

NORTH CENTRAL NEVADA SAGE GROUSE CONSERVATION PLAN DRAFT

PREFACE

The North Central Nevada Local Area Planning group (NCLAPG) includes individuals from the Nevada Division of Wildlife, the Bureau of Land Management, the US Forest Service, the University of Nevada Cooperative Extension, the Nevada Farm Bureau, county government, sportsmen, ranchers, trappers, conservation groups, mining, and tribal interests.

The planning effort initially had about 30 participants. Twelve to fifteen individuals form the core-planning group (i.e., regular attendees to planning meetings). The number of attendees at each planning meeting has varied; however, the composition of the group has been consistent. Most members are employed by federal and state agencies.

Seven task forces (committees) were established to meet the goals of the statewide planning effort. These included: 1) delineate/verify PMU's; 2) incentives; 3) adaptive management; 4) Mapping habitat conditions; 5) identify population risks; 6) identify population goals; and 7) plan preparation. County work groups were also formed to deal exclusively with the population management units (PMU) in their respective counties. Each task force gathered relevant information, and passed it to the county work groups where it was massaged to extract information relevant to specific PMU's. The county work groups then passed the information back to the NCLAPG for inclusion in the planning process, with the information from other county groups.

The county work group structure allowed more participation at the local level. Input from interested stakeholders who could not attend scheduled meetings was solicited on an individual basis, which facilitated better participation in the planning process

INTRODUCTION

Background

Sage grouse populations are believed to have declined throughout the planning area in the past 20 to 30 years. The definitive cause(s) of this decline are unknown because appropriate demographic data for each sage grouse population has not been collected. Also, data about changes in habitat composition and structure has not been collected. Sage grouse are a sagebrush obligate species and much of the planning area has burned from wildfire in the past 25 years, effectively removing very large tracts of sagebrush. The conversion of hundreds of thousands of acres of sagebrush grass rangeland to perennial grasslands (seeded or native), annual grasslands, or a combination thereof has resulted in either a loss of total available habitat or a decline in habitat quality

Fire has removed sagebrush from tens-of-thousands of acres in the following PMU's: Eden Valley, Lone Willow, Black Rock, Slumbering Hills, Santa Rosa; Eugene; Sonoma; East Range; Humboldt Range; Trinity; Majuba; Shawave, and Limbo PMU's. In these PMU's, much of the low elevation (<5,500 to 6,000 ft) Wyoming big sagebrush landscape,

particularly those areas with silty soil, has been converted to annual grassland (largely cheatgrass). Prior to the fires, desired perennial grasses were either largely absent or were present at levels well below their site potential. Post-fire revegetation efforts often failed, or had very limited success. Frequent returns in many areas and competition for soil water from cheatgrass has precluded the return of sagebrush. Much of the Wyoming sagebrush habitat type either was, or is potential winter habitat for grouse. It is used less for nesting, and early and late brood rearing. In recent years, post-fire seeding efforts have usually included sagebrush as a primary species. The success of these seedings has usually been poor due to climatic variability and/or environmental regulations. The completion of environmental assessments and/or other required assessments often prevents seedings from being implemented in the fall or early winter, before the onset of winter precipitation. Seedings are most successful when seed in the soil receives all of the winter precipitation.

Comment: I'm not sure what environmental regulations exist that would preclude seeding, in fact we require dozer lines to be seeded prior to the crews leaving the fire.

A substantial amount of mid elevation (5,500 to 7,000 ft) sagebrush-grass rangeland also has burned. These areas were initially vegetated with Wyoming big sagebrush, Basin big sagebrush, or mountain big sagebrush, depending on the elevation, aspect, and soil. Many burned areas are proceeding through natural successional stages, and sagebrush is re-establishing on many sites that have better growing conditions (north slope and/or higher elevation). For areas seeded, revegetation success has been better than at low elevations, but not all attempts have been successful.

High elevation (>7,000 ft) sites have had an increase in fire in recent years. Mountain big sagebrush is the most common sagebrush species at higher elevations, and typically it recovers to perennial grasses within several years, with sagebrush well established in 5-7 years (Mike Zelenksi, BLM Soil Scientist, WFO, personal communication).

Pinyon-juniper woodlands cover a significant amount of the Desotoya, Clan Alpine, and Stillwater PMU's. There have been substantially fewer fires in these ranges than on mountain ranges in Pershing and Humboldt Counties. Woodlands on these ranges have been expanding both externally and internally. External expansion has allowed trees to move from fire safe sites (shallow rocky soils) that always produced trees into sagebrush cover types on the upper alluvial fans, canyon bottoms, and hillslope areas with deeper soils. In essence, the area of woodland has increased. Internal expansion is the continuing increase in either tree density or cover where trees have already established. Fire has removed large amounts of woodland from most of the East Range, Humboldt Range and the Eugene Mountains. Lower elevation sites have been converted to cheatgrass, largely because competition for water from the trees, deep duff and litter, and excessive shading reduced the perennial herbaceous understory. Plant succession at higher elevations is variable and depends on how much of the understory component remained at the time of burning and the intensity of the fire.

Long-term information about Sage grouse populations (and their dynamics) in the planning area is largely unknown. Some PMU's are believed to have always had small grouse populations (< several hundred) because the amount and/or quality of the habitat for sage grouse were neither large nor good, respectively. That is, the sagebrush landscapes lacked one or more critical structural elements necessary to provide an adequate amount of high quality habitat to meet all seasonal requirements (i.e., nesting, early and late brood rearing, and winter). Other PMUs have populations estimated at several thousand birds or more.

The reliability of past population estimates is low, at best. Recent work in the Lone Willow PMU clearly demonstrates that traditional census methods (Lek counts) can drastically underestimate population size (unpublished data from NDOW). Sage grouse populations have probably declined substantially (on a percentage basis) in those PMU's with a recent history of large, widespread fires. The numeric decline may not be substantial in PMU's that probably had relatively few birds because the amount and quality of the habitat was not adequate to support a large population. The density and trend in populations in the more productive PMU's is largely unknown.

Comment: Need some type of statement that using populations from the 1930, 1950' or some other peak may be inappropriate if the management and environmental conditions that existed in those periods cannot be repeated. Not sure where it should go

Purpose

To maintain self-sustaining Sage Grouse populations on landscape that historically supported sage grouse. Develop a logical and coordinated approach to maintain and/or restore ecologically diverse, sustainable, and contiguous sagebrush landscapes. Base all management proposals and actions on sound science, technology, and economics. .

