

**WHITE PINE COUNTY PORTION
(LINCOLN/WHITE PINE PLANNING AREA)
SAGE GROUSE CONSERVATION PLAN**

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WHITE PINE COUNTY SAGE GROUSE CONSERVATION PLAN

Preface:

Effective Sage Grouse Management must involve a successful partnership between the State of Nevada, the Forest Service (USFS), National Park Service (NPS), the Bureau of Land Management (BLM), private property owners, Native American tribes and the public (See Appendix 1. Roles and Responsibilities of Entities). It is our belief that the Coordinated Resource Management (CRM) Steering Committee is the best vehicle for sustaining this partnership over time. Members of the current White Pine County CRM Steering Committee can be found in Appendix 2.. The White Pine and Lincoln County CRM steering committees met in late fall of 2001 to prepare for writing Sage Grouse management plans. At that time, each county had an established CRM program that was fully able to meet the needs of the respective counties. The respective CRM's originally decided to form Technical Review Teams (TRT's) and to blend their respective plans together in an effort to cooperate with the Nevada State Sage Grouse management planning effort. These teams met frequently, either separately or jointly until mid-2003, when the groups decided to complete individual plans covering each county's respective portion of the planning area.

Introduction:

The Sage Grouse Technical Review Team (TRT) prepared a management plan that meets the needs of the bird and related sagebrush ecosystem species. A list of TRT participants can be found in Appendix 3. The plan will comply with the Governor's Conservation Strategy and local sub-plan provisions and guidelines. The TRT's mission was to:

1. Review currently available data of Sage Grouse habitat and current populations/densities in the plan area. Identify areas of high, moderate, low, and no potential or current populations in the plan area.
2. Work with all interested groups to define issues pertaining to Sage Grouse and related sagebrush ecosystem species management in the plan area, utilizing preliminary lists of issues developed by the Nevada Division of Wildlife, the Society of Range Management (winter 2001 meeting), the Nevada Sage Grouse Conservation Strategy Team, and the Northeastern Nevada Stewardship Group.
3. Based on 1 and 2 above, identify Population Management Units (PMUs).
4. Based upon information about habitats, populations, and threats, prioritize the PMUs for goal setting and strategy development.
5. Develop goals, objectives, and strategies. Strategies include:
 - A. Monitoring and research needs.
 - B. Management actions, guidelines, and methods addressing issues of vegetation, other wildlife, wild horses, livestock, predation, and human activities.
 - C. Develop schedules for implementation and monitoring.

D. Responsibilities of groups and agencies in achieving A, B, and C.

6. After completion of the state plan, we will develop a timeline for revisiting and revising goals, objectives, and strategies.

The TRT will consult with the CRM Steering Committee if problems arise in developing the plan, or if interim actions are needed for short-term emergencies concerning management in the plan area. The TRT will meet with the Steering Committee to discuss the plan when drafts are ready for review and comment. The White Pine County Board of Commissioners will be fully involved in the review and will be requested to concur with the plan before final approval by the Steering Committee.

Conservation Assessment:

Plan Area: The planning area includes most of White Pine County and portions of Nye and Elko Counties, an area of approximately 6 million acres. Most of the federal lands are managed by the Bureau of Land Management Ely and Elko Field Offices, the Humboldt-Toiyabe National Forest Ely Ranger District, Great Basin National Park, and the Bureau of Indian Affairs. Private lands make up between three and four percent of the planning area and state lands less than one percent.

Population Management Units (PMUs): The plan area is divided into four population management units (PMUs). These PMUs are established to divide the plan area into geographical subunits containing largely separate Sage Grouse populations. They are listed and described below. (See Appendix 1 for maps and a detailed description of PMU boundaries)

ButteValley/Buck Mountain/White Pine Range PMU: This large PMU takes in the west side of Steptoe Valley from the City of Ely north into Elko County, all of Butte Valley, the southern half of Long Valley, the east half of Newark Valley, Jakes Valley, Railroad and White River Valleys north of the Nye County Line, the Cherry Creek, Medicine and north Egan Ranges, Buck Mountain, Bald Mountain, most of the Butte Mountains and the White Pine Range.

One hundred-thirty seven known leks occur primarily on bench areas associated with all of the above named valleys. Leks have been documented at over 8,600' in the White Pine Range. Of the 92 leks checked in the last three years, 39 were active. The largest contiguous area of nesting, early and late brood rearing habitat is found in the White Pine Range from Highway 50 south to the White River watershed. Other primary areas include the north Cherry Creek Range, Buck Mountain, the Gleason/Bothwick and Telegraph portions of the north Egan Range, agricultural areas in Butte, Jakes and White River Valleys as well as scattered spring complexes/riparian areas located on benches and in high valleys. Winter ranges are widespread on valley bottoms, benches and mountain slopes within the PMU.

SteptoeValley/Cave Valley PMU: (White Pine County portion): Included in this PMU are Cave Valley north of the Lincoln County Line, Steptoe Valley south of the City of Ely and the adjoining slopes of the Schell Creek and Egan Ranges.

Twenty-three of the 31 total leks within the PMU occur in the White Pine County portion of this PMU. They are scattered through extreme south Steptoe Valley and north Cave Valley on bench areas as well as high valley bottoms up to 7,400'. Nineteen of these leks were visited over the past three years with 13 found active. Nesting and brood rearing areas are widespread and occur in both the Schell Creek and Egan Ranges where water distribution and shrub communities are favorable. Brood rearing has also been documented along Steptoe

Creek (Steptoe Valley Wildlife Management Area), Willow Creek and Cattle Camp Wash. Sage Grouse have been documented on winter ranges in both Steptoe and Cave Valleys. Winter use on surrounding mountain slopes is suspected.

Schell Range/Antelope Valley PMU: Includes most of the Schell Creek Range north of the City of Ely, the east side of Steptoe Valley from Ely north to the Elko County Line, the north end of Spring Valley, a portion of Snake Valley, Antelope Valley south of the Elko County Line, the north tip of the Snake Range, the Kern Mountains and the Antelope Range.

Thirty-five leks are known to occur on the benches of the Schell Creek Range, Antelope Range, Kern Mountains and Snake Range. A breeding complex also exists in Duck Creek Basin (Schell Creek Range). Of the 24 leks that were visited for activity over the past three years, 16 were active. Important nesting and brood rearing areas are located in the north Antelope Range, in many middle to upper elevations basins in the north Schell Creek Range as well as Duck Creek Basin. Brood rearing is also documented on alfalfa fields/other agricultural lands as well as riparian areas on benches and high valley bottoms. Sage Grouse winter throughout the PMU on suitable mountain benches, mid to upper elevation mountain habitats on all ranges and lower rolling hills such as the Black Hills, north of the Goshute Reservation.

Spring Valley/Snake Valley PMU: This PMU includes the east slope of the Schell Creek Range from Lake Valley Summit north to Kalamazoo Creek, most of Spring Valley, all but the northern tip of the Snake Range and the associated portions of Snake Valley east to the Utah State Line.

The 25 known leks are mainly associated with the east Schell Creek bench and south Spring Valley. A few leks have been documented in Snake Valley but no recent activity has been documented. Seventeen leks were visited over the past three seasons with nine found to be active. Significant nesting and brood rearing areas include the east slope bench of the Schell Creek Range as well as areas associated with private meadows and agricultural lands in Spring Valley. Some nesting and brood rearing also occurs at higher elevations in both the north and south Snake Range. Low numbers of Sage Grouse exist in Snake Valley. A series of fires in the 1980s removed sagebrush from roughly 7,500 acres of the east Schell Bench. Two leks became inactive as a result.

History of Sage Grouse in the Plan Area:

According to available data in the planning area, local populations have varied during the past 25 years. Most small animals, including birds, have dramatic annual changes in population numbers that reflect the failure or success of recruitment of young into the population. Evaluation of long-term population changes must include recognition of normal short-term fluctuations. There is rarely a single cause for either short-term or long-term changes in populations. Some anecdotal information suggests that historic populations of Sage Grouse peaked some 50+ years ago. A number of changes have occurred within the plan area that may have affected Sage Grouse populations. Some of the changes mentioned or discussed among TRT members include 1) increasing federal, state, and local regulations that complicate efforts to implement projects, 2) reduced numbers of livestock and the numbers of people employed in the livestock industry that resulted in changes such as wells no longer being pumped and small meadows no longer being irrigated, 3) grazing that produced negative effects to the range during the turn of the 20th century, 4) reduced area of irrigated meadows used as brood rearing habitat, 5) increasing predator populations, especially of the common raven, 6) loss of herbaceous understory in sagebrush plant communities due to plant succession, 7) pinyon-juniper expansion into sagebrush dominated plant communities, 8) anecdotal evidence of disease outbreaks that reportedly killed Sage Grouse in the 1960s or 1970s, 9) increasing recreational uses of public lands, resulting in increased disturbance by humans and

motorized recreation, 10) alteration of habitat due to agriculture, wildfire, OHVs, vegetative succession, establishment of pinyon and juniper trees in non-woodland shrub communities and increased numbers of fences, utility lines and roads, 11) poaching, etc (see threat tables). This short list of changes suggests that historic Sage Grouse population peaks may be unattainable, but significant potential exists for existing populations to increase.

The Nevada Wildlife Federation (NWF) in its 2002 booklet notes that “In 1867 and 1868, the ornithologist, R. Ridgeway, surveyed the birds across central Nevada. He listed Sage Grouse as birds characteristic of sagebrush and in his conclusions noted that, ‘...we saw it so seldom that little was learned of its habits, particularly during the breeding season. It came under our notice only late in summer and during the autumn, when it was found to be abundant in certain localities, but by no means uniformly distributed.’”

NDOW biologist Robert McQuivey is also cited as finding few references of abundant Sage Grouse during exploration, emigration, and settlement. Settlement led to changes in plant communities that favored increased Sage Grouse populations with increased reports of birds harvested by hunters in the 1870’s. Market hunting rose and then peaked in the 1880’s. Hunting laws began around 1890 with seasons and bag limits greatly reduced by the 1920s. Statewide Sage Grouse populations may have peaked again during the 1950’s and dropped again by the 1970’s.

Early explorers in the Great Basin noted that Sage Grouse were present, but did not record them as being plentiful. Had the birds been plentiful, then the early explorers probably would have commented on eating the birds since the early accounts often emphasized the lack of game for camp sustenance. During the early 20th century, anecdotal records indicate that Sage Grouse were abundant and were a commonly used food item by at least some residents.

Vegetation and Soils as Attributes of Sage Grouse Habitat

The word habitat is used throughout the text to indicate, in the general sense, those areas of rangelands that provide food, cover, and water to Sage Grouse. Habitat may be occupied by the birds either year round or seasonally. Food and cover, in turn, varies with location as a result of the vegetation presently or potentially supported by the soils. Standards for site specific management that conform to the Western Association of Fish and Wildlife Agencies (WAFWA) guidelines call for range ecologists and biologists to establish goals that are “...reasonable and ecologically defensible.”

Goals and objectives for habitat management, rehabilitation, and development are based on the “site potential” at specific locations rather than the general description of habitat. Potential of a site or the natural potential plant community is the key feature of Ecological Sites as correlated during completion of the Soil Survey. Definitions of terms and applications of this technique are those described by the U.S.D.A. Natural Resource Conservation Service, National Range and Pasture Handbook. Plant species composition and several other site characteristics are the basis for determining whether a plant community is at the potential for an ecological site or if the present vegetation represents a “seral” stage. Habitat management goals may specify a “Desired Plant Community” (DPC) to best provide Sage Grouse habitat attributes that are available from a seral plant community.

Current approaches to describing rangeland plant ecological processes builds on the description of ecological site potential by using the term “state” to describe a self-sustaining vegetative community along with the associated seral successional stages. “State and Transition Modeling: An Ecological Process Approach” by Stringham, Krueger, and Shaver is an article in the March 2003 Journal of Range Management; this article provides the concepts and terminology defining state, transition, and threshold for use as goals or objectives of Sage Grouse habitat management. State indicates a “resistant and resilient complex of two components, the soil

base and the vegetation structure”. Plant communities are constantly changing to some extent, but the seral plant composition within a given state is self-repairing through plant succession. On occasion, the change in a plant community may be so extensive that the end product of change is a new state. The process over time and direction of change is called the transition. As transition occurs, it is generally reversible up to the point called the threshold; having passed the threshold the transition has become “irreversible” and a new state is formed. At this point, return to the original “state” is only possible at great cost of energy and money, or by passage of more time than is reasonable from a management perspective. Changes in soils may preclude the ability of a site to revert back to a previous state.

Examples of “state/threshold/transition” observations expected within White Pine County include areas where wildfires have occurred so frequently in sagebrush dominated plant communities (original state) they are now dominated by cheatgrass, an introduced annual grass (new state). In other locations, fires have occurred so infrequently that pinyon and juniper trees have become dominant and understory plants cannot be sustained (new state). Competition for soil moisture and nutrients effectively eliminate both the sagebrush and the associated herbaceous plant species (original state).

Biological Overview:

Taxonomy and Description

The Sage Grouse (*Centrocercus urophasianus*) is a member of the family Phasianidae (grouse and ptarmigan) and is one of seven species of grouse found in North America. They are also known as the sage hen, sage chicken, or sage cock. The Sage Grouse has been held in special reverence by Native American tribes as a magical bird with healing restorative powers. The Washoe word for Sage Grouse is “*Ci uk*”; in Paiute, the bird is known as “*Sekege’s*” (pronounced “hoot-ze”); The Shoshone know the bird as “*Gogozha*” (pronounced “wi-cha”). Lewis and Clark provided the first written accounts of this species during their 1805 expedition. The species was formally described as *Tetrao urophasianus* by C.L. Bonaparte (1872) and later placed in a monotypic genus *Centrocercus*, meaning “spiny-tailed pheasant,” by Swainson and Richardson (1832). Recent DNA work has identified a small population with distinct genetic and behavioral difference that exists in southwest Colorado. The American Ornithologists’ Union (AOU) has recognized the birds from this population as a separate species of grouse, *Centrocercus minimus*, now called the Gunnison Sage Grouse. *Centrocercus urophasianus* is now referred to by the AOU as the Greater Sage Grouse. This document strictly refers to the Greater Sage Grouse, not the Gunnison Sage Grouse. For the purpose of simplicity, the name “Sage Grouse” is used in this document.

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

Life History and Habitat Requirements

Breeding/Nesting – Sage Grouse engage in a lek mating system. The males perform a strutting display (Bond 1900, Scott 1942, Gullion 1957, Schroeder et al. 1999) that includes fanning the tail feathers in an upright fashion that exposes white-tipped under tail feathers, expanding the esophageal pouches that expose the yellow skin patches, and erection of the yellow eye-combs and filoplumes. The expansion of the pouches also produces a series of “plops.” The display is part of an active defense of the breeding territory by each male (Hartzler 1972). Only a few males on a lek or strutting ground do the majority of the mating (Gibson et al. 1991, Scott 1942, Lumsden 1968, Wiley 1937b, Hartzler and Jennie 1988). Males have no incubation or

parental care responsibilities, and do not exhibit territorial behavior away from the leks. Male flocks are commonly encountered during the rest of the year.

Generally, the lek sites are used year after year (Simon, 1940, Scott 1942, Batterson and Morse 1948, Wiley 1978, Autenrieth 1981). Leks are established in open areas, 0.2 to 12 acres in size, adjacent to large areas of sagebrush, which are used for nesting, while at the same time affording escape and protection from predators (Patterson 1952, Gill 1965). As populations decline, the number of males attending leks may decline or the use of some leks may be discontinued. Likewise, as populations increase, male attendance on leks increases, new leks may be established, or old leks may be re-occupied.

The lek is considered to be the center of year-round activity for resident populations (Eng and Schladweiler 1972, Wallestad and Pyrah 1974, Wallestad and Schadweiler 1974). However, habitats that are located long distances from the leks are used by migratory populations of Sage Grouse and are essential to their survival (Connelly et al. 1988, Wakkinen et al. 1992). On the average, most nests are located within 4 miles (6.2 km) of the lek; however, some females or hens may nest more than 12 miles (20 km) away from the lek (Autenrieth 1981, Wakkinen et al. 1992, Fisher 1994, Hanf et al. 1994).

Nesting and early brood-rearing in Nevada generally occur from April through June. The nest consists of a shallow depression on the ground. Nest lining is sparse, consisting of dry grasses, sagebrush leaves, and a few feathers (Batterson and Morse 1948, Autenrieth 1981). Heights of shrubs at nesting sites vary, but studies indicate that there is some preference for shrubs that are taller than the average shrub height for the given site (Keller et al. 1941, Trueblood 1954, Klebenow 1969, Wallestad and Pyrah 1974, Autenrieth 1981, Kerster and Willis 1986).

Nesting habitat is characterized primarily by sagebrush communities that have 15 to 38 percent canopy cover and a grass and forb understory (Connelly et al. 1991, Terres 1991, Gregg et al. 1994, Sveum et al. 1998a). Residual cover of grasses is likely important (Klebenow 1969, Connelly et al. 1991, Sveum et al. 1998a), for its contribution to vertical cover structure that serves to hide the nest. Clutch size of Sage Grouse normally ranges from seven to ten eggs (Connelly unpublished data, Schroeder 1997, Wakkinen 1990). Incubation by the female takes 25-28 days.

