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NORTHEASTERN GREAT BASIN STANDARDS AND GUIDELINES ASSESSMENT

**Final Determinations for the
BOTTARI ALLOTMENT**

Elko District, Tuscarora Field Office

January 2011

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 *Northeastern Great Basin Standards and Guidelines for Grazing Administration (1997)* were developed. Recently, the Tuscarora Field Office completed an assessment of the achievement of these standards on the Bottari 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. The approved standards for rangeland health are as follows:

Standard 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.

Standard 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

Standard 3. Habitat: Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species.

Standard 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple use.

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Standard 5. Healthy Wild Horse and Burro Populations: Wild horses and burros exhibit characteristics of a healthy, productive, and diverse population. Age structure and sex ratios are appropriate to maintain the long term viability of the population as a distinct group. Herd management areas are able to provide suitable feed, water, cover, and living space for wild horses and burros and maintain historic patterns of habitat use.

This assessment does not include an assessment of Standard 2 (Riparian and Wetland Sites) or Standard 5 (Healthy Wild Horse and Burro Populations) because there are no riparian or wetland sites on public lands, and there are no wild horse herd management areas in this allotment.

2.0 Allotment Description, Resource Values, and Uses

The Bottari Allotment is located approximately 10 miles east of Elko, NV (Map 1). Elevations in the allotment range from 5,300 to 5,600 feet above sea level. Topography in the allotment is generally flat, with low ridges and shallow swales. The allotment contains approximately 2,855 acres of land, of which 486 acres are private and 2,369 are public.

The Elko Resource Management Plan categorized the Bottari Allotment as a class “I”, or Improve, allotment. Characteristics of Category I allotments were:

- Existing range improvements are inadequate. Redesign and/or removal of existing projects and development of new ones are required.
- The potential is moderate to high for a positive economic return on public investment for potential new range improvements and vegetative manipulations. There is potential for high cost effectiveness.
- There are one or more major resource conflicts present and they are responsive to or correctible through management.
- The land ownership objective states that when called for in the planning system, the public lands will be retained/consolidated to meet future management goals.
- Livestock distribution is poor to fair. Not all of the areas are being used proportionately. The current level of use by all grazing animals may exceed what the resource can support.
- The present activity plan if implemented is deficient and requires modification to resolve resource conflicts such as range improvements. There are physical problems that inhibit implementation of a new plan at the present time if one is required.
- The current ecological range and watershed condition is unsatisfactory. The primary concern is with stabilizing any downward trends and improving them where cost effective. The average climax potential is moderate to high.

The RMP placed the Bottari Allotment into the “I” category due to poor livestock distribution and lower ecological status in the Native Pasture. However, a 1988 evaluation concluded that livestock distribution was not a problem in the Native Pasture. In 1988, a modification to livestock use in the Native Pasture was implemented and then revised again in 1997 to require a delay (deferment) in grazing until seedripeness of the key forage species at least two out of every four years. The reason for the deferment was to improve ecological conditions.

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The allotment is divided into two pastures. See Map 2 for a detailed map of the allotment. The Native Pasture occupies the southern two-thirds of the allotment. Vegetation in this pasture is dominated by sagebrush and native bunchgrasses, predominately Western wheatgrass (*Agropyron smithii*), Sandberg's bluegrass (*Poa secunda*), bottlebrush squirreltail (*Sitanion hystrix*), Thurber's needlegrass (*Stipa thurberiana*), and Indian ricegrass (*Oryzopsis hymenoides*). The Seeding Pasture lies on the northern one-third of the allotment and is seeded to crested wheatgrass (*Agropyron cristatum*). Sagebrush has become well established in the seeding. Water is provided primarily by three wells, two of which are in the Seeding Pasture and the third in the Native Pasture. See Map 2 for the location of water developments.

The BLM completed an allotment evaluation for this allotment in 1988. The findings of the evaluation resulted in a grazing agreement that governed livestock grazing management on the allotment. A 1997 change in the terms and conditions of the grazing permit later modified the grazing agreement. The authorized season of use for the allotment is currently April 1 to December 31 annually in the Seeding Pasture and May 1 to September 30 on the Native Pasture, subject to the following terms and conditions:

- The permittee must meet annually with the BLM to plan livestock use.
- The Native Pasture must be deferred until after seed ripe two out of every four years.

Total permitted use amounts to 687 Animal Unit Months (AUMs), of which 193 are in the Native Pasture and 494 are in the Seeding Pasture. The allotment is grazed by one permittee under authorization 2701510.

