

# ENVIRONMENTAL ASSESSMENT

## Livestock Grazing Permit Renewal for the Tatman Mountain Common (00639) and Snyder (00640) Grazing Allotments

Worldland Field Office, Wind River/Bighorn Basin District, Wyoming

October 2014



**BLM**

The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

**DOI-BLM-WY-R010-2014-0021-EA**

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*Type of Project: Grazing Permit Renewal*

*General Location of Proposed Action: Bighorn and Park Counties, Wyoming; T51N R97W sec. various, T51N R98W sec. various, T50N R97W sec. various, and T50N R98W sec. various*

*Name and Location of Preparing Office:*

*Worland Field Office*

*101 S. 23<sup>rd</sup> St.*

*Worland, WY 82401*

*Grazing Authorization Number: 4901234 and 4912947*

*Applicant Name: Steve & Mike Coble and J Bar H Ranch Inc.*

## **1 INTRODUCTION AND NEED FOR THE PROPOSED ACTION**

### **1.1 Background Information**

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing the grazing permits on the Tatman Mountain Common (00639) and Snyder (00640) grazing allotments (see Map 1).

Two current grazing permits are associated with the allotments. There is one permit for Steve and Mike Coble (Authorization #4901234) in the Tatman Mountain Common allotment; and one permit to J Bar H Ranch Inc. (Authorization #4912947) in the Tatman Mountain Common and Snyder allotments.

The Tatman Mountain Common and Snyder allotments border each other and are separated by a fence that is in disrepair; therefore, the two allotments have in the past been utilized as one large common allotment. Because of the current fence situation, the grazing administration for both allotments must be described as if the two allotments are one; however, from an administrative perspective they are two distinct allotments (addressed in EA Nos. WY-018-EA8-83 and WY-010-EA06-46).

### **1.2 Purpose and Need for Action**

The purpose of this action is to issue grazing permits in the Tatman Mountain Common (00639) and Snyder (00640) allotments within the Worland Field Office with appropriate terms and conditions to promote rangeland health.

The Worland Field Office performs Rangeland Health Assessments using Technical Reference 1734-6 “Interpreting Indicators of Rangeland Health” to determine if Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Land Administered by the Bureau of Land Management in the State of Wyoming (S&Gs) approved August 12, 1997 are being met. Through a Rangeland Health Assessment it has been determined that there are acres in the allotments that are not meeting Rangeland Health Standards and acres that are meeting Rangeland Health Standards (See Map 3). Current livestock grazing was determined to be a cause in the findings; therefore, the purpose of this EA is also to address the findings of the Rangeland Health Assessment for the Tatman Mountain Common and Snyder allotments that was signed on September 10, 2013.

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The need for this action is BLM's responsibility to issue grazing permits in accordance with the provisions of the Taylor Grazing Act, Federal Land Policy and Management Act, Public Rangelands Improvement Act, Administrative Procedures Act, Grass Creek Resource Management Plan, and the grazing regulations 43 CFR 4100.

### **1.3 Decision to be Made**

The Authorized Officer (AO) must determine whether or not to issue grazing permits to the applicants. If a permit is issued the AO must identify specific terms and conditions that apply to the permit to achieve management and resource condition objectives for the public lands.

### **1.4 Conformance**

This action is subject to the following land use plan:

Name of Plan: Grass Creek Resource Management Plan (RMP)

Date Approved: September, 1998

Remarks: The Grass Creek RMP established the following Management Objective for Livestock Grazing Management:

“Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and forage for wild horses.” [p. 13]

Specific livestock grazing management actions from the Grass Creek RMP, which apply to this proposed action include,

“The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a permittee's application to change grazing use is appropriate.” [p. 13]

And,

“Grazing strategies (including the timing of grazing) will be designed to accommodate the growth requirements of “desired” species within plant communities.” [p. 14]

“In other plant communities that are grazed during the growing season, grazing strategies will be designed to allow a combined forage utilization of 30 to 50 percent of the current year's growth.” [p. 14]

“In all plant communities that are grazed when plants are dormant, a combined forage utilization of up to 60 percent of the current year's growth is allowed.” [p. 14]

The RMP has been reviewed and it is determined that the proposed action conforms to the land use plan terms and conditions as required by Title 43 Code of Federal Regulations, part 1610.5.

### **1.5 Relationship to Statutes, Regulations, Plans or Other Environmental Analyses**

This Environmental Assessment is being prepared in accordance with Washington Office (WO) Instruction Memoranda WO-IM-99-039 and 2000-022 as well as WY-IM-2000-20, which instruct all Bureau of Land Management (BLM) Field Offices to conduct National Environmental Policy Act (NEPA) review on grazing permit renewals. The primary regulations governing the analysis are 40 CFR 1500 (RE: The President's Council on Environmental Quality implementing regulations for procedural provisions of NEPA). The principal Bureau permitting regulations for livestock grazing are found in 43 CFR 4100. The principal statutes governing livestock grazing on public land are the Taylor Grazing Act

of 1934, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978.

This action is in accordance with the following Grazing Management Regulations: 43 CFR 4110.3 and 43 CFR 4180

- “The authorized officer shall periodically review the permitted use specified in a grazing permit or lease and shall make changes in 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.”
- “The authorized officer shall take appropriate action under subparts 4110, 4120, 4130, and 4160 of this part...upon determining that existing grazing management needs to be modified...”

This action is also subject to national level BLM and Wyoming BLM policy regarding Greater Sage-Grouse Habitat Management found in the following Instruction Memoranda: WO-IM-2012-043 and WY-IM-2012-019.

- “To ensure that the NEPA analysis for permit/lease renewal has a range of reasonable alternatives:
  - “Include at least on alternative that would implement a deferred or rest-rotation grazing system, if one is not already in place and the size of the allotment warrants it.”
  - “Include a reasonable range of alternatives (e.g., no grazing or a significantly reduced grazing alternative, current grazing alternative, increased grazing alternative, etc.) to compare the impacts of livestock grazing on Greater Sage-Grouse habitat and land health from the proposed action.”

## **1.6 Scoping, Public Involvement and Issues**

### **1.6.1 Scoping**

The Proposed Action was reviewed by an interdisciplinary team. The applicants for the action were consulted with about alternative development and livestock management. Interested publics were also solicited for the development of alternatives. The applicants and interested publics were given opportunity to comment on the findings of the Rangeland Health Assessments for the allotments and were mailed the subsequent determination of Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming signed on September 10, 2013. Based on the size and routine nature of the proposed project, it was determined that further external scoping was not necessary.

### **1.6.2 Issues Identified**

- Rangeland Resources/Upland Vegetation
  - How would the proposed action and other alternatives impact the vegetation’s ability to meet Rangeland Health Standard 3 within the Tatman Mountain Common and Snyder allotments?
- Wildlife
  - How would the stocking levels, season of use, and utilization levels addressed in the proposed action and other alternatives, impact vegetation and plant community characteristics important to sagebrush obligate species?
- Cultural
  - How would renewal of the grazing permit affect cultural resources eligible or unevaluated for the NRHP?
- Hydrology/Water Resources

- How would a change in the grazing permits impact the hydrologic conditions as related to the 17 Indicators of Rangeland Health in the allotments?
- What would be the impact to water quality, in the form of sedimentation and fecal coliform, from runoff in the allotment?
- Soils
  - How would the Proposed Action and other alternatives impact Rangeland Health Standard 1, specifically the soil and site stability within the Tatman Mountain Common and Snyder allotments?

### 1.6.3 Issues/Resources Dismissed from Analysis

The Worland Field Office Interdisciplinary (ID) Team determined the following resources are not present or affected by the proposed action or alternatives; therefore, they are not analyzed in this EA.

- Air Quality/Climate Change
- BLM Natural Areas
- Greenhouse Gas Emissions
- Environmental Justice
- Prime or Unique Farmlands
- Native American Religious Concerns
- Public Health and Safety
- Energy Production
- Areas of Critical Environmental Concern (ACEC)
- Threatened, Endangered, Candidate or BLM Sensitive Plant Species
- Hazardous or Solid Waste
- Wild and Scenic Rivers
- Wilderness/Wilderness Study Areas
- Woodland/Forestry

The following resources were identified by the ID Team as present, but not impacted by the proposed action or alternatives; therefore, they are not addressed further in this EA.

- Fuels/Fire Management – The majority of land cover in the two allotments is basin exposed rock and soil with a secondary percentage of Wyoming big sagebrush. There are no recorded wildfires or mechanical, chemical, seeding, stabilization, or burned area rehabilitation treatments for either allotment. Prescribed fire treatments of 99 acres in the Snyder allotment and 164 acres in the Tatman allotment are recorded for 1988 and 1989. The treatment affected 69 acres of public land and the remainder on private land.
- Geology – The Proposed Action and alternatives are a surface activity, no new disturbance of any mineral resources would occur under any of the alternatives.
- Fluid Mineral Resources – The administration of grazing privileges would have no effect on the development of mineral resources within the project area. The area is open for fluid mineral leasing. There are 4993 acres of leased minerals in the project area. There are no producing wells and no applications for drilling new wells in the project area.
- Land Use / Access - The project area has existing rights-of-ways for roads, irrigation ditches, canals, and the Greybull Valley Irrigation reservoir. These authorizations should not be affected by the grazing permit.
- Paleontology: Surface paleontological resources are primarily found on bare, non-vegetated outcrops which are created as the result of active erosion processes. These are not locations livestock congregate.
- Recreation – Renewal of the grazing permits associated with the Tatman Mountain Common and Snyder allotments will not interfere with desired recreational settings, goals, experiences, or

beneficial outcomes of recreation within the allotments or the Badlands SRMA which is located within portions of the allotment.

- Socio-Economics – The Proposed Action would reduce the amount of AUMs the permittees are permitted which could impact their economic viability of their ranch operations. However, the permittees were consulted and helped developed the Proposed Action and no issues were raised about the proposed reductions having economic impact on their operations.
- Visual Resources – The area is managed under VRM Class II. The VRM II objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The continuation or reduction of grazing does not impact the characteristic landscape and meets the objective class. The removal of the fence also does not alter the characteristic landscape and also meets the class II objective.
- Wild Horses and Burros – These allotments are occasionally used by wild horses from the adjacent Fifteenmile Herd Management Area (HMA), but the allotments are not a part of the HMA. Neither the Proposed Action nor other alternatives would contribute to adverse impacts to wild horses.
- Lands with Wilderness Characteristics (LWC) – Two LWC areas are present within the Tatman Mountain Common (00639) and Snyder (00640) allotments (NI- WY-010-130 E, WY-010-130 D). Both areas were found to contain opportunities for naturalness, recreation, and solitude. The continuation of grazing and/or reduction of grazing does not alter these wilderness characteristics. Additionally, the removal of the fence also does not degrade or change wilderness characteristics.
- White-tail prairie dog, mountain plover, burrowing owl and the ferruginous hawk, are all Wyoming BLM sensitive species that might occur in these allotments, but have not been documented and are not sagebrush obligates and therefore not as sensitive to livestock grazing impacts on the sagebrush/bunchgrass community.
- Ground Water - Both of the allotments are located over the Tatman and Willwood Tertiary aged geologic formations. There are no identified issues in relation to groundwater, however it has been documented that increased amounts of vegetative litter and decreased amounts of bare ground provide for increased infiltration in the Vadose Zone, or soil profile above the water table. The water table in the allotment is consistently above the vadose zone and groundwater recharge is not a significant issue and not further analyzed. Analysis suggest there would not be a measurable amount of change to groundwater recharge if upland litter amounts and runoff conditions were changed according to the proposed action. The groundwater in the watershed was determined to not be directly linked to surface water because of high depths to the water table in the watersheds.

## 2 PROPOSED ACTION AND ALTERNATIVES

### 2.1 Alternatives Considered

The alternatives were developed based upon the current grazing permit, proposals from the applicants, and BLM Policy Instruction Memorandums: WY-IM-2000-020, WO-IM-2012-043, and WY-IM-2012-019. The alternatives were developed to address the grazing impacts on public lands within the allotments, to consider the permittee’s ranching resource goals and operations, and to provide the opportunity for specific comparisons on which the decision maker could base a decision. Table 1 outlines the alternatives.