During the course of its annual life cycle, the Sage Grouse depends on sagebrush in different ways as indicated by a variety of scientific studies. Prior to nesting, hens' diets are limited to sagebrush due to the late winter and early spring season of year when breeding occurs. Sage Grouse, however, can so effectively digest the sagebrush leaves that provide their winter diet that, unlike nearly every other animal, they gain body condition and weight during the winter months and hens are physiologically able to reproduce. During favorably warm springs, hens may have access to various forbs to supplement the sagebrush diet. Most of the forbs are more nutritious than sagebrush and hens are able to develop eggs with a high fat level in the yolk, which means that chicks are more likely to survive. Nests that are under sagebrush plants and surrounded by grasses or forbs are more effectively hidden from avian predators than are nests that are more exposed. Sage Grouse hens are likely to establish nests under or next to such dwarf sagebrush species as low sagebrush (*Artemisia arbuscula*) or low growing big sagebrush species. In addition, hens may use shrubs and large bunchgrasses associated with mountain brush communities.

Brood Rearing – The area in proximity to the nest is used for several weeks by hens for brood rearing. Chicks are able to fly weakly at approximately 10 days, and are relatively strong fliers by five weeks (Girard 1937). At six to eight weeks, chicks acquire full juvenile plumage and resemble adult hens. Hens will usually move the chicks from the early brood habitat/nest area to summer habitat, where the majority of brood rearing occurs, when they are about six weeks of age. This movement occurs about two weeks after males and females without broods have moved to summer range (Connelly et al. 1988).

The habitats used during the first few weeks after hatching need to provide cover to conceal the chicks, but more importantly, to provide the nutritional requirements of this period of rapid development. Productive brood-rearing habitats provide a wide variety of plant and insect species that are important chick foods. Newly hatched broods are most often found within dwarf sagebrush communities, possibly because they offer a greater abundance of succulent forbs than the adjacent big sagebrush plant communities do. Some biologists feel that hens seek out nest locations based on characteristics of the shrubs and associated grasses while others indicate that nests are established where the hens are foraging. Nests and early brood rearing in dwarf sagebrush may mean that nutritional needs are better met at the expense of being more exposed to predation.

Summer habitat consists of sagebrush mixed with areas of wet meadows, riparian, or irrigated agricultural fields (Connelly et al. 2000). As habitat begins to dry up, broods move to more mesic areas where succulent forbs and insects are still available (Savage 1968, Schlatterer and Pyrah 1970, Oakleaf 1971, Neel 1980, Autenrieth 1981, Klebenow 1985). This can be especially important in drier years and during long drought periods. Klebenow (1982) found that Sage Grouse would stay on the uplands through late July in years when precipitation was sufficient to maintain forage. During drought years, grouse switched to using meadows earlier in the summer. In addition, Nevada Sage Grouse have a greater reliance on wet areas for their survival since Nevada normally receives less precipitation than other states supporting Sage Grouse populations (Klebenow 1985).

Fall and Winter – Sage Grouse form flocks as brood groups break up in early fall. As fall progresses, Sage Grouse move toward their winter ranges. Exact timing of this movement varies depending on the population, geographic area, overall weather condition, and snow depth. Sagebrush is essential for Sage Grouse survival during the fall, winter and early spring months.

Seasonal movements are related to severity of winter weather, topography, and vegetative cover (Beck 1977). The amount of snow, rather than an affinity for a particular site (Beck 1977, Barrington and Back 1984) determines winter use areas. It is crucial that sagebrush be exposed at least 10 to 12 inches above snow levels as this provides both food and cover for wintering Sage Grouse (Barrington and Back 1984, Hupp and Braun 1989). Wallstad (1975) found that in Montana less than 10 percent of the range was available when snow depth exceeded 12 inches. If snow covers the sagebrush, the birds will move to areas where sagebrush is exposed.

Sagebrush Identification - As the name implies, Sage Grouse live in and around sagebrush, but not just any sagebrush. According to the Natural Resources Conservation Service (NRCS), more than thirty species and subspecies of sagebrush (*Artemisia* spp. and ssp.) are known from the Great Basin. Two general groups of sagebrush include “big sagebrush”, meaning mature plants over 15-20 inches tall, and “dwarf sagebrush” that are less than 15-20 inches tall when mature. Such features as soil characteristics, climate (as determined by elevation and aspect), and occurrence of flooded or seasonally wet soils, etc. control which sagebrush species occur at each location. Sagebrush species are occasionally intermixed within the ecotone between specific plant communities or soils supporting different sagebrush may result in a mosaic that has the appearance of being intermixed. Accurate botanical identification of sagebrush species is essential for land managers to classify plant communities based on species or subspecies of sagebrush. Some species of sagebrush are very important in the annual life cycle of Sage Grouse and a number of sagebrush species are never important and probably never used by Sage Grouse.

Food Habits – Adult Sage Grouse feed primarily on various species of sagebrush. Chick diets include forbs and invertebrates (Klebenow and Gray 1968, Drut et al. 1994) Insects, especially ants and beetles, are an important component of early brood-rearing habitat (Drut et al. 1994, Fischer et al. 1996). Forbs increase in the diet after the first week and remain the major food item for juveniles throughout the summer. Some of the forbs found in quantity in the diets of juvenile Sage Grouse include: common dandelion (*Taxaxacum officinale*), common salsify (*Tragopogon dubius*), prickly lettuce (*Lactuca serriola*), pepperweed (*Lepidium densiflorum*), Harkness

gilia (*Linanthus harknessii*), tapertip hawksbeard (*Crepis acuminata*), loco (*Astragalus convallarius*), phlox (*Phlox longifolia*), and common yarrow (*Achillea millifolium*) (Klebenow and Gray 1968, Peterson 1970). Sagebrush (*Artemisia* spp.) occurs in only trace amounts until chicks are about five weeks old (Klebenow and Gray 1968, Peterson 1970). Summer food habits of adult grouse are similar to juvenile food habits with some differences in proportion of foods consumed. As the meadows dry and frost leads to the drying and killing of the forbs, Sage Grouse shift their diet primarily to sagebrush leaves (Patterson 1952, Connelly and Markham 1983, Connelly et al. 1988, Wallestad 1975), and sagebrush continues to be a major food source until spring (Girard 1937, Rasmussen and Griner 1938, Patterson 1952, Leach and Hensley 1954, Klebenow and Gray 1968, Peterson 1970, Wallestad et al. 1975).

Movement/Migration Patterns – Sage Grouse populations display a wide variety of seasonal movement/migration patterns between winter, breeding and summer ranges (Connelly et al. 2000). Some populations exhibit limited (<10 km) movements between seasonal habitats and are considered nonmigratory (Dalke et al. 1963, Wallestad 1975, Connelly et al. 1988, Wakkinen 1990). Migratory Sage Grouse can travel in excess of 75 km between distinct seasonal ranges (Dalke et al. 1963, Connelly et al. 1988). Telemetry data from similar habitats in Lincoln County indicate that birds moved approximately 24 km between breeding and summer habitats, crossing many km of non-habitat pinyon/juniper woodland. Throughout much of the planning area, the summer distribution of Sage Grouse tends to occur in higher elevation habitats while documented winter ranges are mostly associated with valley and bench areas. In some areas, summer, breeding and winter ranges appear to occur in close proximity, especially where Sage Grouse summer in association with agriculture. These observations suggest that both migratory and nonmigratory populations exist in the planning area.

Surveys and Data Collection

Traditionally, Sage Grouse survey and data collection has been conducted by NDOW on a county-wide basis. Most of the data sets pertinent to the PMUs being considered under this plan are based on White Pine County. Because of this foundation, the potential for making direct analysis of data sets between PMUs is limited. Data collection methods will need to be modified where possible to support PMU-level analysis. At the same time, county-wide data sets must be maintained at some level to allow for the analysis of long-term trends. Trend lek counts and harvest are the most consistent data sets for the analysis of population status and trend. Fall composition, as estimated from hunter harvested wings, is also a useful indicator. The summer brood data that was collected annually for many years can be used to delineate summer distribution and use areas, but the relationship between summer brood data and fall populations is weak.

Lek Monitoring – Annual lek surveys are coordinated between Ely NDOW, Ely District BLM, USFS Ely Ranger District and Great Basin National Park personnel. In addition, Elko District BLM personnel monitor leks in the Elko County portion of the Butte Valley/Buck Mountain/White Pine Range PMU.

Lek counts are conducted in the early morning from first light through about one half hour after sunup. Depending on factors such as location and cover, some leks may be easily counted from a distance while other leks require walking and flushing to obtain reliable counts. Usually, two to six leks can be checked for activity in one morning. Most monitoring is conducted from the ground although aerial surveys are sometimes used. Trend lek data is compiled by NDOW for annual evaluations of population trend. Evaluation of population trend through lek studies involves the intensive survey of the same leks from year to year. Each trend lek is visited several times throughout the breeding season in order to observe the peak in male attendance. This usually occurs in late April or early May in east-central Nevada. The resulting data are compared to the previous year's attendance on those same leks and are expressed as a percent upwards or downwards. Lek studies that qualify for trend analysis extend back to 1982 for White Pine County. Annual studies of the same leks prior to that time were not conducted to the standards of today's guidelines and are considered to be

“comparable leks” rather than “trend leks”. The attendance data gathered from comparable leks is a less dependable indicator of population trend due to the fact that fewer leks were studied less intensively. The number and timing of counts prior to 1982 was not sufficient to capture peak attendance of males. The total number of leks monitored for trend has tripled since 1982. Additional trend leks will need to be established before population trend can be adequately measured in each PMU. Current distribution of trend leks within PMUs is as follows: Butte Valley/Buck Mountain/White Pine Range – 15; Schell Range/Antelope Range – 3; Spring Valley/Snake Valleys – 4; Steptoe Valley/Cave Valley – 0.

Monitoring by NDOW personnel is focused mainly on trend lek counts while the personnel from other agencies monitor additional leks for activity. Approximately 80 to 100 mornings are invested by all participants in White Pine County each year. Lek monitoring efforts begin in early March and end by mid May. As an example, in 2003 a total of 22 leks were monitored for trend within three of the four major White Pine County PMUs. Each trend lek was checked an average of five times. A total of 97 leks were checked at least once by all participants. Data is collected by NDOW from all participants for use in updating the database for each PMU. Over a dozen attributes are maintained for each lek including lek name, location (UTMs and TRS), date last active and number, date last checked, reporting agency, county, PMU, etc. Documentation of lek locations and intermittent counts stretch back to the early 1950s. Additional leks continue to be located over the years by NDOW, BLM, USFS, USDA/APHIS personnel as well as the general public. Aerial surveys were utilized periodically from 1970 onward, which resulted in the location of many new leks. Consistent recording of lek data began around 1970.

Harvest Data - Harvest, as reported through 10% hunter questionnaires response, has been estimated annually since 1952. The harvest in a given year is mainly dependent on population size although season dates, season length, bag limits, hunter participation and weather patterns prior to and during the hunt also influence harvest. Although changes to season dates, length and bag limits over time place some limitations on analysis, harvest data correlates well with lek trend data as another indicator of population trend.

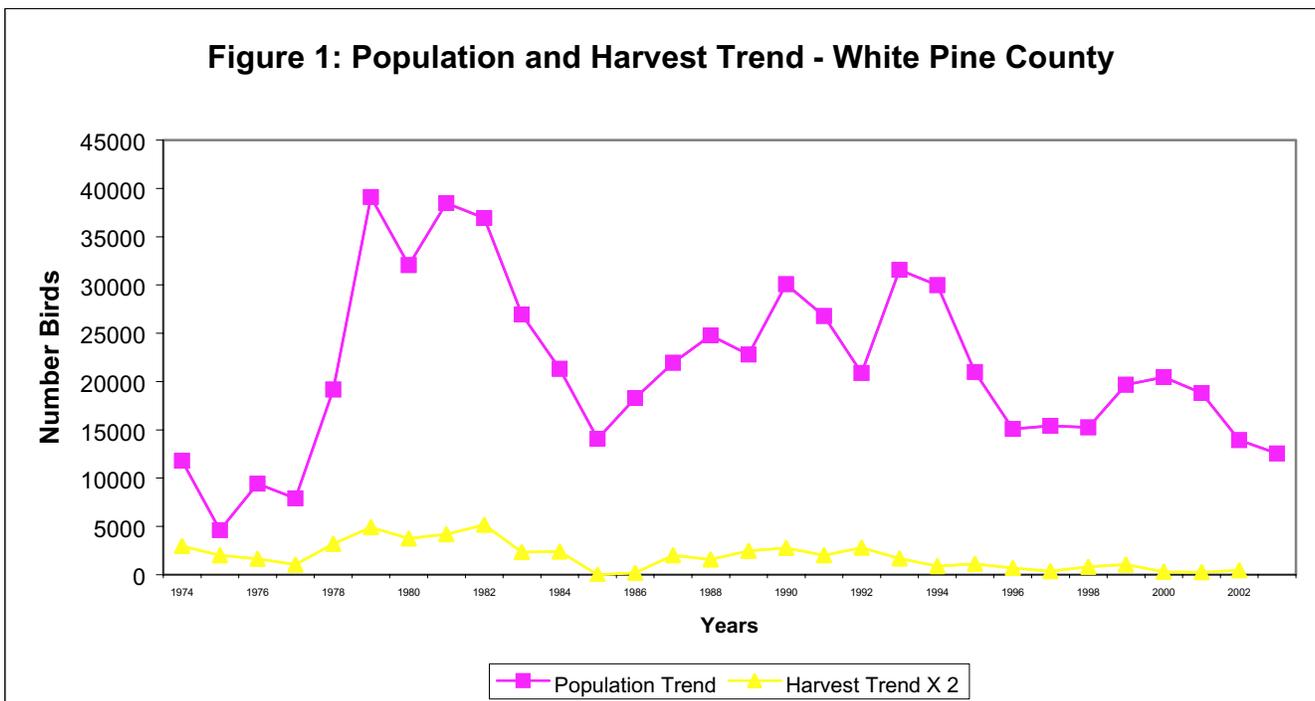
Wing Data – The collection of wings from hunter harvested birds provides a variety of information about the composition of the fall Sage Grouse population. This voluntary method of sampling is accomplished by distributing labeled “wing barrels” at key road intersections during the Sage Grouse hunting season. Wings can be classified by both sex and age (young, yearling and adult). The rate of successful nesting can be estimated for hens and hatch dates can be determined for young of the year. Wing data collection has been intermittent over time, putting limitations on its value for long term trends. Low sample sizes resulting from low harvest under current season frameworks may be a limitation to analysis at the PMU level (See Table 1.).

Summer Production Surveys – Summer surveys for Sage Grouse were established in the early 1950s. Since that time, summer composition data has been collected from standard routes, random observations or both during most years. Survey routes have changed over time and the intensity of survey efforts has varied. Summer production surveys involve the driving and walking of areas favored by Sage Grouse in late June, July and early August (late brood habitat). The Sage Grouse observed are classified by sex (adults) and age class (young). Locations are also recorded. Data sets derived from production surveys include ratios of young/100 adults, young/100 hens, brood size (all broods), brood size by age class (I, II, III, IV), % successful hens, numbers of birds classified (by sex and age) and unclassified. The samples obtained from summer surveys are greatly influenced by summer weather patterns and survey effort. As stated above, summer population composition has limited value in determining population trends. However, periodic resurvey of established routes can provide meaningful comparisons of relative numbers and bird use of specific areas. Summer production data is valuable in the identification of important late brood rearing habitats. Many years of data arising from summer surveys and random observations will be incorporated into a GIS layer to aid management decisions.

Telemetry Surveys – The attachment of radio transmitters to Sage Grouse is a technique widely used to delineate seasonal distribution and home ranges of Sage Grouse populations. The best times to capture Sage Grouse are during the breeding season (around leks) and during late summer, when grouse are concentrated on late brood rearing habitats. Standard (VHF) transmitters require periodic aerial survey follow-up which is labor and equipment intensive. Transmitters capable of relaying their location through a satellite are more expensive, but eliminate much of the labor involved in follow-up. Telemetry studies will be initiated within the plan area during the 2004 breeding season. Up to 26 radio collars will be placed on Sage Grouse in three or more lek complexes representing two or more PMUs.

Status and Distribution:

Status - No formal population estimates of Sage Grouse were completed for the plan area prior to 2002. The method for estimating Sage Grouse populations utilizes the most current data on individual leks from a three-year period including the year of the estimate and the two previous years. This data is combined with assumptions about lek attendance and the composition of Sage Grouse populations to arrive at a low and high range estimate (see Appendix 6.). Data sets that are useful for predicting past population trends include harvest data, lek attendance counts, trend lek studies, and wings collected from hunter-harvested birds as described above.

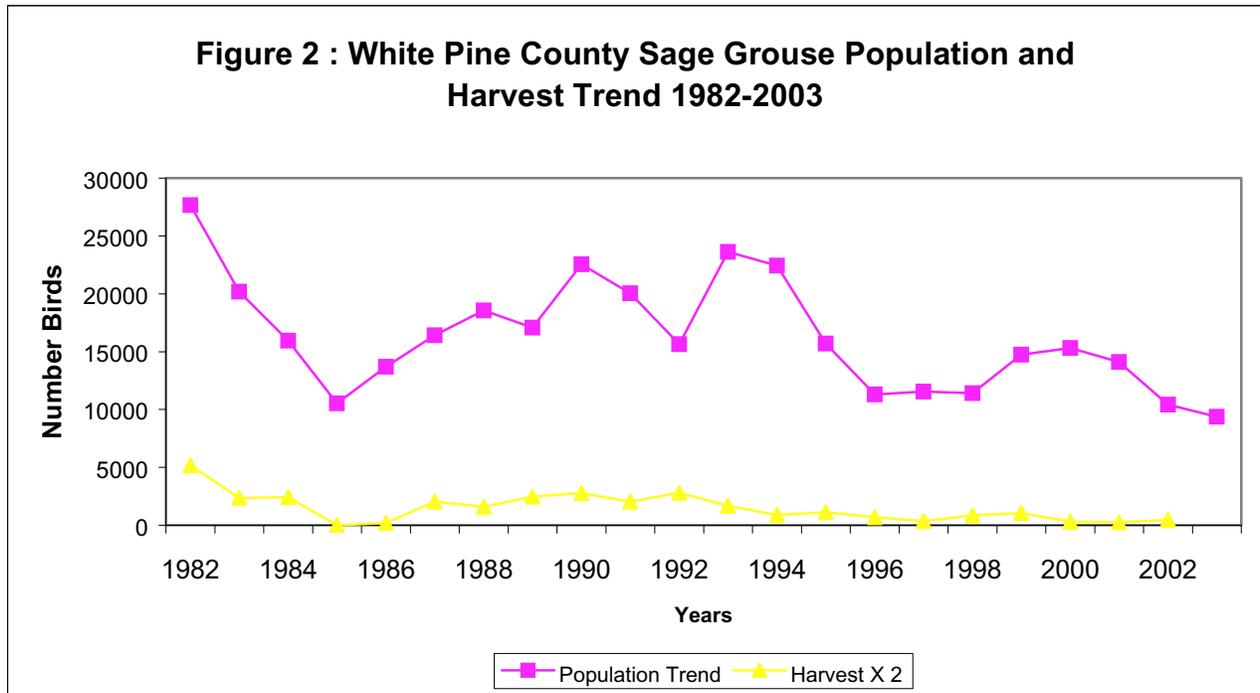


Note: season closed in 1985 followed by poor hunter participation in 1986.

