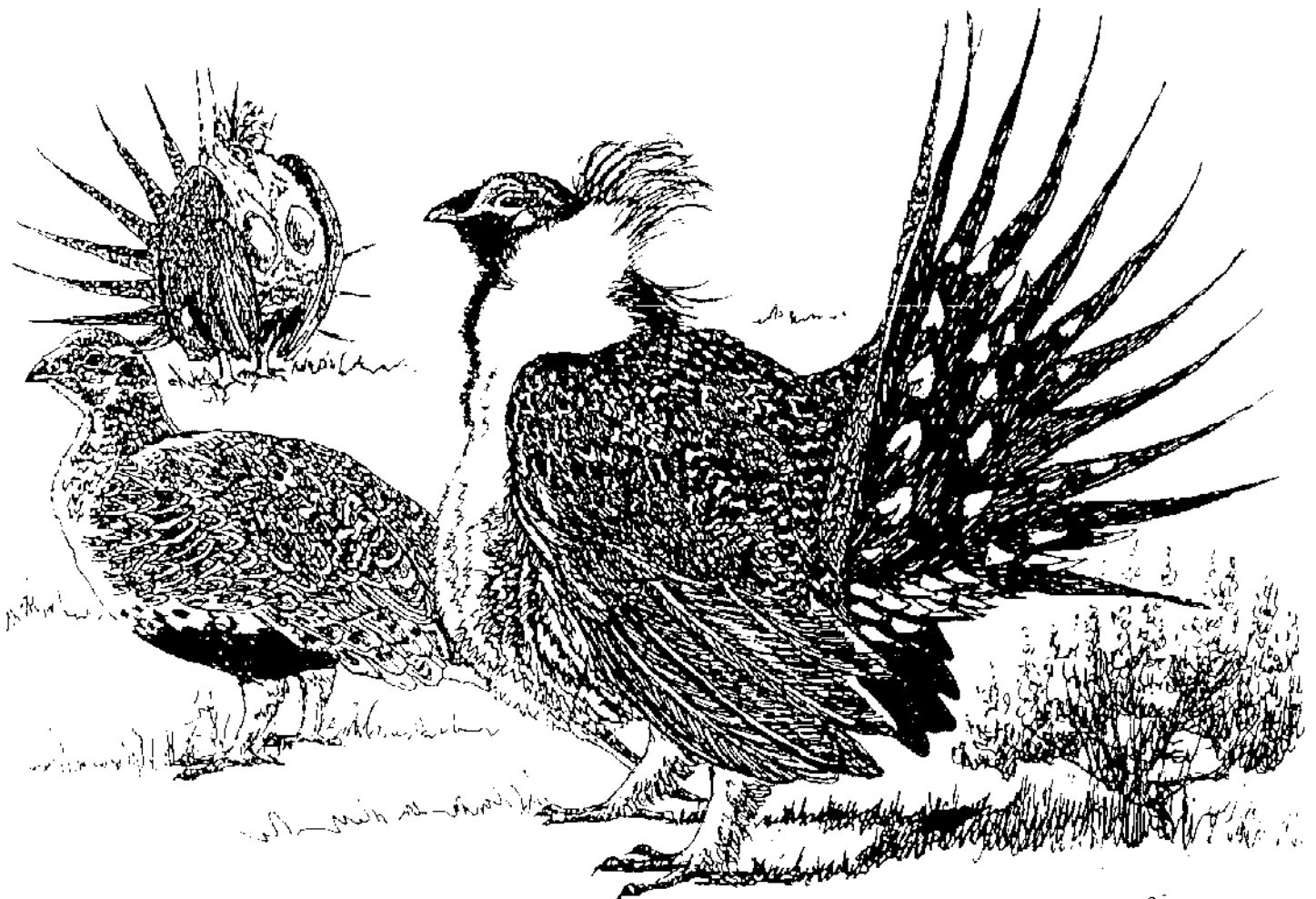


North Park Greater Sage-Grouse Conservation Plan

Jackson County, Colorado

December 2001

Prepared by the North Park Sage Grouse Working Group



SAGE GROUSE

Francis Robinson 79

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I. PREAMBLE

Sage-grouse are restricted to sagebrush rangelands in western North America and occur nowhere else in the world. Their distribution and abundance have markedly decreased throughout their range and the species has been eliminated from five states and one province. Their long-term existence in at least six states and two provinces is uncertain.