Utilization objectives for the key species in the allotment are set as follows:

Table 1. Key Species Utilization Objective

Key Species	Utilization Objective
Native Perennial Grasses	Not to exceed 50% on the key species
Crested wheatgrass	Maximum annual utilization level of 65%

The Bottari Allotment in association with the surrounding habitat in the Spring Creek/Lamoille area may provide habitat for a multitude of bird, mammal, reptile, and amphibian species that commonly or occasionally inhabit sagebrush habitats throughout the northeastern Nevada. A list of species that potentially inhabit the types of habitats found in this allotment are presented in Appendices A through F. The BLM developed these lists from multiple sources and considers them to be a representation of the species most likely to be present on or transitory through this allotment.

Big Game Species

The entire allotment is identified as mule deer crucial summer range as well as antelope summer range.

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Federally Listed and Candidate Species

There are no known threatened or endangered species present or known to exist in the Bottari Allotment. The gray wolf (endangered) and the black bear (threatened) are transients (at best) to this District. The gray wolf is listed on the Nevada Department of Wildlife Master List for northeastern Nevada as being “locally extirpated.” The black bear is on the BLM Nevada Elko District Mammal List with the notation that “occasionally one will wander in from Idaho.” Neither has been recently documented on the district. The yellow-billed cuckoo is a candidate species that may occur in this portion of the Elko District; however none have been documented in the allotment. Furthermore, there is no appropriate habitat (cottonwood-willow forest) for yellow-billed cuckoos located within or in close proximity to the Bottari Allotment. Another candidate species that potentially inhabit this portion of the District is the Columbian spotted frog. None have been documented by BLM in the allotment. The Nevada Natural Heritage Program identified the possibility of habitat being present within the allotment for the Columbian spotted frog. This species requires riparian habitat not present in the allotment. The Nevada Natural Heritage Program identified Elko pyrg (small snail) as a species that may have potential habitat within 2 km of the allotment. This species is a freshwater gastropod either an S1 state and G1 global ranking. Habitat suitable for these species only exists in riparian areas on private land outside of the allotment.

On July 9, 2007, the bald eagle was removed (“de-listed”) from the list of threatened and endangered species. BLM is coordinating with the Nevada Department of Wildlife (NDOW) to ensure compliance with state regulations regarding the bald eagle. As of August 30, 2007, BLM policy is to consider the bald eagle as a BLM Sensitive Species. After de-listing, bald eagles will continue to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. Both of these laws prohibit killing, selling or otherwise harming eagles, their nests, or their eggs. In June 2007, the Service clarified its regulations implementing the BGEPA and published the National Bald Eagle Management Guidelines. The Service is in the process of establishing a permit program under the BGEPA that would authorize limited take of bald and golden eagles consistent with the purpose and goal of the BGEPA. The Service has also prepared a draft post-delisting bald eagle monitoring plan. These documents and more information about the bald eagle are available on the Service’s website at <http://www.fws.gov/migratorybirds/baldeagle.htm>.

Though not expected to use the habitat types found in the allotment heavily for foraging or other behaviors, transient-foraging could occur during the winter months in the allotment. Additionally, bald eagles may use areas surrounding the allotment which contain quality winter foraging areas. Suitable habitat on uplands, irrigated lands and riparian areas is widely dispersed over tens of thousands of acres throughout the Elko District.

Special Status Species

There are 31 bird, mammal, reptile, and amphibian species designated as Nevada BLM Sensitive Species which potentially use the habitat types present in this allotment. See Appendix G for a complete list of these species.

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Greater Sage Grouse

The allotment is within the South Fork Sage Grouse Population Management Units (PMU) in Northeastern Nevada considered under the Elko Strategy by the Northeastern Nevada Stewardship Group Inc. (NNSG). The entire allotment is sage grouse late summer habitat while the northern 70% serves as nesting and early brood rearing habitat (see Map 3a and 3b). There are no sage grouse leks (breeding display areas) within the Bottari Allotment boundary. The nearest lek is approximately 1 mile from the north boundary of the allotment. All areas of the Bottari Allotment potentially provide sage grouse habitat. Wyoming big sagebrush within the allotment provides forage and cover for adult sage grouse and late brood rearing areas for young. These areas are adequate to provide sage grouse with the needed cover and nutritional requirements for year-round activities. Sagebrush canopy cover, where it occurs, was estimated at 20% to 30% based on data collected in 2002 and field observations in 2006 and 2008.

Pygmy rabbits

Pygmy rabbits have been petitioned for listing as threatened or endangered under the Endangered Species Act of 1973. On January 8, 2008, the U.S. Fish and Wildlife Service announced a 90-Day finding in the Federal Register indicating that, "... the petition presents substantial scientific or commercial information indicating that listing the pygmy rabbit may be warranted." The Finding identifies the need to conserve pygmy rabbit habitat. Pygmy rabbits are found in a variety of vegetation types, including big sagebrush, that are suitable for creating their burrow system. Though no known formal surveys have been completed on the Bottari Allotment, pygmy rabbits have been reported by BLM personnel approximately 10 miles away in the Lamoille Valley area. The sites were within stands of big sagebrush.