Table 1. Alternatives considered for analysis

Alternative	Operator	Allotment	Number of Animals	Kind	Season of Use	%Public Land	Active AUMs	Suspended AUMs	Total Preference AUMs
<b>1: No Action*</b>	Coble	Tatman Mt. Comm.	165	Cattle	May 16 - Oct 15	100	830	400	1,230
	J Bar H	Tatman Mt. Comm.	256	Cattle	June 1 - Oct 31	76	976	0	976
		Snyder	150	Cattle	June 1 - Oct 31	82	617	0	617
<b>2: Proposed Action*</b>	Coble	Tatman-Snyder	50	Cattle	Aug 1 - Feb 28	100	348	882	1,230
	J Bar H	Tatman-Snyder	138	Cattle	Aug 1 - Feb 28	71	683	910	1,593
<b>3: No Grazing</b>	Coble	Tatman Mt. Comm.	0	N/A	N/A	N/A	0	0	0
	J Bar H	Tatman Mt. Comm.	0	N/A	N/A	N/A	0	0	0
		Snyder	0	N/A	N/A	N/A	0	0	0

\* See Appendix 1 for Additional Terms and Conditions to be applied to the grazing permits for each alternative

#### 2.1.1 Alternative 1: No Action

Under the No Action alternative grazing permits would be issued to Steve and Mike Coble and J Bar H Ranch Inc. for 10 years as outlined in Table 1. The permits would expire in 2024. There would not be changes made from current grazing use. The 2,423 Animal Unit Months (AUMs) would be permitted for grazing use by cattle during the late spring, summer, and fall months in the Tatman Mountain Common and Snyder Allotments. Because there is no functional fence between the allotments, and there is no intent to reconstruct the fence, the analysis of this alternative will be based on the two allotments being run in conjunction just as the management has existed in the past.

#### 2.1.2 Alternative 2: Proposed Action

Under the Proposed Action grazing permits would be issued to Steve and Mike Coble and J Bar H Ranch Inc. for 10 years as outline in Table 1. The permits would expire in 2024 and would account for 1,031 active public land AUMs for use by cattle (see Appendix 2 for stocking rate calculations).

The Tatman Mountain Common and Snyder allotments would be combined into one allotment. The current Allotment Management Plan (AMP) says, “The Snyder-Renner fence between the Tatman Mountain Common Allotment and the Snyder Allotment is not a high priority, as long as the permittees agree to run both allotments together as a large common allotment.” Combining the allotments administratively would coincide with the management that has occurred on the ground for at least the last 16 years, since the AMP was implemented. The combined allotment would be named the Tatman-Snyder allotment. Combining the allotments would result in the removal of the dilapidated fence so that wildlife and livestock movements would not be hindered.

Grazing use would be deferred from critical growing season to the dormant season, late summer through the winter months. The permits would incorporate a term and condition that would allow livestock numbers to vary during the season of use as long as the Active AUMs are not exceeded. Use of the current Tatman Mountain AMP would be discontinued. The Proposed Action would incorporate the objectives for upland vegetation, found in Appendix 3.

### **2.1.3 Alternative 3: No Grazing**

Under No Grazing alternative, no livestock grazing would be permitted on the Tatman Mountain Common or Snyder Allotments. The grazing permits would not be issued to the applicants. The grazing preference for the allotments would be removed from the Grass Creek RMP which would require an amendment of the RMP. This action does not meet the Purpose and Need, but is considered to provide a full range of alternatives in accordance with WO-IM-2000-022.

## **2.2 Alternatives Considered but not Analyzed in Detail**

- Permit grazing use during the same season as the previous permits, but reduce the Active AUMs to coincide with suitability and expected use criteria. This alternative was not considered further because the trend data in conjunction with 2013 S&G determination indicates that “even though stocking of the allotment has been well below permitted for more than a decade, the repeated critical growing season use has resulted in range conditions in decline.”
- Combine the Tatman Mountain Common and Snyder allotments into one allotment and permit grazing use in winter months only (Nov 15 – Feb 28) with reduction in AUMs for slopes but not water availability. This alternative was not considered further because cattle will make limited use of snow and travel farther from water sources during late fall through winter, but there is still a need for a water source. Stocking the allotment without considering distance to water would result in over utilization of areas preferred by livestock.
- Permit grazing use as outlined in the Proposed Action, but keep the fence between the existing allotments to use as a pasture fence and implement a pasture rest-rotation grazing system. This alternative was not considered because only one of the grazing permittees has preference on the Snyder Allotment and part of the fence that separates the two allotments is on private lands. The BLM cannot directly enforce fence maintenance on private land fences and at this point in time, consistent with the past, there is no interest from the land owner to build or maintain the fence.

### 3 AFFECTED ENVIRONMENT and ENVIRONMENTAL EFFECTS

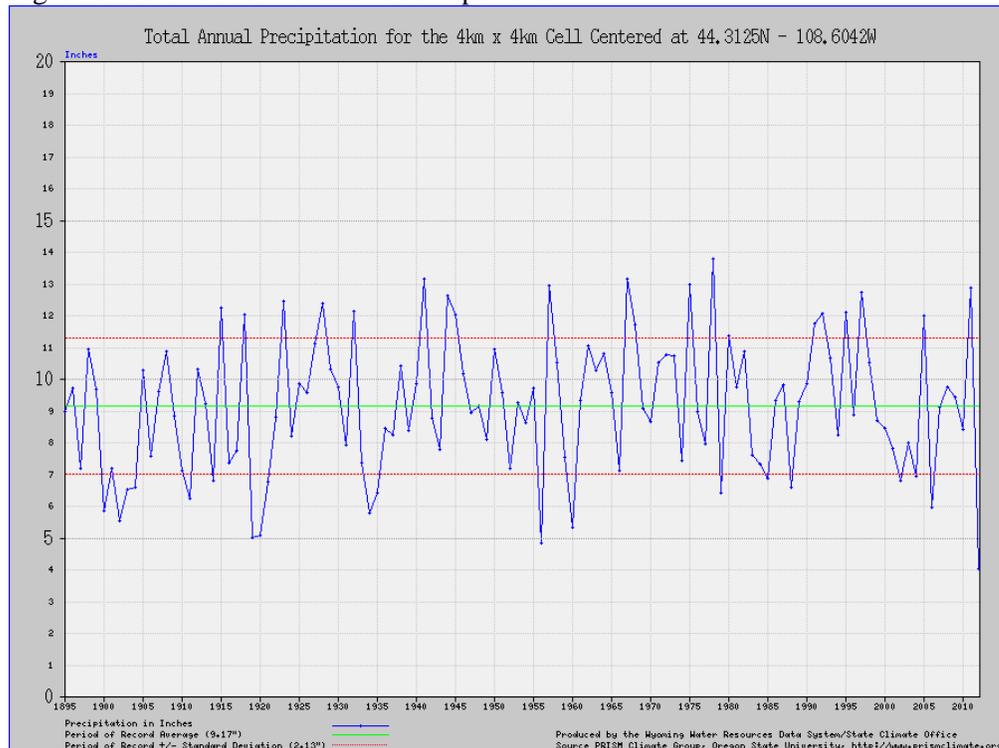
This chapter characterizes the resources and uses that have the potential to be affected by the proposed action, followed by a comparative analysis of the direct, indirect and cumulative impacts of the alternatives. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions.

#### 3.1 Introduction

##### 3.1.1 General Setting and Geographic Scope of the project area

The Tatman Mountain Common and Snyder allotments are adjacent to each other and lie on the border of Big Horn and Park counties. The allotments are generally north of Tatman Mountain with the southern portions of each spilling over the top of Tatman Mountain into the Fifteen-Mile drainage. The allotments are about 16 miles northeast of Meeteetse, Wyoming. The topography varies but is generally wide drainage bottoms amidst steep, badland type slopes that lead to flat benches of sagebrush steppe. Elevation varies from 4,600 feet near the Greybull River to 6,229 feet at the summit of Tatman Mountain. The northern reaches of the allotment are in the 5-9 inch precipitation zone while the upper reaches on Tatman Mountain fall within the 10-14 inch precipitation zone. The total annual precipitation was modeled for the center of the watershed using the PRISM climate model and the results from 1895-2010 averages are in Figure 1 below (PRISM, 2011). The overall average was modeled to be 9.1 inches annually.

Figure 1. Modeled Total Annual Precipitation



Using GIS soil mapping layers there is 18,700 acres of BLM administered public land and 4,119 acres of private and state lands within the Tatman Mountain Common. The Snyder allotment is comprised of 10,196 acres of public land and 2,240 acres of private and state lands using the aforementioned GIS.

## **3.2 Resources Carried Forward for Analysis**

### **3.2.1 Rangeland Resources/Upland Vegetation**

#### **3.2.1.1 Issue(s) Identified**

- How would the proposed action and other alternatives impact the vegetation's ability to meet Rangeland Health Standard 3 within the Tatman Mountain Common and Snyder allotments?

#### **3.2.1.2 Affected Environment**

The subject allotments are classified by the Grass Creek Resource Management Plan (1998) as class "T", Improve allotments. The objective is to improve resource conditions and productivity to enhance multiple use opportunities. There is an allotment management plan (AMP) that was developed for the 2 allotments. The AMP doesn't prescribe a grazing scheme but it does identify range conditions at the time of development (1998) at key areas within the allotments and it does identify resource objectives associated with data collected at the key areas.

Currently there are two grazing permits between the Tatman Mountain Common and Snyder allotments. Tatman Mountain Common is permitted as a common use allotment with the two permittees. The Snyder Allotment is permitted for use by only one of the permittees.

#### **Rangeland Management**

Livestock grazing in the area began in the late 1870s when the communities around Tatman Mountain were being settled (BLM 2009). Applications for grazing permits on the allotments date back to 1935. For the purpose of this analysis historic grazing use is being described as the period of time when livestock were initially introduced into the area, the late 1800's to 2011, when the last grazing use was made. Stocking rates and permitted AUMs on the Tatman Mountain Common and Snyder allotments have varied during their history. The following information depicts the most recent grazing permits:

The stocking rate for public lands in the Tatman Mountain Common Allotment (if run as a single allotment) would be 10.3 acres per animal unit month (AUM). This calculation is based upon 18,700 public land acres divided by 1,809 permitted AUMs and doesn't take into consideration range condition/range site or suitability criteria. The stocking rate for public lands in the Snyder Allotment (if run as a single allotment) would be 16.5 acres per an AUM. This calculation is based upon 10,196 public land acres divided by 619 permitted AUMs and doesn't take into consideration range condition/range site or suitability criteria. Because the allotments have been used in common the combined stocking rate would be 11.9 acres per an AUM (28,896 acres/2,428 permitted AUMs).

The grazing use on the allotments has been less than permitted from 2001 to 2011 (no use was permitted by the BLM in 2012 or 2013). Coble's permit (Auth No. 4901234) has averaged 678 AUMs per a year (82% of permitted) while J Bar H Ranch's permit (Auth No. 4912947) has averaged 307 AUMs per a year (19% of permitted). Combined there has been an average annual use of 985 AUMs. While use over the years has varied, the one consistency in the past management of the allotment is that critical growing season use occurs in every year of use with use starting May 16 and continuing until October 31.

#### **Tatman Mountain Allotment Management Plan**

The decision for the Tatman Mountain Allotment Management Plan (WY-018-EA8-83) was signed in 2000 and was developed to evaluate the existing situation and establish objectives. It also outlined monitoring efforts. The AMP did not change authorized grazing use or make provisions for future

management other than allowing current permitted use to continue and providing for the two allotments to be used as one.

Table 2 shows the objectives that were made in the AMP. Monitoring data from the Key Areas in 1998, 2009, and 2010 is also shown to see if objectives were met.

Table 2. AMP Data and Objectives

<b>Tatman Mountain Common Key Area</b>	<b>1998</b>	<b>2009/2010</b>	<b>AMP Stated OBJECTIVE</b>	<b>Objective MET?</b>
Range Condition Score	72	72	Maintain	YES
Ground Cover	72	78	Maintain	YES
Bluebunch Wheatgrass Frequency	72	63	Maintain	NO
Bluebunch Wheatgrass % Composition	38	34	46	NO
Needleandthread Frequency	34	53	41	YES
Needleandthread % composition	8	14	10	YES

<b>Snyder Key Area</b>	<b>1998</b>	<b>2010</b>	<b>AMP Stated OBJECTIVE</b>	<b>Objective MET?</b>
Range Condition Score	55	51	66	NO
Ground Cover	63	63	Maintain	YES
Bluebunch Wheatgrass Frequency	80	78	Maintain	NO
Bluebunch Wheatgrass % Composition	29	26	35	NO
Needleandthread Frequency	23	12	28	NO
Needleandthread % composition	4	2	5	NO

In the last 14 years, range conditions have declined or stayed static, depending on the site, even with an average use of 985 AUMs (41% of active AUMs). Specifically, the key species Bluebunch wheatgrass and Needle and Thread have decreased from 1995 to 2010 at the Tatman KA and Needle and Thread has declined at the Snyder KA

### **Upland Vegetation**

Vegetation within the allotments is variable and dependent upon the range site, the precipitation zone and the ecological state. The uplands are comprised of grasses such as bluebunch wheatgrass, needle and thread, prairie Junegrass, western wheatgrass, Indian ricegrass, Sandberg bluegrass, blue grama, Squirreltail, and upland sedges. Other vegetation observed includes Wyoming big sagebrush, Gardner's saltbush, bird's-foot trefoil, biological soil crusts, winterfat, phlox, scarlet globemallow, asters, lichens, plains pricklypear, spiny hopsage, greasewood, and multiple other perennial and annual forbs. Cheatgrass is also present on the allotment. This list is not all inclusive however the vegetation noted are those that have been documented through monitoring efforts or have been observed in varying degrees throughout the allotments.

