

JACKSON MOUNTAIN POPULATION MANAGEMENT UNIT RISK FACTOR ASSESSMENT AND PROPOSED ACTION PLAN

This document provides an overall description of the location, land ownership, climate, sage-grouse population information, sage-grouse use areas, and habitat rating of the Pine Forest Population Management Unit. This preface information provides an overview of the PMU. The primary objective of this document is to provide a full evaluation of each risk factor for sage-grouse and/or their habitat, rate those risk factors (low to high), and develop conservation goals (current and future) to address those issues with a moderate to high risk. Parallel with this effort, objectives were developed (current and future) to attain the identified conservation goals. In order to accomplish this task, the North Central Local Planning Group designed a risk assessment matrix to evaluate the primary risk factors for sage-grouse and/or their habitat (see attachment). The data/information obtained from completion of the assessment matrix form the basis for this narrative and the supporting analysis. Each risk factor and subcategory was identified and or discussed regardless of the risk factor ranking. The North Central Planning Group used this approach to ensure that all risk factors were considered and no issues and/or risks were subjectively overlooked in the assessment process. In order for readers to more readily access the analysis for specific risk factors, a Table of Contents is included (page 2).

The assessment process identified many potential risk factors as having low potential or not applicable to this PMU. Numerous others received a rating of moderate or high. Moderate to high risk levels indicate risk factors that need to be addressed to stabilize and/or enhance sage-grouse populations and/or their habitat. Obviously, within those elevated risk factors requiring action, the most immediate threats have to be prioritized.

The most significant risk factor to this population of sage-grouse is the loss of sagebrush from Juniper expansion, loss of meadow habitat in specific locations, too little fire in specific high elevation sage-grouse use areas and the fact that only 12.2% of the PMU is considered to be R-0 or good sage-grouse habitat. In the future, the most important risk factor is continued loss of sagebrush to Juniper expansion, decadent sagebrush expansion, loss of meadow habitat, the expansion of noxious weeds and no net gain in R-0 habitat type.

For risk factors rated moderate or high, conservation goals and objectives have been identified. Site-specific implementation plans will have to be developed once priority management plans/actions are identified. Although a number of risk factors have been identified, the ability to conduct measures to correct those risks may well be influenced by budgets, time, laws-policies-regulations and/or current science. Risk factors with low ratings are not included in actionable items, but are identified. By no means should they be interpreted as risks involving “no action”. Rather they are more likely to be addressed with normal resource planning processes and budget opportunities facilitating action to remedy the risks.

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POPULATION MANAGEMENT UNIT (PMU) DESCRIPTION
Location, Land Ownership, Topography, and Climate

The Jackson Mountain PMU is located in the north-central portion of Humboldt County and is typical of the north-south mountain ranges separated by the basin and range geography found in Nevada. The Jackson Mountain PMU is more of an island surrounded by open basins, desert or low salt desert hills. The Jackson Mountain PMU is difficult to describe as it contains fragmented pieces of sage-grouse habitat that are contained within the north half of the mountain range. The majority of the Jackson Mountains north of the Trout Creek/Jackson Creek road above 4400 ft. is included within the PMU. The northern boundary extends north of Water Canyon off the east slope west over the top of Buff Peak down the Happy Creek drainage and north of the Pass Creek summit approximately two miles. The west boundary follows the crest of the mountain from Deer Creek Peak south over Mary Sloan Basin along the crest to a table just north of King Lear Peak. The southern boundary falls off the east face of King Lear Peak into the ridge splitting Little and Big Cedar Creeks to approximately the 4500 ft. elevation and north to Trout Creek. The Jackson Mountain PMU encompasses a total of 75,606 acres or 118 square miles.

Table x: Land Ownership in the Black Rock PMU

| <u>Ownership</u> | <u>Acres</u> | <u>Percent</u> |
|------------------------------|--------------|----------------|
| Public-BLM | 65,005 | 85.9% |
| Native American Reservations | 0 | 0% |
| Private | 10,601 | 14.1% |
| Surface Waters | | 0% |

The vast majority of the sage-grouse use areas are associated with habitat above 4400 ft in elevation. The sage-grouse use areas are predominately associated with fragmented pieces of habitat supporting low sagebrush ridges or basins intermixed with mountain brush and mountain sagebrush communities. The majority of those sites, due to the steep topography of the mountain are found at the upper elevations between 7500 and 8000 + ft. where the topography is more open and less precipitous. Perennial grass production is generally very good as herbaceous plant material is well represented at these elevations. Forb production is equally good, but generally delayed until June or even July in some years. Sage-grouse use areas, other than that described, is very limited due to heavy mountain brush habitat interspersed with Juniper and aspen stands. The majority of the drainages off the east slopes prohibit sage-grouse use due to the steep fall in those systems and narrow floodplains. Sage-grouse use can be found on some of the less precipitous ridges and basins off the east slope, but they are fragmented locations. The west slope off the crest of the mountain provides no sage-grouse habitat due to the steep Juniper covered slope that fall directly into a salt desert shrub community. Occasional sage-grouse use, as determined from observations or indices, indicates use occurs within the meadows associated with upper Jackson Creek, along the alluvial fan or

benches following north along the east side of the Trout Creek spur, and at the top McGill Canyon on the plateau north of King Lear Peak. Sage-grouse droppings indicate ephemeral winter use in the low hills north of Cedar Creek east of King Lear Peak. Historical use accounts place sage-grouse in upper Water Canyon, Happy Creek, Mary Sloan basin and the ridge north of Deer Creek Peak. The highest peak within the PMU is 8,648 ft. and is located at the top of Bottle Creek. The lower elevations vary from 4,400 to 5,000 ft. and are arid sagebrush sites located immediately above or intermixed with the salt desert shrub zone. The sites are comprised of a mix of primarily Wyoming sagebrush and interspersed with both Basin Big and Lohonatan sagebrush. Juniper trees can be found throughout most of the PMU in varying density and expanding within the PMU. Numerous springs, seeps and perennial streams are located throughout the entire PMU. Precipitation amounts vary considerably by elevation and location, ranging from 6 inches at the lower elevations to over 30 inches at the tallest peaks. The high elevation summer use areas receive between 12-20+ inches of annual precipitation. Vehicular access during the spring months, to assess lek activity or numbers, is usually impossible above 5,500 to 6,000 ft., due to wet soil conditions. Access above 6000 ft. is generally restricted until early June.

The Jackson Mountain PMU west boundary adjoins both the South and North Jackson Mountain Wilderness areas. The total acreage for both wilderness areas is 77,975 acres of which 19,840 acres are encompassed inside this sage-grouse PMU.

Sage-grouse Use and Population Information

The sage-grouse information for this PMU is extremely lacking since the inception of the state wildlife agency (currently NDOW) in the late 1940's within Humboldt County. Traditionally, substantial wildlife populations were identified by hunter use or activity in site-specific locations. Baseline information was generally formulated as a bi-product of known hunter day or pressure information, harvest results, or wildlife surveys and inventory work to monitor key populations. Generally, those activities were conducted in areas where a large or suitable sample could be collected to assess a given wildlife species response to environmental or habitat related influences. The Jackson Mountain sage-grouse population was always considered to be an area that did not support anything more than a "small resident population." Consequently, the area never attracted either much hunting pressure or survey/inventory assessment work for this particular species.

The majority of the current sage-grouse population is located at the top of "the Big South Fork of Bottle Creek" where the primary leks are located or have traditionally been observed. The birds seem to core in that area and south along the Trout Creek Spur, again on top of the mountain. The elevation of that bench country ranges between 8000-8200 ft. The suitable or available use areas on top of the bench equates out to approximately 776 acres or 1.2 square miles. The habitat is not uniform and fragmented

into areas suitable for sage-grouse and those that will not support birds. It appears as though the birds use this area in a diffused manner for their primary nesting, brooding and summer use area. Birds have been observed using the area late into the fall/winter with moderate to heavy snow cover. However, birds have also been observed off the east face to the open sagebrush benches down to 4400 ft. and many of the open ridges between. During the late winter and spring, sage-grouse can be observed anywhere within the confines of the PMU as indicated by sightings and NDOW observations in association with other activities (primarily helicopter surveys for mule deer and bighorn sheep). Consistent patterns or use areas have not been established from all of those sightings or from indices such as fecal dropping. Sage-grouse can be found in small concentrations on top of the Trout Creek spur, but it is very difficult to predict where sage-grouse use occurs away from that area during any particular season. Earlier accounts from the 1930'-40's indicated much higher accounts of sage-grouse. Those accounts were derived from the long-term permittee's in the area and others who lived in the area prior to 1950. From an antidotal viewpoint, many of the former permittee's indicted that domestic sheep were run on the Jackson Mountains through the 1940's and relate the decrease in sage-grouse to the lack of heavy domestic sheep use on the vegetation since that era. One Winnemucca resident, Pete Lucemberry, recounts both a higher density and distribution of sage-grouse during the years when domestic sheep activity was ongoing compared to his visits in the 1990's.

Helicopter lek surveys have been conducted throughout the area on two occasions to better determine densities and distribution. After a two attempts over a number of years, none under ideal survey conditions, **five leks** or potential lek sites have been identified. Ground lek surveys are virtually impossible due to the elevation and access restrictions associated with the areas at the head of Bottle Creek (8,000 + ft.). Based on identified leks and summer use areas, only a professional estimate can be provided for the sage-grouse population in this PMU. The sage-grouse population estimate for the Jackson Mountain PMU is 200-250 birds. That figure was based on the first lek survey in 1994 that yielded birds on 5 (five) leks. A subsequent survey in 2005 did not yield any active birds on those same sites.???????? (Partee to rewrite or provide information)

Lek Assessment Work:

Monitoring of known lek sites, on an annual basis to determine trends, has been very inconsistent for this PMU. No annual lek surveys have been conducted over the past 50+ years. Close vehicle access was often precluded because of heavy mud and/or deep snow. Lek locations were traditionally discovered from the ground, word of mouth and more recently during spring helicopter surveys for mule deer. Mule deer helicopter surveys were started consistently in 1976 and provided good insight as to how many lek locations were being over looked. The helicopter was an ideal tool for lek surveys as the sage-grouse did not suspend strutting activities which often was the case with a fixed wing aircraft such as a super cub (avian predator reflex). Starting in the early 1990's, formal helicopter surveys were directed specifically at inventory efforts for lek sites within a given area. Those NDOW survey efforts continue today and have been either funded by NDOW or the Winnemucca BLM Field Office since the early 1990's. More

recently, a sportsmen's group, the Nevada Chukar Foundation, has contributed money for lek surveys. Most of the PMU's within the Winnemucca BLM district have been surveyed with a number of attempts dedicated to the Jackson Mountain PMU.