Bats

Sixteen BLM sensitive bat species have been documented in the Elko District. The Bottari Allotment has the potential to provide habitat for a variety of these species (Appendices B through D). Although no surveys for bats have been conducted in the Bottari Allotment, the potential exists for bat use of the allotment for foraging. Bats occur in a variety of habitats in eastern Nevada, which include spring riparian areas, canyons, coniferous forests (including juniper), and deciduous forests. Wetlands and surface water associated with springs, reservoirs, sagebrush rangelands and artificial structures provide habitat for some or all of these species. The majority of the Bottari Allotment is relatively open and natural roost sites are marginalized to the Ruby Mountains to the east. There are numerous structures and homesteads throughout the Lamoille and Spring Creek areas where bats can roost on a temporary or permanent basis. Foraging areas are provided on the allotments' native uplands and in riparian areas located in the general area. Bats could transient-forage throughout the area.

Improvement or maintenance of range conditions, including maintenance of some sagebrush cover, would improve foraging habitat conditions for these species of bats as a variety of insects are associated with sagebrush habitats.

Raptors

Ten diurnal raptor and owl species are present in the Elko District with the potential to occur in the Bottari Allotment, based upon habitat types present. The following have been documented nesting within the District: turkey vulture, northern harrier, Cooper's hawk, northern goshawk,

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ferruginous hawk, golden eagle, American kestrel, prairie falcon, and burrowing owl. Rough-legged hawks may winter in the allotment.

Migratory Birds

On January 11, 2001, President Clinton signed the Migratory Bird Executive Order 13186 entitled “Responsibilities of Federal Agencies to Protect Migratory Birds.” It directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act and to conserve migratory birds. Pursuant to this act, special attention is given to birds, both migratory and resident, that may occupy habitat in this allotment.

According to the BLM Elko District Bird List, there are approximately 246 species that could inhabit the District area of jurisdiction on a seasonal or yearlong basis (BLM, 1999). Careful review of the Nevada Breeding Bird Atlas and widely accepted range maps reveal several more species that may possibly inhabit the District. The Bottari Allotment includes habitat for many of these bird species on a seasonal or yearlong basis. Bird species likely to use the Bottari Allotment and the habitat(s) where they are likely to be found are included in Appendix A. This listing is modified from the 1999 Nevada Partners in Flight Bird Conservation Plan.

Recreation

No established recreational areas exist on the Bottari Allotment. The allotment does receive dispersed recreational use due to the close proximity to the communities of Spring Creek and Lamoille. Most of this recreational activity consists of off road vehicle use (all terrain vehicles, dirt bikes, and four wheel drive vehicles) and target practice.

3.0 Summary of Available Monitoring Data

A. Indicators and Studies Summary

1. Key Area Utilization

A key area is a representative site within a use area selected to monitor trends in plant community or soil. A key area is monitored to show how management and natural factors are affecting similar areas in the allotment. The use levels summarized below represent the highest levels of annual use on key forage species at the key areas in the allotment. Utilization data were collected only for those years shown below.

Table 2. Utilization Data Key Area #1

Key Area #1- Seeding	
Key Species: crested wheatgrass (<i>Agropyron cristatum</i>)	
Year	Crested wheatgrass
1977	56.5%
1978	49.8%*
1979	45%
1980	30%
1981	35%
1982	35%
1983	25%
1984	18%

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1985	22%
1986	22%
1987	34%
1988	63%
1989	62%
1990	61%
1991	23%
1992	65%
1993	47%
1994	43%
1997	27%
1998	29%
2000	22%
2008	51%
2009	24%

*Denotes average of more than one transect.

Table 3. Utilization Data Key Area #2

Key Area #2- Native			
Key Species: Western wheatgrass (<i>Agropyron smithii</i>)			
Year	Western wheatgrass/Thickspike wheatgrass	Thurber's needlegrass/Indian ricegrass	POA spp. (Bluegrass)
1977	63.5% **		
1981	<10% **		
1982	9%		
1983	11%	4%	5%
1985	18%	30%	37.3%
1986	15%	30%	34%
1987			44%
1988	17%	45%	0%
1989	35%	50%/57%	20%
1990	33%	44%/50%	24%
1991	13.5%	32%	40%
1992		43%	
1993	30%	35%	
1994	43%	42%	
1998	0%		0%
2008	54%	55%	
2009	0%	0%	

**Data is unreliable because on the data sheet the species is noted as crested wheatgrass, which is not present in the Native Pasture. It is assumed the species should have been noted as western wheatgrass/thickspike wheatgrass.

2. Actual Use Data

Actual use data is provided annually by the permittee, by allotment and by pasture to determine the amount of AUMs used by livestock during each grazing year. Actual use data is summarized by year in the table below. Actual use was available only for those years shown below.

