removed and removed what small amount of sinuosity occurred within the stream channel. Currently the stream riparian area is used heavily by elk and deer. Cattle use here is not an issue.

There are several springs or lentic systems within this allotment. Not all were monitored for PFC. Several springs within the allotment are fully developed and could not be monitored for PFC. Of the ones monitored they were determined to be functioning properly but functioning at risk

Geyser Spring 2004

STANDARD 3. **HABITAT**: Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species. Not Met.

As indicated by:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, or age class);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Determination:

X Meeting the Standard

□ Not Meeting the Standard, but making significant progress towards

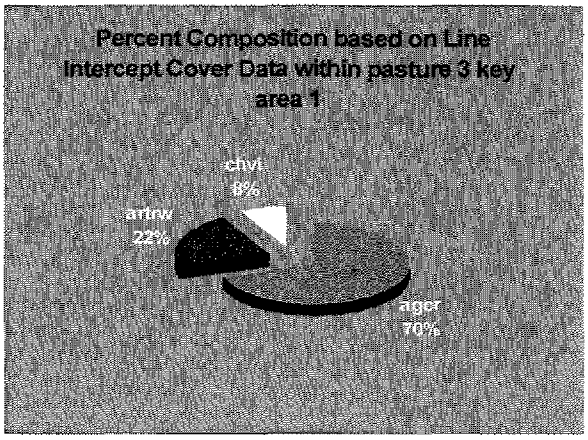
□ Not Meeting the Standard, not making significant progress toward standard

Causal Factors

□ Livestock are a contributing factor to not meeting the standard.

□ Livestock are not a contributing factor to not meeting the standard

□ Failure to meet the standard is related to other issues or conditions



Evaluation:

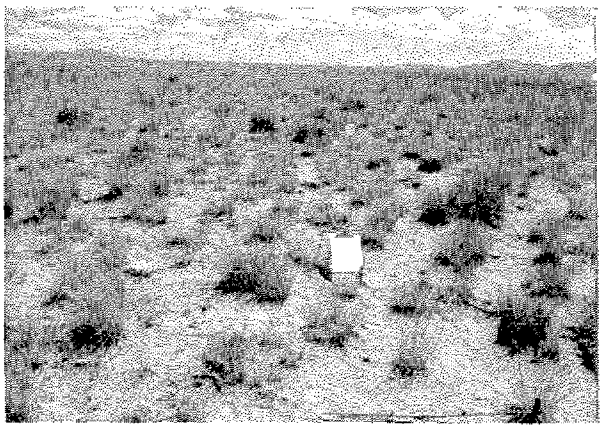
Salt Desert Shrub Communities

The salt desert shrub communities are predominantly within pastures 3,6 and 7. Wet saline bottoms are also found here. These communities are found on the lower fans and valley bottoms. The salt desert shrub communities have various dominate plants primarily Shadscale and black greasewood. Percent composition for the shrub, grass and forb components are appropriate to the site as indicated by the range site descriptions. These sites are relatively undisturbed due to the surrounding crested wheat seedings which is of preference to the cattle. The communities comprise mainly of winterfat, Nevada ephedra Douglas rabbitbrush, broom snakeweed, gray molly kochia, horsebrush, spiny hopsage and Fourwing saltbush.

The percent composition of grass species is appropriate for the site potential. Desirable primary grasses are appropriate but show stress due to recent drought conditions from the period of 1999 to 2004. The percent composition of the desirable grasses in the plant community over the entire allotment is at or above the site potential.

Forb composition is appropriate for the salt desert shrub communities within the allotment.

There was a die off in a portion of the Shadscale community type in the 1980's, as recruitment occurs in the community a structural change should occur with respect to age structure.



Pasture 3 Key area 1 2005

Wet Meadows

The wet saline meadows are dominated by shrubs. Percent composition for the shrub component is higher than what is appropriate for the site. The percent composition of the desirable grasses is less than the site potential. The primary grass is inland saltgrass and there are four grass and grasslike plants present which improves the nutritional value of the forage available.

Wyoming Sagebrush Communities

Wyoming sagebrush communities have an infestation of cheatgrass. Grasses and forbs are present and are at or working towards meeting standards as set by the soil guides site potential. Small isolated juniper trees are occasionally occurring within this community.

Black Sagebrush Communities

Black sagebrush occurs at the higher elevations on a shallow calcareous soil. Pinyon and juniper trees are occurring within these sites and generally in denser concentration on the north aspect where the temperatures are cooler and there is usually greater effective precipitation.

Mountain Sagebrush Communities

Mountain sagebrush communities occur at higher elevations and precipitation levels. There are an increased number of pinyon juniper trees in these locations particularly on the north slopes of the numerous drainages. However, the fires of 1999 and 2000 along the Muleshoe and Dutch John mountain range have reduced the number of pinyon and juniper and greatly enhanced the native grass and shrub communities within this eco-tone. Cheatgrass is also an issue due to fire, but without further disturbance it should be out competed by desirable grasses, forbs and shrubs.

Conifer, Aspen and Pinyon Juniper Woodlands

Conifer aspen and pinyon juniper woodlands make twenty percent of the allotment.

Conclusion:

Current vegetation communities are meeting the standard. Vegetative composition is appropriate for the potential of the site and the site characteristics. Sagebrush communities exhibit a healthy herbaceous understory. Percent composition for the shrub component is higher than what is appropriate at some sites. Percent composition for the shrub, grass and forb components are appropriate to the site. Vegetation distribution with respect to patchiness, are present, this is due to natural wildfires that occurred within the community types. Some of the areas in this allotment have crossed the threshold as exhibited by rabbitbrush and cheatgrass components in the plant community. The vegetative diversity of the salt desert shrub communities is high due to precipitation and lack of grazing by domestic and wild ungulates. The resilience of the wet saline bottom communities is high.