A table to display lek trend data would not accurately reflect population cycles due to the low number of ground surveys, biases in those surveys, and limited areas surveyed within the PMU. In order to indicate the number of leks or potential lek sites (birds observed in area not strutting) within this PMU, the following shows the number of sites located from the 1950s to date.

1950's No Lek Information
1960's No Lek Information
1970's No Lek Information (Need to info.)
1980's No Lek Inforamtion
1990's 5 Leks Identified
2000's No activity on known lek sites

Habitat Rating / Restoration Values

The North Central Local Area Planning Group went through an extensive process to better outline and map the various sagebrush habitats and the current status of each as defined in the guidelines of the Governors' Recovery Team Plan (GRTP). The GRTP definitions or guidelines were too broad and required modification. The habitat categories identified below provide better compatibility with vegetation data in the BLM's GIS database. Because of the steep topography of the PMU, extensive time was devoted to determining sage-grouse use areas based on degree of slope. It was determined that slopes in excess of 25% did not have sage-grouse use or it was very limited. The various Restoration Values or categories and the acres mapped to each are as follows:

R-0 Key Habitat = 7,891 acres = 10.4% (2,317 acres > 25% slope)

Areas with desired species composition that have sufficient, but not excessive, sagebrush canopy and sufficient grasses and forbs in the understory to provide adequate cover and forage to meet the seasonal needs of sage-grouse (nesting, early brooding, summer, fall/winter)

R-1 = 8,518 acres = 11.3% (244 acres > 25% slope)

Areas with potential to produce sagebrush plant communities. They currently have good understory composition of desired grasses and forbs, but lack sufficient sagebrush canopy.

R-2 = 31,703 acres = 41.9% (8025 acres > 25% slope)

Existing sagebrush plant communities that have good sagebrush canopy but lack desired grasses and forbs in the understory.

R-3 = 17,506 acres = 23.2% (11,427 acres > 25% slope)

Areas with potential to produce sagebrush plant communities that have not crossed the Pinyon/Juniper, or Juniper woodland threshold but are in various stages of becoming encroached upon by Pinyon and/or Juniper.

X-3 = 9,987 acres = 13.2% (7761 acres > 25% slope)

Landscapes with the potential to produce sagebrush plant community types, but which have crossed the threshold from sagebrush to Pinyon/Juniper or Juniper woodlands. This category excludes true woodland sites (i.e. Aspen stands).

R-4 = 0 acres

Areas with potential to produce sagebrush plant communities, but are dominated by annual grasslands, annual forbs, or bare ground.

- 29,774 acres of >25% slope or 39.4% of the PMU deemed not suitable for sage-grouse use. That reduces the total usable acres within the PMU to 45,832 acres. It also changes the percentages of the major habitat types: R-0 = 12.2 %, R-1 = 18.1 %, R-2 = 51.7%, R-3 = 13.2% and X-3 = 4.8%
- The **X** indicates areas with poor restoration potential but are needed to have a complete map of our work. These **X** designations are for the North Central Local Area Planning group of the Nevada Sage-Grouse Conservation Strategy.
- Maps indicate the current vegetation within a PMU and are not broken down into seasonal habitat classifications.

ASSESSMENT PROCESS

A qualitative risk assessment for the Jackson Mountain PMU was completed using a matrix developed by the North Central Local Area Planning Group. The risk assessment matrix used a two-pronged approach. **First**, it evaluated how the presence or absence of specific habitat attributes are (current risk) or may (future risk) affect habitat quality and quantity, across a series of spatial and temporal scales. **Second**, eleven ecological processes, management actions, and/or land uses were assessed to determine their potential risk to required habitat attributes and/or sage-grouse biology. Also, risk type was identified (when applicable) with a yes or no into three basic sub categories: 1) direct (immediate effect on the bird) or indirect (effect occurs away from the action and/or at a later time); 2) controllable or uncontrollable; and 3) predictable or unpredictable. The Humboldt County coordinator organized one Jackson Mountain PMU meetings. Notices of the meetings were sent to all the affected permittee's. Those in attendance to complete the matrix included the Humboldt County Extension Educator, one BLM wildlife biologists, a BLM seasonal employee, an NDOW biologist and a retired NDOW biologist. No ranchers or other interest groups participated in the meeting.

HABITAT QUALITY:

The amount of key habitat type (R-0) is 12.2% of the entire area or PMU. A significant amount of (R-0) habitat is interspersed with Juniper and aspen, as well as dense mountain brush sites that are not suitable for sage-grouse. Areas with suitable sagebrush cover but an insufficient understory of grasses and forbs (R-2) represents 51.7% of the area. While sites that have adequate grass understory but lack sagebrush cover (R-1), only represent 18.1% of the PMU. Large continuous tracts of sagebrush plant community types, providing the habitat components necessary to produce sage grouse chicks and facilitate survival over the various seasons, are limited. In particular, a habitat type supporting large areas of big sage community types interspersed with low sage and open meadow systems are very limited. The highly variable physiographic breaks in the landscape, combined with the natural spatial distribution of habitat types, soils and their inherent ecological potential and moisture patterns result in this PMU having a very limited potential to produce and support large numbers of sage-grouse. Particularly when Juniper encroachment or Juniper dominated sites represent nearly one fifth of the useable portions of the PMU (18%). Couple those figures with 52% R-2 and approximately 70% of the PMU is rated as unsuitable sage-grouse habitat. Within that context, the risk assessment process was conducted and identified a number of factors that probably are decreasing sage grouse population size below its unknown potential.

Most key habitat types identified have an acceptable structure to support sage-grouse, but are not considered to be the best sage-grouse habitat. Habitat on all the seasonal use areas generally has an acceptable vegetative composition, physical structure, and spatial arrangement. However, as discussed earlier, the continuity or sizeable tracts of habitat supporting these features to accommodate higher densities and/or broader distributions is limited. A *Poor mix of sagebrush range sites* is not a problem; rather the fragmented and limited size of the good sage-grouse habitat is the deficiency. Isolated problems that occur at specific points can influence sage-grouse habitat to variable degrees, depending on the severity of the impact and the size of the sub population.

Most of the nesting and early summer use areas have adequate *sagebrush cover, sagebrush density, and seed production*. Various ecological sites that support Wyoming sagebrush, mountain sagebrush, and/or low sagebrush occur in a fractured mosaic with large tracts of unsuitable habitat between those use areas. Many of the more productive ecological sites within this PMU are considered unsuitable to ever meet the vegetation and structural requirements of sage-grouse. Basically, many of the higher elevation sites are too productive and closed to support viable sustaining populations of sage-grouse (heavy mountain brush, dense sagebrush, aspen, Juniper, and steep slope). *Sagebrush canopies* (cover and height) are sufficient to provide nesting, thermal and escape cover. There are no extensive areas on the early nesting and summer use areas with sagebrush that *are too low, too tall, or too dense* to support good nesting habitat. One area, Mary Sloan Basin, a high elevation site located to the west of the primary sage-grouse use area supports a very tall and dense stand of sagebrush. The site supported sage-grouse use years ago along a small stringer meadow at the bottom end of the basin (John DeLong-local rancher). Current use was validated in Mary Sloan basin by a NDOW stream

survey crew in 2001. Sagebrush height and density may well have limited or precluded sage-grouse use in this small area. The area is privately owned and limited options for sagebrush treatment exist. *Herbaceous cover* on these same seasonal use areas, are sufficient to provide good vertical and horizontal cover in the key habitat types. However, lack of herbaceous understory and forbs in approximately 52% of the sagebrush habitat within the entire PMU can influence early nesting success and brood survival if the hens utilize these sites. This situation largely reflects poor site potential, but can be a result of large herbivore use patterns in some areas. Those sites are primarily associated with the lower more arid elevations that encompass the base of the mountain. Inherently, many of these benches are in less productive sites with limited ecological site capability. Again, there is no strong historical sage-grouse use information for these alluvial fans and benches. *Lack of desired forbs* does not appear to be a limiting factor, especially in the early nesting use areas identified in the key habitat types. However, forb development is delayed significantly in those populations associated with the higher elevations. Visual observation has found no *lack of abundant insects* on the nesting, early brood and summer use areas, which suggests this important diet component is adequate. *Over mature sagebrush in extensive monocultures* is rated as low or not a risk factor within the PMU.

When gaps between the ground and sagebrush canopies (umbrella effect) are common there can be insufficient hiding cover from predators, especially if herbaceous plants are absent or the sagebrush provides limited vertical structure. Gaps between the ground and sagebrush canopy are largely limited to the periphery of some meadows and open water sources in summer use areas. The problem is relatively minor at the spatial scale of the entire PMU; however, the loss of potential chick hiding cover during the first 21 days of life (late May to early June) may result in increased predation losses. The current risk is low at the scale of the entire PMU (but moderate in some watersheds) and remains low when projected into the future. If grazing management becomes less proactive then the risk could become moderate.

Wildfires over the past decades have resulted in minimal acres *being converted to monotypic communities of annuals (largely cheatgrass)*. In fact, the GIS database identified annuals as a result of fires to be minimal acres (R-4). Obviously, there are small sites involving low acreage from wildfire that have been converted to annuals. The GIS cannot pick up these small acreage sites, but the problem is minor or rated as a low risk factor within the PMU. The history of wildfire within the PMU is relatively small and only effects small acreages. Generally, lightning strikes impact individual Juniper trees or small sites. The fires are contained because of the fractured vegetation communities, open soil sites and rocky outcrops. Wildfire could result in abundant annual grasses becoming a moderate risk factor into the future. The risk would be associated with those dense sagebrush stands at the lower to mid elevation sites. The risk would not be large scale due to the broken vegetation, but could influence key sites used by sage-grouse on a seasonal basis.