Goals

- ⊘ Maintain, and where possible, increase the sage grouse population.
- ⊘ Develop more in-depth knowledge about sage grouse and sagebrush ecosystems.
- ⊘ Maintain and restore diverse, healthy, sagebrush communities.
- ⊘ Develop needed scientific data regarding sage grouse and sagebrush habitat.
- ⊘ Identify important data gaps and develop protocols for collecting relevant information.
- ⊘ Increase public involvement in both the planning and management process.
- ⊘ Increase interagency cooperation between land and wildlife management agencies as well as with private property owners.
- ⊘ Meet the requirements of the US Fish & Wildlife PECE policy.
- ⊘ Avoid listing the sage grouse as a threatened or endangered species.

Comment: The second and fourth bullets seem to be the same.

CONSERVATION ASSESSMENT

PLAN AREA

The NCLAPG has the primary sage grouse planning responsibility for 19 population management units (PMUs), located in Churchill, Humboldt, and Pershing counties. Several PMU's have multiple, spatially separated units that must be individually evaluated for habitat conditions and populations risks. This approach results in 24 distinct management areas. Additional PMU's are partially located in the planning area, but are being addressed by other planning units.

The PMU's located in Humboldt County are Lone Willow, Santa Rosa, Eden Valley, Slumbering Hills, Pine Forest, Black Rock, and Jackson's. The Sheldon, Massacre, and Buffalo PMU's, are partially located in Humboldt County, but are being addressed by the Washoe Modoc Planning team.

Comment: If you use the list in the Governors Plan (19) plus add the 5 additional Majuba PMUs, and the extra Trinity and Shawave PMUs I end up with 26.

PMU's located in Pershing County are the Sonoma's, Eugene's, East Range, Majuba, Trinity, Shawave, Limbo, Nightingale, and Humboldt. Part of the Battle Mountain PMU is located in the North-Central Planning Area, but it is being assessed by the South Central planning team.

The PMU's located in Churchill County are Stillwater, Clan Alpine and Desatoya. The Desatoya PMU occurs partially in Churchill County and partially in Lander County. It is being addressed by the North Central Sage Grouse Planning group because federal lands in the Desatoya PMU are administrated by the Carson City Field Office of the Bureau of Land Management, and the Carson City Field Office is physically closer to the North Central Planning Area than the South-Central Planning Area. .

The planning area ranges in elevation from about 4,000 ft to almost 10,000 ft. Valley bottoms generally are below the 5,000 ft elevation contour, and most were lake bottoms during the last ice age. Soils usually are fine lakebed silts and/or clays that are high in salt, and have a high pH. The vegetation is predominately salt-desert shrub with occasional stringers of Basin or Wyoming big sagebrush along drainages (mostly ephemeral). The sagebrush stringers typically occur where run-on moisture has leached salts from the soil and there is an increase in effective soil moisture. The salt-desert shrub areas are not sage grouse habitat, and the sagebrush stringers do not provide regular, high quality habitat.

The sagebrush zone generally occurs on the alluvial fans, between about 4,500 and 5,000 ft elevation. Wyoming big sagebrush is the most widespread sagebrush between 4,500 and 6,500 ft elevation. Lahontan sagebrush occurs on old beach terraces with fine soil and high pH levels. Black sagebrush is infrequent in this part of Nevada because the strongly calcareous soils that develop from limestone parent materials are largely absent. The Wyoming big sagebrush sites are important winter habitat for sage grouse, and can provide important nesting and early brood rearing habitat at locations where the site potential for vegetation production permits the growth of an abundant amount of perennial grasses and forbs in the understory beneath the sagebrush.

Mountain big sagebrush and mountain shrub community types are widespread above the 6,000 to 6,500 ft elevation contour. Aspen stands are common in some PMU's particularly in northern Humboldt County. Mountain sagebrush sites have the potential to produce substantially more herbaceous (perennial grasses and forbs) cover and biomass than do Wyoming sagebrush sites. Another common sagebrush above the 6,000 ft elevation is low sagebrush. Low sagebrush sites often produce large quantities of forbs, a critical food source for grouse in the spring and early summer.

The United States has been divided into Major Land Resource Areas (MLRA). Each MLRA is a large land area that is characterized by a particular pattern of soils, vegetation (species composition and amount of annual production), climate (annual and seasonal), water resources (amount and distribution) and land uses (USDA 1981). Population management units located in the planning area are found in five different MLRA's. The Santa Rosa PMU is located in the Owyhee High Plateau MLRA. The Lone Willow, Pine Forest, and Black Rock PMU's are located in the Malheur High Plateau MLRA. Both of these MLRA's are located in the sagebrush steppe region of North America (West 198x). The sagebrush steppe is wetter and cooler than the sagebrush semi-desert region found to

the south (West 198x a) and 198xb). Not only is the total amount of annual precipitation generally higher in the sagebrush steppe, but the amount of spring precipitation is higher and variability between years is less. Growing season precipitation favors shallow rooted herbaceous species, while dormant season precipitation (winter) favors deeper-rooted shrubs.

The Eden Valley, Slumbering Hills, Jackson, Sonoma, East Range, and Eugene PMU's are located in the Humboldt Area MLRA, which covers southern Humboldt County, extreme northwest Pershing County, and the east, north-east third of Pershing County. The Fallon-Lovelock MLRA covers the remainder of Pershing County, and all of Churchill County, except the Desotoya Range (PMU). PMU's in the Fallon-Lovelock MLRA are the Humboldt, Trinity, Sahwave, Majuba, Limbo, Nightingale, Stillwater, and Clan Alpine. The only PMU located in the Central Nevada Basin and Range PMU is the Desotoya.

The number of sagebrush sites known to occur in each MLRA ranges from 25 to over 60. The Humboldt and Fallon-Lovelock PMU's each have 25 sagebrush sites. The Owyhee High Plateau and the Central Nevada Basin and Range MLRA's have 32 and 42 sagebrush sites, respectively. The Malhuer High Plateau has over 60 distinct sagebrush plant communities. For the Malhuer High Plateau, the Owyhee, and the Central Nevada Basin and Range MLRA's it is likely that all potential sagebrush sites are not found in the PMU's located in the planning area, because much of each MLRA is located outside the planning area. The total number of potential sites, however, provides a "qualitative picture" about the diversity of sagebrush community types located in the respective PMU's in each MLRA. Table 1 shows the number of sagebrush ecological sites by sagebrush species in each MLRA.