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Table 4. Actual Use

Actual Use: Bottari (AUMs)		
Year	Pasture	
	Seeding	Native
1975	456	197
1977	450	198
1981	430	
1982	710	
1983	477	193
1984	446	193
1985	318	193
1986	378	193
1987	345	193
1988	264	193
1989	402	115
1990	341	198
1991	168	183
1992	324	132
1993	436	147
1994	352	165
1995	418	184
1996	403	180
1998	531	184
1999	287	192
2000	394	187
2001	333	195
2002	380	196
2003	178	123
2004	161	172
2005	270	195
2006	478	180
2007	345	201

3. Weight Estimate Production Summary

Weight-estimate production data measures the vegetative production at a site and was used to assess current vegetative conditions in relation to its site potential. The total dry weight production at key areas in the allotment is summarized below.

Table 5. Production Data

Production Data: Bottari Allotment		
Species	Total Dry Weight Production (lbs./acre)	
	1982	1987
Key Area 1- Seeding		
Crested wheatgrass		861.1
Spiny phlox		1.8
Miklvetch		1.0
Douglas rabbitbrush		Trace

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Big sagebrush		46
Key Area 2- Native		
Western wheatgrass	1.3	
Bluebunch wheatgrass	3.0	
Bottlebrush squirreltail	6.0	
cheatgrass	25.8	
Sandberg's bluegrass	4.8	
Longleaf phlox	12.8	
Wyoming big sagebrush	743.7	
Douglas rabbitbrush	19.2	

4. Wildlife Studies

There are currently no wildlife key area monitoring points established in the Bottari Allotment. Visual evidence of vegetation species composition and diversity, an assessment of indicators of rangeland health, and photo points were used in this allotment to evaluate wildlife habitat suitability.

5. Indicators of Rangeland Health

On April 29, 2008 an interdisciplinary team of BLM resource specialists visited the Bottari Allotment to evaluate rangeland health by looking at a variety of indicators and assessing how well the landscape on the allotment is functioning compared to similar areas (reference areas) where ecological processes are functioning within the normal range of variability, and have adequate resistance to and resilience from most disturbances. Technical Reference 1734-6, Version 4 "Interpreting Indicators of Rangeland Health" was used as the guide in conducting the assessment. The assessment led to the following conclusions:

- Soil and Site Stability: observations indicated conditions of the soils in the Bottari Allotment are slightly to moderately departed from what would be expected at a reference area. Some soil compaction noted, almost all confined to drainage bottoms.
- Hydrologic Function: slight to moderate departure from what would be expected at a reference area. Departure was based on evidence of some soil compaction and lower levels of vegetative cover in the drainage bottoms than would be expected.
- Biotic integrity: Slight to moderate departures from expected. Sites in the Native Pasture, especially in the drainage bottoms, showed signs of some species depletion, along with higher amounts of phlox, Sandberg's bluegrass, and rabbit brush than expected.

4.0 Conclusions and Determinations

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.

Standard 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform. **Met.**

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Rationale: Landforms present are predominately low rolling hills. The Bottari Allotment lies in the valley floor off the west side of the Ruby Mountains.

During the 1960's, the native plant community within the Seeding Pasture of the Bottari Allotment was converted to crested wheatgrass seedings. Crested wheatgrass was seeded for the purpose of providing forage for livestock and to increase flexibility in grazing management options in other areas. The dominant ecological site within the crested wheat seedings in the Bottari Allotment is Loamy 8"-10" precipitation zone. The site characteristics and the average annual precipitation associated with this ecological site are suitable for producing healthy and vigorous crested wheatgrass plant communities. Plant communities dominated by crested wheatgrass in this ecological site have the potential of achieving favorable site stabilization characteristics associated with the attainment of this standard.

The dominant soils in the Bottari Allotment are from the Hunnton-Wieland-Hunnton gravelly association soil series. They are positioned on fan piedmont remnants and composed of mixed alluvium influenced by loess and volcanic ash. They are moderately deep to deep and moderately drained with a loam to clay-loam texture. According to the U.S. Natural Resource Conservation Service Nevada site description, the approximate vegetative ground cover of native vegetation appropriate for the Loamy 8 to 10" precipitation zone ecological site ranges between 20% to 30%.

Recent monitoring information including cover data accompanied by field observations indicate that sufficient vegetative cover, litter and rock fragments are present to meet the requirements of this standard given the potential of the sites monitored. Furthermore, the utilization objectives established on the allotment have largely been achieved. The attainment of the utilization objective has resulted in healthy and vigorous crested wheatgrass plants in the Seeding Pasture and a stable native plant community in the Native Pasture. There has been some recent loss of sagebrush due to aroga moth infestations, and cheatgrass has become well established in portions of the Native Pasture, but these factors are not affecting the stability of the sites. The vegetative cover required to stabilize soils and ensure appropriate infiltration and permeability rates is being maintained in the allotment.