Noxious weeds currently present a low risk across the majority of the PMU, although Tall Whitetop, Bull Thistle, Scotch Thistle and Russian Knapweed, Horey Cress

and Salt Cedar can be found in numerous drainages. Populations of Spotted Knapweed, Medusahead, and Canadian Thistle have extensive and/or widespread populations in other parts of Humboldt County and nearby Washoe County. Yellow star Thistle and Rush Skeletonweed are widespread in similar habitat types in southeast Oregon and Southern Idaho, and could become established in the near future. The initial establishment and occupation of habitat by noxious weeds is generally associated with disturbed sites such as burns, roads, stock handling facilities, campsites, mines, and eroded stream channels. All these features occur in the PMU; therefore, noxious weeds have the potential to become well established and spread rapidly, particularly if a regular inventory and treatment program is not implemented. All meadows, riparian areas, and disturbed sites are susceptible to the establishment of multiple species of noxious weeds. Once established, these species can invade undisturbed sagebrush sites, especially nesting and early brood rearing habitat. The risk factor is indirect relative to sage-grouse habitat, controllable, and predictable.

Current Issues identified with Moderate or Higher Risk

None

Conservation Goals to Address Current Issues

Objectives to Attain Current Conservation Goals

Future Issues identified with Moderate or Higher Risks

- Increase in annual grasses within the PMU.
- Increased establishment of noxious weeds

Conservation Goals to Address Future Issues

1. Prevent the loss of any additional healthy sagebrush/grassland communities to site disturbance or wildfire and subsequent conversion to annual grasses.
2. Prevent the widespread establishment of noxious weeds in the PMU

Objectives to Attain Future Conservation Goals

- 1.a Use site-specific disturbance mechanisms to reduce sagebrush canopy cover when the desired perennial herbaceous species (including forbs) begin to decline below acceptable limits for the ecological sites present. This type of activity must be undertaken only in those sites with a high probability of **not** promoting a conversion to invasive species. Sagebrush canopy reductions may be partial or entire,

depending on the size of the area affected, its spatial configuration, the spatial relationship among the ecological sites present and the probable life expectancy of the treatment.

Manage the season and duration of grazing to maintain the appropriate mix of shrubs and perennial herbaceous species within the planning unit. A variety of grazing techniques may be used to increase the rate of sagebrush establishment and growth where it is absent. Conversely, grazing periods (not necessarily seasons) may be shortened, primarily through more rapid rotation of animals through allotments/pastures to reduce the duration spent in any specific drainage or watershed.

- 1b. Revise BLM resource management plans to identify these locations as high priority suppression sites, and ensure local and regional suppression organizations know where high priority suppression habitat is located.

For areas where conversion to cheatgrass is likely following fire, identify locations based on site potential (soil depth, water holding capacity, aspect, etc.) that have the highest probability of being converted to sagebrush/bunchgrass habitat type if small scale chemical and/or mechanical treatments are combined with fall/early winter (Sept-December) reseeding programs.

Identify areas with sagebrush and annual grasses that would benefit from fuel breaks to reduce the continuity of both large and fine fuels. Use appropriate (e.g., mowing, herbicides, prescribed livestock grazing, etc.) to alter fuel continuity to the acceptable level.

2. In 2008 initiate a survey of all roads, disturbed sites (natural and anthropogenic), water sources and streams, meadows, camp areas, stock handling facilities, and other habitat types where noxious weeds are likely to initially establish. Select a random sample of additional upland sites for survey. For all weed populations found, develop a strategic treatment plan following the principles of integrated weed management. High use roads, camp sites (developed and regularly used hunting camps), stock handling facilities, high value meadows and borrow pits will be surveyed annually. Other locations will be resurveyed every 3-5 years.

The BLM will ensure that all staff are trained in the identification of noxious weeds and have the resources necessary to map and report the location of noxious weeds they may encounter while conducting field work in the planning unit.

The BLM will encourage all livestock permittees to know and report noxious weeds they observe in their grazing allotment.

The BLM and permittees will develop a protocol that allows permittees to treat noxious weed populations they locate in their grazing allotments.

The University of Nevada Cooperative Extension will provide livestock permittees educational information about weed identification, control and management.

The Governor's Sage-Grouse Conservation Planning Team, State of Nevada, NDOW, the legislature, county government, the BLM, the USFS, and the USFWS will collaborate to try and create a county weed district and secure funding for this position.

- The Governor's Sage-Grouse Conservation Planning Team, State of Nevada, NDOW, the legislature, and the BLM pursue the creation of a countywide weed district. Secure funding for a position within each county. Given even that level of manpower, survey and inventories should be established on a priority basis as it relates to key sage-grouse areas.

Funding: Obviously, a large portion of the responsibility and funding for the above objectives or those to follow in this document are tied to the Winnemucca BLM Field Office. However, assured funding and budgets to accomplish those objectives is another matter. If priority objectives for this PMU, and others around the state, are going to come to fruition then a collaborative effort needs to be put forth to secure a more stable budget. The North Central Local Planning Group recommends that the Governor's Sage-Grouse Conservation Planning Team, Governor's Office, NDOW, Nevada legislature, BLM and all other federal resource agencies collectively attempt to secure a funding base to implement the objectives as they are identified for this PMU and the statewide priority list.

HABITAT LOSS / QUANTITY:

Of the 12 risk factors identified within the matrix for review by the assessment team, only three were thought to be associated with habitat loss or the total amount of habitat available. The following do not present a risk for sage-grouse populations in the Jackson Mountain PMU: *loss of sagebrush from fire, loss of sagebrush-change to annual grassland, loss of sagebrush -change to perennial grass seeding, loss of sagebrush-mining, loss of sagebrush-urban expansion / loss of sagebrush –urban expansion / other development, loss of access to meadows, remove / divert water supply, loss of lek sites, migration impeded, loss of habitat connectivity.*

Loss of sagebrush – Pinyon/Juniper Encroachment: one of the highest risks identified for the PMU was the encroachment of Juniper trees onto existing sagebrush communities. There is no Pinyon within the PMU. Historically, Juniper was almost completely removed from the Jackson Mountain PMU to fuel mines, mining camps, and communities in the late 1800's and early 1900's. The landscape removal of the Junipers, coupled with heavy use by domestic sheep and livestock, led to a whole scale change in the vegetation. The tree cover and herbaceous sites gave way to a young class of sagebrush. Sage-grouse responded and occupied a much larger percentage of the PMU

through the mid 1900's. However, the Juniper occupation and encroachment now represents approximately 18% of the entire PMU. The dominance of this vegetation type is primarily the result of no significant impacts from large-scale wildfire and any form of tree removal. The problem is considered to be a moderate risk at this time and will elevate into the future without some level of management intervention.

The loss of sagebrush to mining has currently been rated at a relatively low impact to date. Historic mining activity, primarily exploration roads and drilling pads, and minimal excavation typify the mining impacts over most of the PMU. Over the past twenty years, all the drill roads and pads from more recent exploration have been reclaimed. The Bottle Creek mining district (Water Canyon drainage) and the Iron King Mine (Jackson Creek Basin) are the core areas of the historic mining activity. Activity was suspended in the mid 1940's and early 1960's respectively. The activity and disturbance was minimal relative to sage-grouse use areas at both sites. Although exploration activity may continue well into the future, the PMU is rated as low for potential minerals development.

Loss of meadow habitat (i.e., late summer brood rearing) is a moderate risk over much of the PMU on specific sites, but the majority of those sites are held in private ownership. Therefore, the overall rating for this risk factor was rated as low because of the management options available to improve those areas. The primary drainages that provide any riparian habitat useful for grouse are privately owned such as Happy Creek, Bottle Creek, Big Creek, Willow Creek, Jackson Creek, and possibly Trout Creek. Most of those sites are associated with lower elevations where the streams flow from the mouth of the canyon. Due to the steep slope of most of the PMU, only a few meadow systems exist on top of the mountain that provide brooding habitat. Those sites are the headwaters of Big South Fork of Bottle Creek, Mary Sloan basin and the headwaters of Big (Alexander) Creek, Boulder Creek and Willow Creek. Heavy herbivore utilization in and around many of the riparian areas has resulted in most of these systems showing signs of damage in the form of headcuts. All but the Mary Sloan drainage is on public land. The Big South Fork of Bottle Creek and Big (Alexander) Creek are centered in the primary summer use area for sage-grouse. A new grazing system was developed in 2000 to address utilization on those sites and provide an opportunity for regrowth on those meadows. Because of two permittee's running in close proximity without fences or physical barriers, the allotment evaluation calls for a 7/15 and 7/31 removal to allow regrowth on those meadow/riparian systems. **The integrity of that system, utilization and corresponding improvement information data are not available. (More current BLM data??/ recent lek survey flights indicated the area is heavily used with little or no recovery- point of discussion with the group) EDITS TO INCLUDE: The Happy Creek Allotment permit is in the process of NEPA analysis and permit reissuance (April, 2007). Utilization data collected from the Happy Creek Allotment over the period of the ten year grazing permit reveals a mix of upland sites are meeting utilization objectives however wetland/ riparian shrub and herbaceous sites have not met objectives due to both livestock and horse pressure. Documented use levels measured in 2004 from the Environmental Assessment are as follows: Winterfat – objectives met;**

Prior to the new Final Multiple Use Decision for this allotment, stream functionality surveys were conducted within the upper reaches of both of these systems in 1997. Both drainages were read as functioning at risk with a downward trend. The current bio-physical state of these meadow habitats, still support populations of sage-grouse; however, many are at risk and have limited ability to withstand natural events that occur at 25 to 50 year cycles. Neutralization of damage and improvement of the habitat will, in the long term, maintain and stabilize sage-grouse populations, especially in late summer use areas. The management decisions associated with current allotment evaluations and recently implemented standards and guidelines seem poised to promote and maintain improvements into the future. Future effects from land uses and management actions are expected to have substantially fewer adverse impacts than resulted from past actions. However, large herbivore use and the ability to control seasonal utilization levels can be more successful with livestock through adherence to grazing management plans. Validation of use patterns, season of use and overall monitoring of these high elevation sites is difficult due to access. Mechanical structures or protection measures for some meadows may be required in isolated instances, but are limited due to access.

