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ELKO DISTRICT Tuscarora Field Office

NORTHEASTERN GREAT BASIN STANDARDS AND GUIDELINES ASSESSMENT

Cotant Seeding Allotment



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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

Cotant Seeding Allotment Standards and Guidelines Assessment

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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 Cotant Seeding Allotment. The results of this assessment are presented in this report. This assessment outlines the BLM's determination as to (1) whether these standards are being met, and, (2) if they are not being met, whether existing grazing management practices have contributed 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.

Standard 5. 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 standard does not apply to this allotment. There are neither wild horse herd management areas nor wild horses within the Cotant Seeding Allotment.

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2.0 Background

One livestock permittee, authorization 2701590, is authorized to graze livestock within the Cotant Seeding Allotment. An allotment evaluation was completed on January 28, 1994 and a Final Multiple Use Decision (FMUD) implementing the management actions identified in the evaluation was signed on May 18, 1994. The FMUD allows for a rotational grazing system alternating early and late use between the native and seeded pastures within the allotment. The active preference in the allotment is 720 AUMs with 112 AUMs considered as voluntary non-use for conservation purposes. The total preference remains at 832 AUMs.

Table 1. Permitted Use for the Cotant Seeding Allotment

Allotment	Livestock Number	Livestock Kind	Permit Dates	AUMs
Cotant Seeding	178	Cattle	5/1-8/31	720

Table 2. Cotant Allotment Grazing System

Pasture	Target AUMs	Year #1	Year #2	Year #3	Year #4
Mexican Field*	546	4/15-5/31	4/15-5/31	4/15-5/31	7/27-9/10
Cotant Seeding	462	7/3-8/26	7/3-8/26	6/1-7/26	6/1-7/26
Cotant Native	258	6/1-7/2	6/1-7/2	7/27-8/26	5/1-5/31

* Mexican Field is a separate allotment that is used in conjunction with the Cotant Seeding Allotment to complete a rotational grazing system.

East Fork Beaver Creek Enclosures Grazing System

In 1989, BLM fenced the majority of the East Fork of Beaver Creek occurring within the Cotant Seeding Allotment into two enclosures. Water gaps for livestock exist above, below and between the enclosures. Limited grazing of the enclosures by livestock was provided for in the 1988 Comex (Cotant-Mexican Field) Allotment Management Plan (AMP) and carried forward in the 1994 FMUD. Under provisions of the 1988 AMP, the enclosures could be grazed from 4/16-6/15 for two years followed by two years of rest beginning in 1994. A utilization limit of 50% on key species was also established. Other than periodic unauthorized use, prescriptive grazing of enclosures has only occurred in 2008.

Since the FMUD was issued in 1994, no formal evaluations or assessments of resource conditions in the allotment have been completed. However, a draft Standards and Guidelines Assessment was issued in 2002. Monitoring data collected since 1994 indicate that existing management is favorable and has provided for the attainments of multiple use objectives.

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3.0 Allotment Description, Resource Values, and Uses

The Cotant Seeding Allotment is located approximately 30 miles north of Elko, Nevada. Gently rolling hills to moderately steep mountainous terrain with elevations varying from 5,500 feet to 6,500 feet characterize the topography of the allotment. The allotment consists of two pastures, the west 27 percent of the allotment is seeded with crested wheatgrass and the remainder is native range consisting of big sagebrush, low sagebrush, bunch grasses, annual grasses and various forbs. There are two pastures within the Cotant Seeding Allotment, the Cotant Seeding Pasture and the Cotant Seeding Native Pasture.

The Cotant Seeding Allotment includes approximately two miles of the East Fork of Beaver Creek. The East Fork of Beaver Creek is identified as a high priority stream for management in Elko's 1987 Resource Management Plan (RMP).

The Elko Resource Management Plan categorized the Cotant Seeding 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.

3.1 Soils

The Cotant Seeding Allotment is characterized by steep hills with rocky outcrops with gradual neat level basins or small, low rolling hills in between the steeper hills. Steep hillslope areas are typified by the Akler-Quarz-Soughe Association (24%). Depth to bedrock ranges from near zero to 40 inches. Surface textures range from gravelly loams to extremely cobbly loams. Available water holding capacity is limited and the soils are rated poor for rangeland seedings because of steep, thin and/or rocky soils.

Soils situated on low lying basins or rolling hills located between the steeper hills are typified by the Enko-Hunnton Association (16%). These soils are generally deeper than 60 inches. An

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indurated duripan, which restricts root growth, commonly occurs at a depth of 20 to 40 inches. Available water holding capacity ranges from 3.4 to 8.6 inches. Suitability for rangeland seedings is rated fair.

3.2 Vegetation

The vegetation community within the native pasture of the Cotant Seeding Allotment is dominated by Thurber's needlegrass (*Stipa thurberiana*), bluebunch wheatgrass (*Agropyron cristatum*), and Wyoming big sagebrush (*Artemisia tridentata wyomingensis*). Other species found within the allotment include Sandberg's bluegrass (*Poa secunda*), bottlebrush squirreltail (*Sitanion hystrix*), and Douglas rabbitbrush (*Chrysothamnus viscidiflorus*). Additional grass and shrub species may also be present in limited numbers. The seeding pasture is dominated by crested wheatgrass with Wyoming big sagebrush over story. Utilization objectives for the key species in the Cotant Seeding Allotment were established in the Comex Allotment Management Plan as follows:

Table 3. Key Species and Utilization Objectives

Key Species	Utilization Objectives
Crested Wheatgrass (AGCR)	65%
Thurber's Needlegrass (STTH2)	50%

3.3 Invasive, Non-Native Plant Species

The BLM defines an invasive weed as, "a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the health of the site, it makes efficient use of natural resources difficult and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all" (BLM National List of Invasive Weed Species of Concern). Invasive and non-native plant species may spread from infested areas by people, equipment, livestock, wildlife, and winds. They often exhibit aggressive growth and have the potential to seriously degrade the economic and ecological values of natural resources. Under Executive Order 13112, it is the policy of the land management agencies to prevent introduction of noxious weeds and invasive non-native species and to control their impact (EO 13112, 1999). Nevada Revised Statute 555.005 defines noxious weeds as plants which are likely to be "detrimental or destructive and difficult to control or eradicate."

3.3.1 Category A Weeds

These weeds are not found or are limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; and control is required by the state in all infestations (NDOA 2005).

There are no known Category A Weeds within the Cotant Seeding Allotment.

3.3.2 Category B Weeds

These weeds are established in scattered populations in some counties of the state; actively excluded where possible; actively eradicated from nursery stock dealer premises; and control is

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required by the state in areas where populations are not well established or previously unknown to occur (NDOA 2005).

There are no known Category B Weeds within the Cotant Seeding Allotment.

3.3.3 Category C Weeds

These weeds are currently established and widespread in many counties of the state with abatement at the discretion of the state quarantine officer (NDOA 2005).

Several populations of whitetop (*Cardaria draba*) are known to exist within the Cotant Seeding Allotment.

3.4 Riparian and Wetlands

Approximately 80% of the East Fork of Beaver Creek within the Cotant Seeding Allotment is included in two exclosures. Small water gaps (places where cattle can access water) exist below, above and between the two exclosures. The East Fork of Beaver Creek is identified as a potential recovery stream for Lahontan cutthroat trout (LCT), a federally listed threatened species, in the LCT Recovery Plan (U.S. Fish and Wildlife Service 1995). No seeps or springs on public lands have been identified in the Allotment.

Although conversation records suggest LCT may have been present in the East Fork of Beaver Creek in the early 1970's (BLM file data), only nongame fish species including suckers (*Catostomas* species), redbreast shiners (*Richardsonius egregious*) and Lahontan speckled dace (*Rhinichthys osculus*) are currently present. Dominant riparian plants include several species of willows (*Salix* species), Nebraska sedge (*Carex nebrascensis*), baltic rush (*Juncus balticus*) and spikerush (*Eleocharis* species). Active beaver dams occur throughout both exclosures.

3.5 Wildlife, Special Status Species, Threatened and Endangered, and Migratory Birds

3.5.1 Wildlife

Big Game Species

The Cotant Seeding Allotment provides habitat for mule deer, pronghorn and elk on a seasonal or yearlong basis within Management Area 7, Unit 073 as delineated by the Nevada Department of Wildlife (NDOW).

Mule Deer: The allotment provides summer (5/1 to 10/14) and intermediate (spring: 3/16 to 5/11 and fall: 10/14 to 12/15) habitat including a migration corridor.

Pronghorn: The allotment provides pronghorn summer range. The "water gap" area and improved road between the two fenced riparian exclosure areas on the East Fork of Beaver Creek provide a documented "bottleneck" portion of a migration corridor for pronghorn moving to and from summer range (at least upper elevation Unit 073 area) and winter range (lower elevation Unit 073 area). This is an important movement area as some other areas to the south are encumbered by fencing and the North Fork Humboldt River (some areas are entrenched, deep, or have expanded areas with willow cover, or a combination, thereof).

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Rocky Mountain elk: Elk use of suitable habitat could occur on a seasonal or yearlong basis or during migration to and from winter and summer range areas. No elk sign has been observed on or near the key area monitoring transect as of 2010 although elk have been observed on surrounding areas.

Other Game and Nongame Wildlife

There are approximately 350 species of vertebrate wildlife which occur in northeastern Nevada. The allotment provides habitat for many of these species on a seasonal or yearlong basis in association with sagebrush steppe habitat, and riparian habitat types. The table shown in Appendix 1 includes a list of main wildlife species that have the potential to occur within the project area on upland habitat areas.

3.5.2 Special Status Species

Actions that may affect species that are Federally-listed, or are proposed for listing as threatened or endangered, are subject to consultation or conference under Section 7 of the Endangered Species Act. Nevada BLM policy is to provide State of Nevada Listed Species and Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species as shown in BLM Manual 6840.06C. Nevada protected animals that meet BLM's 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: (1) 'protected' under authority of Nevada Administrative Codes 501.100 – 503.104; (2) have been determined to meet BLM's policy definition of "listing by a State in a category implying potential endangerment or extinction," and (3) are not already included as a federally listed, proposed, or candidate species (Appendix 3). See Appendix 3 for BLM policy (516 DM 6840) definitions for special status species.

3.5.3 Federally Listed, Proposed and Candidate Species (Terrestrial Species)

There are no known terrestrial wildlife species that are listed as threatened or endangered under the Endangered Species Act (Appendix 3).

Greater Sage Grouse

The greater sage grouse is a candidate species as of March 5, 2010 (see paragraph and footnote below and Appendix 3). This species could be considered an "umbrella species" where positive or negative impacts to their habitat generally affect the habitat for other sagebrush-obligate species or other species that utilize similar upland and riparian/meadow habitat.

On March 5, 2010, the U.S. Fish and Wildlife Service announced Proposed Rules* in the Federal Register for the notice of 12-month findings for petitions to list the greater sage grouse as a threatened or endangered species. The Fact Sheet for this finding iterated the following, *"After thoroughly analyzing the best scientific and commercial information available, the Fish and Wildlife Service has concluded that the greater sage-grouse warrants protection under the Endangered Species Act. However, the Service has determined that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. As a result, the sage-grouse will be added to the list of species that are candidates for Endangered Species Act protection. The Service will review the status of the sage-grouse annually, as we do all candidate species, to determine whether it warrants more*

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immediate attention.” The Proposed Rules were formally announced in the Federal Register on March 23, 2010 under the following reference: **13910 Federal Register** / Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules.

