

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

Beckley Allotment #00024

APRIL 2011

BLM

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



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.

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 STANDARDS	1
2.0 AFFECTED ENVIRONMENT-ALLOTMENT DESCRIPTION, RESOURCE VALUES, AND USES.....	2
2.1 LOCATION AND LAND OWNERSHIP	2
2.2 HYDROLOGY	2
2.3 AIR QUALITY/CLIMATE	2
2.4 SOILS	3
2.5 UPLAND VEGETATION	4
2.6 INVASIVE SPECIES.....	4
2.7 RANGE.....	4
2.8 WILDLIFE.....	4
2.9 THREATENED OR ENDANGERED SPECIES	5
2.9.1 <i>Threatened, Endangered, Candidate, and BLM Sensitive -- Plant Species</i>	5
2.9.2 <i>Threatened, Endangered, Candidate, and BLM Sensitive – Wildlife Species</i>	5
3.0 SUMMARY OF MONITORING DATA & ASSESSMENT	5
3.1 UPLAND VEGETATION	6
3.2 HYDROLOGY	6
3.3 SOIL AND SITE STABILITY	6
3.4 WILDLIFE HABITAT	6
4.0 CONCLUSIONS.....	8
4.1 STANDARD 1	8
4.2 STANDARD 2	8
4.3 STANDARD 3	8
4.4 STANDARD 4.....	9
4.5 STANDARD 5.....	10
4.6 STANDARD 6.....	10
5.0 RESOURCE SPECIALIST SIGNATURES.....	11
6.0 DETERMINATION	12
7.0 REFERENCES	13

TABLES, MAPS, PHOTOS

TABLE 1. WATERSHEDS.....	2
TABLE 2. GRAZING OPERATOR AND SCHEDULE	4
TABLE 3. RANGELAND HEALTH SUMMARY	5
TABLE 4. SUMMARY OF MONITORING DATA	6
TABLE 5. HABITAT ASSESSMENT DATA	7
MAP 1: ALLOTMENT MAP	14
MAP 2: WATERSHED MAP	14
MAP 3: SOILS/RANGE SITES.....	15
MAP 4: WILDLIFE MAP.....	16
ONSITE PHOTOS	17
PHOTO 1. GENERAL VIEW TRANSECT IN KEY AREA #1	17
PHOTO 2. GENERAL VIEW TRANSECT IN KEY AREA #2	17

1.0 INTRODUCTION

The Bureau of Land Management (BLM) grazing regulations at 43 CFR 4130.3-1(c) require that grazing permits issued by the BLM contain terms and conditions that ensure conformance with BLM regulations at 43 CFR 4180, which are the regulations under which the 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 were developed. Recently, the Worland Field Office completed an assessment of the achievement of these standards on the Beckley Allotment. The results of this assessment are presented in this report. This assessment will serve to inform the BLM's determination as to whether these standards are being met, and, if they are not met, whether existing grazing management practices contribute to their lack of attainment.

1.1 Standards

The approved standards for rangeland health are as follows:

- Standard #1: 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.
- Standard #2: Riparian and wetland vegetation has structural, age and species diversity characteristic of the state of channel succession and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide ground water recharge.
- Standard #3: Upland vegetation on ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.
- Standard #4: Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.
- Standard #5: Water quality meets State standards.
- Standard #6: Air quality meets State standards

2.0 Affected Environment-Allotment Description, Resource Values, and Uses

2.1 Location and Land Ownership

The Beckley Allotment is located in T45N, R87W which is approximately 14 miles south of Ten Sleep, WY in Washakie County. The allotment consists of 2,130 acres as described on the grazing permit but is actually 1,745 acres geographically; all of which is public land. Elevations within the allotment range from 4,660 feet to 5,144 feet above sea level.

2.2 Hydrology

The Beckley allotment is located within two different USGS Level #6 watersheds that are also identified by name and Hydrologic Units Code or (HUC) watersheds (Table 1). The majority of the allotment (2.41 square miles) are within the Nowood River-Mud Gulch watershed HUC# 100800080301 with several ephemeral drainages that flow in a northwestern direction through the allotment (Map #2). There is also a minor portion of the allotment (0.31 square miles) located in the Otter Creek-Nowood River watershed.

Watershed Name-Level #6 (HUC #)	Total (Mi²)	(Mi²) within allotment	(%) Mi² of watershed in the allotment
Nowood River- Mud Gulch 100800080301	37.1	2.41	6.5
Otter Creek-Nowood River 100800080904	49.6	0.31	0.6

The majority of the allotment drains into the upper Nowood River following storm events and during snow melt in the spring. The allotment is located over thin outcrops of Cretaceous age sandstone and shales with elevations in the allotment ranging from 4,660 feet to 5,144 feet above sea level. The drainages are similar to other lower elevation semi-arid watersheds in the Bighorn Basin with intermittent or ephemeral flow regimes and no perennial drainages in the allotment. To provide water for livestock it is hauled in to the allotment and there are no other functional water sources such as wells or other water pipelines present in the allotment.

2.3 Air Quality/Climate

An air quality monitoring station was recently established in the Bighorn Basin, but no monitoring data is available at this time. Annual precipitation ranges from 10-14 inches per year. The nearest BLM rain gauge is Spring Creek which is approximately 3 miles northeast of the allotment. The average annual precipitation from 1984 to 2009 was 13.35 inches and the average annual growing season precipitation for the same time period was 6.11 inches.

The normal precipitation pattern shows the least amount of precipitation in December, January, and February, increasing to a peak during the latter part of May. Amounts decrease through June, July, and August and then increase some in September. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall exceeds 20 inches annually. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation.

Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in

temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Winds are generally not strong as compared to the rest of the state. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 75 mph.

Growth of native cool-season plants begins about April 15 and continues to about July 15. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the “Thermopolis 2” climate station:

	Minimum	Maximum	5 yrs. out of 10 between
Frost-free period (days):	74	149	May 23 – September 16
Freeze-free period (days):	112	180	May 8 – October 1
Mean Annual Precipitation (inches):	7.6	21.9	
Mean annual precipitation:	12.35 inches		
Mean annual air temperature:	46.2°F (30.1°F Avg. Min. to 62.3°F Avg. Max.)		