Remove/divert Water Supply was identified as not being a problem within the sage-grouse use area. Bottle Creek is diverted into a pipe during the irrigation periods for Bottle Creek Farms and is low enough on the alluvial fan that it was not determined to be a risk to sage-grouse.

Loss of Habitat Connectivity was not identified as a problem. Obviously Juniper encroachment can fragment the habitat, but it is discussed within *Loss of Sagebrush-PJ Encroachment*. Other causes for loss of habitat connectivity such as wildfire and vegetative manipulation projects are not factors within this PMU.

Current Issues Identified with Moderate to Higher Risks

- Loss of sagebrush – Juniper encroachment
- Loss of meadow habitat

Conservation Goals to Address Current Issues

1. Reduce the Juniper encroachment into key sage-grouse use areas.
2. Reverse the loss of meadow habitat.
3. Inventory meadows throughout the PMU and classify as to condition. Initiate protection measures and or mechanical or structural intervention to stop head cutting in those most in jeopardy in sage-grouse habitat, particularly on public lands.
4. Encourage meadow rehabilitation on private lands

Objectives to Attain Current Conservation Goals

1. Initiate a prescription fire plan, to systematically remove Juniper in key sage-grouse use areas. This will have to be a precise action as removal of sagebrush outside these

Juniper areas should be avoided. Investigate alternative methods for Juniper removal and or control.

2. Implement utilization criteria as outlined in the allotment evaluations. Actual utilization levels and or seasonal use requirements need to be attained.
3. BLM range management staff will monitor and enforce utilization standards as prescribed by each allotment management plan and the “terms and conditions” contained therein for livestock use.
 - Conduct monitoring meetings each fall with the range, wildlife, and wilderness staff to assess utilization levels from prior grazing season.
 - Encourage permittee to conduct their own short-term monitoring for utilization levels and move livestock accordingly.
4. Schedule a minimum of one mechanical and or structural project annually to reduce incising and or head cuts in key sage-grouse habitat, and decrease depth to groundwater. Herbicide applications should be applied as necessary to control noxious or invasive species as a result of mechanical or other disturbance activities as well as remove undesirable species from the meadows.
5. Encourage private land treatments of both meadow and uplands to attain better habitat objectives for sage-grouse. Take advantage of NRCS and state programs to help offset costs associated with projects.

Future Issues Identified with Moderate to Higher Risk

- Excessive loss of Sagebrush from fire – perennial component remains
- Loss of Sagebrush and conversion to annual grasslands
- Loss/degradation of meadow habitat
- Loss of sagebrush – Juniper encroachment

Conservation Goals to Address Future Issues

1. Prevent the excessive loss of any additional sagebrush communities to wildfire **and subsequent permanent** conversion to either perennial or annual grasses.
2. Reverse the loss/degradation of meadow habitat.
3. Inventory meadows throughout the PMU and assess their status for down cutting, invasive/noxious weeds, shrub encroachment and relative potential from activities that may increase these threats. Initiate protection measures and or mechanical or structural intervention to stop head cutting in those most in jeopardy in sage-grouse habitat.
4. Reduce the Juniper encroachment into key sage-grouse use areas.

Objectives to Attain Future Conservation Goals

1. Identify the locations where large catastrophic fires are most likely and pose the highest risk to sage grouse, and decrease the potential for large fires by manipulating fuel loads and connectivity.
 - 1a. Ensure the revised BLM resource management plan identifies the for-mentioned locations as high priority suppression sites, and ensure that local and regional suppression organizations know where high priority suppression areas are located.
 - 1b. For areas where conversion to cheatgrass after a fire is likely, identify specific locations (based on soil depth, water holding capacity, aspect, and other environmental attributes) with a higher probability of being converted to sagebrush/bunchgrass habitat type if small scale chemical and/or mechanical treatments are applied alone or in combination with fall/early winter (Sept-December) seeding programs, prior to a wildfire.
 - 1c. Establish wide (up to 300 ft.) green-strips of low flammability perennial grasses between cheatgrass areas and unburned sagebrush/grass habitat types.
 - 1d. Once functional green-strips are established, work toward establishing sagebrush and desired perennial herbaceous species in the initial green-strip and create a replacement green-strip in the adjacent cheatgrass area. Repeat this process across decades to eventually reduce the size of the cheatgrass monocultures and increase the area of sagebrush/bunchgrass habitat.
 - 1e. The Federal agencies (USFS, BLM, NRCS) will collaborate among themselves and external entities to develop desired plant materials for the 6-10 inch precipitation zone inhabited by low elevation (arid) Wyoming sagebrush ecological sites that typically transition to cheatgrass (or other annual species) following catastrophic disturbance.
 - 1f. Use appropriate pre-emergent herbicides to reduce competition from invasive plants such as cheatgrass and promote an increase in perennial grasses and forbs. These applications may be sprayed in corridors to reduce fuel or in blocks to create a successional mosaic of plant communities.
 - The potential use of herbicides for vegetation management is limited because some products are not labeled for use on rangeland or have not completed the NEPA process, which prevents their use on BLM administered rangelands. The BLM and its collaborators need to streamline (expedite) the process for granting

clearance to use new herbicide formulations that show promise for addressing invasive and noxious weeds on public lands.

- 1g. Assess landscapes inhabited with mature sagebrush to determine the locations likely to become perennial grassland for extended periods following fire (or other shrub removing disturbance) because seed production from sagebrush is (or will be) inadequate for rapid establishment to occur. Treat subsets of these areas to remove decadent sagebrush and re-establish seed producing plants.
- 1h. Treat dense stands of sagebrush with Spike, or a similar herbicide, or appropriate mechanical treatments, that do not adversely affect understory herbaceous species. The objective is to reduce the continuity of highly flammable sagebrush that produces long flame lengths, without eliminating sagebrush or seriously reducing mid-term nesting quality of the area. Treatments will be staggered in space and time (specifics require additional site-specific research) to create a heterogeneous mosaic sagebrush community types with different size and age classes of sagebrush.
2. Continue objectives outlined in “Objectives to Attain Current Conservation Goals” regarding loss of meadow habitat and establishment of monitoring criteria.
3. Identify all riparian areas that will require mechanical structures or similar intense treatments to facilitate their return to a functional state. Prioritize the sites for treatment, develop site specific treatment plans and a long-term implementation schedule.
4. Initiate a prescription fire plan, to systematically remove Juniper in key sage-grouse use areas. This will have to be a precise action as removal of sagebrush outside these Juniper areas should be avoided.

FIRE

The risks associated with fire can reflect either too much or too little fire. The concept of too much fire (disturbance on shrubs) concerns not just the total acreage burned, but also the arrangement of the fires in both space and time. One fire every 50 years that burns 50% of the PMU has a very different effect than 100 fires over 50 years, that burn 50% of the PMU. The former results in two habitat conditions: decadent sagebrush with poor resistance and resilience to undesired vegetation change and grassland that often takes decades to have sagebrush cover that benefits sage-grouse. The latter creates a mosaic in fuel loads and fuel connectivity that reduces the risk of large catastrophic fire. Also, it provides a broad spectrum of vegetative composition with respect to shrubs and the herbaceous understory. This mosaic is more likely to meet sage-grouse needs across a larger spatial scale than areas that have one to several large fires, with long recovery periods.

The concept of too little fire (disturbance) affects habitat potential by allowing extensive monocultures of highly flammable closely spaced shrubs to develop. On Wyoming sagebrush, basin big sagebrush, Lahontan sagebrush, black sagebrush, many low sagebrush sites, and some mountain sagebrush sites high sagebrush canopy cover (15-30%+, depending on the ecological site) results in a corresponding decrease in desired herbaceous species. Mountain sage sites with high precipitation and mountain brush sites usually have sufficient precipitation to permit herbaceous species to be common even at high sagebrush cover. Fire or some other disturbance that decreases shrub cover but results in rapid increases in desired herbaceous species maintains a balance between shrub and herbaceous dominance when fires are relatively small, have high perimeter to interior ratios, and are widespread in both space and time. In some instances, too little fire can lengthen the evolved fire cycle preventing sagebrush communities from regenerating and creating successional age classes that provide a wide variety of seral habitat types. The assessment team evaluated fire as a separate risk factor with the following impacts being derived from the risk assessment matrix.

Too little fire, within the PMU, was rated as a low risk factor for sage-grouse. *Excessive decadent sagebrush* stands or *loss of desired herbaceous understory* from lack of fire, as a viable component within the PMU, are considered to be a low current risk for sage-grouse habitat within the Jackson Mountain PMU. *Excessive decadent sagebrush* stands might occur in small specific sites into the future without fire or some other disturbance factor. Site specific areas such as Mary Sloan Basin may qualify for fire treatment, but it is located on private property and holds Lahontan cutthroat trout within that drainage. Other potential treatment sites exist, but would be relatively small in size and scope. *Too little fire as it relates to Juniper Expansion*: is identified as a low risk factor at this time, but could be rated at a moderate to high in specific locations in the future.

Too much fire: Loss of Sagebrush cover has really not been an issue within this particular PMU to date. In fact, the matrix team comments were “not an issue” either historically or into the present time. The history of wildfire within the PMU is relatively small and only effects small acreages. Generally, lightning strikes impact individual Juniper trees or small sites. The fires are contained because of the fractured vegetation communities, open soil sites and rocky outcrop intermixed with talus slopes. Wildfire could result in abundant annual or perennial grasses becoming a moderate risk factor on relatively small sites, but not the PMU on a large scale. The risk would be associated with those dense sagebrush stands at the lower to mid elevation sites. The risk would not be large scale due to the broken vegetation, but could influence some small key sites used by sage-grouse on a seasonal basis.

Converted to cheatgrass: is not considered to be an issue within this PMU. The potential exists for small sites to convert to cheatgrass, but not on a large scale based on the current fire history.

The permanent conversion of sagebrush/bunchgrass habitat to perennial grasses: is not considered to be an issue within this PMU. The matrix team determined that based

on the fire history and lack on large homogeneous vegetative types, the risk of converting sagebrush/bunchgrass to perennial grasses on a large scale was a very low risk.

The Lack of sagebrush islands in many burns creates several risks for sage-grouse. However, with the lack of large burns within this PMU, the risk was considered to be a “none issue”.