By indexing past trend (from comparable and trend lek studies) to the 2003 population estimate, it is possible to approximate the population fluctuations of Sage Grouse in White Pine County since 1974 (Figure 1.).

As described previously, the lek data used to estimate trend is less reliable prior to 1982 and has become more reliable in recent years as additional leks have been added to trend analysis. Lek trend data roughly parallel harvest trends, although the two arise from independent data sources and methodologies. Figure 2 displays population and harvest trend since 1982. Lek trend for the past five years (1999-03) was +29%, +4%, -8%, -26%, and -10% respectively. Seven comparable leks that were active in 1971 as well as 2003 show a drop in

male attendance of 62%. Eight of the 24 leks currently used to assess population trends have been monitored annually since 1982 and indicate a decline of 59% in male attendance as of 2003.



Note: season closed in 1985 followed by poor hunter participation in 1986.

As stated above, wing data may be too intermittent to allow for long term analysis. However, population composition as estimated from hunter harvested grouse is another line of evidence that can correlate with harvest and lek data as an indicator of population trend. A fall chick/hen ratio of ≥ 2.25 is considered sufficient for stable to increasing Sage Grouse populations. With harvest at low levels in recent years, wing samples from White Pine County have been limited (See Table 1.)

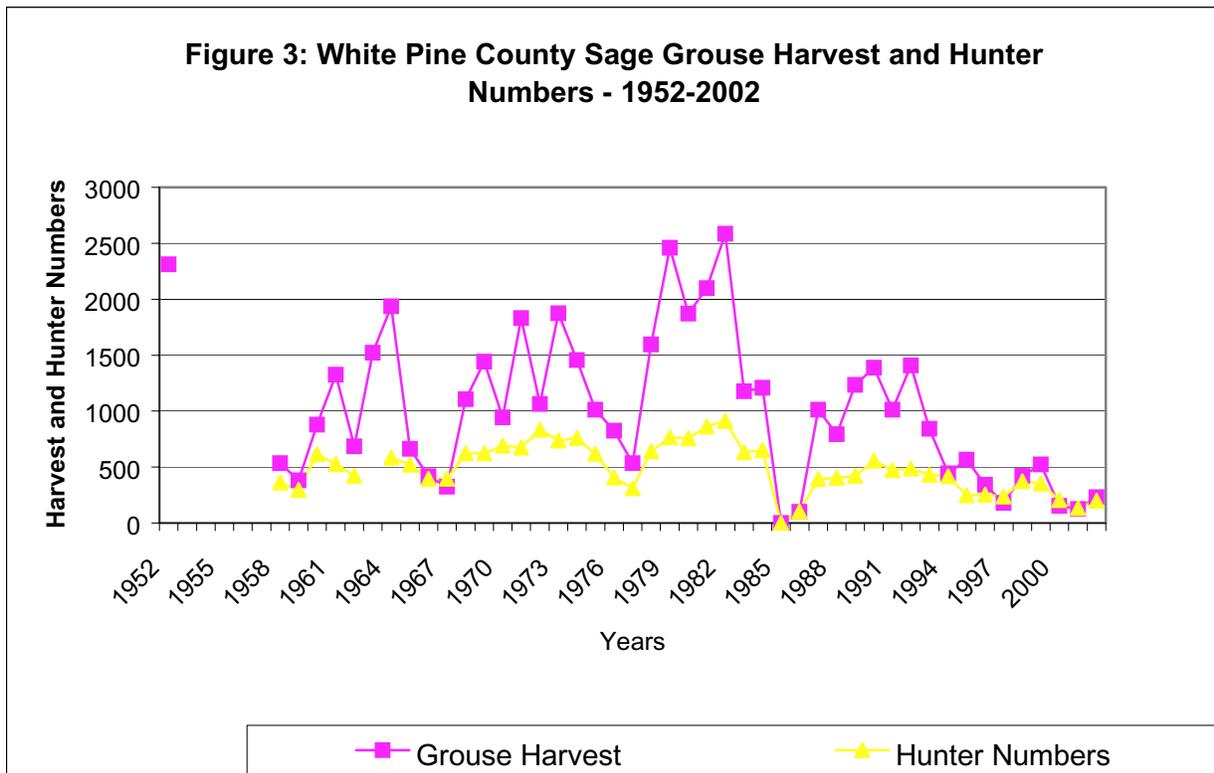
Table 1. Sage Grouse Wing Data – White Pine County

Year	Sample (wings)	Harvest	Sample as % of Harvest	Young/100 Adult Females
1998	73	420	17	5.00
1999	85	522	16	.83
2000	59	153	39	1.41
2001	54	125	43	1.44
2002	39	230	17	1.58
2003	60	*	*	2.79

* Harvest estimate for 2003 unavailable at this time.

Figure 3. depicts available harvest and hunter data. Harvest over the past ten seasons has averaged 382 birds, or 37% of the long-term average of 1,039 Sage Grouse. A record five-year average harvest of 2,122 Sage Grouse occurred between 1978 and 1982. The low rates of harvest over the short term are likely due to a combination of conservative hunting seasons and/or low population levels. Seasons have opened in early to mid-October for the past 11 years. Harvest trend roughly parallels population trend, as indicated by lek trend studies (Figures 1 and 2). This data set indicates a series of increases and declines, including substantial increases over as little as two years. This illustrates the ability of Sage Grouse populations to recover quickly from population lows under favorable conditions. The rate of decline has been aggravated by the conservative hunting seasons of

recent years. Over the past five seasons, the annual harvest has averaged 1.7 percent of the estimated spring population. This falls well within the recommended harvest rates of 5-10 % of the fall population considered safe under current management guidelines.



Note: season closed in 1985 followed by poor hunter participation in 1986.

Generalized lek location and attendance information has been recorded on an increasing scale since the 1940s. These data include the locations of all recorded leks and random observations made on those leks over time. Data prior to 1971 are limited. However, it is interesting to note that large leks were documented in the 1940s and 1950s (and since) that are no longer active and have apparently not been replaced by other leks. In some cases, the reasons for this are clear, such as large burns or development. In some portions of the planning area, historic lek locations have been displaced by pinyon and juniper. Historic leks in Snake Valley of White Pine County have become inactive and recent reports of Sage Grouse in this area are very limited. These losses of useable habitat ultimately document decreases in carrying capacity and population levels beyond the short term. These observations support anecdotal reports of much higher bird numbers at times in the past.

In summary, available data illustrates the cyclic nature of Sage Grouse populations. According to records, including anecdotal reports, populations have declined since the mid-1900. According to NDOW harvest and population trend data, White Pine County Sage Grouse populations appear to have fluctuated over the past 30 years. These data suggest that populations were lowest in the late 1960s and highest in the early 1980s and have been relatively stable since 1986. In the near short term, data indicate that Sage Grouse populations in the plan area declined from 1999-2003. However, wing data collected from hunters in White Pine County indicate that recruitment in 2003 was above the maintenance level for the first time since 1998. Prolonged drought is likely the biggest factor in this recent decline. However, current populations appear stable and well distributed, with potential to increase in numbers.

Distribution – Sage Grouse are found throughout the plan area where suitable seasonal habitats are in close proximity to each other (see PMU description pages 4-5). Leks are associated with open areas in the valleys, and are found on higher elevation benches as well. New leks are discovered each breeding season. Sage Grouse are widely distributed and can be found in the valley bottoms associated with agriculture (alfalfa production), wet meadows, and riparian areas, but are commonly observed at the higher elevations in mountain brush communities especially during the late summer and fall. Even though the long-term ability of the land to support Sage Grouse is declining, habitats in the planning area are capable of supporting higher numbers of Sage Grouse with proper habitat management and favorable climatic conditions.

In summary, some areas that previously provided good year-round habitat for Sage Grouse no longer do so. The expansion of pinyon and juniper trees into sagebrush plant communities, degradation of mesic habitats, changes in vegetation types due to climate, fire management, the spread of weeds and exotic plant species, and herbivore are some of the reasons the Sage Grouse is losing suitable habitat. However, not all habitat changes have been negative; some areas now provide suitable habitat where it did not historically occur. All of these habitat changes have impacted the distribution of the birds.

Factors Affecting Sage Grouse Populations and Their Habitats:

Habitat Quantity:

- € The quantity of suitable Sage Grouse habitat in the plan area is decreasing due to the expansion of pinyon-juniper into sagebrush communities.
- € Large areas of decadent sagebrush exist with little or no understory vegetation.
- € Lack of water (quantity, quality, and yield) in otherwise suitable habitat is adversely affecting populations.
- € Sagebrush has become reestablished in many old crested wheatgrass seedings and the areas now appear to provide suitable habitat, although the forb component is often limited.
- € Replacement of native vegetation by exotic weeds has a detrimental effect.
- € Areas of Sage Grouse habitat have been altered or converted.

Habitat Quality/Nutrition:

- € Rangeland uses (livestock, wild horse, and wildlife grazing; recreation and mining) resulting in decreases of perennial grass cover, forb composition, and diversity has resulted in a decline in habitat conditions in some areas.
- € Sagebrush is a very aggressive and competitive plant that has caused decreases in perennial grass cover and forb composition that in turn has reduced habitat diversity and condition in some areas.
- € Expansion of pinyon-juniper into sagebrush communities has degraded the quality of sagegrouse habitat, and has reduced the productivity of water sources.
- € Gully formation and abandonment of irrigation systems have reduced the availability of riparian habitat for Sage Grouse brood rearing.
- € Some spring outflows have been piped to other locations for various uses, sometimes eliminating the water found at the source. Although water may be available in other locations, it may or may not benefit Sage Grouse.
- € Changes in management and/or regulations have resulted in disruptions of available water sources, particularly from wells, for Sage Grouse.
- € As a result of improved grazing management practices that include planned grazing systems, changes in season of use, livestock numbers, etc., some habitats have improved.

Habitat Fragmentation:

- € Human activities such as construction, development, agriculture, and recreation, have reduced habitat for Sage Grouse in some parts of the plan area.

- ∄ Fences, roads, and utility lines in Sage Grouse habitat are indirect and direct sources of mortality to the birds.
- ∄ Lack of natural fire frequency has led to a predominance of pinyon-juniper, decadent sage, and overall loss of habitat.
- ∄ Lack of post-fire management may or may not lead to fragmentation and loss of habitat
- ∄ Conversion of sagebrush stands to alfalfa may or may not affect the Sage Grouse, depending on the location of the sagebrush stands.

Changing Land Uses:

- ∄ Wilderness Study Areas/Wilderness Management needs to be addressed to allow habitat projects to restore healthy sagebrush ecosystems in these areas.
- ∄ Recreation, especially inappropriate use of off-road vehicles may be negatively affecting Sage Grouse populations.
- ∄ Conversion of sagebrush habitat to agricultural crops such as alfalfa may affect Sage Grouse populations.
- ∄ Conversion of sagebrush stands to alfalfa may or may not affect the Sage Grouse in adjacent sagebrush stands.

Predation:

- ∄ Nest predation by many species of animal's impact survival and recruitment of Sage Grouse.
- ∄ Predation by raptors, corvids, and mammals results in lower bird numbers.
- ∄ Power lines, which are perches for raptors and other avian predators, have been installed in Sage Grouse habitat.
- ∄ Pinyon-juniper establishment into sagebrush communities has provided additional perches for avian species, thereby increasing the potential for predation.
- ∄ Some species of predators may occur in artificially high numbers due to alternative food sources (e.g., dumps, road kills).
- ∄ Federal and state laws, rules, and regulations have protected certain predators.
- ∄ Reduced trapping pressure allowed predator populations to increase until recent fur prices increased stimulating trapping activity.

Livestock, Wild Horse, Wildlife Grazing:

- ∄ Grazing by ungulates in nesting areas could be reducing nesting success of Sage Grouse.
- ∄ In some instances, natural water sources and surrounding habitats are being negatively impacted by grazing and may be decreasing the success of Sage Grouse.
- ∄ Properly planned livestock grazing can improve and/or increase Sage Grouse habitat.

Fire Ecology:

- ∄ Wildfires have burned important areas of habitat and historic fire management practices have resulted in vegetation-type conversions away from those used by Sage Grouse.
- ∄ Recent fire management has interrupted the natural fire frequency in sagebrush communities and associated Sage Grouse habitat.
- ∄ Areas in which fires do occur generally are not suitable for Sage Grouse for many years, until sagebrush becomes re-established.
- ∄ Current fire management practices inhibit using wildfire as a habitat management tool.

Disturbance: (see threat table)

- ∄ Non human-caused: wildfire, drought

- € Human-caused: wildfire suppression, antler hunting, photography, development
- € Biological observations and surveys from aircraft, military overflights, and other aircraft uses may disturb birds to some extent.

Disease:

- € Long-time White Pine County residents report suspected disease outbreaks (blue wing) that killed many Sage Grouse in the 1960s and 1970s. These reports are anecdotal, but do suggest that disease can affect Sage Grouse.
- € West Nile Virus (WNV) is an exotic disease first detected in the Western Hemisphere in 1999. Avian species are the host for this virus which can be spread from infected birds by mosquitoes. As of fall 2003, the only contiguous states without reports of WNV were Oregon, Nevada, Utah and Arizona. It is anticipated that Nevada will experience reports of WNV in the near future. Many species of birds can carry the disease without developing clinical symptoms, but some species do not survive without showing signs of chronic neurological dysfunction. During the summer of 2003, sick and dead Sage Grouse in Montana and Wyoming were confirmed to be infected with WNV. The potential effects of WNV on Sage Grouse populations is unknown at this time.

Hunting:

- € Bird mortalities associated with hunting are kept within management guidelines designed to allow Sage Grouse populations to sustain or increase.
- € Hunting provides valuable demographic data on Sage Grouse through the collection of wings from hunter-harvested birds.
- € Over-hunting causes an adverse impact on Sage Grouse populations.

Poaching:

- € Poaching could be a significant source of mortality to Sage Grouse populations, depending on time of year and population size and location.

Politics:

- € Some laws (e.g., NEPA, ESA, Migratory Bird Treaty Act, Wilderness Act, Wild Horse and Burro Act) may pose challenges to implementation of strategies identified in the Sage Grouse Conservation Plan.
- € Special interest groups may protest specific actions and could delay certain aspects of plan implementation for years.
- € Lack of agency commitment and cooperation to implement the plan.

Risk Assessment

The team developed risk matrices to help assess and prioritize PMUs relative to overall population risk. In addition, they wrote guidelines to aid in the evaluation of various risks. Each PMU was evaluated for 23 factors of potential risk. The level of risk was approximated for each risk factor using a rating of zero through five which represented the following risk categories: zero for no risk; one for minimal; two for low; three for moderate; four for high and five for maximum risk. Three potential risks (Human Impacts – Direct, Habitat Quality and Habitat Quantity) were subdivided into a number of categories and their assigned values were averaged to arrive at a rating for the primary risk factor. The ratings, which appear in the individual PMU Threat Matrices, are subjective in nature and reflect opinions and discussions of limited data during TRT meetings. The ratings also reflect the knowledge and experience of natural resource professionals and local residents as agreed to by consensus of the group. Group members failed to reach consensus in only one

instance, resulting in a range of numbers being assigned for a risk. In this case, the middle number was used in the addition for the total score for the PMU. A consistent approach results in a fair assessment between PMUs. The greatest value of the matrices is in the prioritization of the PMUs for overall risk rather than an absolute assessment of each risk. Although a total score of 0 to 115 was possible, scores for the four PMUs ranged from 43.25 to 51.1 (See Table 2 and individual Threat Matrices in Appendix 7.). Less than three points separated the total score for three of the PMUs, suggesting that no meaningful overall difference in risk exists. However, risk ratings for individual risk factors varied between all PMUs.

Table 2. PMU Risk Ratings

PMU	Rating
Schell Range/Antelope Valley	51.1
Butte Valley/Buck Mountain/White Pine Range	46.0
Spring Valley/Snake Valley	45.3
Steptoe/Cave Valley (White Pine Co. Portion)	43.3

Other factors that may affect the ultimate risk level in a PMU include Sage Grouse population size and viability as well as planned land actions or changes in management. Priorities for specific conservation actions may be further influenced by feasibility, opportunity and the cost of the actions that are warranted in each PMU.