Forage production data was collected at the key areas in 2009 to 2010. It was not collected at the other 6 sites during the assessments due to drought conditions in 2012. The Tatman KA had none to slight

departure while the Snyder KA had a slight to moderate departure from what is expected for annual production based on the Ecological Site Descriptions (ESDs) (NRCS 2005).

The ESDs show that 90% of the plant growth including reproduction functions in the 5-9” precipitation zones occurs during the period of April to about July 1 while 80% of the plant growth including reproduction functions in the 10-14” precipitation zone occurs about April 15 to July 15. Cool weather and moisture in September may produce some additional regrowth/green up of cool season plants which could continue to late October if weather conditions allow.

Vegetation monitoring efforts in the Tatman Mountain Common and Snyder allotments are summarized below in Table 3 at locations shown in Map 2. A more complete description by each site is available in the 2013 S&Gs. The table depicts findings from the most recent rangeland health assessment as well as what the Historic Climax Plant Community (HCPC) should be and the potential for the site to improve according to the Ecological Site Descriptions.

Table 3. Summarized Vegetation Monitoring and Current Conditions in the Tatman Mountain Common and Snyder Allotments

Allotment	Snyder				Tatman Mt. Comm.			
	463	Section 14	Snyder KA	461	496	Tatman KA	465	Reference
Ecological Site	Loamy 5-9”	Loamy 10-14”	Loamy 10-14”	Sandy 10-14”	Sandy 5-9”	Loamy 5-9”	Loamy 5-9”	Loamy 10-14”
Cover by Grass/likes	42%	66%	36%	61%	78%	57%	54%	76%
Cover by Forbs	17%	13%	3%	12%	6%	1%	31%	7%
Cover by Woody Spp.	10%	21%	61%	28%	14%	41%	15%	16%
Bare Ground	20%	12%	37%	22%	30%	22%	27%	8%
Rangeland Health Assessment	M-E	N-S	S-M	S-M	M-E	N-S	M-E	N-S
Biotic Integrity								
Current State	ARTR/Bare Ground Comm.	Perennial Grass/ARTR Comm.	transitioning from Perennial Grass/ARTR Comm. to ARTR/Bare	transitioning from Perennial Grass/ARTR Comm. to ARTR/Bare	CAFI/BOGR Sod	transitioning from HCPC to Perennial Grass/ARTR Comm.	BOGR Sod	At HCPC
HCPC	PSSP/PASM/HECO Comm.	PSSP/PASM Comm.	PSSP/PASM Comm.	HECO/ACHY Comm.	HECO/ACHY Comm.	PSSP/PASM/HECO Comm.	PSSP/PASM/HECO Comm.	PSSP/PASM Comm.
Potential for Site to Improve from Current State to a more desirable state solely utilizing grazing management	Low	High	High	High	Low	High	Low	High
Inputs to transition from current state to higher ecological state	Mechanical treatments, reseeding, followed by grazing rest and deferred grazing	Prescribed deferred or rotational grazing	Prescribed deferred or rotational grazing	Prescribed deferred or rotational grazing	Mechanical treatments followed by grazing rest and deferred grazing	Prescribed deferred or rotational grazing	Mechanical Treatments followed by grazing rest and deferred grazing	Maintian with proper grazing management
Suggested stocking rate based upon current state (acres/AUM)	10	3.3	5	5	20	6.25	20	2.5

PSSP=bluebunch wheatgrass PASM=western wheatgrass HECO=needle and thread ACHY=Indian ricegrass ARTR=big sagebrush CAFI=Threadleaf sedge BOGR=blue grama HCPC=Historic Climax Plant Community Comm=Community E=Extreme M-E=Moderate to Extreme M=Moderate S-M=Slight to Moderate N-S=None to Slight

The Biotic Integrity Rating for the sites is based on the 17 Indicators of Rangeland Health (Pellant et. al. 2005) and is the amount of departure from HCPC according to the reference sheet developed for each Ecological Site. The Reference Site is an example of a site at HCPC. It is functioning at climax with all components of the climax community present. The Section 14 site is near HCPC, but is lacking dominance by bluebunch wheatgrass. The Snyder Key Area (KA) and Site 461 have indicators showing a transition to a big sagebrush/Bare Ground Communities. If this transition continues a threshold would be crossed that would require large inputs to restore the sites. Sites 496, 465, and 463 have crossed thresholds and have transitioned into states that require large restoration inputs; these states no longer have the natural pathways to achieve a more desirable state. These sites are stable, but are not desirable or able to meet Rangeland Health Standards without additional inputs beyond grazing management.

**Rangeland Health Assessment/Determination-September 2013**

Rangeland Health Assessments are used by the Worland Field Office to determine if Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming are met. The Worland Field Office bases S&G determinations on field observations, Indicators of Rangeland Health, and monitoring. The sites assessed represent a majority of the vegetation types and ecological sites in the allotments. The ESDs are then used to determine what state the vegetation is in and if that state is meeting the requirements for healthy rangeland standards.

A Rangeland Health Assessment was performed in 2012 on the Tatman Mountain Common and Snyder allotments with a determination of Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming (S&Gs) signed in 2013. Table 4 shows the findings of the 2013 determination for Standard 3. Standard 3 states, “Upland vegetation on ecological sites consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.”

Table 4. Acres Meeting/Not Meeting Rangeland Health Standard 3  
Snyder Allotment

Acres Meeting Standard	4,626 (45.4%)
Acres NOT Meeting Standard	4,786 (46.9%)
Acres Mapped as Badlands	784 (7.7%)
Total Public Land Acres	10,196 (100%)

Tatman Mountain Common Allotment

Acres Meeting Standard	5,832 (31.2%)
Acres NOT Meeting Standard	10,723 (57.3%)
Acres Mapped as Roach Gulch Reservoir/Badlands	2,146 (11.5%)
Total Public Land Acres	18,700 (100%)

Combined

Acres Meeting Standard	10,458 (36.2%)
Acres NOT Meeting Standard	15,509 (53.7%)
Acres Mapped as Roach Gulch Reservoir/Badlands	2,930 (10.1%)
Total Public Land Acres	28,896 (100%)

Acres that were determined to NOT MEET the standard are those that have had a significant change or shift from the potential of the site and do not have an appropriate plant community capable of recovering or returning to a functional community without mechanical treatments, seedings, intensive grazing management, etc. These sites have little capability or probability of returning to a more desirable state.

These sites are typically the draws/drainages and the immediate slopes (of up to 25%) to the draws and drainages.

As it pertains to the acres that do meet the standard, these sites are in a dynamic equilibrium with the Historic Climax Plant Community. This means that these sites have appropriate pathways available to respond to proper grazing strategies, favorable environmental conditions, and environmental events such as wildfires. The sites have a vegetative community that is stable, intact, resistant to change, and provides for soil and watershed stability. These areas are the broad benches/flats above the drainages and draws or the steep ridges of the allotment that receive little or no disturbance.

Data gathered at the key areas (Trend) indicates that objectives are not being reached and in some cases the indicators show a decline in range condition and a shift from HCPC. While these key areas are in areas that are still meeting the standard there is evidence suggesting that under the current management the range conditions or attributes of range condition (frequency and % composition of key species) is not desirable.

### **3.2.1.3 Direct and Indirect Effects**

#### **Alternative 1: No Action**

The no action alternative would authorize grazing to occur on the Tatman Mountain Common and the Snyder allotments. The season of use would remain the same; season long grazing. Grazing would begin May 16 and continue through October 31. The grazing permits would authorize a maximum of 2,423 active federal AUMs for use by cattle season-long.

Grazing would remove primarily herbaceous growth in various areas of the allotment. These areas of livestock use are restricted to those areas that have available water sources, feed, and are not limited by topography-slope. These areas of use would provide the feed source for livestock. The vegetation within these areas would be utilized annually during the critical growing season. During the critical growing season range plants expend stored energy to initiate growth and to ultimately produce seed and as such, this period is the most critical to the life of the plants. The vegetative community would not be afforded the opportunity to initiate growth, maximize growth, and reproduce unabated by domestic livestock grazing in any year; there would be no deferred or rotational grazing plan to account for the needs of the range plants. Holechek et. al. indicate that the dormant period is the least critical period for grazing use while the most critical period is from floral initiation through seed development (2011).

The grazing under this alternative would occur on 14,428 acres of public land within the allotment. These are the amount of acres that are determined to be suitable/usable by livestock based upon slopes and distance to water (see Appendix 2). However, all acres would be allocated AUMs as if all acres were suitable for grazing. The remaining acres within the allotment may have vegetation that could provide vegetation for feed/AUM calculations. However, there is no water in those areas thus the stocking rate for this alternative is derived from only those areas of the allotment that has available water and topography that is suitable for grazing. The suitable acres (14,428) are comprised of various range sites in differing ecological states of rangeland health, in two precipitation zones, and with differing appropriate stocking rates (see table 3).

The acres within the allotment would be grazed at a stocking rate which was not determined by defining suitable acres of use or current range conditions. From a practical standpoint, in that there is not a functional fence between the two allotments; the stocking rate will be discussed as if the allotments are combined into one as that is how the allotments have been managed in the past. The stocking rate for the allotments, using all acres within the allotments without regard to whether acres are suitable or not, would

be  $28,896/2423 = 11.9$  A/AUM. The stocking rate based on suitable acres would be  $14428/2423 = 6.0$  A/AUM.

Repeated growing season use does not allow these desirable cool season grasses to produce enough reserves for maintenance and survival; therefore, range health has declined and would continue to decline. The sites that are transitioning from one state to another are the most vulnerable. Because the Snyder KA, the Tatman KA, and Site 461 exhibit indicators of transitioning they would decline and the biotic integrity of the sites would depart further from HCPC. This departure would result in more than 10,723 acres in the Tatman Mountain Common and 4,786 acres in the Snyder not meeting S&Gs. Also, the Section 14 and Reference sites (assessed sites that are at or near HCPC) could decline if the full 2,423 AUMs were utilized. An exact amount of acres that would not meet S&Gs in the future is unpredictable due to variances in the sites, their response to grazing pressure, and precipitation patterns; however, the amount of acres not meeting the standard would be expected to increase.

It can be determined that even though the stocking of the allotment has been well below permitted for more than a decade, the repeated critical growing season use has resulted in range conditions in decline. The management that has occurred on the allotment is season long-grazing begins in the critical growing season and continues to dormancy-there is no rest (recovery) period for desirable species under the current management. While some of the failing acres like those immediate to water and in the multiple drainages/draws of the allotment are or could be attributed to historic grazing, the repeated critical growing season use continues to contribute to the standard not being met.

### **Alternative 2: Proposed Action**

The proposed action would authorize grazing to occur on the Tatman-Snyder Allotment. Grazing would begin August 1 and continue through February 28. The grazing permits would authorize a maximum of 1,031 active federal AUMs for use by cattle under a deferred use grazing system.

Grazing would remove primarily herbaceous growth in various areas of the allotment. These areas of livestock use are restricted to those areas that have available water sources, feed, and are not limited by topography-slope. These areas of use would provide the feed source for livestock. The vegetation within these areas would not be impacted by grazing until post seed ripe. The vegetative community would be afforded the opportunity to initiate growth, maximize growth, and reproduce unabated by domestic livestock grazing. Grazing would occur when the vegetative community is least likely to be affected by livestock grazing. Holechek et. al. indicate that the dormant period is the least critical period for grazing use while the most critical period is from floral initiation through seed development (2011).

The proposed grazing would occur on 14,428 acres of public land within the allotment. These are the amount of acres that are determined to be suitable/usable by livestock based upon slopes and distance to water (see Appendix 2). The remaining acres within the allotment may have vegetation that could provide vegetation for feed/AUM calculations; however, there is no water in those areas thus the stocking rate for this alternative is derived from only those areas of the allotment that has available water and topography that is suitable for grazing. The suitable acres (14,428) are comprised of various range sites in differing ecological states of rangeland health, in two precipitation zones, and with differing appropriate stocking rates (see table 3).