Standard 3. Habitat: Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species. **Met.**

Rationale: The evaluation of existing data indicates that this standard is being met in the uplands.

Seeding Pasture – The upland habitat values within the Seeding Pasture were altered in the 1960s when the native plant community was seeded with crested wheatgrass. Crested wheatgrass seedings were commonly established during this time period to provide additional spring forage for livestock on range sites that exhibited low productivity. Although this practice is controversial from a wildlife standpoint, one benefit of establishing these seedings was to relieve livestock grazing pressure on higher elevation range sites which were more productive

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and diverse. Although the plant community in the Seeding Pasture continues to be dominated by crested wheatgrass, some native species such as Wyoming big sagebrush, Douglas rabbitbrush, tansy mustard, Sandberg's bluegrass, and lupine have re-established. The upland habitat has been evaluated towards meeting this standard based on the potential of crested wheatgrass and other existing upland species to provide suitable feed, water, cover and living space for animal species and maintain ecological processes within the allotment.

Production as an attribute provides insight into plant vigor and takes into account vegetation attributes such as height, basal diameter, number of stems or leaf whorls and volume. These attributes are reflected in the biomass or production of plants. Although production is affected by annual precipitation, inferences can be made to the expected productivity of the site in relation to its potential. The review of more recent information including key area photographs, shows no indication that the productive capacity or the viability of the seeding has been reduced since the last production estimates.

Production studies also provide insight into plant diversity, a key component describing this standard. Existing monitoring data has shown some re-occupation by native vegetation. Field observations have shown the presence of the species mentioned above, but the primary vegetative component remains crested wheatgrass. The current capability of the allotment to produce a diverse plant community within the Seeding Pasture is limited; however sufficient upland native plant species exist to support the attainment of this standard. The Land Use Plan objective for this allotment is to maintain prior seeded areas, however, future maintenance activities will be conducted analyzing impacts to wildlife values not originally considered in the original conversion. Sage grouse conservation planning efforts are currently underway within the Tuscarora Field Office. Specific Population Management Units (PMUs) have been established and will be evaluated to determine priority attention based on identified risk factors, which include habitat alteration. Based on these determinations a series of appropriate practices designed to enhance sage grouse habitat will be assessed and incorporated as recommended.

Recorded utilization levels in the Seeding Pasture have been at or below desired use levels and have resulted in sufficient residual herbaceous vegetation to provide habitat for wildlife species relying upon the habitat values in the allotment. Wildlife habitat, specifically sage grouse habitat, has begun to improve in these seedlings as the diversity of vegetation and increase in sagebrush cover has increased since the conversion to crested wheat. Habitat quality is expected to continue to increase over time. Further, this level of use in accordance with existing management has ensured that crested wheatgrass plants are vigorous, able to reproduce and increase in long term productivity. The presence of these vegetative attributes, indicate that upland habitat values, given the present capability of the allotment, supports the attainment of this standard.

Native Pasture – The Native Pasture remains in native vegetation. Portions of this pasture contain a significant cheatgrass component. There has also been some sagebrush mortality in recent years, perhaps due to an aroga moth infestation. However, visual observations indicate sagebrush continues to provide adequate cover. Good forb and shrub diversity is present and likely provides a variety of food and cover choices for wildlife. Some forbs and shrubs

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documented in the Native Pasture include lupine, tansy mustard, milkvetch, rockcress, pepperweed, spiny phlox, Douglas rabbitbrush, spineless horsebrush, and spiny hopsage.

Recorded utilization levels in the Native Pasture have also been below desired use levels and have resulted in sufficient residual herbaceous vegetation to provide habitat for wildlife species relying upon the habitat values in the allotment. Dominant grass species for the ecological site (particularly bluebunch wheatgrass, Thurber's needlegrass, and bottlebrush squirreltail) are present in lower quantities than would be considered desirable. The current grazing system should allow these species to regain dominance, particularly given the slight decrease in sagebrush canopy. Under this grazing schedule, the Native Pasture is not to be grazed prior to seed-ripe more than 2 years out of 4.

Standard 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple use. **Met**

Rationale: Based on the evaluation of existing information pertaining to range improvements and grazing, cultural resources are being recognized within the context of multiple use management in the Bottari Allotment.

Determination

Based on information provided in this assessment, I have determined that all standards are being met and current livestock grazing is in conformance with the guidelines.

/s/ David Overcast
David Overcast
Field Manager
Tuscarora Field Office

January 12, 2011
Date

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Appendices A-H

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Appendix A: Birds by habitat type in the Bottari Allotment. This list was developed from the BLM Elko Bird List, the Nevada Breeding Bird Atlas, the range maps in the Sibley Guide to Birds, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Habitat information is from the Nevada Partners in Flight Bird Conservation Plan.