For detailed information visit the Natural Resources Conservation Service (NRCS) National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include “Grass Creek 1E”, “Thermopolis”, “Thermopolis 25NW”, “Buffalo Bill Dam”, and “Black Mountain”, (United States Department of Agriculture (USDA) NRCS Technical Guide Section IIE Rev. 08/12/05).

2.4 Soils

The soils reflect the mid level elevation environment in which they formed. They are highly variable, reflecting differences in parent material (sandstone, siltstone, shale and/or mixed alluvium), position on the landscape, slope and aspect. Soil depth ranges from several inches to over 60 inches. These are well drained soils. Many of the soils are typified by the reddish hue that is characteristic of soils developed from Chugwater parent materials. Surface textures are loams, very fine sandy loams, and clay loams. Due to the Chugwater influence these soils are strongly influenced by gypsum. Slopes range from 1 to 40 percent.

The ecological sites found in the in the allotment are listed below:

Loamy 10-14 in. pz.	R032XY322WY
Shallow Loamy 10-14 in. pz.	R032XY362WY
Shallow Clayey 10-14 in. pz.	R032XY358WY
Lowland 10-14 in. pz.	R032XY328WY
Very Shallow 10-14” pz.	R032XY376WY

One upland health assessment was conducted as a part of this investigation. This assessment was conducted in Map Unit 55 Neville-Spearfish-Rock Outcrop Association as described in the published Washakie County soil survey. The soils at the assessment location are similar to the Neville loam series, differing from the Neville series in that they have a well developed argillic horizon. The ecological site at the assessment location is a Loamy 10-14 in. pz.

Refer to Map 3 - Soil and Ecological Sites that follows this discussion.

2.5 Upland Vegetation

The uplands consist of Loamy, Shallow Loamy, Shallow Clayey, range sites. The Loamy sites make up the majority of the allotment acres.

The Perennial Grass/Big Sagebrush Plant Community is the predominant state associated within the above mentioned sites. This plant community is a closely associated state of the Bluebunch Wheatgrass/Rhizomatous Wheatgrass HCPC for the site. The Perennial Grass/Big Sagebrush Plant Community can move to the HCPC since important plant species remain present in the community. Plant composition within the allotment observed on July 2009 and June 2010 included Big sagebrush (*Artemisia tridentate*) with understory and interspaces filled with Bluebunch wheatgrass (*Pseudoroegneria spicata*) Needle-and-thread (*Hesperostipa spicata*), Western wheatgrass (*Pascopyrum smithii*), Sandberg bluegrass (*Poa secunda*), Prairie junegrass (*Koeleria macrantha*), Green needlegrass (*Nassella viridula*) Cheatgrass (*Bromus tectorum*), Field Brome (*Bromus arvensis*) Cactus (*Opuntia polyacantha*), Woolly plantain (*Plantago patagonica*), Fringed sagewort (*Artemisia frigid*), Hood’s Plox (*Phlox hoodii*) and Scarlet globemallow (*Sphaeralcea coccinea*). Juniper (*Juniperus spp.*) tended to dominate the steeper slopes and ridges of the allotment. This list is not all inclusive; however the vegetation noted are those that are quite evident and readily found.

2.6 Invasive Species

No noxious weed species have been observed or documented to within the allotment, but small populations of common burdock and Canada thistle are known from adjacent pastures. Cheatgrass is established across the allotment in varying abundances.

2.7 Range

For management priorities the allotment is categorized as “I” (Improve) in the Washakie RMP. As shown below in Table 2, the Beckley Allotment is authorized for cattle and sheep grazing, however sheep use has never occurred under the current schedule and the terms and conditions of the current permit allow unused sheep AUMs to be used as Cattle AUMs within the same schedule dates. Water sources for the livestock in the allotment are limited. Water must be hauled to stock tanks located in the central and southern parts of the allotment.

Operator	Livestock Number	Livestock Kind	Begin	End	PL %	AUMS
Lazy Bighorn Ranch	60	Cattle	4/26	6/10	100	91
	400	Sheep	4/26	6/10		121
	60	Cattle	10/10	12/31		164
	400	Sheep	11/15	12/25		108

Permitted Use (AUMs):	<u>Active</u>	<u>Suspended</u>	<u>Total</u>
	485	15	500

2.8 Wildlife

This allotment provides habitat for several big game species, as well as many other non game and special status wildlife species, during all seasons of the year. Predominate habitat within this allotment is rolling sagebrush grassland with scattered juniper on the steeper slopes and a mix of perennial grasses throughout. All of the allotment is designated as crucial big game habitat for elk and mule deer by Wyoming Game & Fish.

2.9 Threatened or Endangered Species

2.9.1 Threatened, Endangered, Candidate, and BLM Sensitive -- Plant Species

No threatened and endangered or sensitive plant species have been found in the Allotment.

2.9.2 Threatened, Endangered, Candidate, and BLM Sensitive – Wildlife Species

No threatened or endangered wildlife species have been observed or recorded utilizing the habitat within this allotment.

The entire allotment lies within an area designated as a Sage Grouse core breeding area by the state of Wyoming and, although no active sage grouse leks are known to exist within the allotment, one historic unoccupied sage grouse lek exists near the northern end of the allotment. A small portion of the northernmost end of the allotment lies within a two-mile radius of an active Sage Grouse lek (Coyote Springs), which is located in a nearby allotment.

3.0 Summary of Monitoring Data & Assessment

The Rangeland Health Assessment was conducted at Key Area #1 by an interdisciplinary team on 7/7/2010 using the 17 Indicators of Rangeland Health as described in BLM Technical Reference 1734-6. The 17 indicators are broken into 3 categories - soil stability, hydrologic function, biotic integrity. The measurement of these indicators is based upon a departure from that which would be expected for the specific range site. Individual ratings for the *Rangeland Health Indicators* are displayed for each transect location below in Table 3.