The acres within the allotment would be grazed at appropriate stocking rate which was determined by defining suitable acres of use, current range conditions, and consistent with that prescribed within the ESDs. The stocking rate for the suitable acres would be  $14,428$  suitable acres/ $1,031$  AUMs =  $14$  A/AUM while as a whole the allotment stocking rate would be  $28,896$  total acres/ $1,031$  AUMs =  $28$  A/AUM.

The proposed action would stock the allotment with 57% fewer Animal Unit Months than the no action alternative as a direct result of a suitability analysis and current range condition while the no action alternative considers neither and continues with historic permitted AUMs. In addition to the reduction in AUMs, the grazing strategy would be designed to accommodate the growth requirements of the desired species (key species) through a deferred grazing scheme while the no action alternative would continue season-long grazing.

Combining the decreased utilization with the change in season would at a minimum maintain the current vegetative states. It would be expected that the acres not meeting would remain close to 15,509 and the acres meeting would remain close to 10,458. The maintenance of these acres is because the sites with Moderate to Extreme departure (463,496, and 465) would be maintained in their current degraded state. According to the ESDs these sites have a low potential to transition to HCPC. However, change in use and season would serve to prescribe grazing in a way that the Tatman KA, Snyder KA, and Site 461 would be allowed to recover towards HCPC. Because these sites were considered meeting the standards at the 2013 determination an increase in acres meeting standards would not happen and because these sites are transitioning they are the most vulnerable, but they are also the sites where improvement would be seen. Improvement would include increased cover by cool season perennial grasses, which are desirable, and decreases in the amount of bare ground. The site that is at HCPC (Reference) would also be maintained. This site is at its potential and the Proposed Action would support it staying in that condition. The Section 14 site would at a minimum be maintained and would likely see improvement from implementation of the Proposed Action. The ESD shows that prescribed grazing would allow improvement towards HCPC.

For the reasons mentioned above, specifically the dormant season use and reduction in AUMs, positive impacts to Rangeland Health Standard 3 would happen because the vegetative communities would be more resilient to disturbance and would either increase or maintain their diversity.

### **Alternative 3: No Grazing**

The No Grazing alternative would remove livestock grazing from the Tatman Mountain Common and Snyder allotments. No AUMs would be authorized and the allotments would not be stocked. This alternative would require an amendment to the RMP to remove the allotments from being open for grazing.

The No Grazing alternative does not meet the need of the action. However, it would meet the purpose by removing the grazing disturbance and providing indefinite rest from livestock use so that rangeland health may improve. No vegetation would be removed by livestock. Timing is also not important because there would be no livestock use permitted. This would favor cool season grasses, especially those preferred by livestock, such as needle and thread. Because cool season grasses would be favored the sites that are transitioning would improve towards HCPC. The vegetative communities not meeting standards would remain static, in their current state. This is because those communities would need mechanical treatment to improve and have a low potential to transition back to HCPC as was discussed under the Proposed Action. The two sites that were at or near HCPC would also be maintained under this alternative. This alternative would not change the amounts of acres meeting/not meeting rangeland health standards. This alternative would help the transitioning sites to improve towards HCPC because they would not be subject to disturbance outside of natural occurrences. The effects to rangeland health would be similar to the Proposed Action with the added reassurance of no vegetation being removed by livestock.

#### **3.2.1.4 Cumulative Effects**

No reasonably foreseeable future actions have been identified that would affect upland vegetative resources within the Tatman Mountain Common and Snyder allotments. The affects from past and current grazing actions were discussed in the affected environment. Because no foreseeable future

actions or other present actions have been identified there would be no cumulative effects to upland vegetation from the alternatives analyzed in this EA.

### **3.2.1.5 Wildlife**

#### **3.2.1.6 Issue(s) Identified**

- How would the stocking levels, season of use, and utilization levels addressed in the proposed action and other alternatives, impact vegetation and plant community characteristics important to sagebrush obligate species?

#### **3.2.1.7 Affected Environment**

The Tatman Mountain Common and Snyder allotments provide habitat for several sagebrush obligate species, some seasonally and some year long. Mule deer and pronghorn antelope dependence is primarily in the winter. The southern 1/5 of both allotments, around Tatman Mountain, is mapped as crucial mule deer winter range, but both wintering mule deer and antelope could be found dispersed throughout both allotments. Avian sagebrush obligates like the sage thrasher, sage and Brewer's sparrow, that migrate south every winter, depend on these plant communities in the spring and summer for breeding, nesting, and foraging habitats. The greater sage-grouse depends on the sagebrush plant community all year long for breeding, nesting, brood rearing and wintering habitats.

The primary habitat type or plant community within these allotments is the sagebrush/bunchgrass community. And this plant community provides the necessary habitat components like forage and cover for all life cycle needs of the sagebrush obligates mentioned above. The Historic Climax Plant Community (HCPC) for these sagebrush communities typically would have >10% sagebrush canopy cover with a healthy understory composition of herbaceous species, (see Reference site in Table 3. If all plant communities within both allotments were at HCPC, approximately 90% of the combined allotments acreage would be healthy sagebrush plant communities meeting Rangeland Health Standards #3 and #4. Presently only 40% of these communities are meeting these standards (see Table 3&4 above), and this is displayed as the "Met" polygons on Map 3. These sagebrush/bunchgrass communities are important to wintering mule deer, antelope, and wintering and nesting sage grouse, as well as other sagebrush obligate passerines like the sage thrasher, sage sparrow, and Brewer's sparrow. Mule deer, antelope and sage-grouse depend on the sagebrush plants for winter forage and the green herbaceous plants in spring and early summer. The avian sagebrush obligates depend on both the sagebrush and standing herbaceous residue for nesting cover.

#### **Threatened, Endangered and BLM Sensitive Species**

The sagebrush/bunchgrass communities mentioned above provides breeding, nesting, brood rearing and wintering habitat for sage-grouse. The western half of the Tatman Mountain Common allotment and all of the Snyder allotment, approximately 19,600 BLM acres, are within the Core area, (see Map 5.Wildlife Resources Map). There is one known occupied sage-grouse lek, first identified in 2004, just east of the Fenton Pass road in the western portion of the Tatman Mountain Common allotment. Also in this vicinity and south towards Tatman Mountain, a sage-grouse winter concentration area has been identified. These wintering habitats, and likely also nesting habitats, primarily in the center of both the Tatman Mountain Common and Snyder allotments, overlap with acreage classified as meeting Standards #3 and #4, (see Map 3 & 5). Nesting and early brood rearing activities are expected to be occurring to some degree, although they have not been documented. Male sage-grouse attendance at the Fenton Pass lek averaged approximately 14 males from 2004 through 2012. Other sagebrush obligate bird species, like sage and Brewers sparrows, and sage thrashers, also likely inhabit and depend upon the sagebrush habitats in this allotment. The sage-grouse, sage thrasher, sage and Brewers sparrow; are all Wyoming BLM sensitive species. There are no known threatened or endangered wildlife species within these allotments.

### **3.2.1.8 Direct and Indirect Effects**

#### **Alternative 1: No Action**

Under the no action alternative the terms of the existing grazing permit would be continued with 2,423 AUMs of cattle use from May 16 – Oct 31 and a stocking rate of 11.9 acres/AUM. Under this alternative growing season grazing at permitted use levels would result in continued ecological decline of the 15,509 acres of degraded sagebrush/bunchgrass community within both Snyder and Tatman allotments that have been identified as not meeting Standards #3 and #4. Degradation would continue due to continued growing season use or hot season cattle grazing in the lowlands and drainage bottoms closer to the water sources where unsustainable use levels would continue to result in little to no herbaceous residue for wildlife forage and nest cover needs, or litter for soil moisture retention. As a result, grazing would be authorized while the plants are actively growing, the frequency and composition of key bunchgrass species would continue to decline as well, also decreasing residue, litter and the sustainability of the sagebrush/bunchgrass community. This would render 15,509 acres or 60% of degraded sagebrush/bunchgrass communities unsuitable for sagebrush obligates under this alternative.

The 10,458 acres of sagebrush/bunchgrass community within both allotments that have been identified as meeting Standards #3 and #4 are expected to slowly degrade over time under this alternative. These sagebrush communities are located on the broad benches/flats above the drainages, or on the steep ridges of the allotments that typically receive less livestock grazing. While these plant communities are still meeting the standard there is evidence suggesting that under this alternative the frequency and composition of key bunchgrass species is not desirable, (see Table 2). Unlike those degraded sagebrush communities in the lowlands not meeting standards, these communities do not typically receive livestock concentrations, and therefore use levels are typically lower and should provide for adequate amounts of herbaceous residue and litter for sagebrush obligate forage, nest cover, and plant community maintenance. This condition would be until declines in frequency and composition of key bunchgrass species start to occur due to prolonged growing season grazing. These changes will likely occur first in those areas within the broad benches/flats above the drainages that are closest to water. In addition to the decline in frequency and composition of key bunchgrass species subsequent decreases in herbaceous residue, litter and plant community sustainability would also be expected. This eventual degradation would render some, if not all, of the 10,458 acres of sagebrush/bunchgrass communities presently suitable for sagebrush obligates, unsuitable.

#### **Alternative 2: Proposed Action**

Under the Proposed Action alternative the terms of the existing grazing permit would authorize 1,031 AUMs of cattle use from Aug 1 – Feb 28 and a stocking rate of 28.2 acres/AUM. The proposed change from growing season to dormant season use and the change in stocking rate from 11.9 acres/AUM to 28.2 acres/AUM would result in maintenance of the 15,509 acres of sagebrush/bunchgrass community within both allotments that have been identified as not meeting Standards #3 and #4, and enhancement of the 10,458 acres of sagebrush/bunchgrass community identified as meeting standards.

The sagebrush communities meeting standards and the degraded sagebrush communities not meeting standards would see some level of improvement from the Proposed Action alternative; primarily because of the change from growing season use to dormant season use, which would result in better cattle distribution and decreased use levels in the acreage not meeting standards, or lowlands and drainage bottoms closer to the water sources. The dormant season grazing would not result in decreases in frequency and composition of key bunchgrass species like the repeated growing season use in the No Action alternative. Both of these changes will result in increased levels of residue and litter, important to sagebrush obligates and the sagebrush communities they depend on.

The Proposed Action would provide increased residue and litter, therefore forage and cover for sagebrush obligates; however the unsuitability of 15,509 acres of degraded sagebrush/bunchgrass communities for sagebrush obligates would be expected to be maintained due to the state of transition the communities are in. The sagebrush/bunchgrass communities within both allotments meeting standards would be enhanced or improved, because these communities have not transitioned to a state where they are not able to respond to changes in grazing management. Some of these sagebrush communities are within a transitional state where they still retain the soil and vegetative components necessary to respond to the decreased herbaceous utilization and the removal of growing season use, and will show increases in herbaceous production, residue, litter, frequency, and composition of key bunchgrass species and would be expected to transition towards their historic climax plant community, (see Table 3 reference site HCPC). This improvement would provide increased forage and cover necessary for wildlife, and residue and litter for sagebrush/bunchgrass plant community maintenance. Compared to the No Action alternative, this alternative would maintain the acres not meeting standards with anticipated increases in residue and litter, and enhance the habitat suitability of the acres meeting Standards to the benefit of sagebrush obligates.

### **Alternative 3: No Grazing**

Under this alternative there would be no livestock grazing in the Tatman and Snyder allotments. In the absence of livestock grazing, each year's annual herbaceous production within the sagebrush/bunchgrass communities would be available for wildlife forage and cover needs as well as for the maintenance of the sagebrush plant community. For the 15,509 acres of sagebrush/bunchgrass community within both allotments identified as not meeting Standards #3 and #4, this would still likely result in the maintenance of these communities for the same reason mentioned in the proposed action analysis. This would provide increased residue and litter, and forage and cover for wildlife, but this alone would not provide for a transition back to a sagebrush community meeting standards. Unlike the 10,458 acres of sagebrush/bunchgrass community within a transitional state that still retains the necessary soil and vegetative components and would be able to respond to the decreases in herbaceous utilization and growing season use and would show increases in herbaceous production, residue, litter, and frequency and composition of key bunchgrass species until they eventually transition back to their HCPC.

#### **3.2.1.9 Cumulative Effects**

There were no cumulative effects to wildlife identified beyond the historic and proposed livestock grazing impacts considered and analyzed within the alternatives impact analysis.

### **3.2.2 Cultural**

#### **3.2.2.1 Issue(s) Identified**

- How would renewal of the grazing permit affect cultural resources eligible or unevaluated for the NRHP?