Table 1. Major Land Resource Areas located in the planning area, and the type and number of sagebrush plant communities in each MLRA

Sagebrush Type	Malhuer High Plateau	Humboldt	Owyhee High Plateau	Fallon-Lovelock	Central Nevada Basin and Range
Low Sage	10	2	6	4	6
Lahontan	3	1	0	4	0
Silver	1	0	1	0	2
Black	1	4	4	2	8
Wyoming/Basin	8	5	5	4	5
Three-tip	1	1	0	0	0
Basin Big	4	2	2	2	2
Mountain Big	19	4	9	4	10
Wyoming	12	6	4	5	8
Early	1	0	1	0	0
Pygmy	0	0	0	0	1

SAGE GROUSE IN PLAN AREA

Historical Distribution- There are no reliable records about which areas of the planning unit were used by sage grouse at the time of initial settlement (arbitrarily defined as 1860). Sage grouse are believed to have occurred throughout the planning area, wherever

sagebrush was the ecologically dominant shrub. Their seasonal distribution at that time is unknown, as is variation in habitat use between years. There is no information about population size, but sage grouse were not frequently mentioned by the early explorers (add citations here).

Based on known habitat requirements, most areas that either produced or are capable of producing (based on soils and climate) Wyoming big sagebrush, mountain big sagebrush, black sagebrush, low sagebrush, and three tip sagebrush probably were/are used by sage grouse at some point in time during the year, or during a multi-year period. Basin big sagebrush areas would have been used very little, if at all, because sage grouse do not select areas with tall (>3 ft) plants. Basin big sage is usually taller than 3 ft. Not all potential use areas, however, are likely to have been used each year, let alone during some part of the year. There are complex interactions among habitat successional stages, annual and seasonal climatic fluctuations; seasonal and interannual habitat quality; and grouse population cycles that determine which areas are used by sage grouse in a given year. For our planning purposes, we equate the PMU's identified in this document as the historical area used by sage grouse. Nothing in this designation implies that historic populations were large or small, or were evenly distributed within and between PMU's. Definitive information about historic population size and use areas is unavailable.

Comment: This is a new term I'm not familiar with.

Current Status and Distribution-

There is conflicting information about the current status of the sage grouse population and its distribution, in the planning area. Reliable data are unavailable. Data collected in the Lone Willow PMU during the past two years indicate that population estimates may be low, particularly for PMU's believed to have hundreds to thousands of sage grouse.

Sage grouse are believed to occur in all 22 PMU's at some time during the year. Some PMU's have sufficient habitat to meet all seasonal requirements, while others appear to largely have seasonal use, particularly winter habitat. To accurately assess the current size of the sage grouse population in each PMU, and its seasonal distribution, it will be necessary to collect a substantial amount of PMU specific data over across multiple years. The increased amount and depth of data collection will be necessary to ensure that future management actions are directed at populations with known risks, and that have potential to increase in population density and distribution if known risks are removed or lessened.

Comment: I get 26 PMUs.

Comment: Its 19 PMU's the planning area has responsibility for. Majuba and Trinity have subunits that can be lumped or split into one or several PMU's. Parts of other PMU's occur in the Planning area but are being addressed by other planning areas.

BIOLOGICAL OVERVIEW

Taxonomy and Description

Sage Grouse (*Centrocercus urophasianus*) belong to the family Phasianidae (grouse and ptarmigan) and are one of seven species of grouse in North America. They also are known as the sage hen, sage chicken, or sage cock. The Sage Grouse has been held in special reverence by Native American tribes as a magical bird with healing and restorative powers. Lewis and Clark provided the first written accounts of this species during their 1805 expedition. The species was formally described as *Tetrao urophasianus* by C.L. Bonaparte (1827) and later placed in a monotypic genus *Centrocercus*, meaning "spiny-tailed pheasant," by Swainson and Richardson (1832). The species was later differentiated into two subspecies, the Westrn Sage Grouse (*C.u. phaios*) and the Eastern Sage Grouse (*C.u.*

urophasianus) (Aldrich 1946, 1963; AOU 1957). Similarities in appearance and morphological measurements resulted in poorly defined ranges, and recent genetic work indicates there are no differences between the two subspecies. The subspecies designation has been dropped.

Recent DNA work has identified a small sage grouse population with distinct genetic and behavioral differences in southwest Colorado. The American Ornithologists' Union (AOU) has recognized the birds from this population as a separate species of grouse, *Centrocercus minimus*, now called the Gunnison Sage Grouse. *Centrocercus urophasianus* is referred to as the Greater Sage Grouse by the AOU. (In this document, all name references involve the Greater Sage Grouse, but for purposes of simplicity, the document uses the name "Sage Grouse".)

Sage Grouse are the largest North American grouse. Males range from 27 to 34 inches long and weigh five to seven pounds. Females are 18 to 24 inches long and weigh from two to three pounds. They are grayish-brown with a dark belly, and long and pointed tail feathers. The male is equipped with two air sacs (esophageal pouches), covered with short, stiff, scale-like white feathers, on each side of the lower neck and upper breast. When the pouches are distended, two yellow pear-shaped patches of bare skin are exposed. A yellow fleshy comb occurs above the eye, and long filoplumes extend from the back of the neck and head. The female has the same general appearance but lacks the air sacs and filoplumes. The feet are feathered to the toes on both sexes.

Life History and Habitat Requirements

Breeding/Nesting

Sage Grouse have a lek mating system, and breed from late March through April, and perhaps into early May. The males perform a strutting display to attract females (Bond 1900, Scott 1942, Guillion 1957, Schroeder et al. 1999) The display is part of an active defense of the breeding territory by each male (Hartzler 1972). Most of the breeding is conducted by only a few males (Gibson et al. 1991, Scott 1942, Lumsden 1968, Wiley 1973b, Hartzler and Jenni 1988). Males have no responsibilities for incubation or parental care, and do not exhibit territorial behavior off the leks. Flocks composed of only males are common during the rest of the year.

Comment: Should indicate when the breeding season is (i.e. March – April).

Sage grouse generally use the same lek sites every year (Simon 1940, Scott 1942, Batterson and Morse 1948, Wiley 1978, Autenrieth 1981). Leks typically are found in open areas about 0.2 to 12 acres in size, and are surrounded by big sagebrush. The taller shrub habitat is important for escape cover and protection from predators (Patterson 1952, Gill 1965). As sage grouse populations decline, the number of males attending leks may decline, or the use of some leks may not occur. Likewise, as populations increase, male attendance on leks typically increases, new leks may be established, or old leks may be re-occupied.

The lek is considered the center of year-round activity for resident Sage Grouse populations (Eng and Schladweiler 1972, Wallestad and Pyraah 1974, Wallestad and Schladweiler 1974). Seasonal habitat may occur only at long distances from the leks, Sage grouse that use spatially isolated habitat patches, separated by long distances (12+ miles), are

migratory. These isolated patches are critical for the survival of those (Connelly et al. 1988, Wakkinen et al. 1992). Most nests are located within 4 miles (6.2 km) of the lek; but hens may nest 12 or more miles (20 km) from the lek (Autenrieth 1981, Wakkinen et al. 1992, Fischer 1994, Hanf et al. 1994).