Indicator	Departure from Reference
1. Rills	<i>None to Slight</i>
2. Water Flow Patterns	<i>Slight to Moderate</i>
3. Pedestals and/or Terracettes	<i>Slight to Moderate</i>
4. Bare Ground <u>7.4</u> %	<i>None to Slight</i>
5. Gullies	<i>None to Slight</i>
6. Wind- Scoured, Blowouts, and /or Deposition Areas	<i>None to Slight</i>
7. Litter Movement	<i>None to Slight</i>
8. Soil Surface Resistance to Erosion	<i>None to Slight</i>
9. Soil Surface Loss or Degradation	<i>Slight to Moderate</i>
10. Plant Community Composition and Distribution Relative to Infiltration	<i>Moderate</i>
11. Compaction Layer	<i>None to Slight</i>
12. Functional/Structural Groups	<i>Moderate</i>
13. Plant Mortality/Decadence	<i>Moderate to Extreme</i>
14. Litter Amount	<i>None to Slight</i>
15. Annual Production	<i>None to Slight</i>
16. Invasive Plants	<i>Moderate to Extreme</i>
17. Reproductive Capability of Perennial Plants	<i>None to Slight</i>

Overall Attribute Rating		
Soil & Site Stability	Hydrologic Function	Biotic Integrity
<i>Slight to Moderate</i>	<i>Slight to Moderate</i>	<i>Moderate</i>

3.1 Upland Vegetation

Very little historical vegetation monitoring data has been collected on the Beckley Allotment. Some one-time photo points and a few periodic allotment inspections over the years have not identified any significant management problems on the allotment.

In the summer of 2009, two key management areas (key areas) for the purpose of vegetation monitoring were selected on the allotment. Key areas are indicator areas that are able to reflect what is happening on a larger area as a result of on-the-ground management actions. Ecological site, soil type, vegetative community, topography, location of water sources, and livestock grazing history are some of the factors that were considered in the selection of these key areas. These key areas were designated as Key Area #1, and Key Area #2. Also, three wildlife habitat assessment transects were established at both Key areas and one in the northern part of the allotment. A map showing the key area and monitoring locations, and photographs of each area, are located at the end of this document.

At Key Area #1 the summers of 2009 and 2010, the Sample Point method was used to estimate cover and basic species composition, in addition a 300 foot Sagebrush canopy cover was ran over the same transect. In the same years at Key Area #2, a 100 foot Line-Point Intercept transect was used to estimate cover and basic species composition, also a 100 foot Sagebrush canopy cover was ran on the same transect. A summary of the cover data collected from each key area is shown below in Table 4:

Site Name	Range Site	Method	Date	Vegetative Cover	Litter	Bare Ground	Sagebrush Canopy Cover
Key Area 1	Loamy 10-14	Sample Point	July 2009	65%	27%	5%	32%
			June 2010	58%	30%	7%	30%
Key Area 2	Loamy 10-14	Line-Point Intercept	July 2009	55%	17%	27%	16%
			June 2010	59%	16%	25%	20%

3.2 Hydrology

The hydrologic factors as shown in Table 4 indicate “Slight to Moderate” departure from the reference ecological sheet for this site. Due to the expansion of cheatgrass in the allotment, infiltration rates have been slightly reduced from the original reference state. Field observations also indicate primarily ephemeral flow regimes for the drainage segments with flow occurring in the channel on average less than 10 percent of the year. The drainages exhibit a losing stream segment, that means surface water is lost to ground water through the length of the drainages. There are no known or inventoried springs, seeps, or other wetlands within the allotment. The current upland indicators suggest that the allotment is able to withstand storm events and other runoff producing events without excessive accelerated erosion occurring throughout the allotment. The amount of bare ground is a key indicator for upland hydrologic health, the amount calculated (7.4 percent) is within acceptable limits for the ecological site.

3.3 Soil and Site Stability

One rangeland health determination was conducted on July 7, 2010 as part of this investigation. Standard 1 for Healthy Rangelands was evaluated using the attribute ratings for *Soil and Site Stability* and *Hydrologic Function* using rangeland health indicators 1 through 11 and 14. Field observations were

compared to the Reference Sheet for the Loamy 10-14" pz (R032XY322WY) dated 5/1/2008 to determine departures from normal.

Rill formation was not observed. Waterflow patterns were observed in proximity to two-track trails, quickly fading with distance from trails; they are short (2 – 5 feet) and discontinuous. One to two inch pedestals were observed around the sagebrush; none were observed with bunchgrasses. No terracettes were observed. Transect data determined bare ground to be 7.4 percent and litter cover was determined to be 30 percent, due in part to the presence to cheatgrass. Both bare ground and litter are within the guidelines described in the reference sheet. No gullies were observed. There was no evidence of wind-scouring or blowout areas. Litter was well distributed across the site and there was no evidence of litter movement. The soil stability index (SSI), an indicator of soil surface resistance, to erosion was 4.0. This is a good rating for a soil that is naturally susceptible to erosion. When combined with cover values, this soil is stable and resistant to rain drop impact and resistant to the erosive force of overland flow. The stability is further enhanced by the presence of the soil biological crusts which were determine to make up 3 percent of the surface cover. The A horizon is only 2 inches deep indicating that there has been some historic soil loss. The plant community composition and distribution is adequate to facilitate infiltration and reduce runoff, due in part to the amount of cheatgrass. No soil compaction was observed.

Based on the observations discussed above the attribute rating for *Soil and Site Stability* and *Hydrologic Function* were rated as “Slight to Moderate”.

3.4 Wildlife Habitat

In June and July of 2010 three transects, were ran to determine habitat suitability for Sage Grouse. Line-Intercept with height, Belt Transect, and Daubenmire plots were the methods used in data collection. The data indicates that all the sites are highly suitable for Sage Grouse Nesting, Early Brood-rearing and Wintering habitat. Table 5 summarizes the data found from each site and Map 4 shows the transect locations.