Certain risk factors were consistently rated high among most or all PMUs. These include climate/weather, predation, laws/policies, regulations, and a lack of fire. Prolonged drought over the past 15 years has illustrated the potential for climatic conditions to adversely affect biotic communities in the Great Basin. Concerns about predation are based on general observations of high numbers of predators such as corvids. Data on predation impacts is limited, however direct predation or evidence of predation has been observed. It is felt that current laws, policies and regulations raise barriers to actions such as habitat manipulation that could benefit Sage Grouse. In all PMUs, a lack of fire has resulted in expansion of Pinyon and Juniper trees at the expense of seasonal Sage Grouse habitats. In other areas, shrub communities have become overmature or decadent.

Steptoe/Cave Valley PMU (White Pine County portion)

In addition to the common risks listed above, this PMU was rated as high risk for habitat quality of both nesting/early brood and late brood habitats.

Spring Valley/Snake Valley PMU

In addition to the common risks listed above, this PMU was rated high for Human Caused Mortality (hunting and poaching), Water Distribution and Habitat Quantity (breeding). Concerns about human caused mortality are related to the fact that this PMU contains smaller and more isolated Sage Grouse populations than other PMUs. Water distribution and abundance have been reduced in the short term by drought and in the long term by Pinyon/Juniper expansion. Breeding habitat has been lost due to the expansion of pinyon and juniper trees onto bench areas.

Butte Valley/Buck Mtn. /White Pine Range

In addition to the common risks listed above, this PMU was rated high for Habitat Quality (late brood). The quality of late brood habitat is being compromised by the expansion of pinyon and juniper trees.

Schell Range/Antelope Valley PMU

The common risks listed above, this PMU was rated high for Wild Horse Grazing (too much), Human Impacts – Direct (off road vehicles), Water Distribution, Habitat Quantity (late brood) and Habitat Quality (late brood).

Horse numbers are often above AML, contributing to degradation of Sage Grouse habitat. The high-risk rating associated with off-road vehicles arises from increasing recreational use in portions of the Schell Creek and Antelope Ranges. Water distribution and abundance has been reduced in the short term by drought and in the long term by Pinyon/Juniper expansion. Pinyon and juniper expansion has reduced both the quality and quantity of late brood habitat for Sage Grouse.

GOALS, OBJECTIVES AND STRATEGIES

Goal 1: Develop a more complete understanding of Sage Grouse and sagebrush dominated plant communities through research in the plan area.

Objective 1.1: Increase knowledge of existing Sage Grouse populations, distribution, and use patterns.

Benefit: Assists in the conservation of the species by developing a more complete understanding of local populations (movements, habitat requirements, preferences, etc.), which will be used to guide the application of management practices and strategies.

Success Standard: Achieve a more complete and comprehensive knowledge of each population group and its' dynamics.

Strategies:

- 1.1.1 Participate in the development of standardized statewide Sage Grouse population and habitat monitoring protocols.
- 1.1.2 Draft proposals for research on population/habitat dynamics and acquire funds to implement the proposals with academic institutions.
- 1.1.3 Expand and evaluate program to monitor populations of Sage Grouse in order to make recommendations for management through lek counts, brood surveys, trapping and marking, and wing collection in hunting areas.
- 1.1.4 Use radio telemetry to identify seasonal use areas and migratory/non-migratory birds.
- 1.1.5 Initiate research projects, which will benefit management and provide additional needed information on population/habitat dynamics.
- 1.1.6 Design and coordinate a survey program for leks and late brooding areas, which will provide scientifically sound data tailored for each PMU.
- 1.1.7 Explore the potential for augmenting populations through trapping and transplanting.
- 1.1.8 Monitor disturbed sites for occupation by Sage Grouse.

Objective 1.2: Develop an ecological understanding of sagebrush dominated plant communities and the role of disturbances or disturbance regimes in the dynamics of those systems.

Benefit: To have a sound scientific basis for land management decisions.

Success Standard: Achieve a more complete understanding of the various sagebrush ecosystems and how disturbance affects them.

Strategies:

- 1.2.1 Conduct a retrospective study of the effects of past fires and other disturbances such as seedings and chainings and describe vegetative succession in these areas.
- 1.2.2 Design and implement habitat research projects to identify adaptive management strategies beneficial to Sage Grouse.

- 1.2.3 Create a land management database that includes up-to-date research.
- 1.2.4 Explore the role of herbivores in affecting sagebrush ecosystem health.
- 1.2.5 Complete and digitize ecological status inventory within each PMU.
- 1.2.6 (Identify and list ecological sites that provide sage grouse habitat.)
- 1.2.7 (Develop desired plant community descriptions based on ecological site potentials specific to the seasonal Sage Grouse habitats).
- 1.2.8 (Develop rapid assessment worksheets, similar to those used for rangeland health, based on desired plant community descriptions for Sage Grouse habitat.)
- 1.2.9 Carefully identify each sagebrush species and associated plant species, soils, and position on the landscape.
- 1.2.10 Explore the effects of OHV use and excessive road proliferation on sagebrush communities' ecological health.
- 1.2.11 Evaluate habitat fragmentation pertinent to Sage Grouse.

Goal 2: Manage for viable, healthy populations of Sage Grouse in all of the PMUs in the planning area.

Objective:

2.1 Maintain or increase present populations for the short term (i.e., trend over ten years).

Benefit: Populations will persist and thrive in areas of present occupation, so the Sage Grouse will be able to pioneer new areas as habitat becomes suitable for occupation.

Success Standard: No extirpation of breeding sub-populations occurs. Lek counts and brood surveys indicate stable or growing populations throughout the PMU.

Strategies:

- 2.1.1 Examine population viability and identify high priority sub-populations for protection in each PMU.
- 2.1.2 Reduce the detrimental effects of human disturbance and structures (utility lines, fences, traffic, hunting, poaching, OHV usage, biological study, etc.)
- 2.1.3 Inventory road and other recreational accesses that contribute to disturbance of sagebrush plant communities.
- 2.1.4 To augment recovery or management efforts, use predator control in Sage Grouse habitats where appropriate, i.e. where high numbers of predators are found, congregate, or where high predation rates are known.
- 2.1.5 Identify high priority areas for fire protection/suppression activities.
- 2.1.6 Identify high priority areas for the reestablishment of natural fire frequencies (i.e. managed natural fire).
- 2.1.7 Take action to maintain currently occupied habitats.
- 2.1.8 Coordinate and investigate means to minimize the impacts of new utility lines in existing Sage Grouse habitat and encourage removal of abandoned utility lines.
- 2.1.9 Coordinate and investigate means to minimize the impacts of wind-generated power structures including designation of areas unsuitable for such development.

Objective 2.2: Provide favorable conditions for expansion of Sage Grouse populations into historic range in healthy and sustainable numbers.

Benefit: Bird populations occupying a large geographic area will be more resilient to threats.

Success Standard: Increased number of active leks or birds observed over a wide area.

Strategies:

- 2.2.1 Design and implement habitat research projects that identify adaptive management strategies beneficial to Sage Grouse.
- 2.2.2 Develop alternative grazing areas to draw grazing animals away from Sage Grouse leks and nesting habitats.
- 2.2.3 Identify all sagebrush communities that are now dominated by pinyon-juniper or where pinyon-juniper is becoming established and prioritize for projects.
- 2.2.4 Increase the amount and improve condition of sagebrush habitats by implementing projects suggested by and agreed to by local planning groups.
- 2.2.5 Use fire (prescribed fire or managed natural fire) to treat areas of decadent sagebrush or pinyon-juniper dominated sagebrush communities where appropriate.
- 2.2.6 Declare Full-Suppression and managed natural or prescribed fire areas for fire management activities.
- 2.2.7 Use prescribed fire to reduce heavy fuel loads in late seral stage sagebrush communities being encroached with pinyon and juniper where appropriate.
- 2.2.8 Achieve better water distribution throughout suitable Sage Grouse habitat in each PMU.
- 2.2.9 Identify sagebrush plant communities where there is a uniform age stand of decadent sagebrush that could provide better quality habitat, and investigate methods for remedy.

Goal 3: Manage for diverse, healthy, sagebrush plant communities within each PMU.

Objective 3.1: Maintain and improve existing sagebrush plant communities.

Benefit: Suitable habitat for Sage Grouse will be increased.

Success Standard: Habitat inventories are completed in each PMU and priority areas are categorized for projects. Approximately 42,000 acres per year are treated and/or modified through management, resulting in habitat expansion and/or improvement.

Strategies:

- 3.1.1 Inventory and map all habitats by vegetative cover and R-values periodically and/or as more data become available.
- 3.1.2 Identify and reduce the detrimental effects of inappropriate grazing on Sage Grouse habitats.
- 3.1.3 Develop new grazing areas to draw grazing ungulates away from Sage Grouse leks and nesting habitats at critical times.
- 3.1.4 Identify undesirable weed infestations and aggressively treat them to prevent spread.
- 3.1.5 Examine permitted grazing areas in Sage Grouse habitat and make recommendations for management, including using the CRM process.
- 3.1.6 Examine use by wild horses in Sage Grouse habitat and make recommendations for management, including using the CRM process.
- 3.1.7 Address impacts of insect infestations and/or lack of insects.
- 3.1.8 Encourage re-seeding of disturbed areas (i.e. resulting from chainings, fires, etc.) with plants beneficial to Sage Grouse.
- 3.1.9 Identify decadent sagebrush stands and apply management treatments to replace the decadent sagebrush with young, healthy, robust plants.
- 3.1.10 Support the implementation of the Great Basin Restoration Initiative through the Eastern Nevada Landscape Restoration Project.

Objective 3.2: Where appropriate restore dynamic sagebrush plant communities throughout each PMU.

Benefit: Increases in habitat for sagebrush obligate species resulting in future population expansion of these species.

Success Standard: Treat approximately 42,000 acres of potential habitat per year.

Strategies:

- 3.2.1 Identify all sagebrush sites that have become dominated by P-J and prioritize for projects.
- 3.2.2 Increase the amount and improve condition of sagebrush habitats by implementing projects suggested by and agreed to by local planning groups.
- 3.2.3 Use all appropriate means (e.g., fire, mechanical, and chemical, etc.) to treat pinyon-juniper sites that have the potential to support sagebrush habitats.
- 3.2.4 Use all appropriate means (e.g., fire, mechanical, or chemical methods) to treat senescent or degraded sagebrush communities to restore age class diversity.

Objective 3.3: Restore disturbance regimes, especially fire.

Benefit: Restores naturally functioning system processes to degraded sagebrush ecosystems.

Success Standard: Fire-caused disturbances result in plant community mosaics consistent with Goal #3.

Strategies:

- 3.3.1 Properly implement the Ely BLM District Managed Natural and Prescribed Fire Plan to benefit the ecological processes and systems associated with healthy sagebrush communities.
- 3.3.2 Identify and recommend full-suppression, managed natural, and prescribed fire areas for fire management activities in the plan area as relates to Sage Grouse habitat (across all jurisdictions, i.e. NDOW, NPS, NSP, BLM, USFS).
- 3.3.3 Use prescribed fire to reduce heavy fuel loads in identified areas.
- 3.3.4 Coordinate with and include Federal Agency fire managers into the planning process or educate them as part of the completion of the plan.

Objective 3.4: Assure that the availability of water is not a limiting factor in otherwise suitable habitat in accordance with Nevada Water Law.

Benefit: Allows for increased numbers and widely distributed populations of Sage Grouse throughout the plan area.

Success Standard: The availability of water allows occupation of habitat previously unoccupied due to lack of water.

Strategies:

- 3.4.1 Install water developments in areas of otherwise suitable habitat.
- 3.4.2 Work with permittees and water rights owners to ensure availability of water on a perennial basis where applicable.
- 3.4.3 Cooperate with water rights owners to leave water at all spring sources for wildlife use in accordance with Nevada Water Law.

- 3.4.4 Cooperate with water rights owners to explore the possibility of using infrequently used wells as water sources for Sage Grouse.
- 3.4.5 Cooperate with water rights owners to restore and maintain previously available water sources where feasible.
- 3.4.6 Inventory and identify privately owned water rights prior to any water development.

Goal 4: Address the biological, social, political, and economic ramifications of the plan.

Objective 4.1: Encourage landowners and permittees to modify land use practices that are detrimental to Sage Grouse.

Benefit: Higher quality and quantity of brood-rearing habitats. Local landowners appreciate importance of agricultural land in relation to Sage Grouse seasonal needs.

Success Standard: Less mortality associated with agricultural practices and more uniform and better quality brood-rearing habitat in agricultural fields and riparian/wet meadows throughout the plan area.

Strategies:

- 4.1.1 In cooperation with landowners, identify private lands within PMUs that may include Sage Grouse habitat.
- 4.1.2 Evaluate, with landowners, current land use practices that may be detrimental, neutral, or beneficial to Sage Grouse.
- 4.1.3 Work with private landowners to consider Sage Grouse needs in management practices.

Objective 4.2: Ensure all land management agencies address Sage Grouse needs in future plans and actions.

Benefit: A unified and consistent approach to Sage Grouse/sagebrush management. A cooperative and uniform approach in all land use and management actions in the plan area in relation to Sage Grouse/sagebrush management.

Success Standard: Compatibility between federal, state, and county planning documents and management actions. Planning documents/contents are to be fully acceptable to respective boards of County Commissioners.

Strategies:

- 4.2.1 CRM Steering Committee and TRT actively monitor progress of plan implementation.
- 4.2.2 Ensure that TRT members are involved in the planning process for land management decisions.
- 4.2.3 TRT members make recommendations of management actions and projects to benefit Sage Grouse in the plan area.
- 4.2.4 Encourage the implementation of the Great Basin Restoration Initiative and the Eastern Nevada Landscape Restoration Project.
- 4.2.5 Consultation with Native Americans.
- 4.2.6 Consultation with private property owners and stakeholders.
- 4.2.7 Propose, plan, and design habitat treatments for the benefit of multiple species, including Sage Grouse.
- 4.2.8 Coordinate all species management plans within and among all involved agencies.

Objective 4.3: Implement a public education program that increases awareness of sagebrush ecosystems, Sage Grouse conservation efforts, and the role of fire.

Benefit: An informed public will be able to make educated decisions with respect to sagebrush and Sage Grouse conservation management in the future.

Success Standard: An informed public with opportunities for involvement.

Strategy:

- 4.3.1 Initiate a public education campaign that encourages input from local landowners and public lands users.
- 4.3.2 Encourage input to the planning process by local interests.
- 4.3.3 Educate the public about the risks to Sage Grouse by inappropriate use of OHVs.
- 4.3.4 Consider placing signs in selected Sage Grouse habitats alerting recreational users of the concerns about Sage Grouse in the area.

Objective 4.4: Complete a formalized, workable local plan, accepted by the local county commissions, which will be incorporated into a statewide plan, and will be acceptable to USFWS under the PECE policy.

Benefit: Completion of an effective and implementable Sage Grouse conservation plan will give guidance and direction to complete projects beneficial to the sagebrush ecosystem, ensure sustainable Sage Grouse populations, and keep control of Sage Grouse management in local hands.

Success Standard: Preclude Endangered Species Act regulatory actions on Sage Grouse through completion of a formal local plan and acceptance by County Commissions.

Strategy:

- 4.4.1 Draft a local plan that conforms to the effective and implementable criteria of the USFWS PECE policy and is acceptable to the local community.
- 4.4.2 Use a broadly represented consensus based planning group.

Partial List of Potential Sources for Project Funding

1. Challenge Cost Share (CCS) and Cooperative Conservation Initiative (CCI)
2. Grants Available for Sage Grouse/Sagebrush Steppe Restoration
 - a. State of Nevada Question 1 Monies –Administered by Division of State Lands
 - b. State of Nevada Question 1 Monies (NDOW Portion)
 - c. Wildlife Heritage Trust Account
 - d. Nevada Wildlife Foundation
 - e. USDA Natural Resource Conservation Service – Environmental Quality Incentives Program (EQIP)
 - f. USDA Natural Resource Conservation Service – Wildlife Habitat Incentive Program (WHIP)
 - g. Intermountain West Joint Venture
 - h. National Fish and Wildlife Foundation – General Challenge Grant
 - i. U.S. Fish and Wildlife Service – Landowner Incentive Program
 - j. U.S. Fish and Wildlife Service – Cooperative Conservation Initiative (Private Landowners)
 - k. U.S. Fish and Wildlife Service – Tribal Landowner Incentive Program (Tribal Government Assistance)
 - l. U.S. Fish and Wildlife Service – Partners for Fish and Wildlife Program
 - m. U.S. Fish and Wildlife Service – Private Stewardship Grants Program
 - n. U.S. Fish and Wildlife Service – Tribal Wildlife Program (Tribal Government Assistance)
 - o. National Wildlife Federation – Species Recovery Fund
3. Other
 - a. BLM and USFS fuels management funds.

HABITAT ASSESSMENT

A required element for each local Nevada Sage Grouse Conservation Planning effort is to assess and evaluate habitat conditions and population risks within all PMU's. Habitat planning maps will be produced at varying spatial scales in order to achieve these objectives. In addition, the assessment criteria will be tied to the BLM Ely Field Office Watershed Assessment Process wherever possible. Other agencies (Forest Service, National Park Service, Nevada State Parks, Nevada Department of Wildlife) each have assessment criteria to be applied as appropriate. The maps will be first designed at the mid-level scale and later refined at the fine-level scale of analysis using the best information available. They will ultimately provide an overall spatial portrayal of Sage Grouse sub-populations and habitat conditions in each PMU. To compliment this effort in the future, an objective and scientifically based project-level scale Habitat Assessment Criteria will be followed. The pressing timeline of the Sage Grouse Conservation Plan makes it impractical to wait for revised remote sensing vegetation data, comprehensive soil survey completion, or ecological status inventories in order to generate the habitat maps. Initial mapping efforts include a map of the general vegetation types within each PMU based on GAP vegetation maps. GAP data are limited in their reliability and suitable for general discussion only. The GAP data will be replaced with more information as it becomes available or as project-level planning is completed.