Nesting and early brood rearing in Nevada generally occurs from April through June. The nest is a shallow depression on the ground, beneath a shrub (usually sagebrush), that is lined in with dry grasses, sagebrush leaves and a few feathers (Batterson and Morse 1948, Autenrieth 1981). The height of shrubs at nest sites varies. Some research suggests sage grouse prefer nests under shrubs that are taller than the average shrub height for the given site (Keller et al. 1941, Trueblood 1954, Klebenow 1969, Wallestad and Pyrah 1974, Autenrieth 1981, Kerster and Willis 1986). Other work indicates nests are not under the tallest shrubs available (Gregg et al. 1994, Sveum et al. 1998b), because of reduced herbaceous cover under larger shrubs (Klebenow 1969).

Comment: Should also include the results from the studies that show a beneficial correlation between herbaceous cover height associated with nest bushes.

Optimal late brood rearing (i.e., summer) habitat has a sagebrush-grass (perennial grasses) intermingled with areas of wet meadows, riparian, or irrigated agricultural fields (Connelly et al 2000). As herbaceous vegetation in the sagebrush-grass uplands matures and dries, sage grouse broods increase their use of mesic wet meadows where succulent (green) forbs and grasses, and insects are still available (Savage 1968, Schlatterer and Pyrah 1970, Oakleaf 1971, Neel 1980, Autenrieth 1981, Klebenow 1985). The availability of moist meadows and riparian areas is especially important in drier years and during long drought periods. Klebenow (1982) found that sage grouse use the uplands through late July in wet years because the herbaceous plants remain green longer into the summer. During drought years or years with dry spring months, grouse move to meadow/riparian locations earlier in the summer. In addition, sage grouse in Nevada apparently rely on wet areas for their survival more than in other states because uplands in Nevada generally receive less annual and/or spring-early summer precipitation than other states with sage grouse (Klebenow 1985).

Fall and Winter

Sage Grouse form flocks as brood groups break up in early fall, and move toward their winter range. The timing of this movement varies between locations and years, and depends on the geographic location of the sage grouse population, weather conditions, and snow depth. Sagebrush is essential for survival during the fall, winter, and early spring months.

Seasonal movements are related to severity of winter weather, topography and vegetative cover (Beck 1977). The amount of snow, rather than an affinity for a particular site (Beck 1977, Barrington and Back 1984) determines winter use areas. Sagebrush is the only food source in the winter when forbs are dormant. Winter use areas are located where the sagebrush protrudes at least 10 to 12 inches above the snow, so it can provide both food and cover (Barrington and Back 1984, Hupp and Braun 1989). If snow completely covers the sagebrush, the birds will move to areas where the sagebrush remains exposed. In cold wet winters, the amount of winter range is expected to be substantially reduced.

Food Habits

Sage Grouse adults feed primarily on various species of sagebrush. Chick diets include forbs and invertebrates (Klebenow and Gray 1968, Drut et al. 1994). Insects, especially ants and beetles, are an important component of early brood-rearing habitat (Drut et al. 1994, Fischer et al. 1996). Forbs increase in the diet after the first week and remain the major food item for juveniles throughout the summer. Some of the forbs found in quantity in the diets of juvenile Sage Grouse include: common dandelion (*Taraxacum officinale*), common salsify (*Tragopogon dubius*), prickly lettuce (*Lactuca serriola*), pepperweed (*Lepidium densiflorum*), Harkness gilia (*Linanthus harknessii*), tapertip hawksbeard (*Crepis acuminata*), loco weed (*Astragalus convallarius*), phlox (*Phlox longifolia*), and common yarrow (*Achillea millefolium*) (Klebenow and Gray 1968, Peterson 1970). Sagebrush (*Artemisia sp.*) occurs in only trace amounts until chicks are about five weeks old (Klebenow and Gray 1968, Peterson 1970). Summer food habits of adult grouse are similar to juvenile food habits, with some differences in proportion of foods eaten. As the meadows dry and frost leads to the drying and killing of forbs, Sage Grouse shift their diet primarily to sagebrush leaves (Patterson 1952, Connelly and Markham 1983, Connelly et al. 1988, Wallestad 1975), and sagebrush continues to be the major food item until spring (Girard 1937, Rasmussen and Griner 1938, Patterson 1952, Leach and Hensley 1954, Klebenow and Gray 1968, Peterson 1970, Wallestad et al. 1975).

FACTORS AFFECTING SAGE GROUSE AND THEIR HABITAT

HABITAT

Population Management Units have been delineated. Habitat restoration categories (R-ratings) have been defined, and a protocol determined for classifying ecological status data collected by the BLM into the restoration categories. Data have been mapped in GIS format for all PMU's.

In order to classify habitat into the restoration categories the planning team developed a large number of assumptions as part of a decision support system (DSS). This DSS is valid only for the classification of habitat for sage grouse planning purposes. It is not directly transferable to other resource management objectives that may be in place for the land areas addressed in this document. The classification described in this document does not rate habitat value and/or habitat needs for other species and/or other land uses, which might differ from (and even counter to) the habitat needs for sage grouse.

The assumptions used to classify areas in each PMU into specific habitat quality categories (i.e., broad restoration needs) apply only to locations with soils capable of growing a sagebrush-dominant overstory of sagebrush species used by sage grouse (i.e., woody sagebrush species except for pygmy sagebrush and bud sagebrush). Soils without the potential to produce the appropriate sagebrush (e.g. salt-desert shrub or pinyon-juniper sites) are not included in these assumptions. They generally do not constitute sage grouse habitat.

A particular "habitat condition" classification does not confer any level of "habitat use" by sage grouse or any other species. For example, an area classified as having desired habitat composition" may not have sage grouse for reasons unrelated to plant composition. Likewise, an area classified as having an insufficient sagebrush canopy or insufficient

herbaceous understory to support a large grouse population does not automatically imply a need to make adjust management actions and/or land uses, The habitat classifications developed and the assumptions used to develop the classifications were used to help identify and understand potential risk factors; facilitate the development of pro-active management treatments and strategies; potentially develop incentives so that land users and managers could change their management techniques, goals, or strategies where appropriate; and support inventory, assessment, and monitoring decisions related to implementation of an adaptive management approach to future decision making.