Species	Sagebrush
Turkey Vulture	F
Northern Harrier	M
Cooper's Hawk	F
Northern Goshawk	F
Ferruginous Hawk	B
Rough-legged Hawk	F
Golden Eagle	F
American Kestrel	F
Prairie Falcon	F
Gray Partridge	B
Chuckar	B
Columbian Sharp-tailed Grouse	B
Greater Sage Grouse	B
Mountain Quail	B
California Quail	B
Burrowing Owl	B
Common Nighthawk	B
Common Poor-will	B
Rufous Hummingbird	M
Gray Flycatcher	B
Loggerhead Shrike	B
Horned Lark	B
Bushtit	B
Mountain Bluebird	F
Sage Thrasher	B
Black-throated Sparrow**	B
Sage Sparrow	B
Brewer's Sparrow	B
Vesper Sparrow	B
Lark Sparrow**	B
Snow Bunting***	I
Western Meadowlark	B
Brown-headed Cowbird	B
Black Rosy Finch	W
American Goldfinch	M

* B = Breeding, F = Feeding, I = Incidental, M = Migration, W = Wintering.

** These were not on the BLM Elko Field Office Bird List but were documented as breeding in the district by the Great Basin Bird Observatory in their Atlas of the Breeding Birds of Nevada.

*** This species was not on the BLM Elko Field Office Bird List but is shown in the Sibley Guide to Birds as having a winter range that overlaps the Elko District.

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Appendix B: Mammals by life zone in the Bottari Allotment. This list was developed from the BLM Elko Mammal List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on life zones are from Hall's Mammals of Nevada.

Species	Upper Sonoran (Sagebrush)
Merriam's Shrew	X
Vagrant Shrew	X
Water Shrew	X
Preble's Shrew	X
Pallid Bat	X
Townsend's big-eared Bat	X
Big Brown Bat	X
Spotted Bat	X
Silver-haired Bat	X
Western Red Bat*	X
Hoary Bat	X
Western Small-footed Myotis	X
Little Brown Bat	X
Fringed Myotis	X
Long-legged Myotis	X
Yuma Myotis*	X
Western Pipistrelle*	X
Black-tailed Jack Rabbit	X
Nuttall's Cottontail	X
Desert Cottontail	X
Pygmy Rabbit	X
Yellow-bellied Marmot	X
Townsend's Ground Squirrel	X
Wyoming Ground Squirrel	X
Belding's Ground Squirrel	X
White-tailed Antelope Squirrel	X
Least Chipmunk	X
Townsend's Pocket Gopher	X
Botta's Pocket Gopher*	X
Southern Pocket Gopher*	X
Little Pocket Mouse	X
Great Basin Pocket Mouse	X
Dark Kangaroo Mouse	X
Ord's Kangaroo Rat	X
Chisel-toothed Kangaroo Rat	X
Western Harvest Mouse	X
Canyon Mouse	X
Deer Mouse	X
Brush Mouse**	X
Pinon Mouse	X
Northern Grasshopper Mouse	X
Desert Woodrat	X
Montane Vole	X
Sagebrush Vole	X
Muskrat	X
Beaver	X
Black Rat	X

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House Mouse	X
Porcupine	X
Coyote	X
Red Fox	X
Gray Fox	X
Kit Fox	X
Raccoon	X
Ringtail	X
Long-tailed Weasel	X
Mink	X
River Otter	X
Badger	X
Western Spotted Skunk	X
Striped Skunk	X
Mountain Lion	X
Bobcat	X
Mule Deer	X
Pronghorn	X
Bighorn Sheep	X
Elk	X

* These were not on the BLM Elko Field Office Mammal List but were on the April 2005 NDOW Master List.

** This species was not on the BLM Elko Field Office Mammal List but is potentially on the District according to Nevada Wildlife Action Plan.

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Appendix C: Mammals by vegetation association in the Bottari Allotment. This list was developed from the BLM Elko Mammal List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on plant communities is from the USDI BLM Technical Note Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A.W. Kuchler's Associations for the Eleven Western States. X = Habitat Association was listed. Y = Habitat Association not actually listed, but referred to in the narrative for the species.