Allotment / Site Name		Sagebrush* Canopy Cover (Percent)		Average Height (Inches)			Sagebrush* Age Class (Percent)			
		Live	Dead	Sagebrush*	New Herbaceous	Residual Herbaceous	Young	Mature	Decadent	Dead
Beckley	001 (Key Area 1)	23	5	18	12	5	0	65	26	9
	002 (Key Area 2)	17	7	16	10	4	0	44	51	5
	003	18	8	17	11	6	3	43	46	8

**Artemisia tridentata* Nutt. ssp. *wyomingensis*

4.0 Conclusions

This section draws conclusions and makes determinations regarding:

- A. Progress towards or attainment of the standards for rangeland health, and
- B. Whether livestock management is in conformance with the guidelines, and
- C. Whether existing grazing management or levels of grazing use are significant factors in failing to achieve the standards or conform to the guidelines.

4.1 Standard 1

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. MET

Rationale: The attribute ratings for *Soil and Site Stability and Hydrologic Function* were rated as “Slight to Moderate”. The soil surface is stable and does not readily slake or disperse in water. Vegetative and litter cover are adequate to protect the soil from rain drop impact and the erosive forces of overland flow. The presence of erosion indicators (waterflow patterns, pedestals, terracettes, litter movement and wind-scouring) are similar to that expected for the site based on the Reference Sheet for the Loamy 10-14” pz. ecological site. Where they are present, erosion indicators are minimally developed and stable. No gullies were observed. A shallow soil pit indicates that there has been historic soil loss. When compared to the official soil series description (OSD), the soils at this location have a 2 inch A horizon as compared to a 4 inch A horizon described in the OSD. This same excavation did not reveal evidence of soil compaction.

4.2 Standard 2

Riparian and wetland vegetation has structural, age and species diversity characteristic of the state of channel succession and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide ground water recharge. NOT APPLICABLE

Rationale: There are no inventoried or other known riparian or wetland areas within the allotment, therefore this standard is not applicable.

4.3 Standard 3

Upland vegetation on ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance. MET

Rationale: The attribute rating for Biotic Integrity was rated as “Moderate” deviation from that which would be expected for the range site. This determination was made using rangeland health indicators 8, 9, and 11 through 17, as well as the data collected from both Key Area transects.

The cool season bunchgrasses were found to have been moderately reduced but still common with favorable reproductive capabilities. Overall annual production was normal but it was noted that Sagebrush was found to low in new regeneration and around 30 percent of sagebrush on the site was found to be decadent. Cheatgrass does occur throughout the allotment in varying abundances; however, its densities are not limiting perennial grass productivity or diversity. Juniper is a component to some sites in the allotment and its encroachment into the bunchgrass/sagebrush areas has presented the opportunity for future prescribed vegetation treatments.

Assessment sites represented 10-14" loamy ecological sites. These sites were characterized as currently representing the Perennial grass/ Big sagebrush state in the State and Transition Model in the NRCS Tech Reference. These sites are in a dynamic equilibrium with the Historic Climax Plant Community for these sites. This means that at this time these sites have appropriate pathways available to them to respond to proper grazing strategies, favorable environmental conditions, and environmental events such as wildfires. Currently permitted grazing use would allow this to occur. According to the NRCS Tech Reference, this situation lends further credence to the current plant communities being "resilient, diverse, and able to recover from natural and human disturbance". Nevertheless, the presence of cheatgrass in the present plant community is a concern. Wildfire could reduce/eliminate the sagebrush component in affected areas. The presence of cheatgrass could limit/retard the re-establishment of sagebrush, an important vegetative aspect of the community for wildlife.

This qualitative analysis of the allotment shows that the rating variance of the indicators (vegetative cover, plant composition, diversity and vigor, bare ground & litter, and erosion) are appropriate for the ecological sites found on the allotment. Overall, the biotic community is stable, intact, and well adapted to grazing.

4.4 Standard 4

Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced. MET

Rationale: Three separate line intercept canopy cover transects were performed during the growing season of 2010, along with three belt surveys to measure shrub height and vegetation composition. Live sagebrush canopy cover was determined to be 23, 17, and 18 percent respectively for the three transects performed in representative locations within the allotment. Shrub height was determined to average 17 inches for all three transects. Transect data did indicate a possible concern with the age class of sagebrush with relatively high proportion of decadent plants and very few young plants present. Also, juniper is encroaching into sagebrush habitats which could degrade their value to wildlife species dependent upon them. In addition to Wyoming Big sagebrush, numerous diverse plant species appropriate to the habitat were recorded, such as; broom snakeweed, Yellow salsify, Needle and thread, Bluebunch, Segolily, Paintbrush, Lichen, Sandberg bluegrass, scarlet globemallow, bitter root, sandwort, and Japanese brome.

Wildlife species observed during monitoring and assessment were Sage Grouse, mule deer, antelope, elk, and a variety of grassland passerines. The Perennial grass/ Big sagebrush (Big sagebrush <25%) state which represents the majority of the allotment (See Standard #3) provides an appropriate mix of grasses and forbs along with an adequate amount of sagebrush to meet wildlife needs. The diverse plant species and composition recorded are well within appropriate parameters for this type of habitat, and the presence of wildlife across seasons is indicative of the habitat's capability of sustaining viable populations of plant and animal species appropriate to the habitat.

4.5 Standard 5

Water quality meets State standards. UNKNOWN

Rationale:

None of the drainages are listed on the Wyoming DEQ 2008 305(b) Integrated State Water Quality Assessment Report and 2008 303 (d) List of Waters Requiring TMDLs. Many studies have documented the effects of heavy grazing on riparian vegetation and soil erosion rates, but few studies have directly assessed impacts on water quality. Potential management impacts to water quality from rangelands as outlined in (Binkley, 1993) such as: excessive livestock waste production, resource extraction, stream channel modification, bank erosion from floods, erosion following wildfires, or erosion from overgrazing in uplands. There is no BLM, USGS, or other state agency water quality data for these segments. Therefore compliance with Wyoming State Water Quality Standards is unknown, but nothing within available data indicates Standard Number 5 is not being met.

4.6 Standard 6

Air quality meets State standards. UNKNOWN

Rationale: No information is currently available to indicate that this standard is or is not being met. An air quality monitoring station was recently established in the Bighorn Basin, but no monitoring data is available at this time. Until specific data becomes available, the determination for this standard is UNKNOWN, per direction from the BLM Wyoming State Office.