Potential for large fires in either the higher or lower elevation vegetative sites is rated as a “none issue”. Unless vegetative types change significantly, the risk of large fires within the Jackson PMU is considered to be low risk into the future.

Current Issues identified with Moderate or Higher Risk

- None

Conservation Goals to Address Current Issues

Objectives to Attain Current Conservation Goals

Future Issues identified with Moderate or Higher Risks

Too little fire in Juniper dominated sites

Conservation Goals to Address Future Issues

1. Prevent the excessive loss key sage grouse use areas by Juniper expansion

Objectives to Attain Future Conservation Goals

1. Utilize prescription fire treatment to turn back Juniper expansion and reestablish a sagebrush/bunchgrass community.
2. Explore the use of herbicides or other specific control measures on Junipers encroaching on sagebrush communities important to sage-grouse.

HARVEST AND POACHING

No solid harvest data is available for the Jackson Mountain PMU. Contacts with chukar and deer hunters in the Jackson Mountains has revealed a small number of them pursue sage-grouse, primarily on top of the Trout Creek Spur and the head of Big South Creek of Bottle Creek. Access has been limited to the head of Big Creek and the Iron King Mine road, both of which require a hike on top of the mountain. Wing barrels have never been placed in the area due to the low number of hunters and harvest levels. Hunter checks

during field contacts have substantiated *harvest levels* in this PMU are very low, estimated to be less than 5-10 birds annually. Many years no sage-grouse hunting is conducted as determined from hunter checks. Traditionally, the PMU is not a destination point for sage- grouse hunters because surrounding areas that support larger populations. Deer hunting parties and or chukar hunters harvest grouse in association with their primary activities. **The population is estimated to support 150-250 ?? sage-grouse as** determined from sporadic lek inventories and hunter interviews. Given the low level of harvest, it is doubtful that the adult hen segment is being impacted by harvest.

Ancillary activities, by general recreationalist, are considered very low in the primary sage-grouse use areas on top of the mountain. Opportunities for illegal harvest or poaching are highly unlikely and not considered to be a factor. Even if enhanced visitor activity is generated from the creation of the Wilderness Areas, sage-grouse are use is very limited in those areas.

More recently, the sage-grouse season was closed during the 2005 and 2006 seasons. A season within this PMU is doubtful in the near future. The expense of surveying leks in this PMU for the sole purpose of a season is not justified. Not to say that lek inventory work may continue to track the status of this small population into the future.

Current Issues identified with Moderate or Higher Risks

- None

Future Issues identified with Moderate or Higher Risks

- None

LAWS, POLICIES, AND REGULATIONS THAT CONFLICT WITH BIOLOGICAL NEEDS

Resource management agencies must comply with numerous laws, regulations and policies when authorizing and implementing actions on public lands. The most well known laws and associated regulations and policies include the National Environmental Policy Act, laws that protect archaeological resources, endangered species, and wilderness areas and other special (designated) use areas. Other lesser known environmental laws, policies, and regulations (e.g., water quality, air quality, use of non-native species, and use of chemicals to manage vegetation) also influence risk to the management of sage grouse and their habitat. The following discussion identifies those laws, policies, and regulations that may add risk to the successful management of sage grouse populations and/or habitat in the Jackson Mountain PMU. The level of risk often is site and situation specific and relates to the ability to design and implement management actions in a timely manner at appropriate spatial and temporal scales.

Many of the fore-mentioned laws, regulations and policies can potentially prevent or constrain timely management actions required to protect and/or enhance habitat composition and/or structure for sage-grouse. In addition to the established laws, policies and regulations there are two Wilderness Areas in this PMU. Each can contribute additional regulatory requirements that may constrain or delay the inventory and/or monitoring of sage-grouse populations and habitat, or the design and implementation of projects to improve habitat quantity and/or quality. The two wilderness areas within this PMU, the South and North Jackson Mountain Wilderness Areas, represent a total of 77,975 acres with only 19,840 actually inside the PMU boundary. The current or potential risk to sage-grouse from additive regulations or restrictions associated with the two Wilderness Areas is low, due to the small amount of overlap with sage-grouse habitat.

The risk factors associated with potential constraints and/or elimination of activities and the risks associated with the ability to manage sage-grouse habitat and or populations are outlined below.

Poor access to monitor and inventory: Not an issue within the PMU.

Increased costs to manage or manipulate habitat: The BLM will experience increased costs to adhere to the strict forage utilization criteria developed to implement the standards/guidelines and terms/conditions of the BLM and USFWS Biological Opinions for streams and watersheds occupied by Lahontan Cutthroat Trout (LCT). The management of uplands and riparian areas adjacent to LCT waters (occupied and potential) are likely to increase management and monitoring costs (time and dollars) for the BLM wildlife program. In so much as the head waters of Mary Sloan Creek are privately owned and much of the lower stretches of Happy Creek is private property, ancillary monitoring costs should be minimal. Upland and riparian areas adjacent to designated LCT streams are expected to have an increase in herbaceous species, to reduce erosion. On many sites, an increase in herbaceous species, even with a decline (but not loss) of shrubs would be expected to benefit sage-grouse. Although specific sage-grouse related activities might be diminished, the gains in sage-grouse habitat would be positive. The rating for this type of risk factor is considered to be low, non controllable at this time, and predictable.

Archaeological clearance and associated increased costs with fire rehabilitation work and/or other projects have been high in the past. At this time it is not a controlling or limiting factor for fire rehabilitation efforts, thus is considered a low but uncontrollable risk. If the expenses associated with archaeological clearance are too expensive for a fire rehabilitation effort, the decision to aerial broadcast seed maybe selected as an alternative over the preferred method of drilling. Seeding success, however, is usually lower. It is difficult to assess this risk factor because it is situation specific. It can range from low to high depending on the location of a proposed management action, the type of action and the size of the action. Regardless, when and how any archaeological law affects the management of sage-grouse habitat and populations should be documented. This risk is considered to be low.

Non-native seed may be allowed for wildfire rehabilitation in the PMU. The review and approval process can be costly and lengthy, which can increase risks to sage grouse when funds are limited or projects are delayed past optimal windows of opportunity. The risk associated with these constraints is situation specific and cannot be rated at this time. In general, if non-native seed is never needed the risk is absent. If non-native seed is the best option for renegotiating disturbed areas (burned and unburned) constraints on the use of non-native seed can result in increased risk to sage grouse populations. However, some non-native species respond well during post-fire recovery efforts and often stabilize sites by precluding the establishment of monocultures of cheatgrass. Their continued use is an essential management option.

There are no current legal mandates for the management of sage-grouse, but there are legal mandates for either other species and/or designated land uses in this PMU. These changes in management scope and intensity are not accompanied with corresponding increases in funding and personnel. There is an inherent risk to sage-grouse that the prioritization process will allocate limited funds to management issues other than sage-grouse. Management actions (administrative or operational) to meet existing laws, policies, and regulations may have positive or negative effects on sage-grouse, but sage-grouse will likely be a secondary issue. Increased risk to sage-grouse is evident, but the level of risk is unknown and only becomes apparent as management actions are implemented and monitored. The general risk is thought to be low.

Prohibitions on Management Actions: Prohibitions on the use of certain herbicides (e.g. Plateau) to control annual grasses and other invasive/noxious plants can increase the risk that habitat manipulations designed to benefit sage-grouse will have a higher risk of failure. Regulations that restrict the use of herbicides on BLM administered land can decrease the success of post fire rehabilitation efforts, as well as attempts to convert sites dominated by annuals back to a sagebrush/grass community. Properly used, herbicides can reduce competition from weeds for several years, reducing the risk that fire rehabilitation or vegetation manipulation efforts will fail. The risk factor is thought to be moderate to high, depending on the potential area for treatment. For the future, the time frame surrounding clearance/acceptance of new herbicides will determine future risk.

All management actions in the Wilderness Areas are subject to the Interim Management Policy. Physical management actions or techniques that alter vegetation and soils (e.g., guzzlers; mechanical, chemical, or biological vegetation manipulation; watershed rehabilitation, permanent structures, livestock developments, etc) will not be allowed/permitted; unless, they enhance wilderness values; are substantially unnoticeable; do not require maintenance involving motorized vehicles, and suitable alternative locations outside the WSA are unavailable. The rating associated with this risk factor is difficult to assess but is rated low. Future risks could increase if unanticipated needs arise for sage-grouse and their habitat, and these needs overlap or are adjacent to Wilderness Areas. The Animal and Plant Health Inspection Service (Wildlife Services) cannot utilize non-selective control measures in Wilderness Areas and cannot

be directed at offending animals (i.e. M-44's, leg hold traps, snares, etc.). Restricted predator control measures within Wilderness Areas are assigned a current low risk (see Predator Section page 31).

All introductions, transplants, augmentations and reestablishment of fish, wildlife, and plants on public lands shall be done in accordance with the BLM 1745 manual. All projects related to the aforementioned activities will be done in such a manner that they insure there is no conflict with sage-grouse. This would include, but not be limited to augmentation of sage-grouse from other areas and assurances that all health related issues are addressed prior to release.

Prohibitions and/or constraints on management actions are difficult to assess at this time. The potential for activities to be curtailed or restricted and the associated risks with each proposed activity could be low to high depending on the specific nature and importance of the activity for sage-grouse. Prohibitions on management actions, as they relate to habitat improvement projects, have the most potential to become an elevated risk factor for sage-grouse, as the size or complexity of the project increase, or the timeframe to get approval becomes longer. The latter is due to missed windows of opportunity.