Habitat planning maps include the following:

- € *Fine-Scale Habitat Planning Map*
- € *Mid-level Landscape Scale Habitat Planning Map*
- € *Project- Scale Habitat Assessment Criteria*

Various maps will serve several purposes, including:

- 1) Identifying general Sage Grouse habitat areas and aid in quickly assessing areas where Sage Grouse will be a primary concern, and those areas where Sage Grouse are not an issue.
- 2) Evaluate and document existing general Sage Grouse habitat condition, suitability, and habitat restoration needs in respect to habitat quality.
- 3) Assist in evaluating land uses on public lands that may affect Sage Grouse habitat conditions or habitat restoration efforts.
- 4) Graphically portray the degree of Sage Grouse habitat fragmentation on the landscape.
- 5) Serve as a tool for planning and prioritizing fire suppression, fuels management, and prescription activities.
- 6) Serve as an educational tool for explaining current Sage Grouse habitat conditions to resource users, cooperators, and interested parties.

This assessment process is designed to work as a hierarchical analysis of Sage Grouse habitats for the Sage Grouse TRT. Many sources of national and local information were used to develop this assessment process, especially as found in the Governor's Strategy. The overriding emphasis in this effort is to 1) keep it simple, 2) utilize combinations of available data to our best advantage, 3) identify needed data, 4) develop GIS data layers, and 5) produce a quality map and analysis of PMU habitat conditions and threats to Sage Grouse to be used as a planning tool by the TRT.

HABITAT ASSESSMENT PROCESS

A. Mid-Level Scale Information and Assessment Use

Sub-basin reviews are intended to provide an understanding of how management activities in sub-basins fit in with ecosystem and public land management approaches. Broad habitat and population status and condition data are appropriate for this scale. General habitat maps are qualitative in nature and use information such as GAP vegetation data and general sage grouse distribution. More systematic and detailed vegetation mapping will occur at the fine-scale and then again at the project-level scale.

B. Fine-Level Scale Information and Assessment Use

Fine-scale information is processed at various levels, including watershed, allotment, National Park, other administrative units, etc. When fine-scale data (land use applications and locations, Sage Grouse population

status and seasonal habitat dispersals, and more detailed vegetation delineations), is used in conjunction with mid-scale data (Habitat Planning Maps), areas of concern can be documented and a prioritized approach to population and habitat protection and restoration can be developed. Products that already exist or will be needed in the future include:

1. Synthesized Sage Grouse Population Data

These data will assist in defining areas of management and evaluation emphasis and be used to focus attention at the sub-population level. These data include:

- Lek Attendance/Monitoring Surveys
- Lek Status
- Brood surveys
- Random Sightings/Observations
- Season of Use Areas (Nesting/Early Brood-rearing, Brood Rearing, and Wintering)
- Population Viability Analyses
- Harvest data
- Scientific investigations

2. Land Use Information

At this scale, gathering general public land use information will be very helpful and includes, but is not limited to:

- Watershed boundaries
- Grazing allotment and use area boundaries
- Range improvement projects (chainings, seedings, water pipelines, etc)
- Waters (Developed and Undeveloped)
- WSA Boundaries
- HMA Boundaries
- Utility Corridors
- Land Ownership
- Roads
- Rights-of-Ways

3. Vegetation and Habitat Planning Map of Sage Grouse Sub-Populations

Working in the fine-scale, consider habitat availability and fragmentation patterns in relation to the breeding, nesting, brood-rearing, and winter habitat on specific sites of Sage Grouse sub-populations within the PMU. Refining the habitat-planning map is important at this stage, and includes the following:

- a. Breeding, Nesting, and Winter Habitats: Delineate R-values, as defined on page 28 on sagebrush communities by utilizing the following existing GIS data layers and information:

- Ecological Status Inventory (ESI) Maps and Data
- Soil Maps
- Historic Fire Information
- Fire Emergency Rehabilitation Files/Maps
- Fuels Management Files/Maps
- Range Project/Allotment Files/Maps
- Aerial and Satellite Imagery

Elevation Models
Personal observations

- b. Late Brood-rearing Habitats: At this scale, it is important to delineate the extent of brood-rearing areas that are potentially significant. Areas with wet meadow complexes, sagebrush areas adjacent to agricultural fields, perennial streams, and lakes, ponds or lakebeds with sagebrush in close proximity are typical late brood-rearing habitats for consideration. Several information sources are important to use at this scale, in addition to those in item (a) include:

National Wetland Inventory (NWI) Maps
State Water Right Files/Claims
Riparian Proper Functioning Condition (PFC) assessments and maps
Infra-red Aerial Photography
Ecological Status Inventory

4. Watershed Assessments Schedule

Because of the large area comprised of public lands in the planning area that are administered by the BLM, Sage Grouse habitat assessments on a watershed basis will occur over many years. Therefore, it is essential that these evaluations be systematically planned and designed to address areas where habitats are most important, most susceptible to change or have the greatest restoration potential.

C. Project-level Information and Site Assessments

Project-level or site-specific assessments will involve qualitative and quantitative on-the-ground data collection depending on management needs. Site-specific project-level procedures are to be used for a variety of purposes including detailed habitat assessments to characterize current habitat conditions, rangeland health evaluations through watershed analysis, proposed land exchanges, or to evaluate/monitor proposed habitat restoration projects.

Products:

1. Habitat Assessment Criteria

Project level site assessments require direct observations of conditions at the location of each potential project utilizing the information from objectives 1.2.5, 1.2.6, 1.2.7, 1.2.8, and Sage Grouse population data.

HABITAT AND R-VALUES:

To categorize sage grouse habitat we followed the format suggested in the Nevada Sage Grouse Conservation Strategy and used the Restoration Value (R-Value) system developed by the Idaho BLM (citation). This method was slightly modified by the addition of several sub R-Values which better describe and separate habitats by their potential to be restored. The higher the R-Value the more difficult and expensive it would be to restore. The chosen R-Value categorization is as follows:

- ∉ **Quality Habitats (R0): Areas of intact sagebrush dominated habitats with good understory components. Meets the seasonal criteria for both sagebrush canopy and grass/forb understory. High priority habitats for protection.**
- ∉ **Restoration Habitats: Areas that currently are, historically were, or potentially could be Sage Grouse habitat, and that if restored, would provide better habitat at sometime in the future.**

R1: Areas with limited sagebrush, with acceptable grass and forb understory composition. May include native and seeded perennial grass rangelands.

R2: Areas with inadequate grass/forb understory composition, adequate sagebrush cover. Expensive management treatments are needed for restoration.

∉ **R2a: Decadent Sagebrush; cover exceeds the recommended levels.**

∉ **R2b: Areas where perennial or annual invasive species are present and will likely establish and dominate after a disturbance event. The site is at risk, but the threshold has yet to be crossed.**

R3: Areas where the Pinyon and Juniper component is increasing even though the potential natural community of the site is sagebrush dominated. These are sagebrush sites, not natural woodland sites that potentially favor trees.

∉ **R3a: Phase II of tree take over. Small trees of low density, with intact sagebrush/grass/forb understory. High management priority for alteration/maintenance.**

∉ **R3b: Areas where tree density has eliminated sagebrush, grass/forb understory. Where this threshold has been crossed, management options are expensive and limited.**

R4: Areas where sagebrush communities have been type converted through natural or manmade disturbance to annual or perennial grasslands/forbs (could be bare and fallow ground). Potential sagebrush habitats for restoration. If on private ground, only at the discretion of the landowner.

Habitat Maps

Due to limited digital information, only broad scale maps could be developed at this stage. There is considerable information out there amongst the different agencies but it needs to be compiled and transferred to compatible digital formats. Primary information was derived from GAP vegetation layer, Sage Grouse lek layer and BLM fire and managed (chained seeded, etc.) area layers. Soils association information was used where available, which was western White Pine County and Great Basin National Park.

Because of the limited digital information, habitat could only be categorized and limited to primary R-Values: Quality Habitats R0, R1, R2 and R3. To derive Quality Habitats R0, sagebrush/perennial grass categories in the GAP vegetation layer were reclassified to R0.

To derive R1, all areas affected by fire or managed based on the BLM fire and managed areas layers were reclassified as R1 based on the assumption that the objective for these areas was to reduce shrub cover and increase the herbaceous cover.

To derive R2, the sagebrush category in the GAP vegetation layer was reclassified as R2.

The R3 category was derived in one of two ways depending on soils information. If soils association information was available, all associations whose potential native vegetation communities was determined to be at least 75 percent sagebrush/perennial grass cover and less than 15 percent tree cover across the entire association, and the GAP vegetation layer indicated that the same area was now woodland, were classified as R3. If no soils association information was available, woodlands <30 percent canopy cover categories in the GAP vegetation layer were reclassified as R3.

The R4 category was not mapped due to localized nature of such sites in White Pine County. However, it was recognized that some R1 sites could in fact be R4 and that fire could convert large areas to R4.

Further assumptions for habitat mapping can be found in Appendix 8. As more information is compiled, Sage Grouse habitat maps will become more detailed.

White Pine Planning Area - Roles and Responsibilities of Entities Involved with Planning, Implementation and Monitoring

ENTITY	ROLES AND LEAD RESPONSIBILITIES
National Park Service	<ul style="list-style-type: none"> ∅ Serve as lead agency within park boundaries and cooperate and assist in county-wide habitat enhancement, re-introduction, non-indigenous species control, research and monitoring projects ∅ Support state in obtaining and/or securing water rights and land within current and historic sage grouse range ∅ Assist in funding sage grouse habitat and population enhancement projects surrounding Great Basin National Park within compliance to NEPA regulation ∅ Promote and regulate the use of the Great Basin National Park lands ∅ Conserve the scenery, natural and historic objects, and wildlife therein
Nevada Department of Wildlife	<ul style="list-style-type: none"> ∅ Lead responsibility for monitoring program, including survey and population status assessment; compile survey data and maintain species information database ∅ Lead responsibility for harvest management, including development of season and bag limit recommendations ∅ Lead responsibility to develop and implement public information and education programs ∅ Coordinate with and assist other cooperators with habitat enhancement and restoration projects ∅ Lead responsibility for development and periodic review of Agreement ∅ Lead responsibility to develop and modify Strategy and species management plan documents with assistance and input from other cooperators
Nevada Natural Heritage Program	<ul style="list-style-type: none"> ∅ Maintain databases on the distribution, population status, and various biological parameters pertaining to the SG and its habitat; similar data on other sensitive species in the area; and land management and ownership in eastern Nevada
U.S. Fish and Wildlife Service	<ul style="list-style-type: none"> ∅ Advise and assist in the implementation of the Agreement ∅ Periodically review the Agreement to ensure relevance to goals and objectives for management and conservation of the species ∅ Participate in surveys and population status assessments ∅ Assist in control of nonnative species as appropriate ∅ Co-lead responsibility to develop and implement public information and education programs ∅ Provide technical assistance in all aspects of the Agreement and field assistance on habitat enhancement projects ∅ Provide funding support for conservation actions, only as authorized in budget processes ∅ Provide guidance to private landowners on developing

	candidate conservation agreements or other federal-private management projects
U.S. Forest Service	<ul style="list-style-type: none"> ∅ Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through activities and programs ∅ Establish through Forest planning process objectives for habitat management and/or recovery or populations, in cooperation with other agencies ∅ Assist the State in achieving their goals for conservation of endemic species ∅ Establish management objectives in cooperation with the State when a project on USFS lands may have significant effect on sensitive species population numbers or distribution. ∅ Establish objectives for Federal candidate species, in cooperation with USFWS and State ∅ Lead habitat enhancement and protection projects on National Forest system lands
U.S. Bureau of Land Management	<ul style="list-style-type: none"> ∅ Lead habitat enhancement and protection projects on BLM administered land ∅ Assist in population monitoring projects ∅ Secure public water reserves on public land for wildlife where available, only as authorized in budget process ∅ Provide special status species with the same level of protection as is provided for candidate species in BLM Manual 6840.06C, that is to “ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed” ∅ Provide notices of public water reserves to the State Water Engineer for all beneficial use for wildlife
Private Property Owners	∅ Welcome to participate in agency planning and project actions. This may include lands, water rights, rights of way, and other property interests.
White Pine County	∅ Maintain participation through CRM Steering Committee, County Wildlife Advisory Board, Public Land Users Advisory Committee
White Pine County CRM Steering Committee	∅ Have plans prepared and make recommendations to County
Native American Tribes	∅ Have plans prepared and make recommendations to County
Eastern Nevada Landscape Coalition	<ul style="list-style-type: none"> ∅ Collaborate with planning partners ∅ Assist with educational and communications with the general public and ENLC supporters ∅ Assist in fund raising for specific projects related to habitat enhancement ∅ Assist in habitat restoration as it ties to ENLC goals
USDA Wildlife Services	<ul style="list-style-type: none"> ∅ Provided contracted predator control projects, as requested by managing agencies ∅ Provide contracted assistance in research projects concerning predators, as requested by managing agencies ∅ Provide technical assistance on predator related issues ∅ Provide information on Sage Grouse observed while in the

	field with managing agencies
White Pine Conservation District	∄ Provide expertise and assistance to private property owners.
Natural Resources Conservation Service	∄ Provide expertise and assistance to private property owners. ∄ Provide scientific description of soils and ecological sites.
University of Nevada Cooperative Extension	∄ Provide meeting facilitation for planning ∄ Provide educational and technical assistance as requested

Membership List – White Pine County Coordinated Resource Steering Committee

<i>Category</i>	<i>Primary</i>	Alternate	Concurrence
Conservation District	Tom Sanders		
County Commissioners	Dave Provost		
Eastern NV Landscape Coalition	Betsy MacFarlan		X
Economic Diversity	Karen Rajala		
Environmental	Dan Heinz		X
Family Recreation	Laurel Marshall		X
Farm Bureau	Rod McKenzie		X
Farm Services	Tyler Seal		X
Game Board	Steve Marich	Bill Miller	X
Mining			
Multiple-Use	Brent Eldridge		X
N-4 Grazing Board	Bill Davidson	Gracian Uhalde	X
Native Americans			
NV Dept of Agriculture	Gary McCuin	Chris Collis	X
NV Div of Forestry	Bill Wolf	Gary Nall	X
NV Dept of Wildlife	Larry Gilbertson	Steve Foree	X
NRCS	Tim Stack	Curt Leet	X
Outfitters & Guides	Thomas Brunson		
Power Interests			
Public At Large	Joe Anderson		X
Private Lands	Hank Vogler (Chairman)		X
Rocky Mountain Elk Foundation			
Sportsmen	Wade Robison	Bill Miller	X
UNR Cooperative Extension	Bob Wilson (Vice Chairman)	Sherm Swanson	X
US Forest Service	Kathy Johnson	Steve Schatch	X
USDA Wildlife Services	Kevin Lansford		X
USDOJ BLM	Gene Kolkman	Stephanie Connolly	X
USDA National Park Services	Kathy Billings	Tod Williams	X
Wild Horses	Richard Sewing	June Sewing	X
Secretary/Recorder	Alicia Hankins		

Membership List –White Pine County Sage Grouse Conservation Planning TRT

Category	Primary	Alternate
Bureau of Land Management	Mike Perkins	Paul Podborny
Conservation	Joseph Anderson	
Eastern Nevada Landscape Coalition	Betsy MacFarlan	
Economic Development Committee	Karen Rajala	
National Park Service	Neal Darby	
Native American Tribes	Cindy Marques	
Natural Resources Extension	Maria Ryan (Group Facilitator)	
Nevada Dept. of Wildlife	Curt Baughman	Larry Gilbertson
Private Land Owners	Bruce Eldridge, Mike Uhalde, Rod McKenzie	Floyd Rathbun (Range Consultant)
Public Land Use Advisory Committee	Bob Dickenson	
USDA Wildlife Services	Kevin Lansford	
US Forest Service	Kathy Johnson	
White Pine County Wildlife Advisory Board	Steve Marquez	
White Pine County Sportsmen	Randy Drew	
Secretary/Recorder	Theresa Hansen	

Maps of Plan Area and Individual PMUs

PMU Boundary Descriptions

Butte Valley/Buck Mtn./White Pine Range PMU: Those portions of Elko, White Pine and Nye counties bounded on the north by the Medicine Spring Road from the Ruby Valley CCC Road east then northeast between West and Delcer Buttes and southeast to the Butte Valley Road and US Highway 93, on the east by US Highway 93 between the Butte Valley turnoff and the Elko County line, the county line west to Goshute Lake, the bottom of Steptoe Valley from Goshute Lake south to the City of Ely and the crest of the Egan Range from Ely south to the Lincoln/White Pine County line, on the south by the Nye County line northwest to the base of the White Pine Range, the base of the range northwest back to the Nye County line, the county line northwest to a point south of Pogues Station, on the west by a line past Pogues Station along the crest of the Pancake Range to Pancake Summit and US Highway 50, the Sulphur Springs/Water Canyon Road, the bottom of Newark /Valley north to the Warm Springs Road, the central Huntington Valley Road northeast to the east Huntington Valley Bench Road, north on that road to the Overland Pass Road, on the north by the Overland Pass Road, the south Ruby Valley Road, the Mooney Basin Road, the Alligator Ridge Road, the east Long Valley Bench Road from the main Long Valley Road northeast past Nick Well to the Cabin Spring Road, that road east to the crest of the Butte Mountains and on the west by the crest of the Butte Mountains north to the summit and the Long Valley Wash Road, the Long Valley Wash Road and the Ruby Wash Road northwest to the Ruby Valley CCC Road and that road northeast to Medicine Spring.