Species	Great Basin Sagebrush (38)	Sagebrush Steppe (55)
Merriam's Shrew	X	X
Preble's Shrew		X
Pallid Bat		X
California Myotis*		X
Yuma Myotis*		X
Western Pipistrelle*	X	
Brazilian Free-tailed Bat	X	
White-tailed Jack Rabbit	X	
Black-tailed Jack Rabbit	X	X
Nuttall's Cottontail	X	X
Desert Cottontail	X	
Pygmy Rabbit	X	X
Townsend's Ground Squirrel	X	X
Wyoming Ground Squirrel	X	X
Least Chipmunk	X	X
Townsend's Pocket Gopher	X	X
Little Pocket Mouse	X	
Great Basin Pocket Mouse	X	X
Dark Kangaroo Mouse	X	
Ord's Kangaroo Rat	X	X
Chisel-toothed Kangaroo Rat	X	
Western Harvest Mouse		X
Canyon Mouse	X	
Deer Mouse		Y
Pinon Mouse		X
Northern Grasshopper Mouse		X
Desert Woodrat	X	
Bushy-tailed Woodrat		X
Montane Vole		X
Lont-tailed Vole		X
Sagebrush Vole	X	X
Porcupine		X
Gray Wolf*		X
Coyote	Y	Y
Gray Fox	X	
Kit Fox	X	
Western Spotted Skunk	Y	Y
Striped Skunk	Y	Y
Bobcat	Y	Y

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Mule Deer	Y	Y
Pronghorn		X
Bison*		X

* These were not on the BLM Elko Field Office Mammal List but were on the April 2005 NDOW Master List.

** This species was not on the BLM Elko Field Office Mammal List but is potentially on the District according to Nevada Wildlife Action Plan.

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Appendix D: Bats by vegetation type in the Bottari Allotment. This list was put together from species information in the 2006 Nevada Bat Conservation Plan and may not be a complete list of potential habitats.

Species	Sagebrush	Comments
Pallid Bat	X	
Townsend's big-eared Bat	X	
Big Brown Bat	X	
Spotted Bat	X	
California Myotis*		Variety of habitats
Western Small-footed Myotis	X	
Long-eared Myotis	X	
Long-legged Myotis	X	
Yuma Myotis*	X	
Western Pipistrelle*	X	
Brazilian Free-tailed Bat		Variety of habitats

* These were not on the BLM Elko Field Office Mammal List but were on the April 2005 NDOW Master List.

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Appendix E: Reptiles and amphibians by vegetation association in the Bottari Allotment. This list was developed from the BLM Elko Reptiles and Amphibians List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on plant communities is from the USDI BLM Technical Note Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A.W. Kuchler's Associations for the Eleven Western States. X = Habitat Association was listed. Y = Habitat Association not actually listed, but referred to in the narrative for the species.

Species	Great Basin Sagebrush (38)	Sagebrush Steppe (55)
Tiger Salamander		X
Great Basin Spadefoot	X	X
Western Toad	X	X
Woodhouse's Toad		X
Pacific Treefrog	X	X
Great Basin Collared Lizard*	X	
Desert Collared Lizard	X	
Long-nosed Leopard Lizard	X	X
Western Fence Lizard	X	
Sagebrush Lizard	X	X
Side-blotched Lizard	X	X
Desert Horned Lizard	X	
Short-horned Lizard		X
Greater Short-horned Lizard**	X	
Western Skink	X	X
Western Whiptail	X	X
Racer	X	X
Striped Whipsnake	X	X
Great Basin Gopher Snake**	X	X
Common Kingsnake**	X	
Gopher Snake	X	X
Long-nosed Snake	X	
Common Garter Snake		X
Western Terrestrial Garter Snake	Y	Y
Ground Snake	X	X
Night Snake	X	X
Western Rattlesnake		X

* This species was not on the BLM Elko Field Office Reptile and Amphibian List but is potentially on the District according to Nevada Wildlife Action Plan.

** These were not on the BLM Elko Field Office Reptile and Amphibian List but were on the April 2005 NDOW Master List.

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Appendix F: Vertebrates by key habitats in the Bottari Allotment. This was developed from species shown in the Nevada Wildlife Action Plan to inhabit the District as well as those from BLM Elko District Lists, the April 2005 NDOW Master Species List, and widely accepted range maps. Key Habitat Types are from the Nevada Wildlife Action Plan.

Species	Sagebrush
Great Basin Collared Lizard*	X
Long-nosed Leopard Lizard	X
Pygmy Short-horned Lizard	X
Desert horned Lizard	X
Greater Short-horned Lizard**	X
Merriam's Shrew	X
Preble's Shrew	X
Western Small-footed Myotis	X
Pygmy Rabbit	X
Wyoming Ground Squirrel	X
Dark Kangaroo Mouse	X
Sagebrush Vole	X
Kit Fox	X
Mule Deer	X
Greater Sage Grouse	X
Columbian Sharp-tailed Grouse	X
Mountain Quail	X
Ferruginous Hawk	X
Western Burrowing Owl	X
Short-eared Owl	X
Loggerhead Shrike	X
Brewer's Sparrow	X
Sage Sparrow	X

* These were not on the BLM Elko Field Office Species Lists but are potentially on the District according to Nevada Wildlife Action Plan.