#### **3.2.2.2 Affected Environment**

The area of potential effect (APE) was defined to include acres contained within the Tatman Mountain Common Allotment and Snyder Allotment; 28,896 acres of public land and 6,359 acres of State and private land. Following policy provided in Instruction Memorandum (IM) WO-99-039, IM WY-99-020, BLM Manual 8100 series, and Wyoming State Protocol Agreement between the BLM and the SHPO (State Protocol) a literature review was conducted of the APE using State Historic Preservation Office (SHPO) and BLM records (BLM Cultural Project #010-2014-039). Results of the file search indicate approximately 2900 acres, or 8.4%, of the APE have been inventoried for cultural resources at the class III level. Those surveys recorded fifty (50) cultural resource sites. Five of the sites are eligible for the National Register of Historic Places (NRHP), one is unevaluated, and the remaining sites are not eligible. Typical for the region, the site types recorded include prehistoric open camp sites and lithic scatters, a

prehistoric cairn, a historic irrigation canal, and historic debris scatters. The current site density for the allotments is 1 site per 58 acres.

### **3.2.2.3 Direct and Indirect Effects**

#### **Alternative 1: No Action**

Per the State Protocol at Appendix B.27, renewal of grazing permits with no change in season of use or type of livestock is exempt from class III inventory. A literature search conducted of APE identified no historic properties within known livestock concentration areas. In regards to unidentified historic properties, there is a direct relationship between the rangeland health and potential effects to cultural resources (BLM 2006). An exact amount of acres that would not meet S&Gs in the future is unpredictable but more acres than currently not meeting standards would be expected under alternative 1 given no changes would be made from current grazing use.

#### **Alternative 2: Proposed Action**

Under current policy when there will be significant changes in the grazing permit a review of cultural records can be used to identify affects to known historic properties (resources eligible or unevaluated for the NRHP). Results of the file search indicate that the Tatman Mountain Common and Snyder Allotments contain six historic properties (cultural resource sites eligible or unevaluated for the NRHP). Consultation was conducted with the State Historic Preservation Officer (SHPO) under the State Protocol (BLM Cultural Project #010-2014-039).

Research indicates affects to historic properties are most probable in high use areas where livestock congregate (Osborn et al 1987). Concentration areas include water sources and sheltered areas, such as cliff faces and rockshelters, with a southern exposure in allotments used during the winter months. Within concentration areas trampling could modify a site assemblage through breakage, chipping, and /or displacement (Nielsen 1991). Outside concentration areas, livestock are dispersed and it can be predicted that impacts will be surficial or absent (BLM 1999).

Two of the six known historic properties are located within one mile of a water source (48PA1180 and 48PA1182). The site forms indicate the sites are in fair to good condition. In addition, current aerial photos and rangeland monitoring indicate neither trailing or livestock concentrations occur within the site boundaries. Under current policy no additional analysis of known cultural resource sites is required.

In regards to unidentified historic properties, there is a direct relationship between the rangeland health and potential effects to cultural resources (BLM 2006). Provided rangelands remain in satisfactory condition and are not overgrazed, it is anticipated dispersed livestock grazing outside concentration areas will have no adverse effect on historic properties. Rangeland deterioration could constitute a viable threat to historic properties. Existing range improvements projects are considered an existing disturbance. After a determination by a cultural resource specialist, undertakings within previously disturbed areas are generally authorized to proceed without additional class III inventory (State Protocol IV.D). Any and all future range development projects within the allotment will comply with the State Protocol, are subject to relevant cultural investigations prior to permit issuance, and will be analyzed under a separate and site specific EA.

Alternative 2 will have no effect on historic properties. No known historic properties were identified within livestock concentration areas and the changes to the permit are designed to improve rangeland health. Because livestock grazing is a dynamic ongoing process, cultural resource specialists, in conjunction with BLM range management and the permittees, will periodically monitor and inspect heavy use areas and cultural resource sites following current policy (Grass Creek RMP and BLM Manual 8100

series). Any adverse effects discovered will be mitigated in accordance with the State Protocol. Standard cultural stipulations will be added to the terms and conditions of the grazing permit.

**Alternative 3: No Grazing**

Under the No Grazing Alternative, the proposed grazing allotment renewal would not occur. A review of the historical records on file in the Worland Field Office indicates that both the Tatman Mountain Common Allotment and Snyder Allotment, are not eligible for the National Register of Historic Places (36CFR§60.4(a) and (b)). Under this alternative there would be no direct or indirect impact to historic properties.

**3.2.2.4 Cumulative Effects**

Since there would be no direct or indirect effects on known historic properties, there can be no cumulative effects.

**3.2.3 Hydrology/Watershed**

**3.2.3.1 Issue(s) Identified**

- How would a change in the grazing permits impact the hydrologic conditions as related to the 17 Indicators of Rangeland Health in the allotments?
- What would be the impact to water quality, in the form of sedimentation and fecal coliform, from runoff in the allotment?

**3.2.3.2 Affected Environment**

**Surface Water/Watershed**

Within the Tatman Mountain and Snyder allotments there are five different level #6 sub-watersheds that are identified by the United States Geological Survey (USGS) by name and Hydrologic Units Codes or (HUC) (Table 5). The sub-watershed with the most affected acres is the Greybull River-Fenton Draw sub-watershed consisting of 56 % of the total sub-watershed. The other sub-watersheds within the allotments in order of amount of acreages are Greybull River-Willow Creek consisting of 39% of the sub-watershed, Upper Fifteenmile Creek-Big Draw 7.7%, Upper Fifteenmile Creek-Badger Creek 3.6%, and a very minor portion of the Greybull River-Blackstone Gulch 0.1%.

Table 5. Sub-Watersheds of the Tatman Mountain Common and Snyder Allotments

<b>Watershed (HUC) Level #6</b>	<b>Acres (mi<sup>2</sup>)</b>	<b>Acres (mi<sup>2</sup>) Within Both Allotments</b>	<b>Tatman Mtn Common</b>	<b>Snyder Allotment</b>	<b>% of Acres of Watershed within the Allotment</b>
<b>Greybull River-Fenton Draw(100800090402)</b>	40331 (63.0)	22532 (35.2) 13,206	13,206 (20.6)	9326 (14.6)	56
<b>Greybull River-Willow Creek (100800071002)</b>	19532 (30.5)	7465 (11.7)	7465 (11.7)	0	39
<b>Greybull River-Blackstone Gulch(100800090401)</b>	39125 (61.1)	62 (0.1)	0	62 (0.1)	0.1
<b>Upper Fifteenmile Creek-Big Draw (100800071003)</b>	34827 (54.4)	2681 (4.2)	1079 (1.7)	1602 (2.5)	7.7
<b>Upper Fifteenmile Creek-Badger Creek (100800071002)</b>	36697 (57.3)	1309 (2.1)	0	1309 (2.1)	3.6

The allotment is situated along geologic outcrops of the Tertiary-Eocene Willwood and Fort Union formations that form a watershed divide between Fifteen Mile Creek to the south and the Greybull River to the north (Map 6). The watersheds are divided by Tatman Mountain that trends in an east-west direction that is the highest point in the allotments. The surface water flow regime for the Greybull River sub-watersheds in the allotment consists of the main drainages of MacKay Gulch, Roach Gulch, and Fenton Draw. These drainages on the Greybull River northern side of the allotment all flow in a northern direction through the allotment. These drainages are intersected by canals and ditches on the northern allotment boundary these drainages confluence with the Greybull River (Watershed Map 5). In the Upper Fifteen Mile Creek sub-watersheds there are two unnamed ephemeral channels originating from the southern slope of Tatman Mountain. These drainages have gradients greater than 10 percent, trend in a southern direction toward the North Fork of Fifteen Mile Creek, and originate from badland or dominant rock outcrop areas with steep slopes.

Due to the saline upland vegetation community, and wide range of varying topography with steep slopes near the vicinity of Tatman Mountain, there is a naturally high amount of sediment that is generated and transported in association with storm events in the watershed. When functioning, the 14 reservoirs as mentioned in section 3.1.2.2 capture sediment that is delivered from impounded drainages within the allotments. When reservoirs are not functioning, they often deliver historically trapped sediment and newly generated sediment via active head cuts in channels. The list of functioning and non-functioning reservoirs in the allotment is found in the Standards for Rangeland Health Assessment for Tatman/Snyder allotments (BLM, 2013).

**Water Quality**

The main drainages as discussed above are considered as WYDEQ Class 3B waters. Class 3 waters are waters, other than those designated as Class 1, that are intermittent, ephemeral, or isolated waters and because of natural habitat conditions, do not support nor have the potential to support fish populations or spawning. Uses designated on Class 3 waters include aquatic life other than fish, recreation, wildlife, industry, agriculture and scenic value. Class 3B waters are tributary waters including adjacent wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable. Class 3B waters are intermittent and ephemeral streams with sufficient hydrology to normally support and sustain communities of aquatic life including invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage of their life cycles. In general, 3B waters are characterized by infrequent linear wetland occurrences or impoundments within or adjacent to the stream channel over its entire length.

Table 6. Wyoming DEQ Surface Water Beneficial Use Classification

<b>Surface Water Classes</b>	<b>Drinking Water</b>	<b>Game Fish</b>	<b>Non-Game Fish</b>	<b>Fish Consumption</b>	<b>Other Aquatic Life</b>	<b>Recreation</b>	<b>Wildlife</b>	<b>Agriculture</b>	<b>Industry</b>	<b>Scenic Value</b>
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

### **3.2.3.3 Direct and Indirect Effects**

#### **Alternative 1: No Action**

##### **Surface Water**

The impact to the surface water as a result of the no action alternative is linked to the upland hydrologic indicators that have been presented in section 3.1.2.2. The continued permitted grazing on upland vegetation has an indirect impact to the amount and quality of surface water in the allotment. The key indicators of surface water runoff in ephemeral watersheds such as those in these allotments is linked to the amount of rills, water flow patterns, bare ground, and other features that were analyzed in the rangeland health assessments. Under this alternative the hydrologic and soil indicators would remain in their current conditions that have been rated and identified in the rangeland health determinations (BLM 2013) or trend to a further departure from reference conditions. The hydrologic indicators of areas that have none to slight could express a slight to moderate departure in time.

Another indicator of watershed health is the channel geometry of the main drainages. Deeply entrenched drainages typically indicate watershed instability, where excessive runoff and stream energy are dissipated. The entrenchment ratio and channel geometry of main channels such as Fenton Draw, as identified in the BLM 2012 Standards and Guides hydrology section, would continue to entrench further and remove runoff at current conditions. The watershed health and channel conditions would remain unchanged. The infiltration rates from upland areas would remain unchanged from current conditions.

##### **Water Quality**

This alternative would provide incentive to maintain existing and functioning reservoirs in their current condition to meet the water needs of the permitted grazing. The reservoirs that are functioning would continue to capture sediment and the current sedimentation rates would be reduced or remain the same. The amount of sediment delivered from runoff and the fecal coliform from grazing activity would remain in their current conditions. These impacts have not historically been considered to be a water quality issue by the Wyoming Department of Environmental Quality; however this alternative would not change the currently occurring levels of sedimentation and coliform delivery downstream of the allotment. The Class 3B designated beneficial uses would continue to be met under all alternatives.

#### **Alternative 2: Proposed Action**

##### **Surface Water**

The continued permitted grazing on upland vegetation has an indirect impact to the amount and quality of surface water in the allotment. The grazing of upland vegetation and the associated rangeland health conditions, that have recently been assessed, are a key indirect indicator of the surface water and watershed conditions of the allotment.

Under the proposed action alternative the soil and hydrologic conditions as reflected in the rangeland health attributes of *Soil and Site Stability* and *Hydrologic Function* would continue the slow, steady improvement discussed above. The key indicators of surface water runoff in ephemeral watersheds such as those in these allotments is linked to the amount of rills, water flow patterns, bare ground, and other features that were analyzed in the rangeland health assessment (BLM 2013). Under this alternative the hydrologic indicators would remain in their current conditions or return to reference conditions if vegetation and soil parameters improve as well. The end result, when compared to the no action alternative, would provide for increased retention of moisture in upland areas and reduced runoff volumes originating from the allotment.

The channel geometry is another identified indicator of watershed health. Under this alternative channel geometry of main drainages such as Fenton Draw, could potentially stabilize and capture sediment if upland conditions from areas not meeting rangeland health standards improve from reduced grazing pressure. This alternative when compared to the no action alternative would provide have an increased potential to achieve stable channel geometry.

### **Water Quality**

This alternative would provide incentive to maintain existing and functioning reservoirs in their current condition to meet the water needs from the permitted grazing. The reservoirs that are functioning would continue to capture sediment and the current sedimentation rates would be reduced or remain the same. The amount of sediment delivered from runoff and the fecal coliform from grazing activity would be reduced from their current conditions. These impacts have not historically been considered to be a water quality issue by the Wyoming Department of Environmental Quality; however this alternative would potentially reduce the currently occurring levels of sedimentation and coliform delivery downstream of the allotment. The amount of fecal coliform delivered into drainages would be reduced if less AUM's are used on an annual basis.