5.0 Resource Specialist Signatures

4/15/2011

4/15/2011

X 

Michael Peck
Rangeland Management Specialist

4/20/2011

X CJ Grimes

C.J. Grimes
Natural Resource Specialist, Weed Coordinator

4/19/2011

X 

Ted Igleheart
Wildlife Biologist

4/19/2011

X Mike Tietmeyer

Mike Tietmeyer
Supervisory Rangeland Management Specialist

4/20/2011

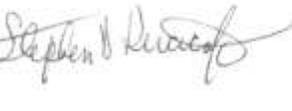
X 

Jared Dalebout
Hydrologist

4/18/2011

X 

Michael Phillips
Assistant Field Manager, Resources

X 

Steve Kiracofe
Natural Resource Specialist, Soils

6.0 Determination

Based on the information provided in this assessment, *I have determined that all standards ARE being met, with the exception of Standard 6, Air Quality, which is determined to be UNKNOWN (per direction from the BLM Wyoming State Office). Current livestock grazing IS in conformance with the standards.*

4/20/2011

X 

Michael Phillips
Acting Field Manager, Worland Field Office

Based on the information provided in this assessment, *I have determined that all of the standards are NOT being met but that livestock grazing is in conformance with the standards.*

X

Michael Phillips
Acting Field Manager, Worland Field Office

Based on the information provided in this assessment, *I have determined that all of the standards are NOT being met and that livestock grazing is NOT in conformance with the standards.*

X

Michael Phillips
Acting Field Manager, Worland Field Office

7.0 References

Binkley, D., Brown, T. 1993. Management Impacts on Water Quality of Forests and Rangelands. USDA Forest Service. General Technical Report RM-239. pp 5-6.

DEQ, 2008. Wyoming's 2008 305(b) Integrated State Water Quality Assessment Report .p 28.
http://deq.state.wy.us/wqd/events/public%20notices/2008%20Draft%20305_b_.pdf

SamplePoint: USDA Agricultural Research Service, Rangeland Resources Research Unit in Cheyenne, WY, USDI BLM Wyoming State Office; 2009; Software code, Robert Berryman; Installation file, Nullsoft Install System v 2.11.

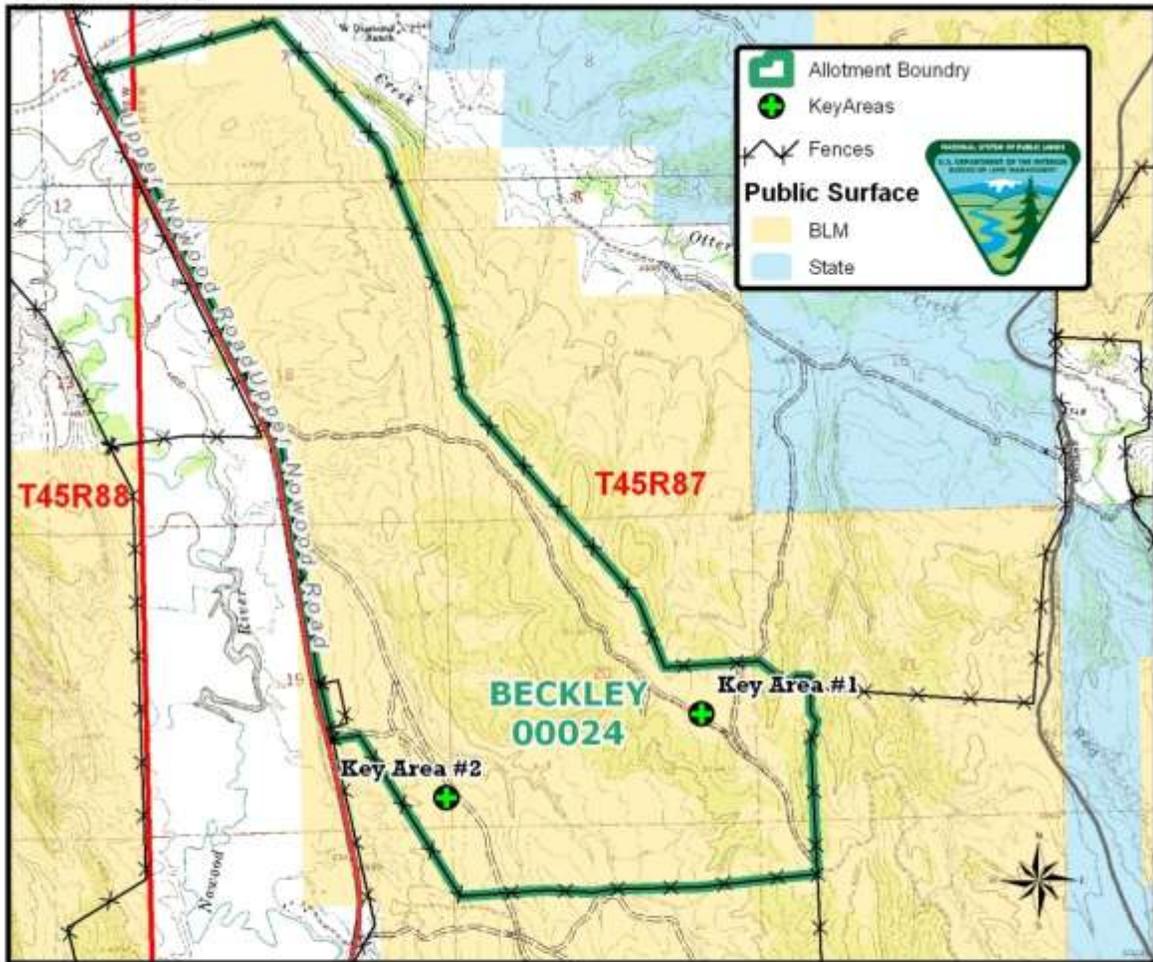
USDA Natural Resources Conservation Service, Technical Guide for Ecological Site Descriptions, Northern Intermountain Desertic Basins, Loamy (Ly) 10-14" Foothills and Basins East Precipitation Zone; R032XY322WY.