[* The following is stated for this finding in the Federal Register, “*This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.*”]

The allotment is in the North Fork Sage Grouse Population Management Unit (PMUs) in Nevada. PMUs are being considered under the Governor’s Nevada Sage Grouse Conservation Strategy by the Northeastern Nevada Stewardship Group as part of sage grouse conservation planning efforts underway for the Elko District. Shrub cover and associated herbaceous plants in the understory is vital as a forage and cover component for sage grouse. Evaluation of habitat values and the possibilities to improve them are considered through this conservation effort.

The lek or “strutting” areas form undefined core areas for associated nesting, brood-rearing and fall-winter habitat areas. In addition, there could be sage grouse movements into the area from outside the project area as individual or groups of grouse seek seasonal use areas. See Appendix 3 for lek definitions.

As of 2010-11, regarding known lek sites, there is one active lek on the allotment and seven active leks approximately 0.95 to 3.2 miles from the allotment boundary. In addition, there are three active leks within four miles of the allotment boundary and a historic lek site (active in 2002) within two miles of the allotment on intact habitat. Nesting could occur up to several miles away from these leks which would include sagebrush habitat on the allotment.

The allotment provides other sage grouse habitat including fall-winter, early (upland) and late (meadow-riparian) brood habitat.

Areas of riparian/meadow habitat are important for brood-rearing on the allotment, especially during the summer and early fall as forbs desiccate (dry out) on upland areas. Forbs are an essential part of the diet of young sage grouse. Hen sage grouse that nest outside the allotment area could move their broods considerable distances seeking riparian/meadow areas that provide succulent forbs; this potentially includes areas on the allotment.

Recent wildfires from 2000 to 2006 have negatively impacted tens of thousands of acres of sage grouse habitat on the surrounding allotments; however, a high percentage of these same burn areas have been artificially-seeded with native shrub, grass and forb species as part of wildlife habitat rehabilitation efforts.

3.5.4 BLM Sensitive Species (Terrestrial Species)

Appendix 4 lists and includes narratives for the BLM and State of Nevada wildlife species of concern that might occur in the vicinity of the proposed action. The exceptions for narratives are for pygmy rabbits and golden eagles shown below as “focus species.” The lists are based on the Nevada BLM-Information Bulletin No. NV-2003-097 (July 29, 2003) and additional input from NDOW.

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3.5.5 Sensitive Mammals

Pygmy Rabbits

Pygmy rabbits are a BLM Sensitive Species that were petitioned for listing as threatened or endangered under the Endangered Species Act. On May 20, 2005, the U.S. Fish and Wildlife Service (USFWS) announced a 90-Day Finding in the Federal Register indicating that, "... the petition does not provide substantial information indicating that listing the pygmy rabbit may be warranted." On September 29, 2010, the USFWS informed the public about a press release regarding a second petition with the following excerpt, "*The U.S. Fish and Wildlife Service (Service) will announce tomorrow, it has completed a status review, or 12-month finding, of the pygmy rabbit (*Brachylagus idahoensis*) and concluded it does not warrant protection under the Endangered Species Act (ESA) in California, Nevada, Oregon, Idaho, Utah, Wyoming, and Montana. The status review was undertaken after the Service determined that a petition to list the pygmy rabbit under the ESA presented substantial information in January 2008, and that listing of the species may be warranted.*" The 2005 and 2010 findings do not downplay the need to conserve, enhance or protect pygmy rabbit habitat. The areas on the allotment with connected blocks of intact sagebrush provide potential seasonal habitat for pygmy rabbits.

Pygmy rabbits are found in a variety of vegetation types that include big sagebrush that are suitable for creating their burrow system. Although no formal surveys have been completed on the allotment, they have either been observed, or their active burrows have been observed in recent years within habitat characterized by the Wyoming, basin, mountain and big sagebrush-bitterbrush vegetation types on the Elko District, including crested wheatgrass seeding areas with sagebrush cover. The NDOW wildlife records as of 2009 do not indicate documentation of pygmy rabbits on the allotment or immediate surrounding areas.

3.5.6 Nevada BLM Sensitive Birds

Golden Eagle

This species is protected under the 2007 Bald and Golden Eagle Protection Act. The area provides foraging habitat where prey species are primarily small mammals. A nest site was documented by NDOW on the Mexican Field Allotment about 3.85 miles north of the allotment in 1972. Other mountainous terrain with rock outcrops on surrounding areas provide potential nesting habitat.

3.5.7 Migratory Birds

On January 11, 2001, President Clinton signed the Migratory Bird Executive Order 13186. It directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act and to conserve migratory birds. Migratory bird species that may occur in the habitat types of the HMAs are listed at Appendix 2. This listing is from the 1999 Nevada Partners in Flight Bird Conservation Plan. The Nevada Partners in Flight Bird Conservation Plan identifies bird species associated with each of these ecotypes (Appendix 2).

3.5.8 Special Status Plant Species

There are no known threatened, endangered or BLM Sensitive Plant Species on the allotment.

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3.6 *Cultural Resources*

Because grazing on public lands requires a permit issued by the BLM, grazing and other associated range activities are considered to be an undertaking and thus requires compliance with Section 106 of the National Historic Preservation Act (NHPA), as implemented using the Protocol between the BLM and State Historic Preservation Office (SHPO) in Nevada.

In order to meet compliance with NHPA under the protocol agreement, a recent sampling archaeological inventory was conducted of the allotment. Within the boundaries of the surveyed areas, eight archaeological sites (26EK7002, 26EK7003, 26EK12686, 26EK12687, 26EK12688, 26EK12689, 26EK12690, and 26EK12691), are known to exist as well as ten isolated finds. Two of those historic properties were found during inventories completed in 1988 (BLM 1-1149) as part of riparian enclosure constructions and the other six were located during the recent Class III archaeological inventory of 400 acres within the Cotant Seeding Allotment on a mix of public and privately held lands which were considered together for this undertaking (BLM 1-2900).

A records survey of the surrounding area revealed that the vast majority of archaeological sites occurred within 250 meters of streams and springs. Based upon that fact, the recent cultural inventory targeted areas near streams and springs and greatly expanded the number of acres inventoried in the allotment. The inventory covered 400 acres (about 10% of the allotment) and recorded six previously unknown prehistoric sites and rerecorded 2 previously known prehistoric cultural properties. This survey incorporated targeted inventorying of areas around streams and springs as well as examining areas away from water to determine if the occupation patterns of prehistoric peoples compared to that of the surrounding area as predicted. Prehistoric sites were found only to be located within 200 meters of water within the inventoried areas of the allotment. Three of the newly recorded sites might be eligible for the National Register of Historic Places (NRHP), but subsurface testing will be required to make that determination. At this time, all sites are unevaluated with regard to NRHP.

As part of the recent inventory, an evaluation of cattle grazing and range improvement projects was made to determine their possible impacts on historic properties. Some evidence of grazing and impacts arising from cattle trampling were observed at all of the documented sites, but this was minor compared to natural erosional processes that were impacting most sites. Unfortunately, previous documentation of the 2 known sites did not mention the degree to which cattle had impacted the site at the time they were recorded so there is no baseline data to compare present site condition with past. Based on artifact descriptions, it appears that sites in the Cotant Seeding Allotment have only been minimally adversely impacted due to cattle trampling since they were originally recorded. One site, 26EK7002, could not be relocated. This is likely not due to grazing activity but rather flooding and sediment deposition along the banks of Beaver Creek where the site was located. Another site, 26EK7003, was relocated and rerecorded. At this site, the rancher had placed a mineral block and cattle trampling of the soil was very evident and only two artifacts could be relocated. But since the site was originally recorded as have 5 artifacts, only being able to relocate 2 is not surprising with the amount of cow manure currently on the site. Additionally, a site with 5 flakes would not be eligible for the NRHP. All of the range improvements within this allotment have been inventoried and evaluated in terms of their effects upon cultural resources and found to have no impact.

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3.7 *Water Quality*

State water quality criteria outlined in Nevada administrative code (NAC) 445A.121 apply to water resources within the Cotant Allotment. Numerical water quality standards based on a variety of beneficial uses including aquatic life, recreation, municipal and domestic supply, and irrigation apply to Class B water sources established for North Fork Humboldt River under the tributary rule, these same standards apply to the East Fork of Beaver Creek. Numerical standards would apply to the East Fork of Beaver Creek within the Cotant Allotment. Typically surface hydrologic connection between this tributaries and the Humboldt River is limited during normal flow condition.

The East Fork of Beaver Creek¹ including the portion that passes through the Cotant Allotment was included in the Nevada's 2006 303(d) list of impaired waters (NDEP 2006). Unclassified waters are waters which the State of Nevada has not designated beneficial uses, and therefore has not established specific water quality standards. Unclassified waters have minimum standards applicable to all waters of the state (445A.123).

¹ The NDEP 2006 report refers to Beaver Creek, however BLM documentation including planning documents refers to the East Fork of Beaver Creek.

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4.0 Data Summaries

There are two livestock key areas (3002 Native and 3001 Seeding) within the Cotant Seeding Allotment. The native key area is the same key area (DS-T-88-15) used to collect wildlife habitat monitoring data as well. Key areas are study locations established in an allotment within the dominant ecological site(s) to monitor changes to vegetation species, soils, and other changes due to management actions.

4.1 Vegetation and Livestock Data

Table 4. Key Area Utilization for the Seeding Pasture

Key Area: Seeding Pasture	
Key Species: Crested Wheatgrass (AGCR)	
Year	Average Utilization
2011	11%
2010	12%
2008	65%
1999	18%
1998	34%
1997	40%
1996	70%
1995	68%

Table 5. Key Area Utilization for the Native Pasture

Key Area: Native Pasture			
Key Species: Thurber's Needlegrass (STTH2), Weber's Needlegrass (STWE), Indian Ricegrass (ORHY)			
Year	Average Utilization Thurber's Needlegrass (STTH2)	Average Utilization Weber's Needlegrass (STWE)	Average Utilization Indian Ricegrass (ORHY)
2011	38%	No Data	No Data
2010	22%	No Data	No Data
2008	No Data	35%	No Data
1999	No Data	36%	No Data
1998	40%	0%	34%
1997	40%	25%	65%
1996	71%	36%	74%
1995	27%	No Data	18%

Table 6. Key Area Ecological Status and Production

Cotant Native Pasture		
Year	Lbs/acre	Ecological Condition Class Rating
1983	341.69	Mid-Seral (Fair)
1988	399.92	Mid-Seral (Fair)

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Table 7. Summary of Point Sampling Cover Data

Key Area	Year	Basal Cover	Canopy Cover	Total Vegetative Cover	Litter	Bare Ground	Rock	Cryptogrammic Crust
Native 3002	2002	8%	11%	19%	26%	35%	19%	1%
Native 3002	2010	5%	20%	25%	11%	62%	1%	1%
Seeding 3001	2010	3%	19%	22%	7%	69%	0.5%	0%

Table 8. Actual Use for Cotant Seeding Allotment

Year	Actual Use (AUMs) Seeding Pasture	Actual Use (AUMs) Native Pasture
2011		
2010	101	134
2009	184	172
2007	154	23
2006	132	99
2005		231*
2004		47*
2003		274*
2002		95*
2001		339*
1999	112	164
1998	474	207
1997	128	128
1996	170	404
1995	245	660

* Actual use submitted by allotment not by pasture.