Steptoe Valley/Cave Valley PMU (White Pine County Portion): That portion of White Pine County bounded on the north by a line bearing roughly east across Steptoe Valley and Success Summit to the crest of the Schell Creek Range at Cleve Creek Baldy, bounded on the east by the crest of the Schell Creek Range from Cleve Creek Baldy south across Highway 50 to the Lincoln county line on Mt. Grafton, bounded on the south by the Lincoln/White Pine County line from Mt. Grafton west to the crest of the Egan Range and bounded on the west by the crest of the Egan Range from that point north to the City of Ely.

Spring Valley/Snake Valley PMU: Those portions of White Pine and Lincoln counties bounded on the north by the lower section of the Kalamazoo Creek Road, State Route 893 north past its end to the junction of the North Spring Valley Road with the Utah/Warm Creek Ranch Road, east on that road to the east Spring Valley Bench Road, south on that road to the Third Butte Road, east on that road to the crest of the north Snake Range and the Marble Wash Road east to the Utah State Line, on the east by the Nevada/Utah State Line between that point and the Lincoln/White Pine County Line, on the south by the Lincoln/White Pine County line west to approximately Big Springs Wash, unimproved roads from there southwest to The Troughs and then northwest to the Lincoln/White Pine County line, the county line west to the Atlanta Mine Road, that road northwest to US Highway 93, the crest of the hills from the highway northwest to the crest of the Schell Creek Range and on the west by the crest of the Schell Creek Range from that point north to Kalamazoo Creek.

Schell Range/Antelope Valley PMU: That portion of White Pine County bounded on the north by the Elko County line between Goshute Lake and the Utah state line, on the east by the Utah state line, on the south by the Marble Wash Road west to the crest of the north Snake Range, the Third Butte Road west to the east Spring Valley Bench Road, north on that road to the Eldridge Ranch –Utah/Warm Creek Ranch Road, west on that road to State Route 893, south to the Kalamazoo Creek Road, the crest of the Schell Creek Range south to Cleve Creek Baldy and a line roughly west across Success Summit and Steptoe Valley to the City of Ely and on the west by the bottom of Steptoe Valley from Ely north to Goshute Lake and the Elko County line.

POPULATION ESTIMATE TABLES

THREAT MATRICES AND GUIDELINES

**BUTTE VALLEY/BUCK MTN. /WHITE PINE RANGE PMU
2003**

	Risk	Rating	Comments
1	Fire – too much	2	
2	Fire – too little	4	Pinyon/Juniper expansion – shrub maturation
3	Human-caused mortality (hunting & poaching)	2	Some areas have high levels of recreational/human use
4	Disease	1	West Nile? Anecdotal accounts of blue-wing
5	Pesticides	1	Some areas with ag. spraying may pose slight risk – effects to birds unknown
6	Laws/policies/regulations	4	
7	Livestock grazing – too much	2	Some high use area (meadows/riparian); partly attributable to PJ expansion
8	Livestock grazing – too little	2	Few areas of important SG habitat receive too little grazing
9	Wild horse grazing – too much	2	Some areas warrant higher risk rating
10	Wild horse grazing – too little	2	
11	Wildlife Grazing/Browsing too little	1	
12	Wildlife Grazing/Browsing too much	1	
13	Mining	1	Current activity limited to Buck and Bald Mtn areas. Historic activity in SG habitat is limited.
14	<i>Human impacts – direct (collisions with vehicles & structures)</i>	<i>1</i>	
15	<i>Human impacts – direct (shed hunting)</i>	<i>1</i>	May increase in future
16	<i>Human impacts – direct (off-road racing)</i>	<i>1</i>	
17	<i>Human impacts – direct (research & monitoring)</i>	<i>1</i>	
18	<i>Human impacts – direct (general recreation)</i>	<i>1</i>	Low intensity recreation. May be localized effects.
19	<i>Human impacts – direct (off-road vehicles)</i>	<i>1</i>	
	Human impacts – direct mean	1.0	
20	Human impacts – indirect (fences, windmills, utility lines – i.e. perches)	2	
21	Predation	2,3,4	No consensus reached concerning risks from predation
22	Insects – too many	1	Unknown
23	Insects – too few	1	Unknown
24	Climate/weather	4	
25	Water distribution	3	P/J expansion = reduced water flows, distribution poor in Butte V.
26	<i>H. Quantity (breeding)</i>	<i>1</i>	
27	<i>H. Quantity (nesting/early brood)</i>	<i>2</i>	P/J encroachment and decadent sagebrush
28	<i>H. Quantity (late brood)</i>	<i>3</i>	P/J encroachment and decadent sagebrush
29	<i>H. Quantity (winter)</i>	<i>1</i>	P/J encroachment and decadent sagebrush
	Habitat Quantity - Mean	1.75	
30	<i>H. Quality (breeding)</i>	<i>2</i>	
31	<i>H. Quality (nesting/early brood)</i>	<i>2</i>	P/J encroachment, poor forb component, high shrub density
32	<i>H. Quality (late brood)</i>	<i>4</i>	P/J encroachment, some riparian areas are in poor condition
33	<i>H. Quality (winter)</i>	<i>1</i>	
	Habitat Quality - Mean	2.25	
34	Weeds	2	Need more data on presence/absence
	TOTAL	46.0	

0 – No Risk/Not Applicable

1 – Minimal

2 – Low

3 – Moderate

4 – High

5 – Maximum

**SCHELL RANGE/ANTELOPE VALLEY PMU
2003**

	Risk	Rating	Comments
1	Fire – too much	1	
2	Fire – too little	4	Some areas a 5 due to P/J; Cheat grass present throughout PMU - consider it a risk with fire
3	Human-caused mortality (hunting & poaching)	3	Some small subpopulations and areas of high recreational use
4	Disease	1	West Nile? Blue Wing?
5	Pesticides	0	Unknown, but very little agriculture in PMU
6	Laws/policies/regulations	4	
7	Livestock grazing – too much	2	Some impacts on P/J encroached riparian areas
8	Livestock grazing – too little	2	Some areas are ungrazed
9	Wild horse grazing – too much	4	When horse numbers are above AML ; P/J limiting range
10	Wild horse/grazing – too little	1	
11	Wildlife Grazing/Browsing too much	2	Potential conflict areas between horses, livestock, deer and elk
12	Wildlife Grazing/Browsing too little	1	
13	Mining	0	No current activity
14	<i>Human impacts – direct (collisions with vehicles & structures)</i>	<i>1</i>	
15	<i>Human impacts – direct (shed hunting)</i>	<i>2</i>	High activity in specific areas
16	<i>Human impacts – direct (off-road racing)</i>	<i>1</i>	
17	<i>Human impacts – direct (research & monitoring)</i>	<i>1</i>	
18	<i>Human impacts – direct (general recreation)</i>	<i>2</i>	
19	<i>Human impacts – direct (off-road vehicles)</i>	<i>4</i>	Especially in Duck Creek Basin; Direct impacts to birds unknown
	Human impacts – direct mean	1.8	
20	Human impacts – indirect (fences, windmills, utility lines – i.e. perches)	2	Fences, power lines, increase in P/J
21	Predation	4	Based on presence of predators; need more data as to actual impacts
22	Insects – too many	1	
	Insects – too few	1	
23	Climate/weather	4	
24	Water distribution	4	Distribution suffering due to drought and PJ expansion
25	<i>H. Quantity (breeding)</i>	<i>3</i>	Risk due to P/J expansion, human impacts
26	<i>H. Quantity (nesting/early brood)</i>	<i>3</i>	Risk due to P/J expansion, human impacts
27	<i>H. Quantity (late brood)</i>	<i>4</i>	Loss of mesic sites due to P/J expansion
28	<i>H. Quantity (winter)</i>	<i>1</i>	
29	Habitat Quantity - Mean	2.75	
30	<i>H. Quality (breeding)</i>	<i>3</i>	Risk due to P/J expansion, human impacts
31	<i>H. Quality (nesting/early brood)</i>	<i>2</i>	
32	<i>H. Quality (late brood)</i>	<i>4</i>	P/J expansion
33	<i>H. Quality (winter)</i>	<i>1</i>	
	Habitat Quality – Mean	2.5	
34	Weeds	3	Cheatgrass, halogeton, Canada thistle; problem areas documented
	TOTAL	51.1	

0 – No Risk/Not Applicable

1 – Minimal

2 – Low

3 – Moderate

4 – High

5 – Maximum

**SPRING VALLEY/SNAKE VALLEY PMU
2003**

	Risk	Rating	Comments
1	Fire – too much	2	Leks lost to fire on east Schell Bench; currently strong cheatgrass component in burn areas
2	Fire – too little	3	
3	Human-caused mortality (hunting & poaching)	4	Small and isolated populations
4	Disease	1	Unknown – West Nile
5	Pesticides	2	Some ag. spraying in this PMU; no data on effects to birds
6	Laws/policies/regulations	4	
7	Livestock grazing – too much	1	
8	Livestock grazing – too little	2	Areas of ungrazed uplands
9	Wild horse grazing – too much	0	No horses in this PMU
10	Wild horse grazing – too little	0	No horses in this PMU
11	Wildlife Grazing/Browsing too much	1	
12	Wildlife Grazing/Browsing too little	1	
13	Mining	1	
14	<i>Human impacts – direct (collisions with vehicles & structures)</i>	<i>1</i>	
15	<i>Human impacts – direct (shed hunting)</i>	<i>1</i>	
16	<i>Human impacts – direct (off-road racing)</i>	<i>0</i>	
17	<i>Human impacts – direct (research & monitoring)</i>	<i>1</i>	
18	<i>Human impacts – direct (general recreation)</i>	<i>2</i>	
19	<i>Human impacts – direct (off-road vehicles)</i>	<i>1</i>	
	Human impacts – direct mean	1	
20	Human impacts – indirect (fences, windmills, utility lines – i.e. perches)	2	
21	Predation	4	
22	Insects – too many	1	
23	Insects – too few	1	
24	Climate/weather	4	
25	Water distribution	4	P/J expansion and drought
26	<i>H. Quantity (breeding)</i>	<i>4</i>	Limited by P/J, site potential and past fires
27	<i>H. Quantity (nesting/early brood)</i>	<i>2</i>	
28	<i>H. Quantity (late brood)</i>	<i>2</i>	
29	<i>H. Quantity (winter)</i>	<i>1</i>	
	Habitat Quantity – Mean	2.3	
30	<i>H. Quality (breeding)</i>	<i>2</i>	Need to rehabilitate east Schell Bench
31	<i>H. Quality (nesting/early brood)</i>	<i>2</i>	
32	<i>H. Quality (late brood)</i>	<i>2</i>	
33	<i>H. Quality (winter)</i>	<i>2</i>	
	Habitat Quality – Mean	2	
34	Weeds	2	
	TOTAL	45.3	

0 – No Risk/Not Applicable

1 – Minimal

2 – Low

3 – Moderate

4 – High

5 – Maximum

**STEPTOE/CAVE VALLEYS* PMU
2003**

	Risk	Rating	Comments
1	Fire – too much	1	Small infestations of cheatgrass monocultures
2	Fire – too little	4	Areas within PMU that warrant 5
3	Human-caused mortality (hunting & poaching)	2	Current harvest rates are low; few reports of poaching
4	Disease	1	Rating based on few data; there is anecdotal evidence of blue wing in the past
5	Pesticides	0	No agriculture in the area at the present time
6	Laws/policies/regulations	4	
7	Livestock grazing – too much	2	Rating based on P/J expansion; some areas with high use levels
8	Livestock grazing – too little	1	Rating based on small areas that may not be grazed
9	Wild horse grazing – too much	0	There are no wild horses in the planning area
10	Wild horse grazing – too little	0	There are no wild horses in the planning area
11	Wildlife Grazing/Browsing too much	2	Rating based on P/J expansion; some areas with higher use
12	Wildlife Grazing/Browsing too little	1	Rating based on small areas that may not be grazed
13	Mining	1	Very minimal impacts from past operation
14	<i>Human impacts – direct (collisions with vehicles & structures)</i>	2	Highway and County Roads in S. Steptoe Valley; minimal structures or traffic in Cave Valley
15	<i>Human impacts – direct (shed hunting)</i>	2	Increased cross-country OHV use may warrant a higher rating in the future
16	<i>Human impacts – direct (off-road racing)</i>	2	Increased cross-country OHV use may warrant a higher rating in the future
17	<i>Human impacts – direct (research & monitoring)</i>	2	Increased attention to bird could increase studies/monitoring impacts
18	<i>Human impacts – direct (general recreation)</i>	2	
19	<i>Human impacts – direct (off-road vehicles)</i>	2	Increased cross-country OHV use may warrant a higher rating in the future
	Human impacts – direct mean	2.0	
20	Human impacts – indirect (fences, windmills, utility lines – i.e. perches)	2	Possible increased opportunities for predators
21	Predation	5	Rating is based on few data; little predation has been observed, but a high number of predators (e.g., corvids) have been observed
22	Insects – too many	1	
23	Insects – too few	2	Need to determine brooding areas and assess insect abundance
24	Climate/weather	4	
25	Water distribution	2	
26	<i>H. Quantity (breeding)</i>	2	Partly attributable to lack of forbs
27	<i>H. Quantity (nesting/early brood)</i>	2	P/J density increasing so will increase risk in future
28	<i>H. Quantity (late brood)</i>	3	Partly attributable to P/J expansion and loss of springs
29	<i>H. Quantity (winter)</i>	2	Primarily attributable to presence of seedings
	Habitat Quantity – Mean	2.25	
30	<i>H. Quality (breeding)</i>	2	P/J expansion reducing available habitat
31	<i>H. Quality (nesting/early brood)</i>	4	P/J expansion reducing available habitat
32	<i>H. Quality (late brood)</i>	4	P/J expansion reducing available habitat
33	<i>H. Quality (winter)</i>	2	Primarily attributable to presence of seedings and P/J expansion
	Habitat Quality – Mean	3.0	Soil survey is needed to more accurately determine the importance of habitat quality as a risk
34	Weeds	1	Cave V. – R. knapweed, Hoary cress; Steptoe V. – S. & R knapweed; Tall whitetop; Hoary cress
	TOTAL	43.25	

0 – No Risk/Not Applicable 1 – Minimal 2 – Low 3 – Moderate 4 – High 5 – Maximum

* Ratings apply to the White Pine County portion of the Steptoe/Cave Valleys PMU

Guidelines for Rating the Risks to Sage Grouse Populations/Habitats for PMU Threat Matrix

Fire: Too Much Rate the risk presented by excessive or frequent wildfire.

Too Little Rate the risk posed by the lack of natural or prescribed fire.

Human Caused Mortality (Hunting and Poaching): To what degree does the direct harvest of Sage Grouse (legal & illegal) threaten the population?

Disease: To what degree does disease threaten the population?

Pesticides: To what degree does the use of pesticides threaten sage grouse or their food source?

Laws/Policies/Regulations: To what degree do Laws, Policies and Regulations threaten Sage Grouse Populations by limiting management actions that could benefit sagegrouse and their habitat?

Livestock Grazing: Too Much: Rate the risk to Sage Grouse and their habitat posed by inappropriately high levels of livestock grazing (overutilization, conflicting season of use, poor distribution).

Too Little: To what degree does an insufficient level of livestock grazing threaten Sage Grouse and their habitat?

Wildlife Grazing/Browsing: Too Much: Rate the risk to Sage Grouse and their habitat posed by inappropriately high levels of grazing/browsing (overutilization, conflicting season of use, poor distribution) caused by other wildlife.

Too Little: To what degree do insufficient levels of grazing/browsing by other wildlife threaten Sage Grouse populations and habitat?

Wild horse Grazing: Too Much: Rate the risk to Sage Grouse and their habitat posed by inappropriately grazing (overutilization, conflicting season of use, poor distribution) by wild horses.

Too Little: To what degree do insufficient levels of grazing/browsing by wild horses threaten Sage Grouse populations and habitat?

Mining: To what degree does mining activity threaten Sage Grouse populations and their habitat?

Human Impacts – Direct: Rate the threats to Sage Grouse presented by direct factors such as collisions with vehicles and structures, physical disturbance, research and monitoring, various human activities in Sage Grouse habitat, etc. *List, rate and average.*

Human Impacts – Indirect: Rate the threats to Sage Grouse and their habitat posed by indirect impacts such as power lines, fences, roads, realty actions, predation, misc. development and various human activities in Sage Grouse habitat.

Predation: To what degree is predation a threat to the Sage Grouse population?

Insects – Too Many: To what degree do insect infestations threaten Sage Grouse and their habitat?

Too Little: To what degree does a lack of insects threaten Sage Grouse or their habitat?

Climate/Weather: Rate the threat to Sage Grouse and their habitat presented by climate and weather.

Water Distribution: To what degree is present water distribution a threat to the Sage Grouse population.

Habitat Quantity: Rate the threat to the Sage Grouse population posed by limited habitat quantity.

Rate each and average

- Breeding
- Nesting/Early Brood
- Summer/Late Brood
- Winter

Habitat Quality: Rate the threat to the Sage Grouse Population posed by limited habitat quality.

Rate each and average

- Breeding
- Nesting /Early Brood
- Summer/Late Brood
- Winter

Weeds: To what extent do noxious and invasive weeds threaten Sage Grouse habitat?