USDI – BLM. 2010, Greater Sage-Grouse Habitat Management Policy on WY BLM Administered Public Lands including the Federal Mineral Estate. Instruction Memorandum No. WY-2010-012. Cheyenne, Wyoming.

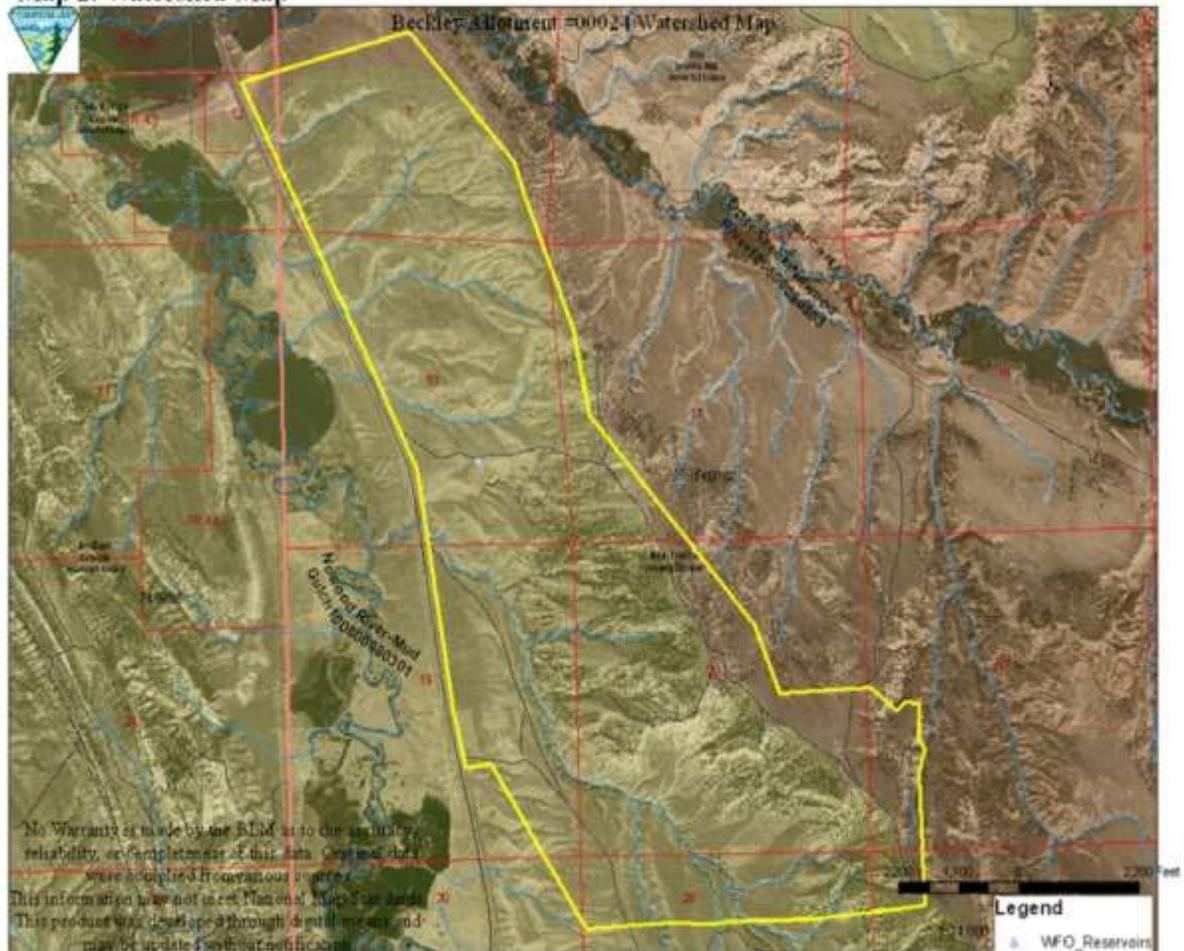
USDI - BLM. 1998. Implementation Plan, Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming.

USDI-BLM. 1988. Washakie Area Resource Management Plan (RMP), Record of Decision and Approved Resource Management Plan for the Washakie Resource Area, Worland, WY.