4.2 Riparian Habitat Data

4.2.1 Stream Survey Data

Data collected by BLM at stream survey stations S-2 and S-3 (refer to Map 2) in 1988, 1996 and 2007 show excellent improvement in stream and riparian habitat conditions since construction of exclosure fences in 1989 (Figures 1, and Photos 1 and 2). Prior to fencing, the riparian condition class (RCC) (represented by the average of streambank cover and streambank stability) was rated as very poor (31% of optimum) indicating streambanks were almost completely unstable, while streambank cover was scattered to absent. At that time, the East Fork of Beaver Creek was also characterized by high sediment loads, absence of pool habitat and a very wide, shallow channel profile. By 1996, all measured parameters showed improvement. By 2007, habitat conditions were considered excellent. The East Fork of Beaver Creek is now characterized by a very narrow, deep channel (as indicated by a decrease

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in the width to depth ratio over time); stable, well vegetated streambanks; and, a streambottom comprised of a high percentage of desirable substrates. Although no high quality pool for fish were recorded in 2007, low flow conditions that year may have biased survey results since ratings are based in part on water depth.

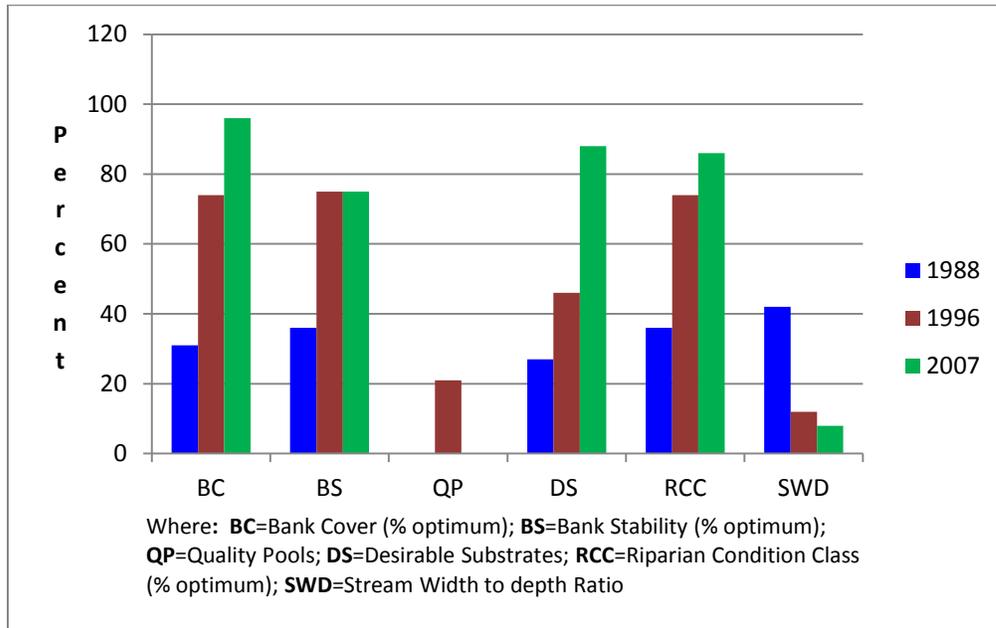


Figure 1. Changes in key stream and riparian habitat parameters recorded for the East Fork of Beaver Creek in the Cotant Seeding Allotment between 1988 and 2007. Techniques are from BLM (2002).

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Photo 1. East Fork of Beaver Creek, stream survey station S-3, T-1, Upstream, 6-15-88.



Photo 2. East Fork of Beaver Creek, stream survey station S-3, T-2, Upstream, 7-25-07.

Additional stream and riparian habitat parameters are available for comparison on the East Fork of Beaver Creek between 1996 and 2007 (these parameters were not part of the 1988

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stream surveys) (Table 9). With the exception of shorewater depth (which may have been influenced by low water conditions), all other measured parameters showed improvement. Streambanks are becoming more developed and stable as indicated by increases in bank angle and bank undercut between 1996 and 2007. Effectiveness and extent of the riparian zone is also improving as evidenced by increases in both the amount of willow overhanging the water column and in the total width of the riparian zone. Data for embeddedness indicate substrates are becoming cleaner and less embedded by fine sediments.

Table 9. Changes in stream and riparian habitat parameters recorded for the East Fork of Beaver Creek in the Mexican Field Allotment between 1996 and 2007.²

Parameter (averages)	1996	2007
Streambank Angle (°)	150	103
Streambank Undercut (ft.)	0.05	0.10
Shorewater Depth (ft.)	0.30	0.05
Woody Vegetation Overhanging Streambank (ft.)	0.15	0.50
Total Riparian Zone Width (ft.)	34	45
Embeddedness (percent surface of gravel, rubble or boulder covered by fine sediment)	25-50	5-25

²Data are from stream survey stations S-2 and S-3. Techniques are from BLM (2002).

4.2.2 Functioning Condition Assessment²

The majority of the East Fork of Beaver Creek within the Cotant Seeding Allotment (which is included in enclosures) was rated as being in Proper Functioning Condition (PFC) in 2001. Stream survey data collected in 2007 and inspections by BLM in recent years indicate proper functioning conditions have been maintained over time. The riparian community which includes a wide variety of herbaceous plants as well as several species of willow is expanding or has achieved its potential natural extent. The area also supports a number of active beaver dams which contribute to the ecological and hydric function of the area.

4.2.3 Riparian Utilization Studies

Utilization studies were conducted on riparian vegetation in the enclosures following a prescriptive grazing treatment in 2008 (grazing occurred from mid-April to mid-June). Stubble height of riparian herbaceous vegetation ranged from 10 to 25 inches, indicating utilization was very light and well below the limit of 50%. Procedures for measuring stubble heights are from BLM (1996).

² Functioning conditions assessments of riparian areas are based on techniques BLM (1998) and BLM (1999, Revised 2003). Riparian areas are considered to be in proper functioning condition (PFC) when adequate vegetation, landform, or debris is present to dissipate energy; filter sediment and aid floodplain development; capture and store water; and, to provide for greater biodiversity.

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4.3 *Wildlife Data*

4.3.1 **Wildlife Habitat Condition Monitoring Summary**

Native Pasture

The single range/wildlife (KA3002/DS-T-88-15) key area in the Native Pasture is characterized by a Wyoming big sagebrush vegetation type on a low gradient sandy loam ridge area, interspersed with the big sagebrush-bitterbrush vegetation type above the transect. These upland areas are dissected by the East Fork of Beaver Creek. The key area was originally established to monitor summer range habitat condition for mule deer, however data collected at the key area can be used to indicate habitat condition for a number of key species including sage grouse. Intermediate range (spring and fall) mule deer habitat was also analyzed. Wildlife monitoring data, including line intercept, vertical cover, and browse form and age class was collected at this key area in 1988, 2008 and 2010. In 2002, only shrub foliar cover, key browse, and disturbance (fencing) factors were monitored/measured. The results are summarized in **Appendix 5**.

Vegetative Composition, Diversity and Cover - Line intercept studies provide a method for collecting vegetative cover (canopy and basal cover) and shrub, grass and forb species composition data. The “droop height” of herbaceous plants that could potentially provide lateral nesting cover for sage grouse was recorded in 2010.

Shrub Height, Foliar Cover and Condition - Vertical cover data provides a way to evaluate changes in vegetation structure and helps determine whether cover is adequate for wildlife species. Shrub height measurements were also recorded on the transect in 2010. Browse form and age class data are used to determine whether overuse is occurring on important browse species and whether age class diversity is providing for the needs of the wildlife species and is adequate to maintain the health of the vegetative community.

These types of information shown above can be used, along with additional monitoring data such as herbaceous utilization and ecological status condition to make determinations regarding the quality of habitat the area is providing for wildlife species, including sage grouse and mule deer. Scientific references (Gregg 1994, Winward 1991 and Connelly et. al, 2000) were also used to help make any determinations on sage grouse habitat quality.

Sage Grouse

Habitat management for sage grouse was emphasized in the 1987 Elko Resource Management Plan-Rangeland Program Summary. Sage grouse are considered an “umbrella species” where maintenance or improvement of their habitat also helps to maintain or improve the habitat of many other wildlife species that are dependent (“sagebrush obligates”) on sagebrush habitat or otherwise utilize these areas on a yearlong or seasonal basis.

Specific objectives for sage grouse habitat in terms of vegetative composition were not established in the Elko Resource Management Plan; however, the Bureau of Land management in Nevada has established interim sage grouse management guidelines (Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada). These guidelines were

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based on Western Association of Fish and Wildlife Agencies (WAFWA) draft guidelines and Oregon Bureau of Land Management sage grouse management guidelines. These guidelines outline optimum (“good”) habitat conditions based on WAFWA habitat descriptions by life cycle for sage grouse and other pertinent research, and provide a basis for evaluating habitat conditions, taking into account actual site potential. The BLM signed a Memorandum of Understanding with other Federal agencies and WAFWA to consider these guidelines in the land use planning process. Table 10 provides a summary of characteristics of sagebrush rangeland needed to help provide productive sage grouse habitat.

Table 10. Characteristics of sagebrush rangeland needed for productive sage grouse habitat (arid site¹) - Arid Sites Excerpt (Connelly, et al. 2000).

Vegetation Type	Breeding Habitat		Brood-rearing Habitat		Winter Habitat ³	
	Height (cm)	Canopy (%) ²	Height (cm) ¹	Canopy (%) ²	Height (cm) ¹	Canopy (%) ²
Sagebrush	30-80	15-25	40-80	10-25	25-35	10-30
Grass-forb	>18 ²	≥15	Variable	>15	N/A	N/A

¹Mesic and arid sites should be defined on a local basis; annual precipitation, herbaceous understory, and soils should be considered (Tisdale and Hironaka 1981, Hironaka et al. 1983).
²Grasses and forbs measured as “droop height”; the highest naturally growing portion of the plant.
³Values for height and canopy coverage are for shrubs exposed above snow.

Relative to footnote 1 in the table above and the Wyoming vegetation type (an arid site) monitored on the key area transect on the allotment, the guidelines go on to say, “Because of gaps in our knowledge and regional variation in habitat characteristics (Tisdale and Hironaka 1981), the judgment of local biologists and quantitative data from population and habitat monitoring are necessary to implement the guidelines correctly.” With this consideration, the following information would help to provide satisfactory sage grouse nesting cover specific to the key area monitoring on the allotment:

Sage Grouse Nesting Cover Studies- Information obtained from a 1994 sage grouse nesting habitat study in Oregon (Gregg et al) indicated that the following factors would help improve sage grouse nesting success:

- 1) an average of 8-12% shrub canopy (live foliar) cover within the Wyoming big sagebrush vegetation type and 15-20% cover within the basin or mountain big sagebrush vegetation types that averages 16-32 inches in height, and,
- 2) an average of 18% aerial (canopy) cover of tall genera grasses with height greater than 7 inches.