Records by early explorers and travelers indicate a general scarcity of sage-grouse during pre-settlement times across its entire original range. There are no known pre-settlement records of sage-grouse in Jackson County, commonly referred to as North Park. Settlement of North Park began in the early 1870's. From that time until 1972, all available evidence and accounts indicate that sage-grouse populations in North Park exhibited extreme fluctuations. There were periods of alarming scarcity and astonishing abundance; however, North Park still has one of the most stable and viable sage-grouse populations in Colorado due to large, intact areas of sagebrush grasslands and associated habitats. The present sagebrush habitats in North Park have resulted from public and private land management and stewardship.

In 1998, because of increased local concerns about the status of sage-grouse in North Park and elsewhere, a group of concerned citizens and agencies formed the North Park Sage Grouse Working Group (NPSGWG). This group believes that locally developed conservation plans provide opportunities for resource management agencies, private groups, and individual landowners to work jointly for more effective conservation. The mission of the NPSGWG is to develop, implement, and monitor a conservation plan to maintain a viable sage-grouse population in Jackson County, Colorado.

This greater sage-grouse conservation plan was developed in a cooperative effort by the North Park Sage Grouse Working Group and describes and sets forth a strategy for the long-term management of sage-grouse. This plan will address concerns about security of greater sage-grouse and long-term viability of the species in North Park in concert with the needs of the residents of Jackson County, Colorado, as well as other resource values and land uses. Participation in plan shall be strictly voluntary. The plan will be reviewed and updated annually, or as needed.

II. THE PLAN AND ITS PURPOSE

The purpose of this conservation plan is to maintain a viable sage-grouse population in North Park by:

1. protection and preservation of agriculture, because private agricultural land is a key component in providing habitat for sage-grouse;
2. identification of opportunities to secure critical habitats for sage-grouse;
3. selection of the best and most cost-effective methods to conserve or enhance these habitats;

4. identification of specific locations of critical habitat areas that need to be conserved or enhanced, including winter range, nesting areas, and brood rearing areas;
5. selection of experimental or alternative treatments or combinations of treatments at identified sites;
6. measurement and monitoring of sage-grouse populations and habitat responses;
7. identification and securing funding sources to accomplish these actions; and
8. addressing the 5 factors considered by the US Fish and Wildlife Service (USFWS) for listing a species as threatened or endangered under the Endangered Species Act (See Appendix B).

III. GUIDING PRINCIPLES

The group process was designed to guide sage-grouse and other resource management efforts by identifying purposes for the plan, and developing and selecting conservation actions and their associated implementation steps that would be undertaken throughout North Park. The group will:

1. assure public involvement in planning and decision making;
2. maintain cooperation and participation among land managers, private landowners, and other stakeholders;
3. implement conservation actions in ways that meet the needs of sage-grouse while maintaining or improving a stable and diverse economic base in North Park;
4. Protect private property rights, respect individual views and values, and implement conservation actions that have broad community support on a cooperative basis; and
5. make every effort among participants to seek efficiency and integration of efforts, and to select conservation actions that also promote other resource management objectives.

IV. DESCRIPTION OF THE AREA

Jackson County lies in the northern tier of Colorado counties. It is rimmed on the west by the Park Range (Sierra Madres), on the east by the Medicine Bow Mountains, on the south by the Rabbit Ears Range, and forms the headwaters of the North Platte River, which flow northerly into Wyoming (See Figure 1). Jackson County is predominantly a large treeless basin that is commonly referred to as North Park. North Park contains substantial areas of irrigated pasture and hay meadows, mountain meadows, and riparian areas, while areas between are dry gently rolling sagebrush grasslands (See Figure 2). For the purposes of this plan, the area included will be all sagebrush-dominated grasslands and the associated irrigated lands, mountain meadows, and riparian areas in Jackson County, Colorado. The elevation range is from approximately 7900 to 9500 feet. Precipitation ranges from approximately 25 inches at lower timberline to less than 10 inches at Walden. More than 50% of the annual precipitation is snowfall. Winters are cold and windy, with the predominate winds from the southwest. Summers are cool and dry.