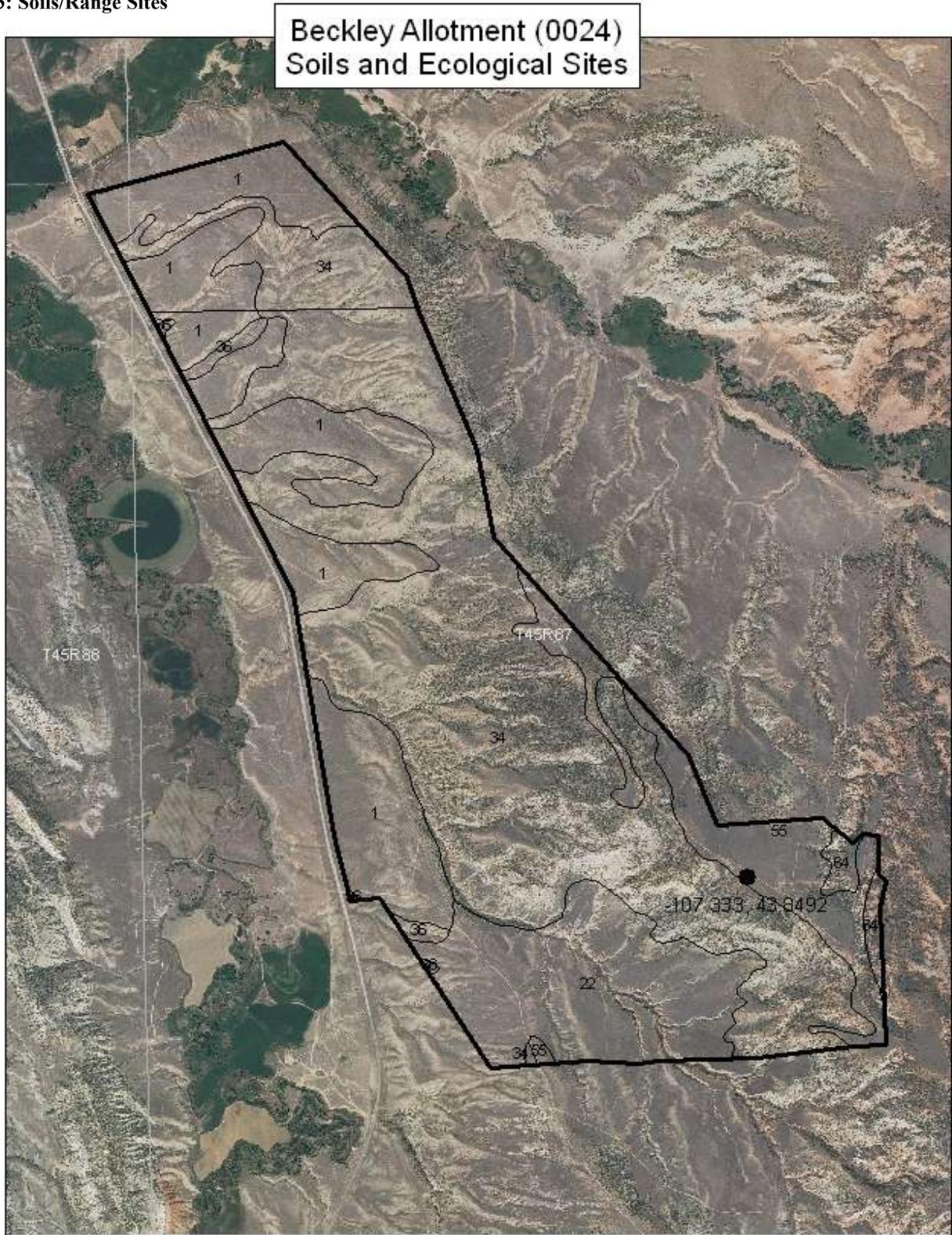
Map 1: Allotment Map



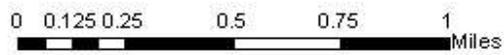
Map 2: Watershed Map



Map 3: Soils/Range Sites



**Beckley Allotment (0024)
Soils and Ecological Sites**

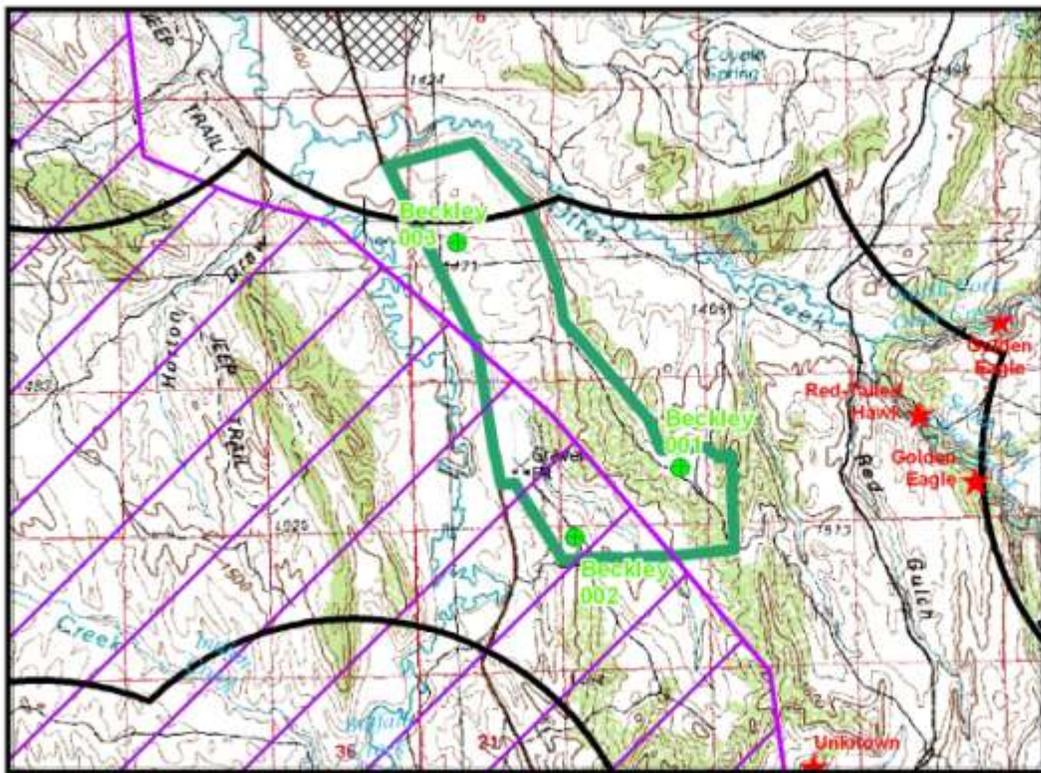


Soils and Ecological Sites

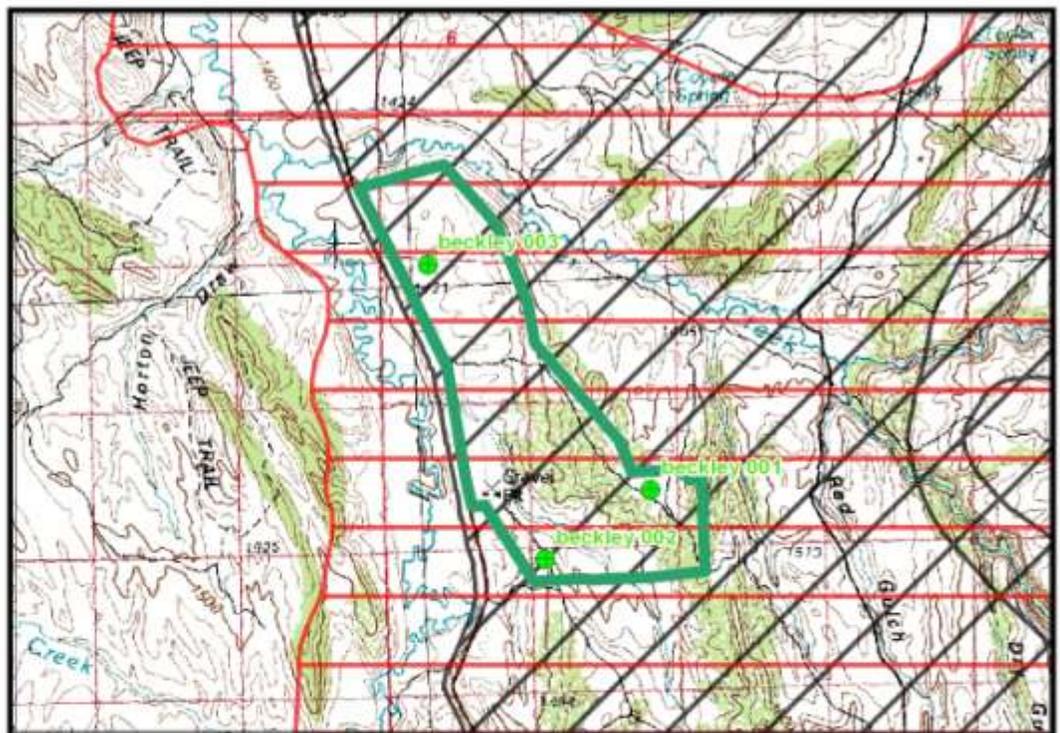
Soils and Ecological Site

[Pattern 1]	1. BECKLEY-HORSEWOODS-SHINELLE ASSOCIATION (L1, L2, S1, S2)
[Pattern 2]	2. FURNWOOD-KISHONA-HAVENWOOD ASSOCIATION (L1, L2, L3)
[Pattern 3]	3. KISHONA-SHINELLE-ROCK OUTCROP ASSOCIATION (L1, L2, S1, S2)
[Pattern 4]	4. KYLU-SHINELLE-BONNABA ASSOCIATION (L1, L2, S1, S2)