Sagebrush Grasslands Studies - Winward (1991) found that collective shrub foliar cover of 8-12% for the Wyoming big sagebrush vegetation type and 15-20% for the basin or mountain big sagebrush vegetation types resulted in little competition between sagebrush and herbaceous

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species. (Considering the potential umbrella foliar cover provided by bitterbrush on areas characterized by the big sagebrush-bitterbrush vegetation type, shrub foliar values between 15-30% would likely have the same results.) These ranges of shrub foliar cover values specific to vegetation types, coupled with understory perennial herbaceous vegetation that reflects upper mid-seral to late seral ecological status, would help to provide suitable wildlife habitat on native sagebrush rangelands with the a high degree of wildlife forage and cover diversity.

Monitoring data collected on June 22, 2010 at the wildlife key area indicate that the majority of the habitat parameters measured for sage grouse are meeting WAFWA guidelines. Grasses including Thurber's needlegrass, bottlebrush squirreltail and forbs that have the potential to meet the height of >18 cm recommended for successful nesting had an average height of 7.1 inches and a collective canopy cover of 5.8%. The canopy cover for all perennial native grasses and forbs was measured at 16.4% on the key study area. Sagebrush foliar cover was 12% with an average height of 17.6 inches. When considering green rabbitbrush (6.9% foliar cover) and spiny horsebrush (0.25% foliar cover), the collective shrub foliar cover was 19.2% with an average height at 12.3 inches. The utilization of Thurber's needlegrass, a key species for monitoring, was light at 22 and 38% in 2010 and 2011, respectively. These percentages indicate that sufficient vegetative cover is available to promote successful nesting during critical periods for sage grouse and migratory birds. No cheatgrass was recorded on the transect although it is present near the same transect.

Sage grouse early (upland) brood-rearing habitat is generally in the vicinity of nesting habitat on upland areas with sagebrush as the primary shrub cover. Monitoring data collected in June of 2010 have indicated that the herbaceous (16.4%) and shrub (19.2%) canopy cover is within recommended ranges for productive brood-rearing habitat. "Medium" to "high" food value forbs including phlox, aster, buckwheat, salsify, and milkvetch comprised 24.2% of the relative plant composition on the transect. Hawksbeard and microseris were other forbs with high food value that were observed outside of the transect.

Sage grouse summer habitat and late brood rearing habitat is associated with riparian/meadow areas on the East Fork Beaver Creek and around a 100-yard span of the North Fork Humboldt River. It is estimated that around 80% of the Beaver Creek portion is within two livestock enclosure areas. Sage grouse broods have been observed by BLM personnel within the riparian areas along the East Fork of Beaver Creek. Ephemeral drainage areas and swale areas with loamy bottom and dry meadow sites could provide some brood-rearing habitat as forbs are associated with these sites. As mentioned under 4.2.2 Functioning Condition Assessment, the majority of the East Fork of Beaver Creek within the Cotant Seeding Allotment (which is included in enclosures) was rated as being in Proper Functioning Condition (PFC) in 2001 and maintained over time per monitoring in 2007. The expansion of the riparian community, including a wide variety of herbaceous plants, would help to provide important summer/late brood-rearing habitat.

The shrub foliar cover was measured at 19.2% in 2010; this included 12.0% sagebrush (ave. shrub height 17.6 in.), 6.9% rabbitbrush (ave. shrub height 8.9 in.) and 0.25% horsebrush (shrub height 8.0 in.). This shrub foliar cover was within WAFWA's 10-30% values which

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help to provide satisfactory winter habitat for sage grouse although no measurements were taken above variable snow cover.

Mule Deer

Data collected at the key area was analyzed for mule deer habitat using the BLM's WILDIVE program, which calculates a vegetative diversity index based on percent composition and preference for species present at the key area. This information is used along with other factors such as water distribution, vegetative production, percent cover, vertical cover, disturbance or interference factors and browse condition to calculate a habitat condition rating for mule deer. Livestock control fencing as disturbance or interference factors were also considered.

Mule Deer Habitat Condition ratings were calculated for mule deer summer use (5/1 – 10/14), and spring (3/16 to 5/1) and fall use (10/15 to 12/14).

“Poor” to “Fair” Mule Deer Habitat Condition ratings were calculated for monitoring completed in 1988 and 2008, respectively. The limiting factor for both years was forage diversity.

The habitat was rated as being in “Fair” condition in 2010 with a satisfactory age class and unsatisfactory form class monitored for bitterbrush. Please refer to Appendix 5 for detailed monitoring information and habitat condition ratings.

Seeding Pasture

No wildlife key area has been established on crested wheatgrass within the Seeding Pasture. Approximately 27% of the allotment was type-converted from Wyoming big sagebrush vegetation type interspersed with Wyoming big sagebrush-bitterbrush vegetation type to a crested wheatgrass seeding area in the 1950s/1960s period. As a result, upland habitat values were altered which compromise use of suitable habitat by sagebrush-obligate species and those species that inhabit big sagebrush and big sagebrush-bitterbrush vegetation types as part of their life cycles on a seasonal or yearlong basis. Shrubs have since re-established on this seeding area with foliar cover estimated at 10-15% in 2010. This percentage of shrub cover provides shrub cover and forage needed for sage grouse seasonal use, and other non-game and game species including big game use while allowing interspace areas for native perennial grasses and forbs as documented during range monitoring on June 15, 2010. Utilization of crested wheatgrass was monitored in the slight category (11-20%) in 2010 and 2011. This type of utilization helps to provide cover for wildlife, including lateral nesting cover and early brood-rearing cover for sage grouse, as well as forage for those species that utilize crested wheatgrass.

Pastures, Exclosures and Other Areas

Ongoing fence modifications are needed on the allotment, including exclosure fences. The facilitation of deer, pronghorn, elk and other wildlife movements under or over livestock control fencing was not fully considered at the time that fences on the allotment were constructed. As of June 22, 2010, barbed wire fencing was measured at different locations to be as low as 10-11 inches off the ground to 53 inches high. The western allotment boundary fence had lowest wire heights at 16 to 18 inches off the ground that would allow for big game

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passage underneath but top wire heights to 43.5 to 53 inches were higher than BLM specifications. Fencing specifications that consider the facilitation of big game and other wildlife movements, specific to big game on the area, have been standardized since the mid to late 1980s to three to four-wire fence with a smooth wire around 16-18 inches off the ground and standardized spacing (e.g. four-wire 18"-6"-6"-12" or 16"-6"-6"-12" spacing) to where the top wire is 38-42 inches above the ground. Fence hazards on sage grouse seasonal use habitat areas are a concern where modifications to lower heights (while still allowing livestock control) and other measures to help make the fence outline more visible would help to minimize collision with fence wires while in flight. Measurements and modification of potential fence hazards to BLM specifications that would help to facilitate wildlife movements and minimize collisions have been completed on the Elko District and are a long-term ongoing effort.

4.4 Water Quality

The West Fork of the Beaver Creek converges with the East Fork to form Beaver Creek, the dominate Class B (nontrout) drainage that passes through the Cotant Allotment. The Beaver Creek was included in Nevada's 2006 303(d) list of impaired waters (NDEP 2006) and is listed in exceedence for total dissolved solids, iron, and total phosphorus. This is based on data collected at two monitoring stations located on the East Fork and the West Fork of Beaver Creek, upstream of the Cotant Allotment boundary. New data is for East Fork and West Fork of Beaver Creek; however, water measurements at this site do not likely accurately reflect water quality within or leaving the Cotant Allotment. Water quality data for the two drainages are given in Table 11. Total coliform and temperature readings are high for but everything else is within the state guidelines. Total coliform values are based on one measurement for the East Fork and two measurements for the West Fork. Continuous water temperature datalogger measurements for the East Fork of Beaver Creek show that maximum temperature readings were greater than 24 C for 84 days in 2007, 58 days for 2008, 16 days for 2009 and 41 days for 2010.

Table 11. Water Quality data for West Fork and East Fork Beaver Creek upstream from Cotant Allotment.

	West Fork Beaver Creek				East Fork Beaver Creek			
	Median	Max	Min	n	Median	Max	Min	n
Flow (CFS)	0.894	1.21	0.578	7	1.047	8.97	0.2719	14
Water Temp. (°C)	17.88	20.01	11.5	5	20.85	27	14.9	12
pH	7.875	8.41	7.61	6	8.475	8.62	7.97	6
Dissolved Oxygen (mg/L)	9.52	11.19	8.1	5	10.01	12.03	8.05	13
Turbidity. (NTU)	7.1	27.4	5.9	5	7.75	20.8	2.2	12
Electrical Conductivity (uS/cm)	245.5	288	190	6	139.7	176	114	13
Nitrate Nitrogen (mg/L)	--	--	--		0.066	0.07	0.062	2
Nitrite Nitrogen (mg/L)	--	--	--		0.073	--	--	1

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	West Fork Beaver Creek				East Fork Beaver Creek			
	Median	Max	Min	n	Median	Max	Min	n
Fecal Coliform #/100ml	145.5	162	129	2	66	166	20	4
Total Coliform#/100ml	1600	1600	1600	2	>2419.6	--	--	1
E Coli (#/100 ml)	141.55	280	3.1	2	23	72	3.1	3
Total Dissolved Solids (mg/L)	--	--	--		150	150	120	3
Sample Duration	07/10/2006 to 09/15/2010				07/10/2006 to 06/17/2011			

n= number of samples

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5.0 Draft Determinations

This section makes determinations regarding:

- A. Progress towards or attainment of the standards for rangeland health,
- 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.

5.1 Standard 1. Upland Sites: Upland sites exhibit infiltration and permeability rates that are appropriate to soil type, climate, and land form.

After reviewing all information, it has been determined that this standard for rangeland health is being Met and livestock grazing management is considered to be in conformance with the guidelines.

Rationale: Interpretation of the existing cover and utilization data, along with recent field observations indicate that the Upland Site standard is being met. Recent monitoring information accompanied by field observations indicates that sufficient vegetative cover, litter and rock fragments are present to meet the requirement of this standard. Point cover sampling collected in June 2010 revealed that the total vegetative cover at the native key area was 25%. According to the U.S. Natural Resource Conservation Service Nevada site description, the approximate vegetative ground cover of native vegetation appropriate for the ecological site ranges between 20% and 30%.

Utilization levels recorded since the 1994 FMUD indicated that use levels have averaged slight use (1-20%). Monitoring data suggests that use levels of key species are adequate to ensure the maintenance of existing herbaceous plant cover needed to stabilize the site.

The key areas are located on a Loamy 10-12" precipitation zone range site. These soils are positioned on fan piedmont remnants. They are moderately deep-to-deep and well drained. The available water capacity is low to moderate and some soils are modified with high volumes of rock fragments through the soil profile. Slope ranges from 2-15%. Runoff is low to moderate and the potential for sheet and rill erosion varies with slope gradient.

Appropriate use levels in conjunction with the appropriate seasons of use have resulted in healthy and vigorous upland vegetation. The vegetation cover required to stabilize soils and ensure appropriate infiltration and permeability rates is being maintained in the Mexican Field Allotment.

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

After reviewing all information, it has been determined that this standard for rangeland health is being Met and livestock grazing management is considered to be in conformance with the guidelines.