** These were not on the BLM Elko Field Office Species Lists but were on the April 2005 NDOW Master List.

*** These were not on the BLM Elko Field Office Species Lists but were documented as breeding in the district by the Great Basin Bird Observatory in their Atlas of the Breeding Birds of Nevada.

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Appendix G: BLM Sensitive Terrestrial Vertebrate Species in the Bottari Allotment. This list was developed by selecting those species in the previous appendices that are on the current BLM Sensitive Species List.

Birds

Common Name	Genus	Species
Northern Goshawk	<i>Accipiter</i>	<i>gentilis</i>
Ferruginous Hawk	<i>Buteo</i>	<i>regalis</i>
Golden Eagle	<i>Aquila</i>	<i>chrysaetos</i>
Prairie Falcon	<i>Falco</i>	<i>mexicanus</i>
Columbian Sharp-tailed Grouse	<i>Tympanuchus</i>	<i>phasianellus</i>
Greater Sage Grouse	<i>Centrocercus</i>	<i>urophasianus</i>
Mountain Quail	<i>Oreortyx</i>	<i>pictus</i>
Burrowing Owl	<i>Athene</i>	<i>cunicularia</i>
Loggerhead Shrike	<i>Lanius</i>	<i>ludovicianus</i>
Juniper Titmouse	<i>Baeolophus</i>	<i>ridgwayi</i>
Vesper Sparrow	<i>Pooecetes</i>	<i>gramineus</i>
Black Rosy Finch	<i>Leucosticte</i>	<i>atrata</i>

Mammals

Common Name	Genus	Species
Preble's Shrew	<i>Sorex</i>	<i>preblei</i>
Pallid Bat	<i>Antrozous</i>	<i>pallidus</i>
Townsend's big-eared Bat	<i>Corynorhinus</i>	<i>townsendii</i>
Big Brown Bat	<i>Eptesicus</i>	<i>fuscus</i>
Spotted Bat	<i>Euderma</i>	<i>maculatum</i>
Silver-haired Bat	<i>Lasionycteris</i>	<i>noctivagans</i>
Western Red Bat	<i>Lasiurus</i>	<i>blossevillii</i>
Hoary Bat	<i>Lasiurus</i>	<i>cinereus</i>
California Myotis	<i>Myotis</i>	<i>californicus</i>
Western Small-footed Myotis	<i>Myotis</i>	<i>ciliolabrum</i>
Little Brown Bat	<i>Myotis</i>	<i>lucifugus</i>
Fringed Myotis	<i>Myotis</i>	<i>thysanodes</i>
Long-legged Myotis	<i>Myotis</i>	<i>volans</i>
Yuma Myotis	<i>Myotis</i>	<i>yumanensis</i>
Western Pipistrelle	<i>Pipistrellus</i>	<i>hesperus</i>
Brazilian Free-tailed Bat	<i>Tadarida</i>	<i>brasiliensis</i>
Pygmy Rabbit	<i>Sylvilagus</i>	<i>idahoensis</i>
River Otter	<i>Lontra</i>	<i>canadensis</i>

Reptiles

Common Name	Genus	Species
Short-horned Lizard	<i>Phrynosoma</i>	<i>douglassi</i>

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Appendix H: BLM Key to Plant Acronyms in the Bottari Allotment.

Key to Plant Acronyms		
Plant Acronym	Species name	Common name
AAFF	-	annual forb
AGCR	<i>Agropyron cristatum</i>	crested wheatgrass
AGDA	<i>Agropyron dasystachyum</i>	thickspike wheatgrass
AGSM	<i>Agropyron smithii</i>	Western wheatgrass
AGSP	<i>Agropyron spicatum</i>	bluebunch wheatgrass
ARTR	<i>Artemisia tridentada</i>	big sagebrush
ARTRW	<i>Artemisia tridentada</i> var. <i>wyomingensis</i>	Wyoming big sagebrush
ASTRA	<i>Astragalus</i>	milkvetch
BRTE	<i>Bromus tectorum</i>	cheatgrass
CHVI8	<i>Chrysothamnus viscidiflorus</i>	Douglas rabbitbrush
LUPIN	<i>Lupinus</i> spp.	Lupine
ORHY	<i>Oryzopsis hymenoides</i>	Indian ricegrass
PHHO	<i>Phlox hoodii</i>	spiny phlox
PHLO2	<i>Phlox longifolia</i>	longleaf phlox
POSE	<i>Poa secunda</i>	Sandberg's bluegrass
SIHY	<i>Sitanion hystrix</i>	bottlebrush squirreltail
STTH2	<i>Stipa thurberiana</i>	Thurber's needlegrass
TECA2	<i>Tetradymia canescens</i>	spineless horsebrush

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