The habitat classification (rating) resulting from application of these assumptions during the assessment process does not preclude or prescribe any particular management decision relative to the uses and management techniques, systems, or applications on the ground (e.g. A seeding with sufficient sagebrush “encroachment” to classify the area as “Key Habitat Area” does not preclude maintenance of the seeding for its original intended purposes, and/or to maintain the understory species. Likewise, an area identified as having insufficient sagebrush cover may have important lek areas, which require short or non-existent sagebrush cover).

The Habitat Task Group expects that the federal agencies, Indian tribes, state agencies, and individuals involved in the management and use of the public lands and forest lands will follow a process of cooperation, coordination, and consultation in the development and implementation of any management decision.

Finally, both the process of classifying sage grouse habitat and the classification’s delineated are flexible. The process provides guidance for: 1) initial categorization; and 2) the protocol for changing such categorization as data becomes available, and/or plant community’s change in species composition and/or abundance through time. The areas/acreage categorized will change in both the short and long-term as unpredictable events (e.g., climate, fire, disease, etc.) occur, additional data are collected, and/or new knowledge is obtained about the habitat requirements and/or biology of sage grouse is developed. For example, an area classified as “key habitat” one year, may burn the next year, creating a condition with insufficient sagebrush canopy.

All classifications, both initial and revised, are expected to be field verified and supported by field data. If not supported by field data, it is the expectation of the Task Group that the categorization will be changed to reflect the assumptions and guidelines outlined below.

As used here:

“Areas with Desired Habitat Structure” are existing sagebrush-dominated areas with good condition understory species composition relative to seasonal needs of the species (aka Key Habitat Areas as referred to at page 32 of The Nevada Sage Grouse Conservation Strategy).

Comment: Jeannette: The wording on the text below differs from my last penciled changes. This should work for this ridiculous deadline, but we need to get the corrections for later on.

EAST RANGE POPULATION MANAGEMENT UNIT

Summary

The East Range Sage Grouse Population Management Unit (PMU) encompasses approximately 600 square miles in eastern Pershing County. Management decisions and actions in this PMU may be more difficult due to the high percentage of checkerboard land ownership. The PMU is made up of 33 percent private land with the remainder being public land administered by the Bureau of Land Management. The area is bounded on the west by Buena Vista Valley, and on the northwest and north by Interstate highway 80. The eastern boundary runs through Grass and Pleasant Valleys. The southern boundary for the population management unit crosses the very northern tip of the Stillwater Range approximately 3 miles south of the McKinney Pass Road.

The elevation varies from approximately 4,700 feet in the valleys to over 8,300 feet at Granite Mountain. Annual precipitation ranges from approximately 6 inches at the valley bottoms to 14 inches at the higher elevations. Vegetation types range from a mixture of salt desert shrub and sagebrush ecological sites at the lower elevations. Pinion-Juniper (PJ) woodlands are widespread at the south end of the PMU. Juniper occurs in the north end of the PMU. Mountain big sagebrush and low sagebrush ecological sites at the upper elevations. Wildfires have burned approximately 75 percent of the PMU, since 1980. Despite the many wildfires that have occurred in the PMU, the PJ woodlands remain the abundant vegetation type at the upper and mid elevations. Cheatgrass, mustard, and other annual plants now dominate many of the lower elevation burns.

This PMU has a very small population of grouse; however, good data about population size and fluctuations are absent. It is estimated that there are approximately 100 birds within the PMU. Some experts speculate that large fires in recent years may have negatively impacted sage grouse movement, but this is speculation. The Granite Mountain area on the southern end of the range is the only area that has not had a large fire. In recent years, burned areas below 6,500 feet in elevation have received most of the rehabilitation effort, due to the high probability of cheat grass invasion. Revegetation efforts have met with fair success.

A qualitative population viability analysis was completed for the East Range PMU by Nevada Division of Wildlife biologists, which determined that there is a moderate probability of extirpation within the next 20 years. Biologists feel the sage grouse population in the East Range is part of a much larger metapopulation. This belief occurs because this area is believed to have always had a comparatively small, but persistent population of sage grouse. The East Range extends for approximately 50 miles (north to south) and despite the significant loss of habitat from extensive wildfires, sufficient habitat exists to support the low-density population. Movement of sage grouse and genetic mixing between this and other PMU's may not occur on an annual basis but is thought to be the main reason many of these small populations continue to persist.

Conversations with long time residents of the area seem to indicate that population levels have been very low in this range for many years.

Population estimates for the East Range PMU are based solely on professional judgment due to insufficient field based census data. During the last decade, only three small leks have been identified, during helicopter surveys. The Spaulding Complex Fire (2001) burned a majority of the habitat surrounding all three of the known leks. Islands of sagebrush habitat remain within the burned areas and may provide sufficient cover and forage for the low-density population. In 1992, when the strutting grounds were discovered, a total of 16 birds were observed with a high count of twelve birds on a single lek. A deer hunter reported an observation of 30 sage grouse one mile north of Granite Mountain in October of 2001 following the fire. This represent the highest number of birds ever recorded in the PMU.

The East Range PMU has been closed to the hunting of sage grouse since 1997. The hunting season was closed six out of ten years in the 1990's and eight out of ten in the 1980's. The level of harvest within the PMU was thought to be very low during past open hunting seasons due to the low density of birds in the range.

Risk Factors:

Habitat Quality – High Risk

A qualitative risk assessment has concluded there is a low-moderate risk to all sage grouse throughout the East Range PMU from a lack of desired forbs and desired perennial herbaceous cover. Risk from these conditions is considered moderately low in nesting/early brood rearing habitat and moderate in late brood rearing habitat. This risk is expected to continue into the future, given current management actions and ecological processes.

Abundant annual grasses are a high risk to the sage grouse population and exist in numerous locations in the PMU. The risk is sufficiently widespread to be considered a risk to all birds in the PMU. The risk from abundant annual grasses will remain high in the future due to the difficulty in managing and rehabilitating large acreages of annual grasses. The potential for larger, more frequent fires is expected to remain high in the future. Noxious weeds are considered a moderately low risk and because of management actions outlined in this plan are not expected to increase in risk in the future.

Sagebrush cover is thought to be insufficient (less than 10%) for season of use in many areas of the PMU due to the extensive wildfires that have occurred over the past twenty plus years. Cheatgrass has established monocultures on many of the low to mid elevation sites, further reducing the amount of sagebrush habitat available to grouse. The current risk is considered high, and is expected to continue into the foreseeable future, especially on lower elevation winter habitats. Due to the loss of habitat from wildfires and pinion juniper encroachment, there is currently less than 40% R-0 habitat remaining

in the PMU. This factor was rated as a moderate to moderately high risk to the sage grouse population in the East Range PMU.

Fifteen habitat quality factors were evaluated. Some were considered a low risk but the combination of abundant annual grasses, PJ woodlands, lack of sagebrush cover, and degraded meadows creates a high risk from degraded habitat quality.