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Rationale: Stream survey data collected by BLM in 2007 show proper functioning conditions documented for the East Fork of Beaver Creek in the Cotant Seeding Allotment are being maintained. Exclosures constructed on the majority of the East Fork within the allotment have allowed for development of excellent stream and riparian habitat conditions. Periodic grazing of exclosures as provided for in the 1994 FMUD and 1988 AMP has been compatible with maintaining a functional, healthy stream system.

Water quality measurements have not been collected downstream of the Cotant Allotment, but data upstream of the allotment is meeting state water quality criteria. Upstream measurements for total coliform and temperature readings are high for Class B (nontrout) drainage, but everything else is assumed to be within the state guidelines.

5.3 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 in order to maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species.

After reviewing all information, it has been determined that this standard for rangeland health is being Partially Met with significant progress and livestock grazing management is considered to be in conformance with the guidelines.

Rationale: Grazing management was changed within the allotment as a result of a Multiple Use Decision issued in 1994 from a system that could be characterized as grazing use conducted during the growing season annually, to one that allowed for deferment (use after seedripeness) of one pasture every year and incorporated primarily early use on the native pasture.

Monitoring data indicate that habitat values including vegetative composition, diversity, and cover for key species including sage grouse and mule deer are being maintained, overall, and that there has been an increase in the composition and cover of perennial native forb and grass species between 1988 and 2010. Additionally, the basal cover of perennial grasses and forbs has doubled from 4% in 1988 to 10.7% in 2010. Livestock utilization has averaged light resulting in adequate forage and cover values for wildlife.

Although, habitat condition ratings have improved from “Poor” in 1988 to “Fair” in 2008 and 2010 for mule deer; monitoring completed in 2010 noted an unsatisfactory form class for bitterbrush, a key browse species for mule deer.

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

This standard for rangeland health is being Met and livestock grazing management is considered to be in conformance with the guidelines.

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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 Cotant Seeding Allotment.

Because this undertaking requires compliance with Section 106 of the National Historic Preservation Act, as implemented using the Protocol between the BLM and State Historic Preservation Office in Nevada, a 400 acre archaeological reconnaissance was conducted in August of 2011 and found little evidence that grazing and range improvements were adversely impacting historic properties.

There is unfortunately little baseline data to work with in making determinations of impacts from cattle grazing. However, it is likely that a century and a half of sheep and cattle grazing has adversely affected some archaeological sites. Other impacts to cultural resources may have also occurred as a result of off-road vehicle use, illegal artifact collecting, grazing (by pronghorn, deer, cattle, domestic sheep, and wild horses), and natural erosive forces such as rain, wind, flooding etc. These impacts generally cannot be separated and singled out as a primary impact to cultural resources on a site specific basis. Additionally, regarding domestic cattle and sheep grazing, it is well known that the number and intensity of grazing animals was far greater in the late nineteenth and early twentieth centuries (generally before passage of the Taylor Grazing Act in the 1930's) than the intensity of grazing which occurs today. As a result, impacts to cultural resources generally have lessened over the course of the past 50+ years compared to earlier impacts. It is not feasible to quantify and compare current impacts in order to make judgments regarding the degree of impacts that may go beyond those already inflicted during days of unregulated grazing. Thus, the focus of inventory efforts is placed on site specific project designs in which both the agent of impact and the location of impact are knowable.

Based on the above factors, and considering that (1) there are currently no known significant sites within the allotment that are being negatively impacted by general cattle grazing, and (2) significant sites recorded in the future that lie in the path of proposed earth-disturbing projects related to cattle grazing will be either avoided or mitigated as per the Programmatic Agreement between the Nevada BLM and SHPO, the BLM has determined that the standard is currently being met.

5.5 Standard 5. Healthy Wild Horse and Burro Populations

The Healthy Wild Horse and Burro Populations standard does not apply to this allotment. There are neither herd management areas nor wild horses or burros within the Cotant Seeding Allotment.

5.6 Conclusions

Based on the information provided in this document I have determined that the Upland Sites Standard, the Riparian and Wetland Sites Standard, the Habitat Standard and Cultural Resources Standard are being met. I have also determined that the Healthy Wild Horse and

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Burro Populations Standard is not applicable. Furthermore, I have determined that current livestock grazing is in conformance with the guidelines for rangeland health.

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

9/28/2011
Date

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6.0 Literature Cited

- Bureau of Land Management (BLM). 2002. Aquatic habitat inventory and monitoring level III survey procedures-transect method. Elko Revised Handbook 6720-1, Elko District, Elko, Nevada.
- Bureau of Land Management (BLM). 1999, Revised 2003. A user guide to assessing proper functioning condition and the supporting science for lentic areas. Technical Reference TR 1737-16, National Applied Sciences Center, Denver, CO.
- Bureau of Land Management (BLM). 1998. A user guide to assessing proper functioning condition and the supporting science for lotic areas. Technical Reference TR 1737-15, National Applied Sciences Center, Denver, CO.
- Bureau of Land Management (BLM). 1996. Utilization studies and residual measurements. Interagency Technical Reference TR 1734-3 Denver, CO.
- Bureau of Land Management (BLM). 1988. Comex Allotment Management Plan. Elko, Nevada.
- Connelly, J.W., Schroeder, M.A., Sands, A.R. & Braun, C.E. 2000c: Guidelines to manage sage grouse populations and their habitats. - Wildlife Society Bulletin 28: 967-985.
- Gregg, M. A., J. A. Crawford, Drut M.S, and DeLong, A.K. 1994. Vegetational cover and predation of sage grouse nests in Oregon. Journal of Wildlife Management 58:162–166.
- Hironaka et. al.1983 as Cited In: Connelly, J.W., Schroeder, M.A., Sands, A.R. & Braun, C.E. 2000c: Guidelines to manage sage grouse populations and their habitats. – Wildlife Society Bulletin 28: 967-985.
- Tisdale et al 1981 as Cited In: The sagebrush-grass region: a review of the ecological literature. Idaho Forest Wildlife, and Range Experiment Station, Bulletin 33, Moscow, USA.
- U.S. Fish and Wildlife Service. 1995. Recovery Plan for the Lahontan cutthroat trout. U.S. Fish and Wildlife Service, Region 1, Portland, Oregon.
- Winward, A.H. 1991. A renewed commitment to management of sagebrush grasslands. Management in the sagebrush steppe. Oregon State University., Agric. Exp. Stn. Special Report 880.

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Appendix 1 Wildlife Species List from Nevada Department of Wildlife

Central Elko County - Northeast Nevada –
Unit 073 Wildlife Species List

(Sagebrush Steppe, Mountain Brush and
Wetland / Riparian Habitats)

Birds

Order: Gaviiformes (Diver/Swimmers)

Family: Gaviidae (Loons)

Common Loon *Gavia immer*

Order: Podicipediformes (Flat-toed Divers)

Family: Podicipedidae (Grebes)

Pied-billed Grebe *Podilymbus podiceps*
Horned Grebe *Podiceps auritus*
Eared Grebe *Podiceps nigricollis*
Western Grebe *Aechmophorus occidentalis*
Clark's Grebe *Aechmophorus clarkii*

Order: Pelecaniformes (Four-toed Fisheaters)

Family: Pelecanidae (Pelicans)

American White Pelican *Pelecanus erythrorhynchos*

Family: Phalacrocoracidae (Cormorants)

Double-crested Cormorant *Phalacrocorax auritus*

Order: Ciconiiformes (Long-legged Waders)

Family: Ardeidae (Bitterns, Herons, Egrets)

American Bittern *Botaurus lentiginosus*
Least Bittern *Ixobrychus exilis*
Great Blue Heron *Ardea herodias*
Great Egret *Ardea alba*
Snowy Egret *Egretta thula*
Cattle Egret *Bubulcus ibis*
Green Heron *Butorides virescens*
Black-crowned Night Heron *Nycticorax nycticorax*

Family: Threskiornithidae (Ibises)

White-faced Ibis *Plegadis chihi*

Family: Cathartidae (New World Vultures)

Turkey Vulture *Cathartes aura*
California Condor *Gymnogyps californianus(L.E.)*

Order: Anseriformes (Waterfowl)

Family: Anatidae (Ducks, Geese, Swans)

Greater White-fronted Goose *Anser albifrons*
Snow Goose *Chen caerulescens*
Canada Goose *Branta canadensis*
Tundra Swan *Cygnus columbianus*
Wood Duck *Aix sponsa*
Gadwall *Anas strepera*
American Wigeon *Anas americana*
Mallard *Anas platyrhynchos*
Blue-winged Teal *Anas discors*

Cinnamon Teal *Anas cyanoptera*
Northern Shoveler *Anas clypeata*
Northern Pintail *Anas acuta*
Green-winged Teal *Anas crecca*
Canvasback *Aythya valisineria*
Redhead *Aythya americana*
Ring-necked Duck *Aythya collaris*
Greater Scaup *Aythya marila*
Lesser Scaup *Aythya affinis*
Bufflehead *Bucephala albeola*
Common Goldeneye *Bucephala clangula*
Barrow's Goldeneye *Bucephala islandica*
Hooded Merganser *Lophodytes cucullatus*
Common Merganser *Mergus merganser*
Red-breasted Merganser *Mergus serrator*
Ruddy Duck *Oxyura jamaicensis*

Order: Falconiformes (Diurnal Flesh Eaters)

Family: Accipitridae (Hawks, Eagles, Osprey)

Osprey *Pandion haliaetus*
Bald Eagle *Haliaeetus leucocephalus*
Northern Harrier *Circus cyaneus*
Sharp-shinned Hawk *Accipiter striatus*
Cooper's Hawk *Accipiter cooperii*
Northern Goshawk *Accipiter gentilis*
Swainson's Hawk *Buteo swainsoni*
Red-tailed Hawk *Buteo jamaicensis*
Ferruginous Hawk *Buteo regalis*
Rough-legged Hawk *Buteo lagopus*
Golden Eagle *Aquila chrysaetos*

Family: Falconidae (Falcons)

American Kestrel *Falco sparverius*
Merlin *Falco columbarius*
Gyrfalcon *Falco rusticolus*
Peregrine Falcon *Falco peregrinus*
Prairie Falcon *Falco mexicanus*

Order: Galliformes (Chicken Relatives)

Family: Phasianidae (Grouse, Partridge)

Chukar *Alectoris chukar*
Gray Partridge *Perdix perdix*
Ring-necked Pheasant *Phasianus colchicus*
Greater Sage-Grouse *Centrocercus urophasianus*
C. Sharp-tailed Grouse *T. phasianellus columbianus (L.E.)*

Family: Odontophoridae (New World Quail)

California Quail *Callipepla californica*
Mountain Quail *Oreortyx pictus*

Order: Gruiformes (Cranes and Allies)

Family: Rallidae (Rails, Coots)

Virginia Rail *Rallus limicola*
Sora *Porzana carolina*
Common Moorhen *Gallinula chloropus*
American Coot *Fulica americana*

Family: Gruidae (Cranes)

Greater Sandhill Crane *Grus canadensis tabida*
Lesser Sandhill Crane *Grus canadensis canadensis*

Order: Charadriiformes (Wading Birds)

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Family: *Charadriidae* (Plovers)

Black-bellied Plover	<i>Pluvialis squatarola</i>
Snowy Plover	<i>Charadrius alexandrinus</i>
Semi-palmated Plover	<i>Charadrius semipalmatus</i>
Killdeer	<i>Charadrius vociferus</i>
Mountain Plover	<i>Charadrius montanus</i>