Prohibition on techniques used to manipulate habitat: Regulations developed to implement the National Historic Preservation Act create risks to both sage-grouse and their habitat. These risks are related to 1) delaying rehabilitation efforts following wildfire (or other disturbances to the habitat), and 2) preventing habitat manipulation treatments that may potentially damage artifacts located on or near the soil surface. The restricted use of tractor's, rangeland drills, and/or other heavy equipment has reduced and/or prevented the success of fire rehabilitation efforts, largely by delaying projects until after the optimum period for implementation. Aerial broadcast seedings are often used to prevent damage to artifacts (usually obsidian flakes or discarded equipment used by early sheep herders or settlers), but these seedings have a much lower rate of success, compared to drill seeding. Additionally, the inability to use of any equipment on these sites limits the options available to rehabilitate/restore native plant communities. Often untreated areas convert to annual grasslands that are highly flammable. Subsequent fires easily spread into adjacent unburned sage-grouse habitat. Mechanical rehabilitation efforts alone do not guarantee a successful seeding or habitat manipulation; however, they enhance the odds for success. The prohibition of use of heavy equipment in archaeologically sensitive areas can increase the amount of acreage burned. The absence of heavy equipment can increase the risk that small to medium fires will become large fires. The long-term risk from fire to sage grouse habitat is more at low (<6,000 ft) than high elevation sites. Low elevation sites often have fewer desired perennial species in their understory and are more susceptible to the establishment of undesired annual grasses. High elevation sites typically progress from largely desired perennial herbaceous species to a sagebrush herbaceous mix. The threat of wildfires becoming large inside the Wilderness Areas and spreading to low elevation sites outside the Wilderness Areas is considered a low risk.

Create focus on single species management that may harm sage-grouse: Three sensitive species exist in the PMU: California bighorn sheep, pygmy rabbit, and Lahontan cutthroat trout. Management of each species potentially generates special management considerations that impact sage-grouse and their habitat. California bighorn sheep occupy very little sage-grouse range on a yearlong basis, but their presence affects the class of livestock within the area. Under current BLM policy, no domestic sheep are authorized on the Jackson Mountain range. Although a spring/fall trailing permit is authorized for domestic sheep along the east flank of the PMU. Domestic sheep can feasibly utilize more of the uplands and be controlled away from the riparian or upland meadows. Also, they can be used to reduce sagebrush cover and release desired grasses and forbs. Retired permittee's who operated sheep ranches back to the 1930's think that sage grouse benefited from grazing domestic sheep. The benefits to sage-grouse would be unknown and the likelihood of a viable operation, given the size of any of the allotments in those areas, is very questionable.

The yearlong habitat requirements of the pygmy rabbit are poorly understood. It is purely speculative about how specific or focused management actions for the pygmy rabbit may influence sage-grouse. A hands-off policy for the removal of any sagebrush, however, is likely to be detrimental. Natural succession will result in fewer grasses and forbs in the herbaceous understory and these plants are needed to maintain community resilience following any disturbance that removes the shrub canopy. In the interim, management objectives for sage-grouse should either benefit or be neutral toward pygmy rabbits and other sagebrush obligate species. Management actions for both bighorn sheep and pygmy rabbit are thought to be low risk factors for sage-grouse.

Management for Lahontan cutthroat trout is largely based on USFWS Biological Opinions and input from other management agencies. The result is an allotment management plan that should improve the implementation of livestock grazing in some of the drainages within the Jackson Mountains. The development of herbaceous material that is too tall or dense for sage-grouse is not thought to be a risk in and around the two LCT recovery waters of Happy Creek and Mary Sloan Creek. Large riparian exclosures are absent in this PMU; therefore, the risk factor is currently considered to be low and is expected to remain low.

Time delays for management actions: Not only are prohibitions on management actions and techniques a risk factor to sage-grouse, but delays in time specific activities such as fire rehabilitation planning, adherence to livestock utilization standards, trespass livestock gathers, etc. can impact sage-grouse and their habitat. The review processes as they evolve, the type of actionable program requested and the resulting impact to sage-grouse will dictate the level of risk involved. These unknowns (i.e., lack of management clarity) create an increased risk to sage grouse in this PMU. An absence of clarity always slows the management process. Some management actions are best implemented during brief temporally unpredictable windows of opportunity. Ambiguity usually slows the decision making process and increases the risk that a window of opportunity will not be used. Therefore, the associated risk factor is tied to specific situations and may range from low to high.

Cumulative affect of laws, policies and regulations on sage-grouse risk: The intent of most laws, regulations and policies is the improvement of resource conditions. The process to comply with each individual administrative requirement is often straightforward and may not consume too much time. The cumulative effort to comply with all the administrative requirements can become complex and require substantial time and manpower. In some cases, this cost and complexity result in major delays for project implementation and can even lead to the cancellation of necessary projects.

Current issues Identified with Moderate or Higher Risks

- The level of risk from laws, policies and regulations is largely unknown and to a degree speculative. A number of existing laws, policies and regulations have the potential to strongly limit the type and size of management actions designed to benefit sage-grouse, but the actual effect will be site and situation specific, and likely will change across time as environmental conditions/constraints change. Because there are unknown, but potentially large risks for sage-grouse associated with the mandatory implementation of existing laws, and their associated policies and regulations, this risk factor requires development of a monitoring program.

Conservation Goals to Address Current Issues

- An adverse effect can for at least four reasons. First, projects deemed desirable to sage-grouse can be delayed so that important windows of opportunity no longer exist. Second, approval to implement projects can be denied. Third, projects can be approved but with modifications due to laws, regulations, or policies that make them ineffective (e.g., too small or with poor spatial configuration). Fourth, projects can be approved but with modifications that make them too costly or labor intensive. The resulting conservation goal is to determine if the implementation of existing environmental laws, regulations and policies has an adverse effect on the design and implementation of management actions to benefit sage-grouse. It is important to know if existing laws, regulations and policies place additional constraints on the management of sage-grouse and how these constraints may influence the success of management for sage-grouse.

Objectives to Attain Current Conservation Goals

- Each year wildlife and range management staff with the BLM and wildlife biologists with the NDOW will document any projects they wish to implement for sage grouse management. Staff will track any project modifications required to meet laws, policies, and regulations, the time required to comply with these constraints, the degree that final projects have deviated from initial projects and the expected effect on project success, the short and long-term success of the project, and if any projects are cancelled because of the constraints imposed by a law, policy, or regulation.

Future Issues Identified with Moderate or Higher Risks

(Potential to become elevated risk factors)

- Increased costs to manage or manipulate habitat
- Prohibitions on management actions
- Prohibitions on techniques used to manipulate habitat
- Time delays for management actions

Conservation Goals to Address Future Issues

Same as above

Objectives to Attain Future Conservation Goals

Same as above

LIVESTOCK MANAGEMENT/GRAZING:

Many of the categories listed under this risk factor can be cross-referenced to issues in both Habitat Quality and Habitat Quantity. The conclusions in those sections may be replicated for the Livestock Management/Grazing narrative.

Excessive herbaceous height in meadows (>6-8 in): This is a low risk factor in this PMU. Excessive herbaceous height only occurs at small specific meadow situations where extended periods of non-use by livestock have been implemented. These actions are intermittent and are not consistent with historical use patterns. The current risk factor is rated as low, and is expected to remain low across the PMU.

Sagebrush encroachment in meadows from overgrazing: The loss of or decline in habitat quality of meadows is thought to be a low to moderate risk across much of the PMU. Within the *Habitat Loss/ Quality* portion of this report (page12) moderate risk was identified because specific key sage-grouse use areas are in worse condition. Many of the remaining meadow or associated riparian systems, located away from the key use areas, are on private property. Those sites include Happy Creek, Bottle Creek, Big Creek, Willow Creek, Jackson Creek, and possibly Trout Creek. Most of those sites are associated with lower elevations where the streams flow from the mouth of the canyon. Due to the steep slope of most of the PMU, only a few meadow systems exist on top of the mountain that provide brooding habitat. Those sites are the headwaters of Big South Fork of Bottle Creek, Mary Sloan basin and the headwaters of Big (Alexander) Creek and Willow Creek. Heavy herbivore utilization in and around many of the riparian areas has resulted in most of these systems showing signs of damage in the form of headcuts. All but the Mary Sloan drainage is on public land. The Big South Fork of Bottle Creek and Alexander Creek are centered in the primary summer use area for sage-grouse. A new grazing system was developed within the past few years to address utilization on those sites and provide an opportunity for regrowth on those meadows. Because of two

permittee's running in close proximity without fences or physical barriers, the allotment evaluation calls for a 7/15 and 7/31 removal to allow regrowth on those meadow/riparian systems. The integrity of that system, utilization and corresponding improvement information data are not available. (More current BLM data??/ recent lek survey flights indicated the area is heavily used with little or no recovery- point of discussion with the group) **ADD THE FOLLOWING TO ADDRESS COMMENT ABOVE:** Grazing permit reissuance NEPA was conducted for the Happy Creek Allotment in April, 2007. Utilization data collected in 2004 on the Happy Creek Allotment over the period of the ten year permit found that success in meeting utilization objectives on upland site species was mixed due to both livestock and wild horse use, but that objectives for woody and herbaceous riparian sites generally were clearly not met. Allotment grazing changes are being planned. Planned reintroductions of Lahontan Cutthroat Trout in Happy Creek have also prompted changes to the grazing system to ensure meeting proper functioning condition (PFC) in the riparian zone before livestock can resume use on critical reaches of Happy Creek. A planned wild horse gather is currently scheduled for the Jackson Mountain HMA in the Fall of 2007. Prior to the new Final Multiple Use Decision for this allotment, stream functionality surveys were conducted within the upper reaches of both of these systems in 1997. Both drainages were read as functioning at risk with a downward trend.

Historically, improper livestock grazing is thought to be a primary or predisposing factor for accelerated erosion and for lowering water tables that facilitates meadow desiccation and subsequent encroachment of sagebrush onto these sites. The current bio-physical state of most meadow/riparian sites supports sage-grouse. Reversing past damage and improving the habitat will likely increase sage grouse use, particularly on late summer use areas. Long-term benefits can also be expected for livestock. Eliminating accelerated erosion will preserve the soil/plant base livestock depend on, and should reduce/eliminate potential water quality issues related to sediment in streams. Often, the stabilization of meadow systems enhances the water retention for the site, increasing forage availability. The adherence of the 2000 Bottle Creek Final Multiple Use Decision, combined with current standards and guidelines, should facilitate improvement and address concerns about sage-grouse, as well as watershed stabilization. However, the success and integrity of that new allotment system has not been validated through monitoring. The construction of in-channel structures, in concert with spraying undesirable plant species, maybe necessary to raise the water table and allow for full recovery in many meadow systems.