Conservation Goal(s)

Maintain and/or enhance the quantity and quality of sage grouse habitat in the East Range PMU.

Conservation Objectives

1. Over the next five years the Bureau of Land Management will make adjustments if necessary in the management of livestock to ensure that the seasonal habitat requirements of sage grouse are met. An upward trend in sage grouse habitat quality (determined by monitoring) will be used to determine whether the necessary improvements in habitat condition are being made. Adjustments in the grazing management of livestock will be made using the adaptive management approach.
2. In the next five years, capture 5 to 10 sage grouse and fit them with telemetry collars. Monitor the birds' movements for up to two years to identify critical habitats and learn more about current distribution of sage grouse in the PMU. Use the results to design and implement projects designed to protect, improve and increase the quantity and quality of those habitats.
3. Over the next five years, (once critical habitats have been better defined) design and implement pinion juniper control projects in an effort to protect and restore important sage grouse habitat.
4. Continue to aggressively rehabilitate sagebrush habitats that are lost due to wildfire or other forms of disturbance. The rehabilitation effort should take place during the fall or early winter immediately following the fire. Specific seed mixtures will depend on the site but will include sagebrush, perennial grasses and forbs that are beneficial to grouse and that have a good chance of becoming established.
5. Over the next five-year period, identify and map locations in the PMU where noxious weeds are present and take actions to control/eradicate the weeds.
6. Over the next two years, amend the Winnemucca Districts Fire Plan (BLM) to call for the "full suppression" of wildfires in sage grouse habitats. Due to the likelihood of cheatgrass invasion and the loss of sagebrush habitats from fire,

prescribed burns shall be analyzed on a case-by-case basis to ensure that important sage grouse habitats are protected.

7. Over the next five-year period, determine where greenstripping projects would be an effective treatment in an effort to protect the surrounding sagebrush habitats and/or to minimize the spread of wildfire.
8. Continue to investigate methods to rehabilitate areas dominated by invasive annuals in an effort to restore these important habitats.

Habitat Quantity – High Risk

There is a moderate risk of the loss of sagebrush-covered rangelands by expanding pinion-juniper woodlands. This expansion is believed to be sufficiently widespread to affect all birds in the PMU. Under current management programs this risk is expected to continue into the foreseeable future, and remain a moderate risk on nesting/early brood rearing habitat and late brood rearing habitat. Pinion Juniper is expected to expand into sage grouse winter range but is currently considered a moderate risk.

Abundant annual grasses are considered a high risk to the sage grouse population and are widespread at the lower and mid elevations in the PMU. This risk affects all birds in the PMU. The risk of abundant annual grasses is expected to remain high in the future due to the difficulty in managing and rehabilitating large acreages of annual grasses. The potential for larger, more frequent fires will remain high in the future. The loss of the sagebrush component in many locations throughout the PMU was rated as a high risk to the sage grouse population. Some islands of sagebrush habitat remain within these burned areas. It has not been determined through marking studies whether there has been a loss of habitat connectivity or if the migration of grouse has been impeded.

Conservation Goal(s)

Manage for no net loss of existing or remaining sage grouse habitat. Restore historic or lost habitat.

Conservation Objectives

1. Once important habitats and bird distribution within the PMU have been defined, design and implement projects to protect and improve the quality of important sagebrush habitats in the PMU. Projects will be designed and implemented over the next five years in an effort to protect and enhance the quality of the remaining sagebrush habitat. Treatments that minimize disturbance to the soils are the preferred methodology in areas prone to cheatgrass invasion.
2. Over the next five years, design and implement Pinion Juniper control projects that maintain a sagebrush canopy and a perennial grass/forb understory, particularly in areas near riparian zones.

3. Protect and restore riparian and meadow habitats within the PMU.
4. Over the next five years, the BLM will manage livestock within the PMU to meet the seasonal habitat requirements of sage grouse. By using the adaptive management approach, areas of concern will be addressed on an annual basis and adjustments in management will be made as necessary.
5. Through the NEPA process, evaluate the risk of all Realty Actions that may have an impact on sage grouse biology or sage grouse habitat. Minimize any loss of sage grouse habitat from future Realty Actions. Mitigation is required when avoidance is impossible.
6. Rehabilitate sagebrush habitats that are lost from wildfire or other forms of disturbance.
7. Over the next three-year period, identify and map areas in the PMU that have noxious weeds and take action to control/eradicate the weeds.
8. Over the next two years amend the Winnemucca Districts Fire Plan (BLM) to call for "full suppression" in sage grouse habitat. Due to the likelihood of cheatgrass invasion and the loss of sagebrush habitats from fire, prescribed burns shall be analyzed on a case-by-case basis to ensure that important sage grouse habitats are protected.
9. Determine where greenstripping projects would be cost effective to implement in this PMU.

Fire (Too Much) – High Risk

Wildfire as the number one risk factor effecting sage grouse in the East Range PMU. Since 1980, approximately 75 percent of the range has burned. Many of the older burns were not re-seeded and cheat grass now dominates these lower and mid elevation sites (below 7,000 feet). Cheatgrass has shortened the fire cycle across much of the East Range PMU. Some of the higher elevation sites are returning to sagebrush-dominated communities.

In recent years, burned areas below 7,000 feet have been re-seeded with a variety of native plants including sagebrush. Due to the dry conditions experienced over the past four years, the success of recent rehabilitation efforts has been mixed. The Bureau of Land Management feels that many areas within this PMU are limited in their ability to produce a heterogeneous mix of numerous sagebrush plant communities (i.e., limited site potential). Recent burns have been very large in size, and have overlapped one another. The most recent fire in the range burned over 75,000 acres. A few islands of sagebrush habitat remain within the burned areas. R-0 habitats are estimated to be less than the 40% recommended.

Conservation Goals

1. Prevent the further loss of sagebrush habitat.
2. Rehabilitate burned areas following fire.

Conservation Objectives

1. Over the next two years amend the Winnemucca Districts Fire Plan (BLM) to call for “full suppression” in sage grouse habitat.
2. Analyze prescribed burns on a case-by-case basis to ensure that important sagebrush habitats are protected.
3. Prescribed fires for rangeland improvement are allowed if the effect to sage grouse is neutral to beneficial.
4. Over the next five-year period, determine where greenstripping projects would be an effective treatment in an effort to protect the surrounding sagebrush habitats and/or to minimize the spread of wildfire.
5. Rehabilitate burned areas with native and/or non-native plant species to (a) reduce flammability and/or (b) enhance habitat quality. Introduced perennial species may be the best choice in some areas with a high probability for cheatgrass invasion. Once acceptable species are established a second treatment to restore the sagebrush component will be necessary.
6. Continue to investigate the most effective way to restore areas dominated by cheatgrass and other annuals.