Historic livestock grazing is not an issue due to the large number of acres of crested wheat seedings. This grass specie is able to handle the grazing pressure especially during the critical growing season which allows the native to rest each year. Some of the plant communities are in a state requiring additional disturbance such as mechanical and fire to make change improving age structure and vegetation distribution.

STANDARD 4. **CULTURAL RESOURCES**: Land use plans will recognize cultural resources within the context of multiple use.

Appendix 5, Grazing Rotation

		Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
2006																
Management Unit 1	AUM's	392														
Pasture 1	1381		6/17-8/15,,10/15-12/01	1,392						X	X	X		X	X	
Pasture 2	1130		12/02-2/28	1,147	X	X										X
Pasture 3	1585		N/A	0	Rest											
Pasture 4	1394		3/01-6/16	1,392			X	X	X	X						
	5,490			3,932												
2007																
Management Unit 1	AUM's	*438*		*AUM's*	Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		11/24-2/28	1,396	X	X									X	X
Pasture 2	1130		N/A	0	Rest											
Pasture 3	1585		3/01-6/18	1,584			X	X	X	X						
Pasture 4	1394		6/19-8/15,,10/15-11/23	1,411						X	X	X		X	X	
	5490	Total		4,391												
2008																
Management Unit 1	AUM's	412			Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		N/A	0	Rest											
Pasture 2	1130		3/1-5/22	1,124			X	X	X							
Pasture 3	1585		5/23-8/15,,10/15-11/16	1,693					X	X	X	X		X	X	
Pasture 4	1394		11/17-2/28	1,409	X	X									X	X
	5,490	total		4,220												
2009																
Management Unit 1	AUM's	411			Jan.	Feb.	Mar	Apr	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pasture 1	1381		3/1-6/10	1,378			X	X	X	X						
Pasture 2	1130		6/11-8/15,,10/15-11/02	1,135	X					X	X	X		X	X	
Pasture 3	1585		11/03-2/28	1,594	X	X									X	X
Pasture 4	1394		N/A	0	Rest											
	5,490	total		4,107												

Repeat 2010 cycle at 2006

			X= Active Use Period													
Total		12,090		AUM,s												

2006

Management Unit 2	AUM's	Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850	244	5/22-8/15,,10/15-11/04	858					X	X	X	X		X	X	
Pasture 6	924		11/05-2/28	931	X	X									X	X
Pasture 7	1229		N/A	0	Rest											
Pasture 8	660		3/01-5/21	658			X	X	X							
	3,663		total	2,438												

2007

Management Unit 2	AUM's	*275*	Dates	Act. Use *AUM's*	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		11/26-2/28	859	X	X									X	X
Pasture 6	924		N/A	0	Rest											
Pasture 7	1229		3/01-7/14	1,230			X	X	X	X	X					
Pasture 8	660		7/15-8/15,,10/15-11/25	669							X	X		X	X	
	3,663		Total	2,758												

2008

Management Unit 2	AUM's	282	Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		N/A	0	Rest											
Pasture 6	924		3/01-6/08	927			X	X	X	X						
Pasture 7	1229		6/06-8/15,,10/15-12/18	1,789						X	X	X		X	X	X
Pasture 8	660		12/19-2/28	668	X	X										X
	3,663		total	3,384												

2009

Management Unit 2	AUM's	301	Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 5	850		3/01-5/25	841			X	X	X							
Pasture 6	924		5/26-7/25	604					X	X	X					
Pasture 7	1229		7/26-8/15,,10/15-2/28	1,564	X	X					X	X		X	X	X
Pasture 8	660		N/A	0	Rest											
	3,663		total	3,009												

Repteat 2010 cycle at 2006

X= Active Use Period

2006

Management Unit 3	AUM's	Total Cattle Numbers	Livestock Use Dates	Act. Use	Jan.	Feb	Mar	Apr	May	June	July	Aug.	Sep	Oct	Nov	Dec.
Pasture 9	770	216	5/28-8/15,,10/15-11/12	774					X	X	X	X		X	X	
Pasture 10	758		11/13-2/28	767	X	X									X	X
Pasture 11	788		N/A	0	Rest											
Pasture 12	625		3/01-5/27	625			X	X	X							
	2,941		**Total**	2,159												

2007				Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Management Unit 3	AUM's	*219*	Dates	*AUM's*												
Pasture 9	770		11/13-2/28	778	X	X									X	X
Pasture 10	758		N/A	0	Rest											
Pasture 11	788		3/01-6/17	770			X	X	X	X						
Pasture 12	625		6/18-8/15,,10/15-11/12	634						X	X	X		X	X	
	2,941		**Total**	2,182												

2008			Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Management Unit 3	AUM's	218														
Pasture 9	770		N/A	0	Rest											
Pasture 10	758		3/01-6/14	760			X	X	X	X						
Pasture 11	788		6/15-8/15,,10/15-12/02	796						X	X	X		X	X	X
Pasture 12	625		12/03-2/28	631	X	X										X
	2,941		**Total**	2,187												

2009

Management Unit 3	AUM's	232	Dates	Act. Use	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.
Pasture 9	770		3/01-6/09	770			X	X	X	X						
Pasture 10	758		6/10-8/15,,10/15-11/16	763					X	X	X			X	X	
Pasture 11	788		11/17-2/28	793	X	X									X	X
Pasture 12	625		N/A	0	Rest											
	2,941		**Total**	2,326												

Repreat 2010 cycle at 2006

X= Active Use Period