Family: *Recurvirostridae* (Avocets)

Black-necked Stilt	<i>Himantopus mexicanus</i>
American Avocet	<i>Recurvirostra americana</i>

Family: *Scolopacidae* (Sandpipers, Phalaropes)

Greater Yellowlegs	<i>Tringa melanoleuca</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>
Solitary Sandpiper	<i>Tringa solitaria</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Long-billed Curlew	<i>Numenius americanus</i>
Marbled Godwit	<i>Limosa fedoa</i>
Western Sandpiper	<i>Calidris mauri</i>
Least Sandpiper	<i>Calidris minutilla</i>
Baird's Sandpiper	<i>Calidris bairdii</i>
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>
Wilson's Snipe	<i>Gallinago gallinago</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Red-necked Phalarope	<i>Phalaropus lobatus</i>

Family: *Laridae* (Gulls, Terns)

Franklin's Gull	<i>Larus pipixcan</i>
Bonaparte's Gull	<i>Larus philadelphia</i>
Ring-billed Gull	<i>Larus delawarensis</i>
California Gull	<i>Larus californicus</i>
Caspian Tern	<i>Sterna caspia</i>
Forster's Tern	<i>Sterna forsteri</i>
Black Tern	<i>Chlidonias niger</i>

Order: *Columbiformes* (Pigeons and Allies)

Family: *Columbidae* (Doves)

Rock Dove	<i>Columba livia</i>
White-winged Dove	<i>Zenaida asiatica</i>
Mourning Dove	<i>Zenaida macroura</i>
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>
Ringed Turtle-Dove	<i>Streptopelia risoria</i>

Order: *Strigiformes* (Nocturnal Flesh Eaters)

Family: *Tytonidae* (Barn Owls)

Barn Owl	<i>Tyto alba</i>
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Family: *Strigidae* (Owls)

Flammulated Owl	<i>Otus flammeolus</i>
Western Screech-Owl	<i>Otus kennicottii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Snowy Owl	<i>Nyctea scandiaca</i>
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>
Burrowing Owl	<i>Athene cucularia</i>
Long-eared Owl	<i>Asio otus</i>
Short-eared Owl	<i>Asio flammeus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>

Order: *Caprimulgiformes* (Night Jars)

Family: *Caprimulgidae* (Goatsuckers)

Common Nighthawk	<i>Chordeiles minor</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>

Order: *Apodiformes* (Small Fast Fliers)

Family: *Apodidae* (Swifts)

White-throated Swift	<i>Aeronautes saxatalis</i>
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Family: *Trochilidae* (Hummingbirds)

Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Calliope Hummingbird	<i>Stellula calliope</i>
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>

Order: *Coraciiformes* (Cavity Nesters)

Family: *Alcedinidae* (Kingfishers)

Belted Kingfisher	<i>Ceryle alcyon</i>
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Order: *Piciformes* (Cavity Builders)

Family: *Picidae* (Woodpeckers)

Lewis' Woodpecker	<i>Melanerpes lewis</i>
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>

Order: *Passeriformes* (Perching Birds)

Family: *Tyrannidae* (Flycatchers)

Western Wood-Pewee	<i>Contopus sordidulus</i>
Willow Flycatcher	<i>Epidonax traillii</i>
Hammond's Flycatcher	<i>Epidonax hammondii</i>
Gray Flycatcher	<i>Epidonax wrightii</i>
Dusky Flycatcher	<i>Epidonax oberholseri</i>
Cordilleran Flycatcher	<i>Epidonax occidentalis</i>
Say's Phoebe	<i>Sayornis saya</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
Scissor-tailed Flycatcher	<i>Tyrannus forficatus</i>

Family: *Laniidae* (Shrikes)

Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Shrike	<i>Lanius excubitor</i>

Family: *Vireonidae* (Vireos)

Plumbeous Vireo	<i>Vireo plumbeus</i>
Warbling Vireo	<i>Vireo gilvus</i>

Family: *Corvidae* (Jays)

Western Scrub-Jay	<i>Aphelocoma californica</i>
Clark's Nutcracker	<i>Nucifraga columbiana</i>
Black-billed Magpie	<i>Pica pica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>

Family: *Alaudidae* (Larks)

Horned Lark	<i>Eremophila alpestris</i>
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Family: *Hirundinidae* (Swallows)

Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Bank Swallow	<i>Riparia riparia</i>
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Barn Swallow	<i>Hirundo rustica</i>

Family: *Paridae* (Chickadees, Titmice)

Black-capped Chickadee	<i>Poecile atricapillus</i>
Mountain Chickadee	<i>Poecile gambeli</i>

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Juniper Titmouse *Baeolophus griseus*

Family: Aegithalidae (Bushtits)

Bushtit *Psaltriparus minimus*

Family: Troglodytidae (Wrens)

Rock Wren *Salpinctes obsoletus*

Canyon Wren *Catherpes mexicanus*

Bewick's Wren *Thyromanes bewickii*

House Wren *Troglodytes aedon*

Winter Wren *Troglodytes troglodytes*

Marsh Wren *Cistothorus palustris*

Family: Cinclidae (Dippers)

American Dipper *Cinclus mexicanus*

Family: Regulidae (Kinglets)

Golden-crowned Kinglet *Regulus satrapa*

Ruby-crowned Kinglet *Redulus calendula*

Family: Sylviidae (Gnatcatchers)

Blue-gray Gnatcatcher *Poliotilta caerulea*

Family: Turdidae (Thrushes)

Western Bluebird *Sialia mexicana*

Mountain Bluebird *Sialia currucoides*

Townsend's Solitaire *Myadestes townsendi*

Veery *Catharus fuscescens*

Swainson's Thrush *Catharus ustulatus*

Hermit Thrush *Catharus guttatus*

American Robin *Turdus migratorius*

Varied Thrush *Ixoreus naevius*

Family: Mimidae (Thrashers, Mockingbirds)

Northern Mockingbird *Mimus polyglottos*

Sage Thrasher *Oreoscoptes montanus*

Family: Sturnidae (Starlings)

European Starling *Sturnus vulgaris*

Family: Motacillidae (Pipits)

American Pipit *Anthus rubescens*

Family: Bombycillidae (Waxwings)

Bohemian Waxwing *Bombycilla garrulus*

Cedar Waxwing *Bombycilla cedrorum*

Family: Parulidae (Wood Warblers)

Orange-crowned Warbler *Vermivora celata*

Nashville Warbler *Vermivora ruficapilla*

Virginia's Warbler *Vermivora virginiae*

Yellow Warbler *Dendroica petechia*

Yellow-rumped Warbler *Dendroica coronata*

Black-throated Gray Warbler *Dendroica nigrescens*

Townsend's Warbler *Dendroica townsendi*

MacGillivray's Warbler *Oporornis tolmiei*

Common Yellowthroat *Geothlypis trichas*

Wilson's Warbler *Wilsonia pusilla*

Yellow-breasted Chat *Icteria virens*

Family: Thraupidae (Tanagers)

Western Tanager *Piranga ludoviciana*

Family: Emberizidae (Sparrows, Towhees,

Juncos)

Green-tailed Towhee *Pipilo chlorurus*

Spotted Towhee *Pipilo maculatus*

American Tree Sparrow *Spizella arborea*

Chipping Sparrow *Spizella passerina*

Brewer's Sparrow *Spizella breweri*

Vesper Sparrow *Poocetes gramineus*

Lark Sparrow *Chondestes grammacus*

Black-throated Sparrow *Amphispiza bilineata*

Sage Sparrow

Savannah Sparrow

Grasshopper Sparrow

Fox Sparrow

Song Sparrow

Lincoln's Sparrow

White-throated Sparrow

Harris' Sparrow

Gambel's White-crowned Sparrow *Zonotrichia leucophrys gambelii*

Mountain W-crowned Sparrow *Zonotrichia leucophrys oriantha*

Golden-crowned Sparrow *Zonotrichia atricapilla*

Dark-eyed Junco (Oregon) *Junco hyemalis therburi*

Dark-eyed Junco (Gray-headed) *Junco hyemalis caniceps*

Lapland Longspur *Calcarius lapponicus*

Family: Cardinalidae (Grosbeaks, Buntings)

Black-headed Grosbeak *Pheucticus melanocephalus*

Blue Grosbeak *Guiraca caerulea*

Lazuli Bunting *Passerina amoena*

Indigo Bunting *Passerina cyanea*

Family: Icteridae (Blackbirds, Orioles)

Bobolink *Dolichonyx oryzivorus*

Red-winged Blackbird *Agelaius phoeniceus*

Western Meadowlark *Sturnella neglecta*

Yellow-headed Blackbird *Xanthocephalus*

xanthocephalus

Brewer's Blackbird *Euphagus cyanocephalus*

Great-tailed Grackle *Quiscalus mexicanus*

Brown-headed Cowbird *Molothrus ater*

Bullock's Oriole *Icterus bullockii*

Family: Fringillidae (Finches, Grosbeaks)

Gray-crowned Rosy-Finch *Leucosticte tephrocotis*

Black Rosy-Finch *Leucosticte atrata*

Cassin's Finch *Carpodacus cassinii*

House Finch *Carpodacus mexicanus*

Red Crossbill *Loxia curvirostra*

Common Redpoll *Carduelis flammea*

Pine Siskin *Carduelis pinus*

Lesser Goldfinch *Carduelis psaltria*

American Goldfinch *Carduelis tristis*

Family: Passeridae (Old World Sparrows)

House Sparrow *Passer domesticus*

Mammals

Order: Insectivora (Insect Eaters)

Family: Soricidae (Shrews)

Merriam's Shrew *Sorex meriammi*

Dusky Shrew *Sorex monticolus*

Vagrant Shrew *Sorex vagrans*

Northern Water Shrew *Sorex palustris*

Preble's Shrew *Sorex preblei*

Order: Chiroptera (Bats)

Family: Vespertilionidae (Plainnose Bats)

California Myotis *Myotis californicus*

Western Small-footed Myotis *Myotis ciliolabrum*

Long-eared Myotis *Myotis evotis*

Little Brown Bat *Myotis lucifugus*

Fringed Myotis *Myotis thysanodes*

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Long-legged Myotis	<i>Myotis volans</i>
Yuma Myotis	<i>Myotis yumanensis</i>
Western Red Bat	<i>Lasiurus blossomii</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Silver-haired Bat	<i>Lasionycteris noctivagans</i>
Western Pipistrelle	<i>Pipistrellus hesperus</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>
Spotted Bat	<i>Euderma maculatum</i>
Pallid Bat	<i>Antrozous pallidus</i>

Family: *Molossidae* (Freetail Bats)

Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>
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Order: *Lagomorpha* (Pikas, Hares, Rabbits)

Family: *Leporidae* (Hares, Rabbits)

White-tailed Jackrabbit	<i>Lepus townsendi</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>
Mountain Cottontail	<i>Sylvilagus nuttalli</i>
Pygmy Rabbit	<i>Brachylagus idahoensis</i>

Order: *Rodentia* (Rodents)

Family: *Sciuridae* (Squirrels)

Least Chipmunk	<i>Tamias minimus</i>
Uinta Chipmunk	<i>Tamias umbrinus</i>
Yellow-bellied Marmot	<i>Marmota flaviventris</i>
White-tailed Antelope Squirrel	<i>Ammospermophilus leucurus</i>
Great Basin Ground Squirrel	<i>Spermophilus mollis</i>
Belding's Ground Squirrel	<i>Spermophilus beldingi</i>
Wyoming Ground Squirrel	<i>Spermophilus elegans</i>
Golden-mantled Ground Squirrel	<i>Spermophilus lateralis</i>

Family: *Geomyidae* (Gophers)

Botta's Pocket Gopher	<i>Thomomys bottae</i>
Northern Pocket Gopher	<i>Thomomys talpoides</i>
Townsend's Pocket Gopher	<i>Thomomys townsendii</i>

Family: *Heteromyidae* (Kangaroo Rodents)

Little Pocket Mouse	<i>Perognathus longimembris</i>
Great Basin Pocket Mouse	<i>Perognathus parvus</i>
Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>

Family: *Heteromyidae* (Kangaroos cont.)