Water sources surrounded by substantial bare ground: A number of open or free water sources are surrounded by bare ground, however, the bulk of the use areas have herbaceous plant material nearby. The radius of open ground that surround water sources increases vulnerability of sage-grouse (particularly broods) to predators. This risk is currently rated as low with some specific sites being rated as moderate to high. The Jackson Mountain PMU is well watered, with many open water sources. The high volume of water sources and improvements to key meadow sites should help mitigate this concern in the future. If improvements to those meadow systems are not implemented, then the situation will remain static or feasibly become worse in the future.

Inadequate access to water: The Jackson Mountain PMU has a large number of open or free water sources. These water sources are well distributed and result in this risk factor being rated low. Spring developments, pipelines and water troughs that have limited the access of sage-grouse to water in some areas are very limited, and are considered ‘point’ problems not PMU wide problems. The adverse affect at these relatively few points is largely offset by the large number of open water sources without access issues.

Loss/lack of herbaceous cover and insufficient herbaceous stubble height: The rating can be moderate to high on a site-specific basis, particularly around water or riparian sources. These two risks were rated low on a landscape basis, (i.e., across the entire PMU), as it applies to most of the upland sites. ~~Problem areas in and near riparian areas and open water sources will hopefully be addressed through the grazing allotment evaluation process. Allotment grazing changes are being planned for the Happy Creek Allotment to address weaknesses. Planned reintroductions of Lahontan Cutthroat Trout in Happy Creek have also prompted changes to the grazing system to ensure meeting proper functioning condition (PFC) in the riparian zone before livestock can resume use on critical reaches of Happy Creek.~~ Those mesic sites under private ownership may or may not be addressed through those same grazing allotment evaluation processes.

Risk factors that were absent or not an issue were *Loss/lack of desired forbs, Loss/lack of forb production, and Loss/lack of grass production. Trampling of nests* is an unknown risk, and was not rated. With the diverse nesting habitat available and the relatively low population of sage-grouse, nest trampling is not considered a significant problem

Current Issues identified with Moderate or Higher Risk

- Sagebrush encroachment in meadows from overgrazing

Conservation Goals to Address Current Issues

1. Utilize same goals from the “Habitat Loss/Quantity” section pertaining to the above issues.

Objectives to Attain Current Conservation Goals

1. Utilize same objectives from the “Habitat Loss/Quantity” section.

Future Issues identified with Moderate or Higher Risks

- Sagebrush encroachment in meadows from overgrazing

Conservation Goals to Address Future Issues

1. Continue to utilize the same goals from the “Habitat Loss/Quantity” section

pertaining to the above issues.

Objectives to Attain Future Conservation Goals

1. Continue to utilize the same objectives from the “Habitat Loss/Quantity” section.

MINING DIRECT/INDIRECT EFFECTS:

The impacts to the habitat from mining are discussed in the *Habitat Loss/Quantity* portion of this report. The impacts were rated as low for both historical and current activity. Geologic surveys, drilling and other activity has been very limited in this PMU in comparison with other areas in Northern Nevada. Over the past twenty years, all the drill roads and pads from more recent exploration have been reclaimed. The activity and disturbance was minimal relative to sage-grouse use areas. Although exploration activity may continue well into the future, the PMU is rated as low for potential minerals development.

Current Issues identified with Moderate or Higher Risk

None identified at this time.

Conservation Goals to Address Current Issues

None

Objectives to Attain Current Conservation Goals

None

Future Issues identified with Moderate or Higher Risks

- Possible loss of sage-grouse habitat from accelerated exploration and development if mineral reserves are located.

Conservation Goals to Address Future Issues

1. Minimize the risk that existing and/or expanded mining activities that will have an adverse impact on sage-grouse within this PMU.

Objectives to Attain Future Conservation Goals

1. Minerals staff in the Winnemucca Field Office (WFO) will provide the WFO’s wildlife and range management specialists quarterly updates about

exploration activities (including new claims) so that BLM and NDOW can develop pre-activity review/planning meetings with mining companies to identify potential effects to sage-grouse early in the planning process, and develop mining/exploration operational plans that minimize/prevent adverse impacts to Jackson Mountain sage-grouse population.

MONITORING, RESEARCH AND EDUCATION:

Manipulating wrong management factors or regulate/change wrong land uses within this PMU was not considered to have an impact on sage-grouse or their habitat.

Better information about key sage-grouse lek locations, seasonal ranges, habitat constraints, and relationships between adjoining PMU's are crucial to enhancing sage grouse populations in this PMU. The risk is implementing the right management action in the wrong location, or selecting the right location but using the wrong tool. The information gained from well designed studies and data collection may be transferable to other PMU's. Lack of funding to implement applied research and monitoring about important issues could lead to adverse actions or the lack of action. Both scenarios may impact sage-grouse populations and/or their habitat. A low to moderate risk occurs because of the lack of adequate baseline data.

The BLM lacks sufficient funds and/or personnel to adequately monitor habitat trend, assesses habitat condition, monitor grazing, and design and implement projects designed to benefit sage grouse in this PMU. Overall the risk to sage grouse is thought to be low, largely due to adequate (but sub-optimal) habitat conditions in the PMU. The risk associated with continuation of the status quo, however, may range from low to high on a spatial scale, but is relatively unknown.

The lack of information about lek attendance prevents an accurate conclusion about the direction and rate of change in the sage-grouse population. Normally, this could be considered a drawback for population management. For this PMU, and for sage grouse at the regional scale, the risk due to the lack of this knowledge is thought to be low. Grouse continue to be present in historic use areas, albeit at lower population sizes. The subpopulations have persisted despite some loss of meadow habitat and Juniper encroachment. The habitat elements required to maintain the populations appear to be present, although the suitable habitat types only represent a relatively small percentage of the entire PMU (30%). The task would require establishing helicopter lek trend survey routes. The high elevation of the lek sites, and limited access in the spring for capture and telemetry work, would be prohibitive from the standpoint of expense, manpower and follow-up.. Yet, that information would be very beneficial in determining if this is a closed population or if this population interacts with other surrounding PMU's. Therefore, helicopter lek surveys, every two-three years, may well be the best approach to monitoring sage-grouse within this PMU.

Current Issues identified with Moderate or Higher Risk

- Manipulate wrong habitat factors

Conservation Goals to Address Current Issues

1. Collect baseline population information within the PMU.

Objectives to Attain Current Conservation Goals

1. Conduct helicopter lek surveys every two to three years to assess population trends

Future Issues identified with Moderate or Higher

- Manipulate wrong habitat factors

Conservation Goals to Address Future Issues

See current conservation goals above. If lek surveys indicate a downward trend in the population, then implement a marking project.

Objectives to Attain Future Conservation Goals

1. Conduct a telemetry marking study within the PMU. Traditional capture work off the lek sites to mark and collar sage-grouse for seasonal monitoring.

PREDATION:

The risk of predation to sage-grouse in the Jackson Mountain PMU is largely unknown. Traditionally, brood survey information and wing collection data is based on no or very low samples. The lack of brood survey information is not a reflection of low bird numbers, but that the Jackson Mountain PMU has never been targeted to collect brood survey data. The rough terrain, low density and location have made this activity a low priority. The risk is most likely to occur in late summer use areas, but has not been demonstrated. Work in the nearby Lone Willow PMU has not found the presence of high summer mortality. That is when sage-grouse broods are concentrated in and around meadow/riparian systems in the PMU, particularly, those locations where the meadow systems and associated cover have been reduced in size and density. The concentrated meadow use areas, on top of the Jackson Mountain PMU, may well support a more concentrated predator problem. However, no information has been collected formally or in an ancillary fashion to support that conjecture.

No dumps or trash collection areas exist as a point source to draw predators to an area within the PMU. Badgers, skunks, raccoons, coyotes and squirrels occur throughout the PMU in varying densities with none being identified as a particular problem. However, there has been little work done to validate that assumption.

Red fox has reestablished in parts of the Great Basin and are likely to expand across much of the area. They may become an additional predator on sage-grouse.

The Jackson Mountains, supports a high percentage of vertical cliffs and rock formations. The PMU does support a healthy population of Golden eagle and Prairie falcon's (cliff nesters). This PMU supports solid populations of Marsh hawks and Red-tailed hawks, as well as accipiters (Goshawks and Coopers Hawks) associated with the heavy aspen cover. Like mammalian predators, avian predators (including corvids) are an unknown regarding their impact on sage-grouse in this PMU.

The construction of wind-monitoring towers or wind-generation structures near sage-grouse use areas may enhance roosting sites for avian predators. How wind generation systems and the associated structures (substations, power lines, etc.) may enhance opportunities for avian predators is unclear at this time. Design features may mitigate most of the problem.

Current Issues identified with Moderate or Higher Risk

None identified at this time.

REALTY ACTIONS DIRECT / INDIRECT EFFECTS:

Most of the realty actions are not thought to have any direct or indirect effects, or are non-existent in this PMU. No wind generation complexes have been planned and or identified for the PMU. However, with future energy needs, this may become a risk factor. The national and state emphasis on renewable energy development and associated overarching plans will undoubtedly initiate a review and reassessment of most of the major mountain ranges in Nevada. The site specific location of any proposed projects and the relationship to sage-grouse use areas will dictate the risk level.

There are no cities or towns in or adjacent to the PMU. The nearest town, Denio, (less than 150 people) is approximately 40 miles north of the PMU. Numerous ranches occur near the PMU, along the base of the mountain. The only manmade structures in the PMU are several old mining/livestock operation buildings. There are no power lines or other manmade developments inside the PMU.

County maintained roads surround the perimeter of the PMU, with the primary interior roads maintained by BLM. These roads have not had a significant impact on sage-grouse habitat or associated drainages. Although some of these roads bisect sage-grouse use areas, no significant conflicts for habitat degradation have been identified.

Fences that mark grazing allotments, pastures, exclosures, and private property occur throughout the PMU. The literature indicates that *fences* can be a source of injury or mortality; however, no user group, land manager, or individual within the PMU has identified a significant number of collisions between sage-grouse and fences. Fences are

not considered a risk in this PMU.