### **Alternative 3: No Grazing**

#### **Surface Water**

The no grazing alternative would remove the permitted grazing on upland vegetation. Historic grazing has had an indirect impact to the amount and quality of surface water in the allotment and also is a key land use that has led to the current watershed conditions. The amount, duration, and intensity are key indirect indicators of the surface water and watershed conditions of the allotment.

The soil and hydrologic conditions as reflected in the rangeland health attributes of *Soil and Site Stability* and *Hydrologic Function* are anticipated to improve somewhat more rapidly under this alternative when compared to the proposed action. Under this alternative there would be expected increases in vegetation cover, reduction in the amount and distribution of bare ground; however the duration or time frame form improvement could take several decades for recovery from areas that are within the reference ecological state. Other areas in the allotment that are non-meeting rangeland health standards and their associated runoff rates and volumes would remain unchanged as a result

### **Water Quality**

Under the no grazing alternative, the reservoirs in the allotment would likely not receive maintenance from the grazing operators. There would be no incentive to maintain existing functioning reservoirs that are currently capturing sediment and surface water runoff from various drainages within the allotments. The reservoirs would convert into a non-functioning condition and release previously captured sediment into drainages at an accelerated rate.

The amount of sediment delivered from runoff and the fecal coliform from grazing activity would be reduced from their current conditions. The reductions would be a greater level when compared to the proposed action. Overall, these impacts have not historically been considered to be a water quality issue by the Wyoming Department of Environmental Quality; however this alternative would potentially reduce the currently occurring levels of sedimentation and coliform delivery downstream of the allotment. The amount of fecal coliform delivered into drainages would be reduced if less AUM's are used on an annual basis. The permitted grazing would be eliminated and any potential delivery of fecal coliform into drainages in the allotment would be eliminated. The downstream drainages would have a reduction of delivered sediment and fecal coliforms following runoff events in the allotment.

### 3.2.3.4 Cumulative Effects

There would be no additional effects to the watershed, surface water, or water quality as a result of any of the alternatives.

## 3.2.4 Soils

### 3.2.4.1 Issue(s) Identified

- How would the Proposed Action and other alternatives impact Rangeland Health Standard 1, specifically the soil and site stability within the Tatman Mountain Common and Snyder allotments?

### 3.2.4.2 Affected Environment

The soils reflect the high desert environment in which they formed. They are highly variable, reflecting differences in parent material (shale, sandstone and/or mixed alluvium), position on the landscape, elevation, slope and aspect. The Tatman Mountain Common and Snyder allotments are in the Lower Greybull River and Upper Fifteenmile Creek watersheds which are characterized by rolling hills, ridges and escarpments that are dissected by ephemeral drainages. Soil depth ranges from less than 10 to over 60 inches. Sandstone and soft shale bedrock are common below the substratum. The soils typically have a light brown surface layer. Reddish hues, visible on satellite imagery, are exposed portions of the Willwood formation which makes up much of the ‘badland’ landform typical of the allotments.

Soil textures are varied ranging from course sandy loams to fine sandy loams, and clay loams to sandy clay loams and silty clay loams. In many locations, clay content, calcium carbonate and sodium increases with depth being expressed as argillic, calcic, natrid and/or natriargid horizons. Slopes range from 0 to 60 percent.

Based on NRCS spatial data, these allotments fall within the 5 to 9 inch and 10 to 14 inch precipitation zones. Soil survey data supports this delineation.

Based on available soil survey data, the dominant ecological sites found in the in the allotment are listed below:

Loamy 5-9 inch pz.	R032XY322WY
Shallow Loamy 5-9 inch pz.	R032XY162WY
Saline Upland 5-9 in. pz.	R032XY144WY
Shale 5-9inch pz.	R032XY154WY
Sandy 5-9inch pz.	R032XY150WY
Shallow Sandy 5-9inch pz.	R032XY166WY
Gravelly 5-9 inch pz.	R032XY112WY
Loamy 10-14 inch pz.	R032XY322WY
Shallow Loamy 10-14 inch pz.	R032XY362WY
Saline Upland 10-14 in. pz.	R032XY344WY
Sandy 10-14 inch pz.	R032XY350WY
Shallow Sandy 10-14 inch pz.	R032XY366WY
Clayey 10-14 inch pz.	R032XY362WY
Shallow Clayey 10-14 inch pz.	R032XY304WY

Eight rangeland health assessments utilizing the methodology described in *Interpreting Indicators of Rangeland Health, Technical Reference 1734-6* were performed in the evaluation of these two allotments. They were conducted at key area locations, representative site locations and reference areas. Table 4 depicts the acres that were classified as meeting or not meeting Rangeland Health Standard 3. These

figures also apply for Rangeland Health Standard 1. Standard 1 states, “Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.” The 2013 determination of S&Gs says, “While this standard is being met on the alluvial terrace remnants, referred to as benchtops throughout this analysis, it is decidedly not being met on the broad drainageways (bottomlands) and the low terrace landforms immediately adjacent to the drainageways. In addition, field data indicates steep hills, narrow ridges and escarpments dissected by narrow ephemeral drainages marginally meet Standard 1.” A total of 15,509 acres were found to not meet Standard 1 between the allotments per the 2013 determination. The determination gives the rationale for its findings so further rationale will not be addressed within this EA. Table 7 depicts the ratings given for the Soil and Site Stability attribute of Rangeland Health at each of the sites assessed.

Table 7. Soil and Site Stability Ratings

Allotment	Snyder				Tatman Mt. Comm.			
	463	Section 14	Snyder KA	461	496	Tatman KA	465	Reference
Ecological Site	Loamy 5-9"	Loamy 10-14"	Loamy 10-14"	Sandy 10-14"	Sandy 5-9"	Loamy 5-9"	Loamy 5-9"	Loamy 10-14"
Rangeland Health Assessment Soil and Site Stability Rating	M-E	N-S	S-M	S-M	M	N-S	M	N-S

E=Extreme M-E=Moderate to Extreme M=Moderate S-M=Slight to Moderate N-S=None to Slight

### 3.2.4.3 Direct and Indirect Effects

#### Alternative 1: No Action

This alternative would authorize 2,423 AUMs during the growing season. Livestock grazing removes vegetation that would eventually become litter that helps to stabilize soils from the effects of erosion. If overuse occurs the amount of bare ground would increase and the amount of cover by plants would decrease which leads to a loss of topsoil and reduced soil stability.

This action would adjudicate AUMs to all of the acres in the allotments. Because all of the acres in the allotments are not suitable for grazing the grazing would be congregated on those areas suitable. This translates into a stocking rate of 6.0 acres per an AUM on the acres suitable for grazing (14,428 acres suitable/2,423 AUMs). Stocking at this rate would lead to increased erosion and further destabilization by the suitable areas receiving too much grazing use.

Past grazing use, which has been well below the full permitted use, has led to the current conditions of 15,509 acres not meeting Rangeland Health Standard 1- which states “Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.” It would be expected that if the No Action alternative is implemented that more than 15,509 acres would fail to meet Rangeland Health Standard 1. The acres that would fail to meet are those that are currently not meeting plus the broad benches within the allotment depending on suitability. The benches currently meet standards but are transitioning to a more degraded state; because they are transitioning they are the most susceptible to changes in grazing management. It would be expected that these susceptible areas would show more erosion in the future under this alternative in the way of loss of the “A” soil horizon, increased pedestalling, more bare ground, and more/larger waterflow patterns.

**Alternative 2: Proposed Action**

The Proposed Action would authorize 1,031 AUMs during the dormant season. The stocking rate would follow the guidelines in the ESDs on acres that are suitable for livestock grazing. This alternative would remove litter like the No Action alternative, but would be at a reduced rate.

The stocking rate of the Proposed Action would be 14 acres per an AUM. This is more than double that of the No Action alternative. By increasing the stocking rate more litter would remain in place to protect the soil from erosion and the litter remaining would also help to build and maintain soil characteristics such as depth of the A horizon and stability.

Because the Proposed Action stocks the allotments following the ESDs guidelines and takes into account suitability the effects to soil and site stability would be expected to improve or remain static. It would be expected under this alternative that no more than 15,509 acres would fail to meet Rangeland Health Standard 1 at future assessments. This is because those acres deemed to not currently meet standards have a very low potential for returning to HCPC. However, the broad benches that are the most susceptible to grazing management and currently meet standards would be expected to improve under this alternative. The improvements would be seen as more litter, smaller waterflow patterns, increased soil stability, and smaller/less frequent bare areas.

**Alternative 3: No Grazing**

With the cessation of grazing in the allotments, forage would not be removed by domestic livestock. This would result in more standing vegetation starting the first year without livestock. This would complement the soil resources as reflected in rangeland health attributes of Soil & Site Stability and Hydrologic Function. Trend toward greater stability would happen when compared to the No Action Alternative. Potential improvements include a reduction in the size and distribution of the bare areas, further stabilization of waterflow patterns and an increased amount of surface litter. Increased surface litter would further protect the soil surface from the erosive forces of overland flow and rain drop impact. More water would be retained on the surface to infiltrate into the soil with an equivalent reduction in runoff.

**3.2.4.4 Cumulative Effects**

No reasonably foreseeable future actions have been identified that would affect soil resources within the Tatman Mountain Common and Snyder allotments. Because no foreseeable future actions or other present actions have been identified there would be no cumulative effects to soils from the alternatives analyzed in this EA.

#### 4 TRIBES, INDIVIDUALS, ORGANIZATIONS, or AGENCIES CONSULTED

<b>Person Consulted</b>	<b>Agency/Tribe/Organization</b>
<i>Steve &amp; Mike Coble</i>	<i>Grazing Permittee</i>
<i>Joe Nocito &amp; Ron Holley</i>	<i>J Bar H Ranch Inc – Base Property Owners</i>
<i>Jonathan Ratner</i>	<i>Western Watersheds Project</i>
<i>Kathleen Jachowski</i>	<i>Guardians of the Range</i>
<i>Marty Matsen</i>	<i>Wyoming Office of State Lands &amp; Investments</i>
<i>Stacie Thompson</i>	<i>Wyoming Office of State Lands and Investments – Lander Office</i>
<i>Dick Loper</i>	<i>Wyoming State Grazing Board</i>
<i>Vern Shelter</i>	<i>Wyoming Game and Fish</i>
<i>Jessica Crowder</i>	<i>Wyoming Dept. of Agriculture</i>
<i>Suzy Noecker</i>	<i>Wyoming Farm Bureau Federation</i>
<i>Sean Sheehan</i>	<i>Western Watersheds Project</i>
<i>Bill Simpson</i>	<i>J Bar H Ranch Inc – Authorized Representative</i>

#### 5 LIST OF PREPARERS

The following Worland Field Office personnel reviewed or have been contacted with regard to this EA.

<b>Resource</b>	<b>Name</b>	<b>Title</b>
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Fish/Wildlife (including T&E)	Tim Stephens	Wildlife Biologist
Recreation/VRM/Travel Management/Special Designations	Brian Smith	Recreation/Visual Specialist
Rangeland/Vegetation	Derek Trauntvein	Range Management Specialist
T&E Plants	Karen Hepp	Range Management Specialist (T&E/Sensitive Plants)
Engineering	Monica Goepferd	Civil Engineer
Soils/Haz. Mat.	Derek Trauntvein Jared Dalebout	Range Management Specialist Hydrologist
Invasive Species	CJ Grimes	NRS/Weeds
Water resources	Jared Dalebout	Hydrologist
Paleontology	Marit Bovee	Archaeologist
Geology & Minerals	Alex Jensen	Geologist
Land Use/Access	Rita Allen	Realty Specialist
Fuels	Yvonne Warren	NRS
Forestry	Jim Gates	Forester
Public Health and Safety	Holly Elliott	Planning & Environmental Specialist
Socioeconomics	Holly Elliott	Planning & Environmental Specialist
Air Quality	Holly Elliott	Planning & Environmental Specialist

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Ogle, D.G., St. John, L., Jones, T.A. 2003. Plant Guide: Bluebunch Wheatgrass. U.S. Department of Agriculture, Natural Resource Conservation Service. Boise, ID.

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<http://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>

U.S. Department of the Interior, Bureau of Land Management. 1998. Record of Decision and Approved Resource Management Plan for the Grass Creek Planning Area. Worland, WY.

U.S. Department of the Interior. 2013. Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming. Tatman Mountain Common Allotment No. 00639 and Snyder Allotment No. 00640. Bureau of Land Management, Worland Field Office, Worland, WY. Determination signed September 10, 2013.