ASSUMPTIONS FOR USE OF R-VALUES IN HABITAT CLASSIFICATION

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

The assumptions used to develop the categorization acreages apply only to soils with the potential to sustain a sagebrush-dominant overstory. (These assumptions apply to the big sagebrush and low sagebrush types, and are not intended to apply to such vegetation types as, for example, Pygmy sagebrush and Bud Sagebrush). Soils which do not have such potential (e.g. shadscale zones, etc.) are not included in these assumptions, because they do not apply to sage grouse habitat. It is understood that a particular “habitat condition” does not imply “habitat suitability” as may be demonstrated by varying degrees of sage grouse use. For example, an area may be categorized as R0 by this rating system, even though sage grouse do not occupy the area, for whatever reason. Likewise, an area designated as R-2 (or R-1, or R-3){Restoration Value 1,2,3,4} does not automatically imply a need to make changes to the habitat. However, we expect to use the assumptions below to help understand potential risk factors; facilitate the development of pro-active management treatments and strategies; possibly develop incentives for land users and managers to change their management techniques, goals, or strategies; and support inventory, assessment, and monitoring decisions related to implementation of an adaptive management approach to future decision making.

The habitat categorization (rating) resulting from application of these assumptions during the assessment process does not automatically preclude or prescribe any particular management decision relative to the uses and management techniques, systems, or applications on the ground (e.g. A seeding with sufficient sagebrush “encroachment” to classify the area as R1 – “Areas with limited sagebrush with acceptable grass and forb understory composition” does not preclude maintenance of the seeding for its original intended purposes, and/or to maintain the understory species. Likewise, an area categorized as R1 habitat may contain important lek areas, which require short or low-density sagebrush cover).

The Sage Grouse Planning Group expects that the federal agencies, Native American tribes, state agencies, and individuals involved in the management and use of the public lands and forest lands will follow a process of cooperation, coordination, and consultation in the application of any management decision.

Finally, the habitat categorization described is fluid in nature. It provides guidance for: 1) initial categorization; and 2) protocol for changing such categorization as data becomes available, and/or as certain successional changes or disturbances may occur. The areas/acreage categorized are expected to change in both the short and long term as unpredictable disturbances occur, additional data is collected, and/or new knowledge is obtained about the habitat requirements of sage grouse. For example, an area that is categorized as “R0 Quality Habitat” in one year, may burn the next year, placing it into another category.

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

As used here:

- ≠ **Quality Habitats (R0): Areas of intact sagebrush dominated habitats with good understory components. Meets the acceptable criteria for both sagebrush canopy and grass/forb understory. High priority habitats for protection.**
- ≠ **Restoration Habitats: Areas that currently are, historically were, or potentially could be Sage Grouse habitat, and that if restored, would provide better habitat at sometime in the future.**

R1: Areas with limited sagebrush, with acceptable grass and forb understory composition. May include native and seeded perennial grass rangelands.

R2: Areas with inadequate grass/forb understory composition, adequate sagebrush cover. Expensive management treatments are needed for restoration.

- ≠ **R2a: Decadent Sagebrush; cover exceeds the recommended levels.**

- ≠ **R2b: Areas where perennial or annual invasive species are present and will likely establish and dominate after a disturbance event. The site is at risk, but the threshold has yet to be crossed.**

R3: Areas where the Pinyon and Juniper component is increasing even though the potential natural community of the site is sagebrush dominated. These are sagebrush sites, not natural woodland sites that predominately favor trees.

- ≠ **R3a: Phase II of tree take over. Small trees of low density, with intact sagebrush/grass/forb understory. High management priority for alteration/maintenance.**

- ≠ **R3b: Areas where tree density has eliminated sagebrush, grass/forb understory. Where this threshold has been crossed, management options are expensive and limited.**

R4: Areas where sagebrush communities have been type converted through natural or manmade disturbance to annual or perennial grasslands/forbs (could be bare and fallow ground). Potential sagebrush habitats for restoration. If on private ground, only at the discretion of the landowner.

“Potential to increase” means that a static state has not been reached, and the brush can be expected to increase on the site through natural reproduction (e.g. has a nearby or on-site seed source, is not out-competed by annuals and/or seeded species, etc.).

“Good condition understory species composition relative to seasonal needs of the species” mainly pertains to nesting/early brood and late brood rearing habitats. Understory species composition is less critical to the needs of the species in winter habitat, as the diet of sage grouse is sagebrush leaves at this time of year.

ASSUMPTIONS:

ANNUAL GRASSLANDS

ASSUMPTION A-1.

For all seasonal habitats, areas shown in the GIS data base as dominated by annual grasses are initially assumed “Restoration stage-4”.

ASSUMPTION A-2.

STAGE-1).

For all seasonal habitats, areas shown in the GIS data base as dominated by annual grasses, but which are demonstrated by field data to exhibit attributes suitable to other categorizations discussed here, will be re-categorized as appropriate (e.g., an area which is demonstrated to have substantial perennial grasses will be re-categorized as restoration

Native range:

ASSUMPTION N-1.

In winter habitat, all areas shown in the GIS data base initially (2002) to have sagebrush canopy, regardless of understory or with unknown ecological condition, are assumed to be restoration stage 0.

ASSUMPTION N-2.

In nesting and late season habitat, areas shown in the GIS data base initially (2002) to have sagebrush canopy, and shown to be in “late seral” or “potential natural community (pnc)” will be categorized as restoration stage 0.

ASSUMPTION N-2a.

Where field data demonstrate these areas to not have good understory species composition relative to seasonal needs, the areas will be categorized as “Restoration Stage-2”.

ASSUMPTION N-3.

In nesting and late season habitat, areas shown in the GIS data base initially (2002) to have sagebrush canopy and shown to be in “mid seral” or “early seral” ecological condition are initially assumed to be “restoration stage-2” habitat.

ASSUMPTION N-3a.

Where field data demonstrates such areas to have good understory species composition relative to seasonal needs, the areas will be categorized as restoration stage 0 (e.g. areas which may have been rated as mid seral or early seral due to production, rather than species composition).

ASSUMPTION N-4.

In nesting and late season habitat, areas shown in the GIS data base initially (2002) to have sagebrush canopy but with unknown ecological condition will be categorized as “unknown”. As field data becomes available, these areas will be placed in the appropriate category according to these assumptions.

SEEDINGS:

ASSUMPTION S-1.

For all seasonal habitats, areas initially (2002) shown as seedings in the GIS data base are initially assumed to be “restoration stage-1” habitat.

ASSUMPTION S-1a.

Where field data demonstrate these areas to have failed to establish to the seeded species, the areas will be categorized in whole or in part as “restoration stage-4” habitat.

ASSUMPTION S-1b.

For winter habitat, where field data demonstrates the areas to have at least 5% sagebrush cover with potential to increase, regardless of understory composition, the areas will be categorized as restoration stage 0.

ASSUMPTION S-1c.

For nesting and late season habitat, where field data demonstrates the areas to have at least 5% sagebrush cover with potential to increase, and which have a good understory species composition relative to seasonal needs, the areas will be categorized as restoration stage 0.

ASSUMPTION S-1d.

For nesting and late season habitat, where field data demonstrates these areas to have at least 5% sagebrush cover with potential to increase, and which do not have a good understory species composition relative to seasonal needs, the areas will be categorized as “restoration stage-2”.

BURNS:

ASSUMPTION B-1.

For all seasonal habitats, areas shown as burns in the GIS data base, are initially assumed to be “restoration stage-4” until management actions or field data demonstrate a change in categorization is warranted.

ASSUMPTION B-1a.

For all seasonal habitats, where field data demonstrates these areas to have a good understory species composition, the areas will be categorized as “restoration stage-1”.

ASSUMPTION B-1b.

For winter habitat, where field data demonstrates these areas to have at least 5% sagebrush cover with potential to increase, regardless of understory, the areas will be categorized as restoration stage 0.

ASSUMPTION B-1c.

For nesting and late season habitat, where field data demonstrate these areas to have at least 5% sagebrush cover with potential to increase, and have a good understory species composition relative to seasonal needs, the areas will be categorized as restoration stage 0.

ASSUMPTION B-1d.

For nesting and late season habitat, where field data demonstrate these areas to have at least 5% sagebrush cover with potential to increase, but do not have a good understory species composition relative to seasonal needs, the areas will be categorized as “restoration stage-2”.

ASSUMPTION B-2.

For all seasonal habitats, areas shown as burns in the GIS data base, areas which are seeded following wildfire will be categorized under the seeding assumptions outlined above.

ASSUMPTION B-3.

For all seasonal habitats, areas shown as burns in the GIS data base, where field data demonstrates the areas to have recovery of native species, will be categorized under the native assumptions outlined herein.

PINYON/JUNIPER VEGETATION TYPES:

ASSUMPTION PJ-1.

Areas initially shown as dominated by pinion/juniper in the GIS data base are assumed to be “restoration stage-3”.

ASSUMPTION PJ-2.

Future categorization of any types converted from pinion/juniper dominance will follow the categorizations set out under “native range”, “seedings”, or “burns”, depending upon the treatment selected for conversion.

ASSUMPTION PJ-3.

Areas initially shown as dominated by pinion/juniper in the GIS data base which are determined to be “woodland” ecological type will be de-categorized from sagebrush-potential habitat, and will be removed from “restoration stage-3”.

Project Summaries

Project Summary Worksheet

PMU Name: *Spring/Snake Valleys*

Description of the Conservation Action:

Restoration of Sagebrush and Perennial Bunchgrass (steppe) Vegetation Communities in Great Basin National Park.

Risk Being Mitigated by the Proposed Action: Pinyon has expanded and increased in density on historical sagebrush steppe vegetation communities, which once supported seasonal use by sage grouse. Canopy cover of pinyon approaches 60 percent while remnant sagebrush and herbaceous vegetation currently comprise less than one percent. The reason for pinyon expansion is likely due to lack of fire.

Objectives:

- ⊘ Restore ~6,000 acres of Pinyon and juniper encroached sagebrush steppe communities.
- ⊘ Use mechanical thinning of pinyon to reduce canopy cover, promote expansion of remnant sagebrush and native herbaceous vegetation, and reduce fuel continuity to reduce threat of catastrophic fire.
- ⊘ Reintroduce fire as a natural disturbance to maintain and further enhance sagebrush steppe and savannah communities.
- ⊘ Restore and enhance faunal communities associated with sagebrush steppe and savannah communities.

Rationale: Dense canopy cover of pinyon has virtually eliminated understory shrub and herbaceous species. However, some pockets of remnant understory shrubs and herbaceous vegetation persist in isolated pockets. Mechanical thinning is focused on these pockets to “release” the remnant understory vegetation so as to create a greater seed source of locally adapted, native plants. Also, because of the extensive pinyon canopy cover, catastrophic crown fires are probable. Restoration of shrubs and herbaceous vegetation from what little seed source is available is extremely difficult and costly to re-establish after such fires. By creating pockets and re-establishing understory vegetation within each pocket, canopy continuity would be broken reducing the threat of catastrophic fire and making it more likely to conduct controlled burns. Because understory vegetation will be established in pockets, a seed source would be available for adjacent nontreated sites.

Project Description: Former sagebrush steppe communities were delineated through historical records and soils potential native vegetation community information. Approximately 15,000 acres were identified of which 6,000 acres was determined to be formerly sagebrush steppe. Areas are distributed along the periphery of the park between 6500 and 8,500 feet elevation. Currently, the primary focus is on the Baker and Lehman Creek flats below the park visitor center. A walk-through to find patches of existing native shrub and herbaceous understory vegetation was initiated and mapped. Mechanical thinning will target these areas by reducing tree density and canopy cover to “release” the understory. Trees are mechanically thinned to zero percent canopy cover within a thirty-meter radius and < 30 percent canopy cover between 30 and 100 meters. Special habitat features for sensitive wildlife species were also targeted. Slash material is chipped on site to help control cheatgrass. Eventually, after understory release and production, prescribed fire will be used to further open the canopy over larger acreages. Extensive monitoring to include pretreatment and post-treatment monitoring of vegetation, reptiles, birds, and mammals is being done to evaluate effectiveness.

Legal Authority: All lands are completely within Great Basin National Park and are under the authority of the National Park Service.

Procedural Requirements: All NEPA compliance has been secured for the mechanical treatments. A park wide fire management plan and Environmental Assessment will be completed by July 2004.

Funding Source: Funding is currently through Wildland Urban Interface fuels reduction program and Park base funds. Further funding has been secured through internal Park Service project funds through 2006. Similar funds will be pursued to continue the program.

Implementation Process:

- ∅ FY2003 – Identify sites for mechanical thinning. Conduct pre-treatment monitoring of tree, shrub and herbaceous species density and cover. Initiated mechanical thinning on 30 acres.
- ∅ FY2004 – Continue pre-treatment monitoring on vegetation and small mammals, herptiles and birds. Mechanically thin 50 acres and distribute wood chips and reseed as necessary.
- ∅ FY2005 – Continue pre-treatment monitoring. Mechanically thin 50 acres and distribute wood chips and reseed as necessary. Begin post-treatment monitoring on treated sites.
- ∅ FY2006 – Pursue major funding using monitoring data as justification to begin treatment of 200 acres or more.
- ∅ FY2007+ – Introduce prescribed fire through treated areas, dependent on understory response to mechanical treatment. Expand treated areas through fire so as to remove tree cover on 300 plus acres. Monitor results and shrub and herbaceous species distribution.

Project Area Locations: Lehman Flats is located at T13N R69E Sec. 9-10 and Baker Flats is located at T13N R69E Sec. 15.

Proposed Conservation Strategy Summary Worksheet

Butte Valley/Buck Mtn/White Pine Range PMU

Description of the Conservation Action:

Currant Creek Research Study – this study is to help develop a comprehensive experiment that will evaluate the effects of fire, fire surrogate, and restoration treatments intended to improve the ecological condition of sagebrush communities. Areas within Oregon, Idaho, Nevada, and Utah will be studied.

Risk being mitigated by the Proposed Action:

The risk factors for lack of fire and the quality of late brood rearing habitat was rated as high (4) for this PMU because of pinyon/juniper encroachment. The area is approximately eight miles from a known lek.

Objectives:

Project would be a research project with the Rocky Mountain Research Station with Robin Tausch. Approximately 1,000 acres of Pinyon-Juniper would be treated. It is planned to implement this project in 2006.

Rationale:

To restore the sagebrush habitat that has been encroached upon by pinyon-juniper.

Project Description:

The project area will cover 1,000 acres. Several treatments will be used in paired plots. One plot will have mechanical treatment with one half seeded and the other not seeded. One plot will receive prescribe fire with one half seeded and the other half not seeded.

Legal Authority:

The project area occurs on the Humboldt National Forest

Procedural Requirements:

Projects are within the management responsibility of the Ely Ranger District, Humboldt-Toiyabe national Forest and will follow USFS policies and procedures for project implementation.

Funding Source:

1. Rocky Mountain Research Station - before and after monitoring.
2. Project implementation - U.S. Forest Service – subject to funding approval.

Implementation Process:

1. Chose site and write Categorical Exclusion for a Research Project in 2004.
2. Set up plots and do before project monitoring in 2005.
3. Project implementation in 2006.
4. Post project monitoring would begin in 2007.

Project Area Location:

The Currant Creek area is within the White Pine Mountains, east of the Currant Creek Wilderness Area.

Proposed Conservation Strategy Summary Worksheet

Butte Valley/Buck Mtn./White Pine Range PMU

Description of the Conservation Action:

Three to four spring improvement projects are scheduled for the summer of 2004 in the White Pine Mountains (Hidden Springs, Secret Springs, Horse Track Spring, Ellison Spring and Creek). Additional spring areas are proposed for 2005.

Risk being mitigated by the Proposed Action:

The risk factors for lack of fire and the quality of late brood rearing habitat were rated as high (4) for this PMU because of pinyon/juniper encroachment. Water distribution was rated as moderate (3) due to pinyon/juniper expansion resulting in reduced water flows.

Objectives:

Improve spring flow and water availability along with improving riparian and upland habitat.

Rationale:

Limited brood rearing by Sage Grouse occurs in these areas. Late brood rearing habitat would be improved with increased water flows, the removal of trees and expansion of treeless sagebrush habitat adjacent to riparian areas.

Project Description:

This project consists of mechanical treatments to remove pinyon and junipers trees in the vicinity of springs to improve spring flow and water availability and improve spring outflow wetlands habitat. The limbs will be removed and scattered. The boles of the trees will be removed from the site.

Legal Authority:

All occur on the Humboldt National Forest

Procedural Requirements:

Projects are within the management responsibility of the Ely Ranger District, Humboldt-Toiyabe National Forest and will follow USFS policies and procedures for project implementation.

Funding Source:

National Forest appropriated dollars for FY 2004 and in planning process for 2005.

Implementation Process:

1. Schedule Heritage and Biological surveys.
2. Complete Categorical Exclusion.
3. Implement project.
4. Monitor for 2 years.

Project Area Locations:

Hidden Springs, Secret Springs, Horse Track Spring, Ellison Spring and Creek

1. Hidden Springs: T.11 N., R.59 E., Sec 2, NE ¼
2. Secret Springs: T. 11 N., R. 59 E., Sec. 1, SE ¼
3. Horse Track Springs: T. 12 N. R. 59 E., Sec 23, NW ¼
4. Ellison Spring and Creek: T. 13 N., R. 58 E. Sec. 12

Proposed Conservation Strategy Summary Worksheet

*Steptoe/Cave Valley, Butte/Buck Mtn/White Pine Range, Quinn, Spring/Snake Valley, and Schell Range/
Antelope Valley PMUs*

Description of the Conservation Action:

Beginning in 2005 the Ely Ranger District will start work on Environmental Impact Statements to review all the range allotments on the district.

Risk being mitigated by the Proposed Action:

Range standards will be updated to provide for sage grouse.

Objectives:

Evaluate the grazing allotments on the district and develop revised Allotment Management Plans.

Rationale:

Some Allotment Management Plans have not been revised in many years. This is an attempt to bring all plans up to date.