Most of the PMU is public land (86%). The majority of private land is concentrated in Big Cedar Creek, Trout Creek, Willow Creek, Bottle Creek, Happy Creek, Mary Sloan Basin, Jackson Creek and at wide number of scattered springs. The acquisition of privately owned land that supports sage-grouse may facilitate the implementation of management actions; however, no evidence suggests that maintenance of the sage-grouse population in the Jackson Mountain PMU depends entirely, or even partially, on any specific management actions on private property. The acquisition of private land may (but is not guaranteed to) confer some unknown small benefit to the sub-populations of sage grouse in this PMU, but is not necessary for either the persistence or expansion of the population.

Road maintenance (blading shoulders of dirt roads) by both Humboldt County and the BLM has promoted invasive or noxious weeds throughout the PMU. The normal maintenance and soil disturbance associated with this activity prepares a favorable seedbed condition for many undesirable plant species. Many species sprout from buds on their roots and blading roads (including shoulders and back slopes) spreads root fragments that become new plants. This mechanism can spread populations far and fast. The current risk is considered low to moderate, with the potential to increase as the area infested with weeds expands.

Current Issues identified with Moderate or Higher Risk

- Spread of noxious or invasive plants though normal secondary (dirt) road maintenance (low-moderate).

Conservation Goals to address Current Issues

1. Minimize the density and distribution of noxious and invasive plants as a result of road maintenance. This involves both the BLM and Humboldt County.

Objectives to attain Current Conservation Goals

1. Encourage a minimal amount of disturbance on road shoulders and back slopes during road maintenance.
2. Plant herbaceous species next to the road that will dominate the site and prevent the establishment of undesirable species. These species should have relatively low flammability for much of the potential growing season.
3. Initiate the use of accepted herbicides along these areas being disturbed to prevent the establishment of noxious or invasive species. Use this practice in conjunction with #2 if necessary to establish desirable species.
4. Treat gravel pits used for road materials with an herbicide to manage noxious and

invasive species and their spread.

5. Adoption of an integrated weed management strategy should be prioritized in key sage-grouse use areas, particularly those still supporting R-O habitat.

Future Issues Identified With Moderate or Higher Risks

- Spread of noxious or invasive plants through normal secondary (dirt) road maintenance (low-moderate).
- Possible wind generation complexes being developed into the future

Conservation Goals to Address Future Issues

1. Continue with “Conservation Goals to Address Current Issue”.
2. Prevent proposed wind energy projects from having a significant adverse effect on sage grouse. Review proposals for wind energy projects early in their planning process to identify

Objectives to Attain Future Conservation Goals

1. Continue with “Objectives to Attain Current Conservation Goals”.
2. BLM and the Humboldt County Road Department meet annually to assess sage grouse use areas of concern and prioritize weed control on both County and BLM roads. The two entities will explore options to possibly control the spread of noxious and invasive species, as a bi-product of road maintenance, by utilizing non-soil disturbance methods (e.g., herbicides).
3. BLM realty personnel will inform resource staff (Wildlife and Range) every January and July about applications or scoping documents that are received regarding development plans for wind generation towers. Potential conflicts with sage-grouse will be identified early in the process.

RECREATION DIRECT/INDIRECT EFFECTS:

Recreation may have at least 12 adverse effects on sage grouse habitat or populations. Only a few current or potential impacts were identified. These include the loss of meadows or riparian habitat, increased potential for wildfire, and increased establishment of noxious weeds.

Loss of meadows/riparian habitat: Only a few two-track roads bisect or parallel meadow systems and have contributed to habitat loss or degradation. These situations accelerate erosion and down cutting, create head cuts and accelerate desiccation of the meadow/riparian areas and the encroachment of sagebrush. Meadows are important concentration areas for late summer use by sage-grouse. The loss of any acreage can have a significant adverse effect. This risk is currently low at the scale of the PMU, but moderate to high in specific meadows such as upper Big Creek and the head of the Big South Fork of Bottle Creek. It has only been since the advent of ATV's that motorized access has been opened up to the tops of the aforementioned drainages. This risk is predictable and controllable and may require mechanical/structural intervention (including ATV restrictions) to have a beneficial effect.

Increase potential for fire is a significant threat that is tied directly to the number of people, vehicles (including ATV's) and active campsites in the PMU. The most use comes during mid-late summer for limited fishing and again during the chukar/deer hunting season. A traditional criteria for setting seasons for upland game species is to start hunting seasons late enough for a better opportunity of late summer/early fall precipitation (early October). Precipitation allows birds to disperse and not be concentrated around free water sources during the hunting season. This framework diminishes the opportunity for human caused fires and reduces the chances for large intense fires because days are cooler and humidity higher. Increased use during the hot summer months, however, only increases the potential for large fires. The risk, on a PMU wide basis is low to moderate, and is directly correlated to the burning index on any given day, the number of people and vehicles in the PMU, the focal point of their activities, and how they pursue their recreational activities. The risk is predictable and somewhat controllable through fire restrictions, education, and increased patrols. As discussed earlier, the Jackson PMU does not have a history of large fires due to the broken vegetation within the area. However, increased activity within the two Wilderness Areas, and increased ATV use outside those areas, will only be additive sources for increased threats of fire into the future.

Establishment of noxious weeds: This has the potential to become a problem throughout the PMU, but is a low risk at this time. Any recreational activity associated with the area, particularly from vehicles, ATV's, and pack animals (e.g., baled hay with weeds) provides a mechanism to both import and export noxious weeds, and to spread them across the PMU. The current risk from weeds is low relative to the impacts on sage-grouse habitat but the potential is high because noxious weeds are widespread across Northern Nevada.

Current Issues identified with Moderate or Higher Risk

- Increased fire danger from recreational activities associated with campfires, vehicles and ATV's.

- Increased erosion from ATV's in key meadow systems.

Conservation Goals to Address Current Issues

1. Educate the public as to the importance of the area for sage-grouse, other wildlife species, and the relevance of continued habitat loss from wildfire in this PMU.
2. Reduce the misuse of vehicles and ATV's off road that contribute to wildfires and the degradation of habitat.

Objectives to Attain Current Conservation Goals

1. Public service adds from BLM and NDOW via various media venues, posting the area with signs, and additional patrols in the area when open fires are prohibited, to attain voluntary compliance.
2. Develop provisions in the new RMP, being developed by Winnemucca BLM, to address the off road use of vehicles and ATV's. All vehicles will be restricted to existing roads and two-tracks.

Future Issues identified with Moderate or Higher Risks

- Increased fire danger from recreational activities associated with campfires, vehicles and ATV's.
- Increased erosion from ATV use in key meadow systems.

Conservation Goals to Address Future Issues

Same Conservation Goals stated in Current Issues.

Objectives to Attain Future Conservation Goals

1. Continue with implementation of the fire prevention objectives.
2. Develop provisions in the new RMP, being developed by Winnemucca BLM, to address the off road use of vehicles and ATV's.

WILD HORSE AND BURRO:

The AML for the allotments contained within the PMU is 120-207 horses and no (0) burros. Currently the population estimate is 305 horses. The area is subject to gathers, but the horse numbers increase on a routine basis and gathers are scheduled when funding is available. The overlap of horse use on the PMU occurs around Buff Peak , Happy Creek, and the ridge running north of Deer Peak (all on the north boundary

of the PMU). Horse use on top of the mountain, in the primary use areas, has not occurred to date. Based on infrequent sightings of sage-grouse and current understanding of their use areas, it appears as though feral horses do not pose a risk factor to the sage-grouse within this PMU.

WILDLIFE MANAGEMENT / GRAZING:

No known issues were identified which adversely impact sage-grouse populations or their habitat, with the exception of those under “Create focus on single species management that may harm sage-grouse”, refer to page 26. Natural immigration of elk (grazers) and establishment into a portion of the PMU could feasibly occur under within the next couple of decades.

Numerous sightings of pioneering elk have been reported over the past 20 years with no establishment to date within the Jackson Mountains. The likelihood of establishment and any associated damage from those animals to sage-grouse habitat is an unknown. Elk densities would be low to moderate with those animals utilizing the extensive aspen stands throughout the PMU. Any anticipated damages to sage-grouse habitat would be small and very site-specific.

Humboldt County is one of the few remaining areas of the state where a comprehensive Elk Management Plan has not been developed. As identified in other plans to date, monitoring of use patterns will be a priority within such a plan. Competition with other domestic and or wildlife species will be a concern that only monitoring will determine.

DISEASES:

To date, no avian or upland bird diseases associated with sage-grouse have occurred in this PMU. Sick birds have never been reported from the area. Other than birds collected during the hunting season, no capture projects have taken place in this area to provide an opportunity to assess health from blood or other samples. Bird sampling and collections from associated PMU’s in the area (Sheldon and Lone Willow) have not found any health related diseases. *Ectoparasites* have been observed in a number of birds (all age classes) from the Lone Willow PMU during summer trapping projects in 2003 and 2004. The specific parasite was identified as the common louse fly, *Ornithomyia anchineuria*. The infected birds did not exhibit health related anomalies; however, it could not be determined if the parasite weakens the birds and predisposes them to additional mortality factors.

The West Nile virus appears to be an eventual threat to the sage-grouse throughout most of northern Nevada. How severe this virus will impact the sage-grouse populations depends largely on environmental factors, elevations, water distribution patterns, potential control measures and a number of other factors. A West Nile outbreak was reported in southern Oregon during the summer of 2006. The episode appeared to be isolated to hay fields in and around a ranch south of Burns Junction along Highway 95.

Extensive testing of carcasses and live birds validated the presence of the West Nile virus with significant losses of sage-grouse. Oregon Department of Fish and Wildlife did not identify additional occurrences of the virus. The site of the incident is approximately 90-100 miles from the Jackson Mountain PMU and could easily be transported to northern Nevada within the next year or two by a myriad of avian species.

This risk factor is rated as low at this time with a potential to become very serious within a matter of weeks under the right conditions. Once sage-grouse concentrate around wet meadow systems in the late summer, they are the most vulnerable to contracting this virus.

Another potential risk to sage-grouse is Mycoplasma that causes respiratory distress and lowered productivity. An outbreak was validated in the summer of 2006 north of the Jordan Meadows area of southeastern Oregon. A number of birds exhibited symptoms of nasal discharge onto the breast feathers and birds were collected for lab analysis. To date, the exact strain of Mycoplasma has not been confirmed. The associated health risks and impacts to sage-grouse will not be fully understood until the strain is identified.