Ord Kangaroo Rat	<i>Dipodomys ordii</i>
Chisel-toothed Kangaroo Rat	<i>Dipodomys microps</i>

Family: *Castoridae* (Beavers)

American Beaver	<i>Castor canadensis</i>
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Family: *Cricetidae* (Mice, Rats, Voles)

Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Canyon Mouse	<i>Peromyscus crinitus</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Northern Grasshopper Mouse	<i>Onychomys leucogaster</i>
Desert Woodrat	<i>Neotoma lepida</i>
Bushy-tailed Woodrat	<i>Neotoma cinerea</i>
Mountain Vole	<i>Microtus montanus</i>
Long-tailed Vole	<i>Microtus longicaudus</i>
Sagebrush Vole	<i>Lemmiscus curtatus</i>
Muskrat	<i>Ondatra zibethica</i>

Family: *Zapodidae* (Jumping Mice)

Western Jumping Mouse	<i>Zapus princeps</i>
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Family: *Erethizontidae* (New World Porcupines)

North American Porcupine	<i>Erethizon dorsatum</i>
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Order: *Carnivora* (Flesh-Eaters)

Family: *Canidae* (Dogs)

Coyote	<i>Canis latrans</i>
Gray Wolf	<i>Canis lupus (L.E.)</i>
Kit Fox	<i>Vulpes velox</i>
Red Fox	<i>Vulpes vulva</i>

Family: *Ursidae* (Bears)

Black Bear	<i>Ursus americanus</i>
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Family: *Procyonidae* (Raccoons and Allies)

Ringtail	<i>Bassariscus astutus</i>
Common Raccoon	<i>Procyon lotor</i>

Family: *Mustelidae* (Weasels and Allies)

Short-tailed Weasel	<i>Mustela erminea</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>
Wolverine	<i>Gulo gulo (L.E.)</i>
Northern River Otter	<i>Lontra canadensis</i>
American Badger	<i>Taxidea taxus</i>
Striped Skunk	<i>Mephitis mephitis</i>
Western Spotted Skunk	<i>Spilogale gracilis</i>

Family: *Felidae* (Cats)

Mountain Lion	<i>Felix concolor</i>
Lynx	<i>Lynx lynx (L.E.)</i>
Bobcat	<i>Lynx rufus</i>

Order: *Artiodactyla* (Hoofed Mammals)

Family: *Cervidae* (Deer)

Rocky Mountain Elk	<i>Cervus canadensis</i>
Mule Deer	<i>Odocoileus hemionus</i>

Family: *Antilocapridae* (Pronghorn)

Pronghorn	<i>Antilocapra americana</i>
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Family: *Bovidae* (Bison, Sheep, Goats)

Rocky Mountain Bighorn Sheep	<i>O. c. Canadensis (L.E.)</i>
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Reptiles

Order: *Squamata* (Lizards, Snakes)

Family: *Iguanidae* (Iguanas and Allies)

Common Zebra-tailed Lizard	<i>Callisaurus draconoides</i>
Long-nosed Leopard Lizard	<i>Gambelia wislizenii</i>
Desert Spiny Lizard	<i>Sceloporus magister</i>
Western Fence Lizard	<i>Sceloporus occidentalis</i>
Sagebrush Lizard	<i>Sceloporus graciosus</i>
Side-blotched Lizard	<i>Uta stansburiana</i>
Greater Short-horned Lizard	<i>Phrynosoma hernandesi</i>
Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>

Family: *Scincidae* (Skinks)

Western Skink	<i>Eumeces skiltonianus</i>
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Family: *Teiidae* (Whiptails)

Western Whiptail	<i>Cnemidophorus tigris</i>
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Family: *Boidae* (Boas, Pythons)

Rubber Boa	<i>Charina bottae</i>
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Family: *Colubridae* (Solid-toothed Snakes)

Ringneck Snake	<i>Diadophis punctatus</i>
Striped Whipsnake	<i>Masticophis taeniatus</i>
Western Yellow-bellied Racer	<i>Coluber constrictor mormon</i>
Great Basin Gopher Snake	<i>Pituophis cantenifer deserticola</i>
Common Kingsnake	<i>Lampropeltis getulus</i>
Long-nosed Snake	<i>Rhinocheilus lecontei</i>
Western Terrestrial Garter	<i>Thamnophis elegans</i>

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Appendix 2 Migratory Birds by Habitat Type

Montane Shrub	Montane Riparian	Cliffs and Talus
Obligates: None Other: Black Rosy Finch Black-throated Gray Warbler Calliope Hummingbird Cooper's Hawk Loggerhead Shrike Blue Grosbeak Vesper Sparrow MacGillivray's Warbler Orange-crowned Warbler Swainson's Hawk Western Bluebird	Obligates: Wilson's Warbler MacGillivray's Warbler Other: Cooper's Hawk Northern Goshawk Calliope Hummingbird Lewis's Woodpecker Red-Naped Sapsucker Orange-crowned Warbler Virginia's Warbler Yellow-breasted Chat Other Associated Species Warbling Vireo Broad-tailed Hummingbird Fox Sparrow Blue Grouse	Obligates: Prairie Falcon Black Rosy Finch Other: Ferruginous Hawk Other Associated Species Golden Eagle White-throated Swift Say's Phoebe Common Raven Cliff Swallow Violet-green Swallow Canyon Wren Rock Wren
Sagebrush		
Obligates: Sage Grouse Other: Black Rosy Finch Ferruginous Hawk Gray Flycatcher Loggerhead Shrike Vesper Sparrow Prairie Falcon Sage Sparrow Sage Thrasher Swainson's Hawk Burrowing Owl Calliope Hummingbird Other associated species: Brewer's Sparrow Western Meadowlark Black-throated Sparrow Lark Sparrow Green-tailed Towhee Brewer's Blackbird Horned Lark Lark Sparrow		

** "Obligates" are species that are found only in the habitat type described in the section. [Habitat needed during life cycle even though a significant portion of their life cycle is supported by other habitat types]

** "Other" are species that can be found in the habitat type described the Nevada Partners in Flight Bird Conservation Plan.

**** Other Associated (Wetlands/Lakes) Species are predominately associated with wetlands where emergent aquatic vegetation provides cover and foraging areas. Otherwise, snow pond/playas/manmade reservoirs could provide some seasonal habitat for some of the species shown.

Some of these migratory bird species are also designated as BLM Sensitive Species.

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Appendix 3 Federally Listed & Candidate Species

BLM policy (516 DM 6840) defines special status species to include:

- Federally Threatened or Endangered Species: Any species that the U.S. Fish and Wildlife Service has listed as an endangered or threatened species under the Endangered Species Act throughout all or a significant portion of its range.
- Proposed Threatened or Endangered Species: Any species that the Fish and Wildlife Service has proposed for listing as a federally endangered or threatened species under the Endangered Species Act.
- Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.
- BLM Sensitive Species: Species 1) that are currently under status review by the U.S. Fish and Wildlife Service, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.
- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM’s Manual 6840 policy definition.

FEDERALLY-LISTED THREATENED and ENDANGERED SPECIES and CANDIDATE SPECIES

COMMON NAME	SCIENTIFIC NAME
Federally-Listed Endangered Species	
None	None
Federally-Listed Threatened Species	
None	None
Federally-Proposed Threatened or Endangered Species	
None	None
Federally-Listed Candidate Species	
Greater Sage Grouse	<i>Centrocercus urophasianus</i>

Greater Sage Grouse Terminology

Active - a lek that had two or more birds present during at least one of three or more visitations in a given breeding season. For a strutting ground to attain this status it must also have had two or more birds present during at least two years in a five-year period (Connelly et al. 2003).

Inactive - a lek that has been surveyed three or more times during one breeding season with no birds detected during the visitations and no sign observed on the lek. If a lek is only visited once during a breeding season and was surveyed under adequate conditions and no birds were observed at the location during the current and the previous year and no sign was observed at the lek, then an inactive status can be applied to the lek.

Unknown - a lek that may not have had birds present during the last visitation, but could be considered viable due to the presence of sign at the lek. This designation could be especially useful when weather conditions or observer arrival at a lek could be considered unsuitable to observe strutting behavior. The presence of a single strutting male would invoke the classification of the lek as unknown. A lek that was active in the previous year, but was inadequately sampled (as stated above) in the current year with no birds observed could also be classified as unknown.

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Appendix 4 Nevada BLM Sensitive Mammals

COMMON NAME	SCIENTIFIC NAME
Nevada BLM Sensitive Mammal Species	
Pygmy rabbit	<i>Brachylagus idahoensis</i>
Preble's shrew	<i>Sorex pleblei</i>
Small-footed myotis	<i>Myotis ciliolabrum</i>
Long-eared myotis	<i>Myotis evotis</i>
Long-legged myotis	<i>Myotis volans</i>
Spotted bat	<i>Euderma maculatum</i>
Fringed myotis	<i>Myotis thysanodes</i>
Yuma myotis	<i>Myotis yumanensis</i>
Townsend's big-eared bat	<i>Plecotus townsendii</i>

Preble's shrew - Preble's shrews are found in Nevada primarily in riparian habitat. Riparian areas on the allotment provide potential habitat.

Bats

The cliffs, talus, shallow caves; rock crevices; trees; ephemeral, intermittent and perennial drainages, and mine shafts and adits provide potential bat roost sites on the allotment. Foraging areas are provided on the uplands in the area where use could occur in concert with use on natural or artificially impounded water, drainage areas and riparian areas.

Small-footed myotis -- This bat species could occur in the allotment. Relative to the allotment area and lack of mine adits and shafts, roosting occurs primarily in caves which potentially occur upstream from the allotment along the East Fork of Beaver Creek.

Long-eared myotis -- This bat species is relatively common throughout northeastern Nevada and could occur in the area. This bat has also been reported to be found within a variety of habitats.

Long-legged myotis -- This bat species uses a variety of sites for roosting and could potentially inhabit the area.

Spotted bat -- Suitable habitat could occur in the area. Roosting sites include rock crevices on steep cliff faces which exist in close proximity to the area.

Fringed myotis -- This bat species is uncommon in the Great Basin. Shallow caves along the East Fork Beaver Creek and on the surrounding mountains could provide roosting habitat.