[Pattern 5]	5. BECKLEY-SHEAR-BROCK OUTCROP ASSOCIATION (L1, S1, S2, HO)
[Pattern 6]	6. SPICER-BE-TANE-SHINELLE-ROCK OUTCROP CORNER (S1, L1, S2)

Map 4: Wildlife



- Allotment Boundry
- Habitat Assessment Transects
- Active Raptor Nests
- Sage Grouse Occupied Leks
- 2 Mile Lek Buffer
- Sage Grouse Winter Areas
- WY Sage Grouse Core Area



- Allotment Boundry
- Habitat Assessment Transects
- Mule Deer Crucial Winter & Yearlong Range
- Elk Yearlong Range



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.



Photo 1. Key Area 1 Transect

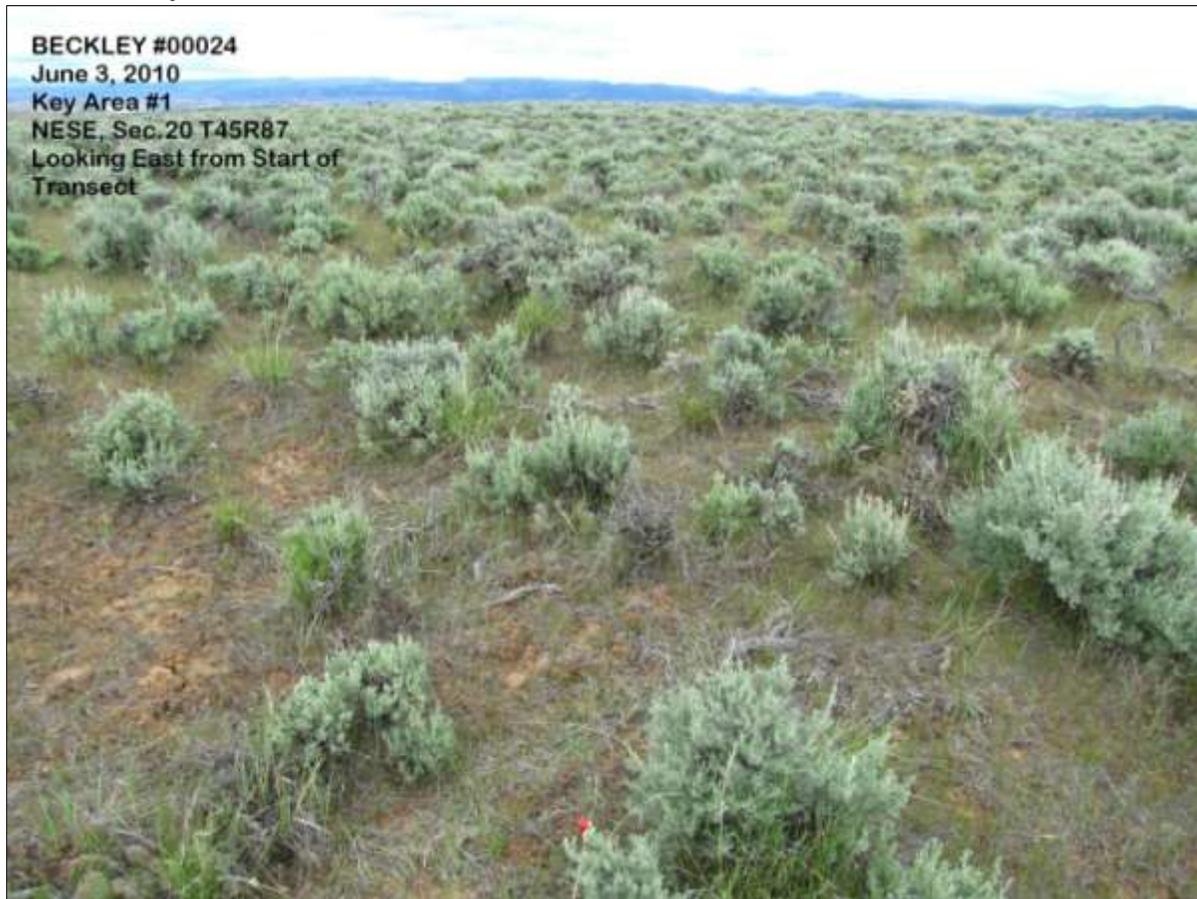


Photo 2. Key Area 2 Transect