Monitoring

1. The Bureau of Land Management should monitor the success or failure of wildfire rehabilitation efforts to determine which treatment and seed mixtures are the most effective and successful in restoring sagebrush habitat or whether additional treatments are necessary.

Fire (Too Little) – Moderate Risk

Extensive stands of decadent sagebrush are not found in this PMU. pinion juniper is the dominant vegetation type at the mid elevation locations that have not burned in the past 20 years. These woodlands also are encroaching into the remaining sagebrush community. Both the woodlands and the invaded sagebrush rangelands often are susceptible to continued cheatgrass invasion following fire. Prescribed fire to control PJ

encroachment should only be attempted where the potential for cheatgrass invasion is low. All vegetation manipulations will consider all techniques.

Conservation Goals

Increase the quality and/or quantity of sage grouse habitat in the PMU by implementing projects and management actions to restore and protect sagebrush habitats from pinion juniper encroachment.

Conservation Objectives

The group suggests the following to restore these sage grouse habitats:

1. Once important sage grouse habitat is defined, design and implement treatments to reduce pinion juniper on sites that were not historical woodland. The areas for treatment should have an understory of sagebrush, grasses and forbs or the site potential to support this vegetation.

Monitoring

1. The BLM will monitor areas that have been reseeded in an effort to learn which treatments or seed mixtures are the most successful in restoring sagebrush habitat.

Harvest and Poaching – Low Risk

Bird numbers are thought to have always been low in this range due to habitat quality and quantity. Excessive harvest can negatively impact sage grouse populations. The most vulnerable are smaller populations where losses from harvest and other factors may exceed annual recruitment and survival.

The sage grouse hunting season in the East Range PMU has been closed for several years and is expected to remain that way due to low population levels.

Conservation Goals

Ensure that the harvest of sage grouse does not exceed levels determined to be detrimental to the population.

Conservation Objectives

1. The number of sage grouse harvested during an open hunting season shall not exceed 10% of the fall population estimate.
2. Hunting seasons shall be closed when less than 100 male grouse have been counted on the strutting grounds during at least one of the previous two breeding seasons or where harvest is thought to exceed 10% of the fall population estimate.

3. Maintain law enforcement patrols in the PMU to curb the illegal poaching of sage grouse.

Monitoring

1. Continue to monitor sage grouse population levels through lek counts and brood surveys in order to determine population trend and estimates.
2. Continue to monitor the number of citations written for the illegal harvest of sage grouse in order to determine where potential problems exist.

Laws, Policies, Regulations/ Conflict with Biological Needs – Moderately Low Risk

The high cost and current environmental restrictions on the use of chemicals that have proven effective in the control of cheatgrass may inhibit our ability to implement management actions aimed at restoring sagebrush communities.

Conservation Goals

Over the next ten years, investigate, design and implement treatments aimed at restoring sagebrush communities in areas that contain abundant cheatgrass and other annuals.

Conservation Objectives

1. Support the easing of environmental restrictions that prohibit the use of certain chemicals (Oust, Plateau etc.) that have been found to be an effective treatment against cheatgrass and other annuals.
2. Support research and experiments that are aimed at finding a cost effective treatment for controlling large acreages of cheatgrass and other annuals.

Monitoring

1. Monitor ongoing experiments and research to determine which treatments may be effective in controlling the spread of cheatgrass.
2. Monitor any changes related to restrictions on the use of chemicals within the State of Nevada.

Livestock Management – Moderate Risk

Livestock Management is a moderate risk. The impacts due to grazing are evident in both the uplands and riparian areas. The primary negative effect is fewer desired forbs, and less herbaceous cover than desired. The primary positive effects are the maintenance

of water sources, utilization of meadows that promotes use by grouse, and the reduction of poaching due to presence of permittees. Permittees also may provide cost share for projects and maintenance of open space on private land.

Conservation Goal(s)

1. Over the next five-year period, make adjustments when necessary to the current grazing management system to ensure that the seasonal habitat requirements for sage grouse are met (using the adaptive management approach).
2. Maintain technically and economically sound grazing operations so the benefits provided by livestock operators continue to occur.

Conservation Objectives:

1. The BLM will manage livestock utilization in nesting and early brood rearing habitat to leave sufficient herbaceous height to provide hiding cover for nests and young chicks. How this equates to an average utilization level is unknown and likely to vary widely across the PMU, depending on site potential and growth form of the sagebrush. [-----]
2. Utilization on riparian areas should be high enough to promote use by sage grouse for brood rearing during the summer months.
3. Over the next five years obtain sufficient information to design and implement habitat protection or enhancement projects in R-0 habitats (eg. Table Mountain or Bortomes Spring Areas) in areas adversely affected by livestock.
4. Meet with permittees annually to determine if there are possible incentives to provide producers to manage their operations for the benefit of sage grouse.

Comment: Stay away from hard values since there is no data to show that specific utilization levels will benefit grouse. Write it in terms related to grouse biology needs.

Monitoring:

1. The Bureau of Land Management will monitor utilization levels from livestock grazing to ensure sufficient herbaceous material is available to meet the seasonal requirements of sage grouse in nesting/early brood rearing, and late brood rearing habitat, respectively, at the appropriate time of year, to provide adequate hiding and/or thermal cover. All monitoring decisions will consider the potential of the site to produce herbaceous vegetation (i.e., soils and stage of plant succession) and whether herbaceous growth or shrub size and morphology are the potential limiting factors for nest success.

Mining – Low Risk

There are several areas in the PMU that have a long history of mining activity, some of which are still active today. Most activity is small in scale and occurs in areas that have

been mined for 100 years or more. Risks from mining are not considered a major risk currently, however the potential for increased activity is high.

Conservation Goal(s)

Monitor current and proposed mining activity in the PMU to ensure that impacts to grouse are minimized.

Conservation Objectives:

1. Through the NEPA process, identify areas important to grouse so that alternatives or adjustments can be made to minimize the impacts to sage grouse.
2. Mitigation for the destruction of sage grouse habitat is required.

Monitoring

1. Monitor mining activity and proposals to prevent impacts to sage grouse.

Monitor, Research, and Education – Moderate Risk

Population Biology

Very little is known about the low-density sage grouse population in the East Range PMU and how it interacts with available habitat. The small population size, combined with significant habitat changes from wildfires, has made it difficult to obtain basic population data for the PMU.