Project Description:

The field work for the allotments in the White Pine and Grant-Quinn Ranges will start in 2005 and an EIS completed in 2007. This portion will cover the following allotments:

White Pine Range - Illipah, Treasure Hill, Blackrock, Tom Plain, Ellison Basin, and Currant Creek Allotments.
Grant-Quinn Ranges - Irwin Canyon, Troy Peak, Hooper Canyon, Cherry Creek, Big Creek, and Pine Creek/Quinn Canyon Allotments.

The field work for the allotments in the Schell Creek, Mount Moriah, South Snake Ranges, and Ward Mountain will start in 2006 and an EIS completed in 2008. This portion will cover the following allotments: Schell Creek Range - Seigel Creek, Queen Springs, Ruby-Mattier, Fitzhugh, Muncy Creek, Second Creek, Timber Creek, Piermont, McCoy Creek, Berry Creek, Taft Creek, Cleve Creek, Duck Creek, Boneyard, Steptoe, and Cooper Wash.

North Snake Range– Ryegrass and Silver Creek.

South Snake Range - Strawberry Creek, Shingle Creek, and Murphy Wash.

Ward Mountain - West Ward, East Ward, and Terrace.

Legal Authority:

All of the allotments occur on National Forest System Lands.

Procedural Requirements:

Allotments are within the management responsibility of the Ely Ranger District, Humboldt-Toiyabe national Forest and will follow USFS policies and procedures.

Funding Source:

U.S. Forest service – subject to funding approval.

Implementation Process:

Proposed Conservation Strategy Project Summary Worksheet

PMU Name: Steptoe/Cave Valley

Description of the Conservation Action:

The proposed action is to conduct prescribed fires, construct greenstrips and install temporary fencing in the Bullwhack Basin on the north end of the Cave Valley watershed. Acres of each treatment would be as follows: 1,320.68 acres of prescribed burning, 17.4 miles of greenstrips, and 3.25 miles of temporary fence. Project is intended to reduce the threat of catastrophic fire impacting the whole of the Bullwhack Basin by breaking up the continuity of the fuels. Prescribed fire treatments would create areas where vegetation is dominated by native grasses and forbs. Future additional burning in the Bullwhack Basin would likely occur to continue the process of opening up the continuous sagebrush stand and reduce the impacts of future fires.

Greenstrips would be constructed using a combination of mechanical and manual methods depending on the principal fuel type involved (e.g., areas with trees (pinyon/juniper encroachment) = mechanical + manual, areas without trees = mechanical). Greenstrips would be constructed to create 400-foot wide breaks in areas without trees and 600-foot wide breaks in areas with trees. Roadside greenstrips would be set back from the road a minimum of 50 feet to reduce the risk of noxious weeds. Green strips would be aligned with existing roads, but edges would be designed to reduce the linear nature of this type of disturbance.

Risk Being Mitigated by the Proposed Action: The lack of fire in the Bullwhack basin has allowed pinyon/juniper to encroach upon nesting and broodrearing habitats. Quality nesting habitats exist in this area of the PMU and greenstripping the habitats would greatly reduce the occurrence of a large fire eliminating these habitats. Prescribed fire would reduce the amount of pinyon/juniper encroachment taking place on these habitats.

Objectives:

1. Prescribed burns are implemented so as to create numerous small irregular sized holes or patches within the total treatment unit reducing pinyon/juniper encroachment, decadent sagebrush density and improving perennial grass and forb densities.
2. No more than 20% of individual burned holes or patches are greater than 75 acres.
3. Burn holes and patches are irregularly shaped

Livestock grazing use would not be scheduled after June 15 on the year of the burns. Grazing use would not be scheduled in burn treated pastures for a minimum of two years following treatment or until recovery objectives are achieved. Livestock grazing control would be maintained through grazing schedule management and water management. In greenstrip treated pastures, livestock grazing would be allowed after seed-ripe the next year after treatment. Two burn blocks would be selected for prescription livestock trailing immediately following the treatment to disturb the soil surface and facilitate micro-habitat creation for plant establishment. After this initial disturbance, livestock would be actively discouraged from using the burns until recovery is achieved. One days trailing through the burns would be allowed to facilitate access to adjacent allotments entering and exiting the adjacent allotments

Rationale: Habitat in this area of the Steptoe/Cave Valley PMU is mountain big sagebrush and Wyoming sagebrush with a good understory of perennial grasses and forbs. The habitats do have decadent sagebrush and much is encroached by pinyon/juniper trees. By treating these areas with prescribed fire, additional nesting and broodrearing habitats will be available within the PMU.

Project Description: The project area is between T. 11 & 12N., R. 63 &64 E in the Ely BLM field office jurisdiction in northern Cave Valley in the Bullwhack Summit area. Prescribed fire, greenstrip construction and temporary fencing will be used to complete the project.

Legal Authority: The proposed project is not specifically identified in the Egan Resource Management Plan, but is in conformance with the approved decisions of this plan. The project is consistent with the goals and objectives of the White Pine County Sage Grouse Conservation Plan. The project is also consistent with the White Pine County Land Use Plan.

Procedural Requirements: The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities; the project is consistent with the goals and objectives of the White Pine County Sage Grouse Conservation Plan. The project was scoped with an interdisciplinary team, NEPA analysis has been accomplished and the project would be inspected and monitored during implementation.

Funding Source: The funding for the project is coming from Fuels Reduction Funds of The Bureau of Land Management fire program.

Implementation Process: The project will commence implementation during the spring/summer 2004.

Proposed Conservation Strategy Project Summary Worksheet

PMU Name: Steptoe/Cave Valley

Description of the Conservation Action: The proposed action is to establish a field trial site in the South Steptoe Valley Watershed. The field trial site would be approximately 244 acres in size. The field trial would consist of mechanical disturbance of the existing crested wheatgrass seeding followed by seeding of the area. Seed mix would consist entirely of native grass and forb species. The trial area would provide a comparison of the effects of various mechanical disturbance implements within a crested wheatgrass seeding.

Risk Being Mitigated by the Proposed Action: Habitat quality, both nesting and brood rearing is a high risk in this PMU. There are many crested wheatgrass seeding in this PMU. This project is a field trail project to see what the effect of seeding of native forbs and grasses into an existing crested seeding would have.

Objectives: The objective(s) of this project are to determine the best mechanical method to increase perennial grass and forb density in an established crested wheatgrass seeding that is being invaded with sagebrush.

Rationale: Many crested wheatgrass seedings were established in the early 1970's and are beginning to transition back to sagebrush sites as sagebrush reinvades the site. The increase in sagebrush is a desirable development for sage grouse, as many of the historical seedings were constructed within crucial sage grouse nesting and brood rearing habitat. However, substantial use of these areas by brooding sage grouse does not occur due to the lack of cover and herbaceous forage. Conducting this field trail will give land managers information on the most expedient method which to use to establish perennial grass and forbs into large seedings to be more acceptable habitat for sage grouse. In addition, many past fire rehabilitation projects utilized crested wheatgrass as a tool to inhibit invasive species, such as cheatgrass from gaining a foothold. These areas are also typically lacking in forbs and native grasses as a result of either the initial disturbance, or past grazing practices prior to initial disturbance. An effective means of bringing native grasses and forbs back to these areas is therefore a valuable detail, which could be used to aid both public and private decision-makers in restoring ecological function of rangelands in Eastern Nevada.

Project Description: The project is located in south Steptoe Valley; T. 14 N., R. 64 E. The proposed action would investigate whether or not one method for disturbing a crested wheatgrass seeding is effective at creating an environment for establishing forbs and native grasses. The project area is currently fenced into two areas; one pasture and one holding pen. The proposed action would utilize areas of the pasture and the entirety of the holding pen. Livestock grazing would be discouraged through water management within the pasture areas, and the holding pen would not be used at all for the first year, then use would be allowed for a one to two day period thereafter for the duration of the research phase of the project (approximately three years). Permittee would be allowed one day's use in the gather pen each year in the fall after seed shatter to facilitate livestock management.

In each of the two areas, the following different implements would be used in a series of randomized plots: rangeland drill, broadcast seeding, broadcast seeding followed by land imprinter, broadcast seeding followed by Dixie harrow, and Dixie harrow followed by broadcast seeding.

Legal Authority: The proposed project is not specifically identified in the Egan Resource Management Plan, but is consistent with the approved decisions of this plan. The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities. The project is also consistent with the White Pine County Land Use Plan.

Procedural Requirements: The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities, The project is consistent with the goals and objectives of the White Pine County Sage grouse Conservation Plan. The project was scoped with an interdisciplinary team, NEPA analysis has been accomplished and the project will be inspected and monitored during implementation.

Funding Source: The funding for the project is coming from Fuels Reduction Funds of The Bureau of Land Management fire program.

Implementation Process: The project will commence implementation during the spring/summer 2004.

Proposed Conservation Strategy Project Summary Worksheet

PMU Name: Butte Valley/Buck Mountain/White Pine Range

Description of the Conservation Action: The proposed action is to mechanically thin approximately 800 acres of rangelands in the Gleason Creek watershed. Proposed action would remove live trees down to a prescribed density of not more than ten trees per acre. This treatment would remove the encroached pinyon/juniper and release the sagebrush, perennial grass and forbs to once become productive again. The Gleason creek watershed is nesting/brood rearing habitat that has become encroached by pinyon/juniper.

Risk Being Mitigated by the Proposed Action: A lack of fire in this PMU has lead to expansion of pinyon/juniper into sagebrush habitats reducing their vigor and production.

Objectives: The main objective of this project is to increase sagebrush/perennial grass/ forb production in this part of the Gleason creek watershed.

Rationale: By removing overstory pinyon and juniper in this portion of the Gleason creek watershed, which is nesting/brood rearing habitat for sage grouse, additional nesting and brood rearing habitat, will be come available to sage grouse.

Project Description: Trees would be cut using a “masticator” type instrument. Resulting large chunks of wood and branches would be left on the site. Project implementation would not occur during migratory bird nesting period without necessary surveys. A pygmy rabbit survey would be conducted on a sample of potentially suitable habitat to detect the presence of this species. Seeding of the area would not be necessary. Approximately 1.53 miles of temporary fence would be constructed. No new roads would be developed. Major trails created during implementation would be rehabilitated at the conclusion of the project.

Legal Authority: The proposed project is not specifically identified in the Egan Resource Management Plan, but is consistent with the approved decisions of this plan. The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities. The project is also consistent with the White Pine County Land Use Plan.

Procedural Requirements: The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities, The project is consistent with the goals and objectives of the White Pine County Sage grouse Conservation Plan. The project was scoped with an interdisciplinary team, NEPA analysis has been accomplished and the project will be inspected and monitored during implementation.

Funding Source: The funding for the project is coming from Fuels Reduction Funds of The Bureau of Land Management fire program.

Implementation Process: The project will commence implementation during the spring/summer 2004.

**Proposed Conservation Strategy
Project Summary Worksheet**

PMU Name: Project in two PMU’s – Steptoe/ Cave Valley & Butte Valley/Buck Mountain/White Pine Range

Description of the Conservation Action: The proposed action is to construct fuel breaks using mechanical methods in two areas totaling approximately 870 acres, and construct temporary fence totaling 4.4 miles. One project area is located in the South Steptoe Valley Watershed, and the other project area is located in the Jakes Wash Watershed unit of the North White River Valley. Both project areas are within Condition Class 3 and Fire Regime group III.

The two project areas are divided into three treatment sites. Site 1 is a Wyoming big sagebrush stand in the South Steptoe Valley Watershed and comprises approximately 174.2 acres within three soil-mapping units (SMU). Sites 2 and 3 are both located within the Jakes Wash Watershed unit of the North White River Valley. Site 2 is a Wyoming sagebrush community and comprises approximately 615.3 acres within three SMUs. Site 3 is a pinyon/juniper encroached Wyoming sagebrush alluvial fan and comprises approximately 79.1 acres within two SMUs. The following are the approximate acreages by SMU for each of the treatment sites

Site	Soil Mapping Unit Numbers				
1	282 50	1141 107./3	1282 16.9	1340	33
2				140	37
3					50

Sites 1 and 2 would be treated using a land imprinter while treatment site 3 would be prescribed burns.

Within Sites 1 and 2, several smaller study plots would be established. Within these study plots, a variety of randomized mechanical treatment techniques would be replicated. The following different treatments would be used in the randomized study plots: rangeland drill, broadcast seeding, broadcast seeding followed by land imprinter, broadcast seeding followed by Dixie harrow, and Dixie harrow followed by broadcast seeding.

The study plots would allow for a direct comparison of selected treatment combinations to the principal land imprinter treatment (land imprinter). Each of the mechanical treatment areas would be partially fenced to provide for a comparison of effects of treatments with and without livestock grazing. Livestock use in the “grazed” side would not be specifically scheduled for grazing use for three years or until resource objectives are achieved. Livestock operator would be instructed to avoid the area through passive techniques such as water management. Some livestock use would be expected as animals drift in and out of the treatments. If utilization by livestock proves unmanageable, additional fencing would be constructed totaling an additional 3 miles approximately.

Seeding treatment would utilize only native species of grasses and forbs. Within the overall project areas, not all of the treatment areas would be treated. A mosaic pattern of treated and untreated vegetation would be left to reduce visual impacts. All treatment areas would be monitored over time to measure results for comparison of different treatments and baseline surveys of pre-treatment vegetation parameters would be conducted.

Site 3 would be prescribed burned after the mechanical treatment of the adjacent site is completed. Following burning, the site would be broadcast seeded. Burning would occur during periods when environmental conditions would facilitate safe operations and achievement of objectives. Limited site prep to include hand cutting of trees along the north and east sides of the block would be necessary. Fences would be designed to wildlife specifications and would remain in place for a minimum of five years after construction. Target for implementation would be for all treatments to be completed within the same calendar year. Fencing would be scheduled immediately after all treatments are complete. Livestock permittee would be assigned maintenance of the fences.

Risk Being Mitigated by the Proposed Action: Pinyon/juniper encroachment as well as decadent non-productive sagebrush was identified in both PMU's as reducing the quality and quantity of habitat available for grouse.

Objectives: Reduce pinyon/juniper in sagebrush/perennial grass sites and determine which methodology is most efficient at rejuvenating decadent non-productive sagebrush/perennial grass sites.

Rationale: By removing overstory pinyon and juniper and treating decadent sagebrush in these areas of the PMU's, additional nesting/brood rearing habitat for sage grouse would become available.

Project Description: The project in Steptoe Valley is located in T. 13 N., R. 62 E. The projects in the Butte Valley, Buck Mountain White Pine Range PMU are located at T. 12 N., R. 62 E. Within these study plots, a variety of randomized mechanical treatment techniques would be replicated. The following different treatments would be used in the randomized study plots: rangeland drill, broadcast seeding, broadcast seeding followed by land imprinter, broadcast seeding followed by Dixie harrow, and Dixie harrow followed by broadcast seeding.

Legal Authority: The proposed project is not specifically identified in the Egan Resource Management Plan, but is consistent with the approved decisions of this plan. The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities. The project is also consistent with the White Pine County Land Use Plan.

Procedural Requirements: The proposed action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities, The project is consistent with the goals and objectives of the White Pine County Sage grouse Conservation Plan. The project was scoped with an interdisciplinary team, NEPA analysis has been accomplished and the project will be inspected and monitored during implementation.

Funding Source: The funding for the project is coming from Fuels Reduction Funds of The Bureau of Land Management fire program.

Implementation Process Implementation of the project would be in the summer/fall 2004. Target for implementation would be for all treatments to be completed within the same calendar year. Fencing would be scheduled immediately after all treatments are complete. Livestock permittee would be assigned maintenance of the fences.

**Proposed Conservation Strategy
Project Summary Worksheet**

PMU Names: Butte Valley/Buck Mtn./White Pine Range PMU, Spring Valley/Snake Valley PMU, Schell Range, Antelope Range PMU.

Description of the Conservation Action:

The proposed action is a radio telemetry study(s) of Sage Grouse from selected leks and summer use areas. This project would be performed in conjunction with a similar project in an adjacent PMU.

Risk Being Mitigated by the Proposed Action: The expansion of Pinyon and Juniper trees into sagebrush and mountain brush communities is thought to present moderate or higher risk to the quantity and quality of seasonal habitats in these PMUs, particularly nesting/early brood and late brood habitats. Telemetry studies would increase our knowledge of these habitats. Increased knowledge of habitat use by Sage Grouse would be valuable in designing habitat improvement projects and land use planning. In addition, seasonal distribution of collared Sage Grouse would help verify PMU boundaries, detect migration patterns and measure fidelity of grouse to specific areas.

Objectives:

4. Increase knowledge of seasonal habitats utilized by Sage Grouse to facilitate the development of projects to enhance Sage Grouse habitats.
5. In conjunction with a similar project in an adjacent PMU, test the validity of existing PMU boundaries.
6. Locate unknown leks through telemetry studies of Sage Grouse that are collared on summer habitat.
7. Begin to fill knowledge gaps about migration patterns.

Rationale: There is currently no data available to substantiate the use of seasonal habitats by Sage Grouse from individual leks. Direct documentation of seasonal habitat use would increase knowledge of habitat preference, influence the development of habitat enhancement projects and test PMU boundaries. The collaring of Sage Grouse on summer range could aid the discovery of unknown leks in key areas during the following spring.

Project Description: Up to 16 Sage Grouse would be captured, radio-collared, banded and released. Trapping would take place at night near leks (spring) and on riparian or agricultural areas (summer). Through follow-up ground and aerial telemetry surveys, monitor seasonal movements of collared grouse. Radio collars provided by both NDOW and Ely District BLM.

Legal Authority: The proposed project falls within the legal authority of the Nevada Department of Wildlife.

Procedural Requirements: None.

Funding Source: NDOW – W64 Grant BLM – Challenge Cost Share Funding

Implementation Process: Project is expected to commence during the spring of 2004 and extend through 2005.