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## Appendix 1. Terms and Conditions

### Alternative 1: No Action Alternative

- All grazing use will be in accordance with the Tatman Mountain Allotment Management Plan/Environmental Assessment WY-018-EA8-83

### Alternative 2: Proposed Action Alternative

- Livestock number may vary so long as grazing is within authorized period and active AUMs are not exceeded

Appendix 2. Stocking Rate Calculations

The proposed AUM usage was determined from Expected Use and Suitability Criteria for the proposed Tatman-Snyder allotment as seen in Map 4. Suitability and expected use of the allotments was determined using Geographical Information Systems (GIS). Reductions for distance to water sources and slope were calculated following published peer reviewed guidelines (Holechek et. al. 2011). Table 8 outlines percent reduction in grazing capacity for slope and distance from water. Table 9 shows how the combined reductions affect acres in the proposed Tatman-Snyder allotment. Map 4 gives a visual reference to Tables 8 and 9.

Table 8. Reductions in Grazing Capacity (Holechek et. al. 1989)

<u>Percent Slope</u>	<u>Reduction</u>
0-10	None
10-30	30%
31-60	60%
60+	100%
<u>Distance from Water</u>	
0-1 mile	None
1-2 miles	50%
2+miles	100%

Table 9. Reductions to Acres in the proposed Tatman-Snyder allotment (see Map 4)

<u>Combined Reduction</u> <u>(Slope/Water)</u>	<u>Total Acres</u>	<u>Acres suitable for</u> <u>grazing use</u>
None	7,138	7,138
45%	8,653	4,759
65%	6,242	2,185
90%	3,466	346
100%	2,842	0
100%	555 (Roach Gulch Reservoir)	0
	28,896 (Total)	14,428 (Total)

To define an appropriate stocking rate for the allotment the following methodology was utilized:

Step 1

Define Acres Not Meeting Standard 3:	15,509 (60%)
Define Acres Meeting Standard 3:	<u>10,485 (40%)</u>
Total Acres (excluding Roach Gulch/badland acres):	25,994 (100%)

Step 2

Define appropriate stocking rates from applicable ESDs (not meeting standard):	<u>20A/AUM</u>
*Site 463-10A/AUM, Site 496 20 A/AUM, Site 465 20 A/AUM.	

Site 463 is in a degraded state with potential to transition to a blue grama sod state which has a recommended stocking rate of 20A/AUM, as such 20 A/AUM was used as appropriate for Acres not meeting Standards.

Step 3

Define appropriate stocking rates from applicable ESDs (meeting standard):	<u>5A/AUM</u>
*Sect. 14-3.3A/AUM, Snyder KA & 461-5A/AUM, Tatman KA-6.25 A/AUM,	

Reference-2.5 A/AUM.

The Reference area is simply that, an area that likely represents the potential of the area. It is an area that is small in acreage and likely receives little grazing-it doesn't accurately reflect the majority of acres meeting the rangeland health standard or the majority of acres likely to be grazed. As such, it was not used in the stocking rate average.

\*See table 3

#### Step 4

Establish a weighted average to establish the stocking rate based upon steps 1, 2 and 3 above. (A weighted average is an average in which each quantity to be averaged is assigned a weight. These weightings determine the relative importance of each quantity on the average. Weightings are the equivalent of having that many like items with the same value involved in the average. <http://www.investopedia.com/terms/w/weightedaverage.asp>)

20 (A/AUM for acres not meeting the rangeland health standard) X 60 (the % of acres not meeting the rangeland health standard) = 1200

5 (A/AUM for acres meeting the rangeland health standard) X 40 (the % of acres meeting the rangeland health standard) = 200

Add the two sums to get 1400 and divide by 100 (100% as a whole) to get 14A/AUM as a stocking rate for the allotment. This rate takes into consideration the range conditions of the allotment.

#### Step 5

Apply stocking rate derived in steps 1-4 above to those acres that are suitable for grazing use, see Table 3.

14,428 acres divided by 14A/AUM = 1031 AUMs (public) available for livestock grazing use derived from an appropriate stocking rate analysis and from those acres that are suitable for grazing.

This would provide a stocking rate of 14A/AUM on suitable acres. The stocking rate based upon total acres of the allotment would be 28A/AUM (28896/1031AUMs).

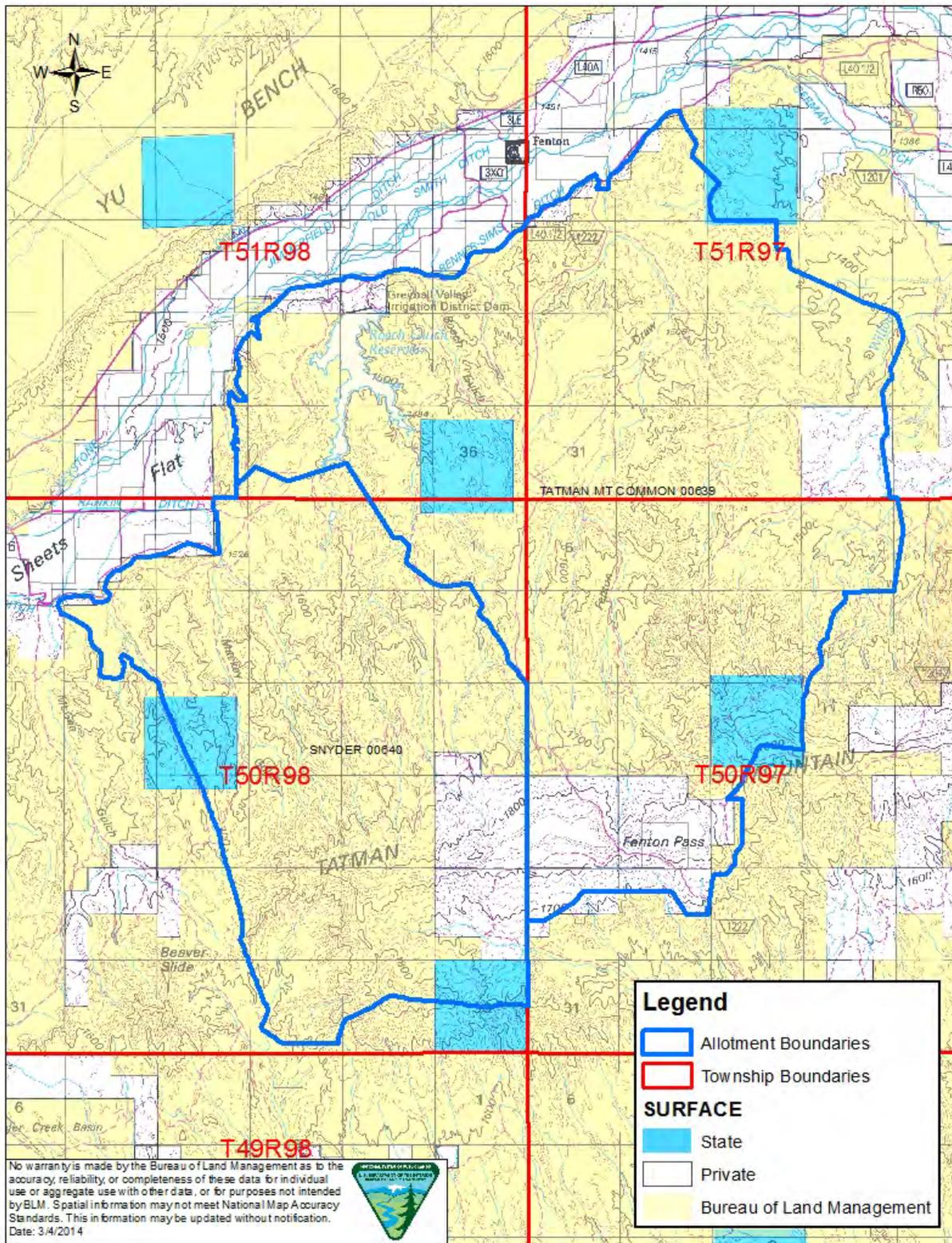
Appendix 3. Table of Upland Vegetation Objectives considered part of Proposed Action

Site	Objective	Rationale	Measure of Success
<b>Tatman KA</b>	Improve/Maintain	The site is in a transitional state that has the capability of responding to prescribed grazing	Increase/maintain cover or composition or frequency of key species
<b>Snyder KA</b>	Improve/Maintain	The site is in a transitional state that has the capability of responding to prescribed grazing	Increase/Maintain cover or composition or frequency of key species
<b>Reference</b>	Maintain	Site is at or near HCPC	Maintain cover or composition or frequency of key species
<b>496</b>	Maintain	The site is in a transitional state that is not likely to respond to a prescribed grazing scheme alone. See table 5.	Maintain cover or composition or frequency of key species. Maintain or Decrease bare ground
<b>465</b>	Maintain	The site is in a transitional state that is not likely to respond to a prescribed grazing scheme alone. See table 5.	Maintain cover or composition or frequency of key species. Maintain or Decrease bare ground
<b>463</b>	Maintain	The site is in a transitional state that is not likely to respond to a prescribed grazing scheme alone. See table 5.	Maintain cover or composition or frequency of key species. Maintain or Decrease bare ground
<b>461</b>	Improve/Maintain	The site is in a transitional state that has the capability of responding to prescribed grazing	Increase/Maintain cover or composition or frequency of key species
<b>Section 14</b>	Improve/Maintain	The site is in a transitional state that has the capability of responding to prescribed grazing	Increase/Maintain cover or composition or frequency of key species

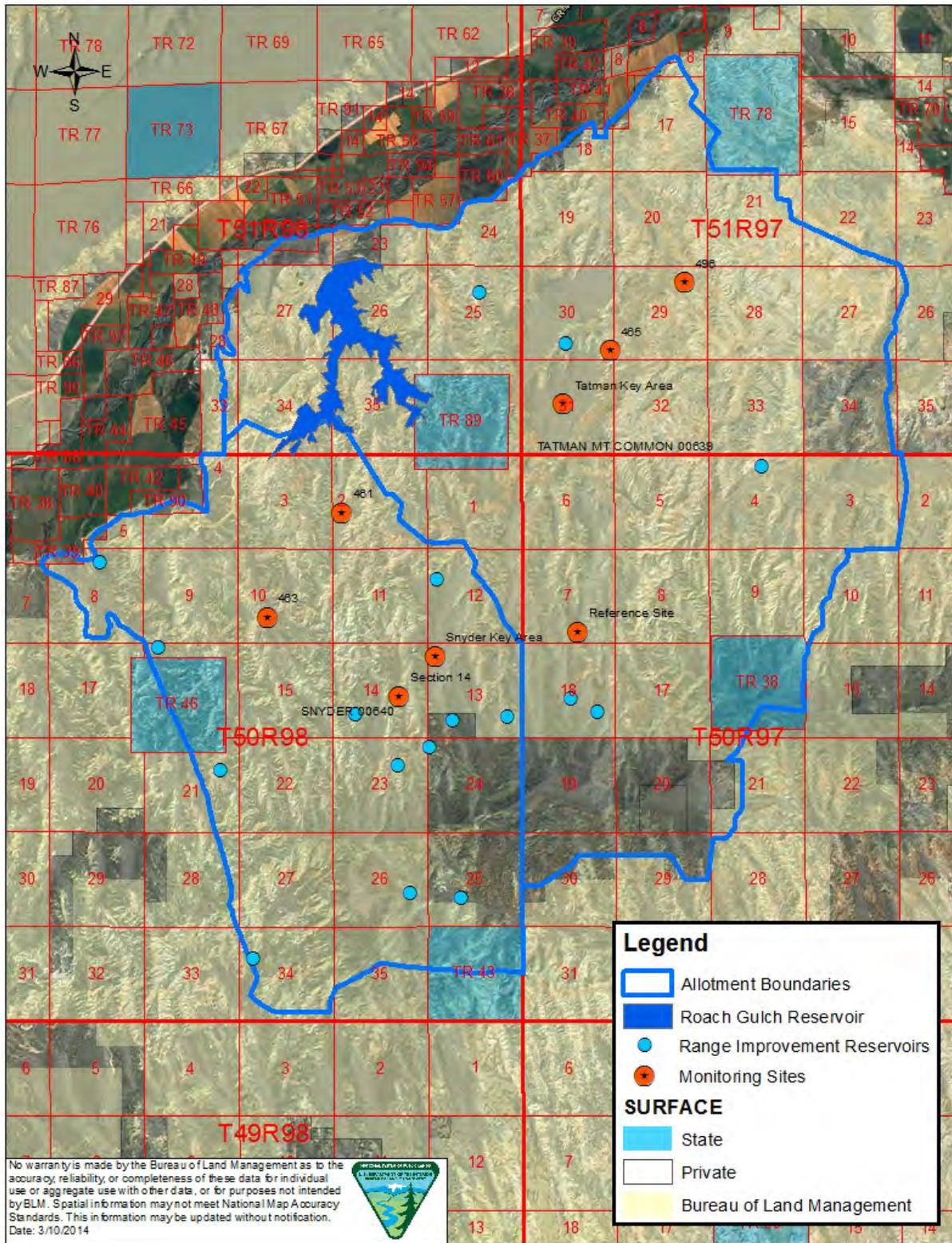
HCPC=Historic Climax Plant Community, a state in transition.