The NDOW and the Winnemucca Field Office of the Bureau of Land Management have been conducting lek surveys in Humboldt and Pershing Counties for several years. A few birds have been observed on the leks in recent years but flights have been hampered by poor weather conditions. Only three small leks have been identified in the range over the last decade. Much of the habitat surrounding the three leks was burned in the 75,000 acre Spaulding Fire in 2001. Several islands of sagebrush habitat remain within the burned areas.

The most recent aerial survey of the PMU (2003) located seven birds. Four birds were observed on one of the leks (East Range # 3) and three other birds were observed during the flight. The highest number of birds ever recorded in the PMU was an observation of 30 sage grouse near Granite Mountain in the southern portion of the range (October 2001).

The first intensive helicopter lek surveys within Pershing County were conducted in 1992. The following table shows the number of birds observed during helicopter lek surveys of the East Range PMU over the last decade.

Table 1. Lek Survey data for the East Range PMU

Lek Name	Number of birds observed 1992	Number of birds observed 1999	Number of birds observed 2002	Number of birds observed 2003
East Range # 1	2	0	Not Flown	0
East Range # 2	2	0	Not Flown	0
East Range # 3	12	1	2	4

Poor weather conditions prevented surveys in 2000 and 2001 and hampered surveys in 2002.

Most population data collected by NDOW over the past 50 plus years is not specific to PMU boundaries or hunt management units. Harvest (Hunter questionnaire, wing data and field check station data, etc.) and brood survey (reproduction data) data was collected and summarized on a countywide basis (Pershing). Prior to 1969, data was collected in a district wide format (Black Rock District). Due to the small sage grouse populations in Pershing County, PMU specific census data are often non-existent or the sample size is so small that the data have limited value. The County and District wide data is provided in Appendix ?

Conservation Goal(s)

Continue efforts to increase the knowledge regarding important habitats, bird distribution and movements of sage grouse in the East Range PMU so that the best management decisions and actions can be made.

Conservation Objectives

1. Continue the helicopter lek surveys.
2. Conduct population trend studies on existing leks on an annual basis.
3. Conduct ground and aerial searches to identify additional leks that may occur in the PMU.
4. The sage grouse hunting seasons shall be closed when less than 100 male grouse have been counted on the strutting grounds during at least one of the previous two breeding seasons, or where harvest is thought to exceed 10% of the fall population estimate.
5. Over the next five years, capture and radio telemeter at least 10 sage grouse (both male and female) to determine if the population is migratory or non-migratory, and if it is part of a larger metapopulation. The capture effort is aimed at increasing our knowledge and understanding of the current distribution and key habitats of sage grouse within the East Range PMU.

6. Conduct brood surveys during the summer months to determine productivity and recruitment. These surveys may also provide critical information about important seasonal habitats and enable biologists to better determine population size.

Monitoring:

1. Monitor the collared birds for at least two years. These data will help to determine whether the population is migratory or non-migratory, and may help find additional lek sites. Also, data will provide information about locations of nesting, brood rearing and wintering habitats.
2. Conduct brood surveys during the summer months to collect productivity and recruitment data. These observations will help to determine critical brood rearing areas (current) and help biologists better estimate population size.

Predation – Low Risk

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Insufficient hiding cover, depleted resources, and poor habitat quality and quantity were each rated a low risk. However the cumulative effect of these risks cause the sage grouse to move to meadows earlier in the summer. Meadow and riparian habitats in the range do not provide sufficient hiding cover for grouse. The earlier the birds are concentrated the more they are vulnerable to predation.

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No predator research has been conducted within this PMU however; some studies have indicated that predators can have a significant impact on sage grouse populations under certain circumstances.

Wildlife Services currently conducts aerial hunting of coyotes in the area in an attempt to reduce coyote depredation. Coyote hunting by local residents is also popular in the PMU.

Conservation Goals

None

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Conservation Objectives

1. Monitor sage grouse recruitment (chicks per hen) by conducting brood surveys in the PMU. If recruitment falls below that necessary to maintain the population (est. 1.7 chicks per hen) for two consecutive years, then investigate whether predators may be having an impact on nesting success and/or survival of broods. Predator densities will have to be determined. Control projects will be initiated if it is believed that predators are causing the decline in sage grouse population levels.

Monitoring

- 1. NDOW will continue to monitor sage grouse production and recruitment to determine what effect predation has on recruitment.

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Realty Actions – Low Risk

The only risk identified was utility lines/corridors in a few areas in the PMU. The utility lines run through potential winter and late summer brood rearing habitats.

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Future wind generation and geothermal energy projects may become a serious concern in the future.

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Conservation Goals

Prevent the loss of sage grouse habitat due to any realty action.

Conservation Objectives

- 1. Mitigation is warranted for any loss of sage grouse habitat.
- 2. Information on sage grouse habitats will be provided early on in the planning processes.

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Recreation – Moderately Low Risk

The amount of recreational activity throughout the PMU is considered to be low.

Recreational activity on the roads that run through the Bortomes Spring area may impact the meadow (potential for downcutting) and for a short period of time may preclude the use of the immediate area by sage grouse. However, the disturbance to grouse was rated as low due to the short duration of the disturbance. Noxious weeds have also been observed in the area and the potential for spreading the weeds to other areas by recreational vehicles exists. The potential for future wildfires caused by recreational activities is a moderate risk to sage grouse in the East Range PMU.

Conservation Goal

Ensure that recreational activities (or other factors related to recreation) do not impact sage grouse or their habitat. If in the future it is determined that the activity or factor is negatively impacting the sage grouse population enact restrictions or management actions that will alleviate the impact.

Conservation Objectives

1. Close or re-route roads around important habitats if it is found that the disturbances are impacting grouse or their habitats.
2. During extreme fire danger enforce campfire and off road restrictions designed to decrease the chance of wildfires caused by recreational activities.
3. Keep exact locations of critical sage grouse habitats confidential to limit disturbance by recreational enthusiasts on the sage grouse population.

Monitoring

1. Monitor the level of recreational activity and its impacts to sage grouse in the East Range PMU.

Wild Horse and Burro Management – Low Risk

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Current horse numbers are very low (10) with a current management objective of 0 horses.

Conservation Goal(s)

Maintain the current management objective of 0 horses and burros in the PMU.

Conservation Objectives

1. Remove the 10 horses from the PMU.

Monitoring

1. The BLM will continue to monitor horse and burro numbers using current aerial census techniques every 3 to 4 years.

Wildlife Management/Grazing - Low Risk

Wildlife Management/Grazing is not a risk to the sage grouse population in the East Range PMU. Low densities of bighorn, mule deer, and pronghorn exist within the PMU.

Conservation Goals

None

Conservation Objectives

None

Monitoring

None