Yuma myotis - A record of this bat species occurring in northeast Nevada was noted as of the 2002 Nevada Bat Conservation Plan. Therefore, there is potential for this species to exist on the area. This species utilizes caves and rock crevices for roosting. These features exist in the area; however, the availability and suitability of caves is not known.

Townsend's big-eared bat -- This species generally requires caves for roosting. The availability and suitability of caves on the allotment is not known.

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Nevada BLM Sensitive and State of Nevada-Listed Birds

COMMON NAME	SCIENTIFIC NAME
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Northern goshawk	<i>Accipiter gentilis</i>
Prairie Falcon	<i>Falco mexicanus</i>
American peregrine falcon	<i>Falco peregrinus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Burrowing Owl	<i>Athene cunicularia</i>
Long-eared owl	<i>Asio otus</i>
Short-eared Owl	<i>Asio flammeus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Black-rosy Finch	<i>Leucosticte atrata</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>
Yellow-breasted chat	<i>Icteria virens</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
State of Nevada-Listed Species	
Osprey	<i>Pandion haliaetus</i>
White pelican	<i>Pelecanus erythrorhynchos</i>
White-faced ibis	<i>Plegadis chihi</i>

Raptors

Bald Eagle -- On July 9, 2007, it was announced that the bald eagle has been removed (de-listed) from the list of threatened and endangered species. BLM is coordinating with the 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 would continue to be protected under the Bald and Golden Eagle Protection Act (BGEPA), as amended, 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 US Fish and Wildlife Service clarified its regulations implementing the BGEPA and published the National Bald Eagle Management Guidelines. The US Fish and Wildlife 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 post-delisting bald eagle monitoring plan.

Bald eagles may use the area due to suitable habitat for foraging primarily during the winter period or during migration. Suitable habitat on uplands, irrigated lands and riparian areas is widely dispersed over tens of thousands of acres with primary use occurring during the winter period or as a migrant throughout the Elko District.

Northern goshawk -- The allotment has suitable foraging habitat and may be an/occasional winter visitor.

Prairie Falcon -- The areas within several miles surrounding the allotment provide nesting (primarily cliff areas) habitat and the allotment area provides foraging habitat for this species where prey species are primarily small mammals. Black-tailed jackrabbits provide a primary forage base.

American peregrine falcon -- This species is considered to be a potential migrant on the area with use of suitable habitat for foraging. There are no known nest sites on the allotment or adjoining allotments.

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Swainson's Hawk -- Rock ledges or deciduous trees such as species of willows along the East Fork Beaver Creek or quaking aspen and cottonwood stands on Stag Mountain to the east on the adjoining Stag Mountain Allotment provide primary nesting habitat. It is unknown if any nesting use or foraging occurs on the allotment. Swainson's hawks were documented by BLM and NDOW personnel on the Pole Creek area on the Stag Mountain Allotment on July 22, 2011. The variety of habitat on the area, as shown for migratory birds, provide foraging habitat during the summer period and during migration or seasonal movement events.

Ferruginous Hawk – This species was documented on the allotment east of the East Fork of Beaver Creek on June 23, 2010. In Nevada, this species prefers to nest in scattered juniper woodlands that are found on the edge of salt desert shrub or sagebrush vegetation types overlooking broad valleys. Juniper woodlands do not exist on the area. They could also nest on the top of tall sagebrush/other shrubs, rock outcrops, manmade structures or on deciduous trees such cottonwoods. Tall sagebrush/other shrubs could be defined as shrubs existing at about six feet in height or higher, out of the reach of potential ground-dwelling predators such as coyotes. Shrubs at this height could occur on some loamy bottom areas on the area. Otherwise, the area provides foraging habitat during migration or seasonal movement events. Black-tailed jackrabbits and ground squirrels provide a forage base.

Burrowing Owl – The area provides potential burrowing owl habitat. Abandoned mammal burrows, such as those created by badgers, help to provide nesting habitat. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing, such as recent burned areas or areas near troughs, corrals, or livestock mineral licks where open terrain exists. This may be due to the lack of vegetation at these sites that allows increased visibility from the burrow entrance.

Long-Eared Owl – This species could potentially utilize older age class willows in riparian areas as nesting habitat. Foraging areas are provided in these same riparian areas as well as surrounding uplands.

Short-Eared Owl - The area provides nesting and documented foraging habitat for this ground-nesting species.

Other Sensitive Avian Species

Loggerhead Shrike – Potential nesting habitat is provided in the area primarily by basin and Wyoming big sagebrush. Foraging habitat is provided on sagebrush-grass areas with variable canopy cover of brush species.

Vesper Sparrow – This species is a ground-nester. It is associated with sagebrush grasslands on the area. The area provides potential nesting and foraging habitat.

Black-rosy Finch – The area provides suitable winter habitat on sagebrush grasslands.

Yellow-breasted chat – Riparian areas with tree cover on the East Fork of Beaver Creek provide foraging and nesting habitat for this species.

Lewis' woodpecker - Riparian areas with tree cover on the East Fork of Beaver Creek provide foraging habitat for this species. It is unknown if suitable nesting cavities in dead or decadent willow trees exist on the area.

State of Nevada-Listed Species

(No known habitat for osprey, white-faced ibis or white pelicans.)

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Appendix 5 Wildlife Data Summary Table

Habitat condition rating/monitoring by transect for the Cotant Allotment DS-T-88-15 (“Native”), Deer Summer and Spring/Fall-Rated, Native Pasture – Summary as of September 13, 2011

TRANSECT DS-T-88-15 DATE MONITORED	BIG GAME HABITAT CONDITION RATING - DEER HABITAT- FORAGE DIVERSITY INDEX	KEY BROWSE CONDITION ARTRW (Wyoming big sagebrush)- 1988, 2008 PUTR2 (Antelope Bitterbrush) – 2002, 2010			RELATIVE SPECIES COMPOSITION			Absolute Perennial Native Herbaceous Plant Cover, and Ave. Droop Height in Inches			1)SHRUB FOLIAR COVER/ 2)Average Shrub/Veg Height/ 3) Total Average Veg Vertical Cover	LIMITING FACTORS/ REMARKS
		Age Class	Form Class	Utilization	Shrubs	Grasses	Forbs	basal	aerial	height		
LOAMY 8-10" Precipitation Zone Ecological Site – Wyoming Big Sagebrush Vegetation Type.												
July 5, 1988	Poor – 0.748 “Poor” diversity	Unsatisfactory - sagebrush	Unsatisfactory - sagebrush	No Data	83.3%	11.5%	5.2%	4%	No Data	No Data	1) 19.9% inc. Artrw: 11.4% Chvi8: 8.5% 2) Veg: 11.7 in. 3) 19.5%	Wyoming big sagebrush was the key browse species
August 29, 2002	Not Rated	Satisfactory – bitterbrush Unsatisfactory - sagebrush	Satisfactory – bitterbrush Satisfactory - sagebrush	5%	No data	No data	No data	No data	No data	No data	1) 20% inc. Artrw: 8.6% Chvi8: 11.4% 2) No data 3) No data	Only Shrub Foliar Cover and Key Browse Condition sampled. Bitterbrush responding to past heavy to severe use. 4-5 to 8-10-inch leader growth on moderately hedged plants. No big game sign; however, mule deer hair on allotment boundary fence to south on 1/2/1998. Some fence modified in 1998.
July 9, 2008	Fair – 0.76 “Poor” diversity	Unsatisfactory - sagebrush	Satisfactory - sagebrush	No Data – Apparent Active Leader Growth	68.8%	15.3%	15.4%	8.75%	No data	No data	1) 19.2% inc. Artrw: 8.6% Chvi8: 10.6% 2) Veg: 10.6 in.	Wyoming big sagebrush was the key browse species

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TRANSECT DS-T-88-15 DATE MONITORED	BIG GAME HABITAT CONDITIO N RATING - DEER HABITAT- FORAGE DIVERSITY INDEX	KEY BROWSE CONDITION ARTRW (Wyoming big sagebrush)- 1988, 2008 PUTR2 (Antelope Bitterbrush) – 2002, 2010			RELATIVE SPECIES COMPOSITION			Absolute Perennial Native Herbaceous Plant Cover, and Ave. Droop Height in Inches			1)SHRUB FOLIAR COVER/ 2)Average Shrub/Veg Height/ 3) Total Average Veg Vertical Cover	LIMITING FACTORS/ REMARKS
		Age Class	Form Class	Utilization	Shrubs	Grasses	Forbs	basal	aerial	height		
June 22, 2010	Fair - 0.676 “Poor” diversity	Satisfactory – bitterbrush Unsatisfactory - sagebrush	Unsatisfactory - Bitterbrush Satisfactory - sagebrush	Not Sampled – Active Leader Growth	64.2%	11.6%	24%	10.7%	All Inclusive: 16.4% “Tall” Stature Exclusive : 5.8%	All: 3.8 in “Tall” Stature Exclu- sive: 7.1 in	3)17.6%	Active livestock use on area. Bitterbrush likely used by deer during fall and early spring, and pronghorn summer use; however, no concentration of pellet groups noted. Cattle could be impacting bitterbrush during seasons-of- use that include mid- summer to fall periods. Fence hazards documented

Background Information for Wildlife Habitat Condition Monitoring on the Cotant Seeding Allotment

Antelope bitterbrush (PUTR2) is the key browse species on the key area with plants for sampling are located immediately north of the transect.

Herbaceous plant aerial cover, average herbaceous plant droop height, and average shrub height considered in 2010 in regard to sage grouse habitat guidelines for Nevada.

Desired Plant Community” objectives should be considered for future collective terrestrial wildlife species habitat/rangelands monitoring in lieu of Big Game (Mule Deer) Habitat Condition Rating. Pronghorn use has substantially increased on the allotment and surrounding allotments since the initial establishment of the transect in 1988.

Cotant Seeding Allotment Standards and Guidelines Assessment

Key Browse Age and Form Class – Extensive Browse Method:

When Big Game Habitat Condition Trend Monitoring is completed in the late spring or early summer during active browse (e.g. bitterbrush) leader growth, it is often difficult to monitor utilization. Therefore, form class is monitored which shows degrees of hedging on previous year's woody leader growth.

Interpretation of Satisfactory Age and Form Class Per BLM Technical Manual 4400-3 and BLM Form 6630-3:

Age Class: When the sum of seedlings and young plants in the sample outnumber decadent plants, the key browse species age class is satisfactory at the monitoring site.

Form Class: When the two-year-old growth (the previous year's leaders) of mature, seedling, young, respouting, and decadent (>50% of the canopy area dead) plants in the sample reflect less than 50% utilization (41-60% utilization class interval), and outnumber severely hedged (61% or more utilization of two-year-old growth), unavailable (at least 50% of crown out of reach of cattle and big game), and dead plants, the key browse species form class is satisfactory at the monitoring site.

Further considerations regarding key browse form class per BLM Technical Manual 4400-3 - Browse plants are considered to reflect the normal growth form when less than 50 percent of the two-year-old growth (the previous year's leaders) has clipped ends and the majority of the current leaders extend directly from terminal buds off two-year-old wood. Alterations from the normal growth form are reflected when 50 percent or more of the two-year-old wood has clipped ends. Current leaders occur mostly as extensions from lateral buds off two-year-old wood in the moderately hedged condition or as clumped lateral and/or adventitious sprouts in the severely hedged condition.

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