PSSP=Bluebunch wheatgrass, ACHY=Indian ricegrass, HECO=Needleandthread grass, all of which are key species.

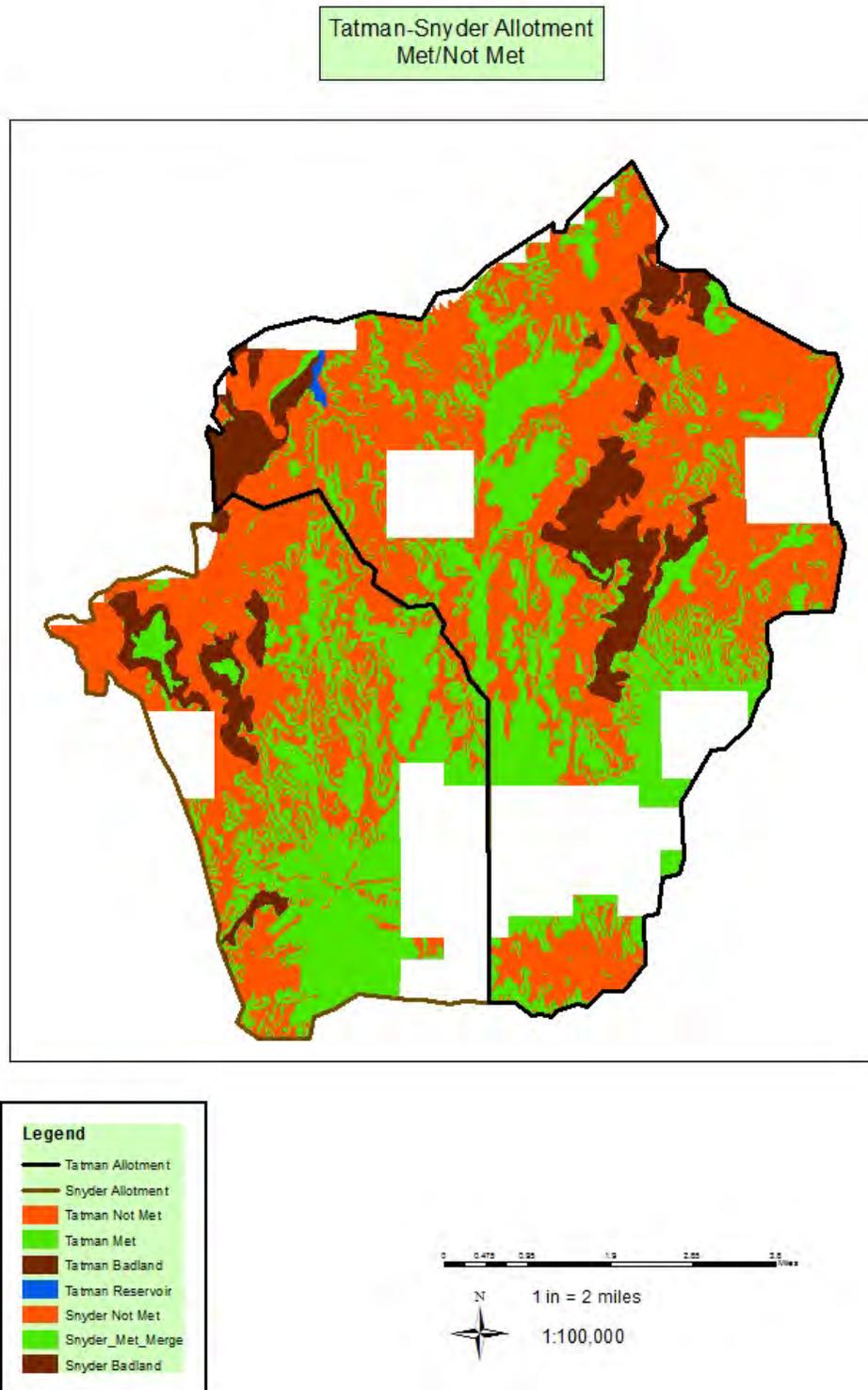
Map 1. Tatman Mountain Common #00639 and Snyder #00640 Grazing Allotments



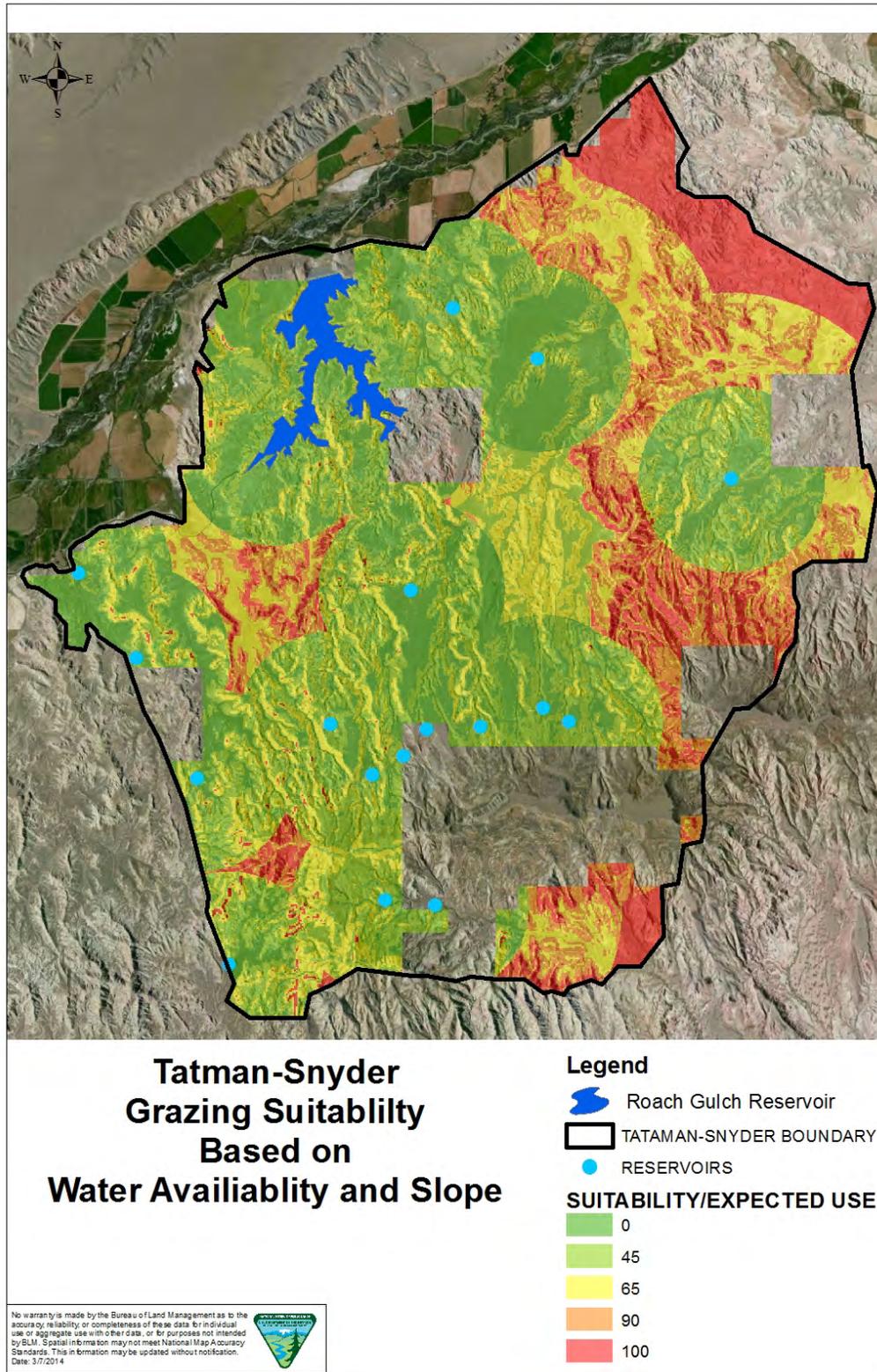
Map 2. Locations of S&G Assessment/Monitoring Sites and Inventoried Reservoirs



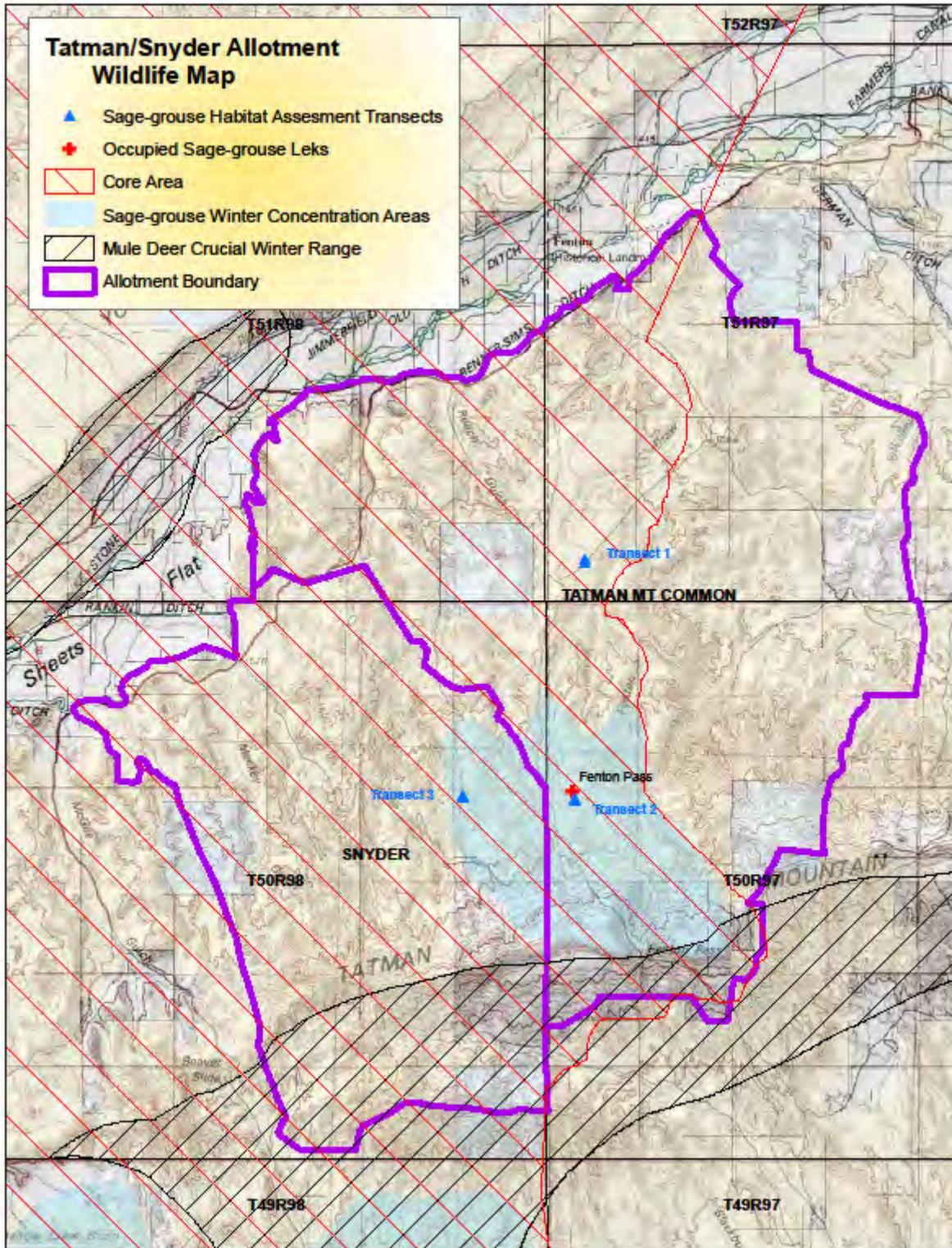
Map 3. Acres Meeting/Not Meeting S&Gs at 2013 Determination



Map 4. Expected Use and Suitability of Rangelands for grazing based on water availability and slope expressed as a percent reduction.



Map 5. Wildlife Resources



Map 6. Watershed Map