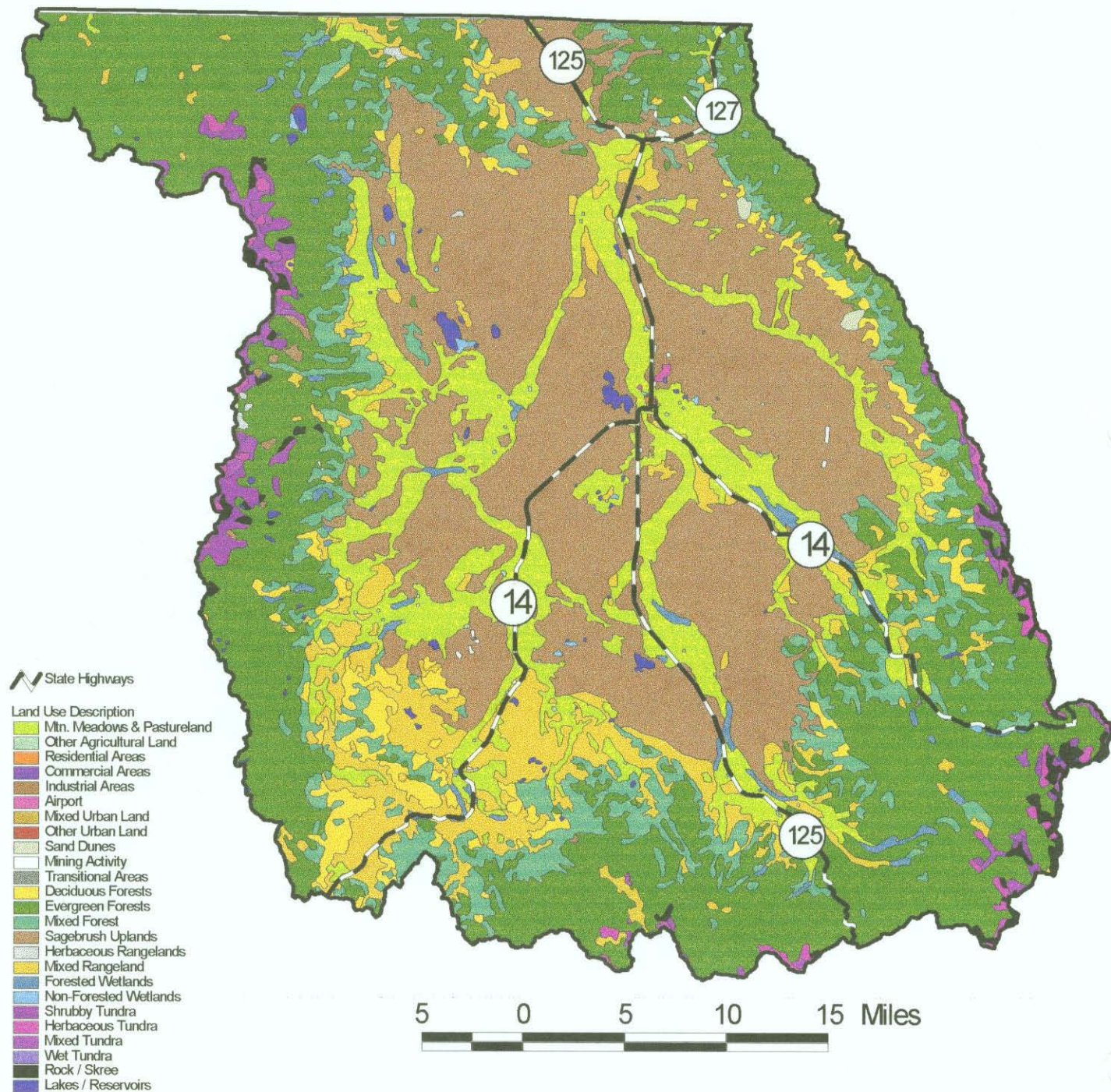
Figure 1

Location Map *Jackson County,* *Colorado*



Land Use Map of Jackson County, Colorado North Park

Figure 2



The boundary of overall grouse distribution is based on known historic use sites and sage-grouse observations, as well as the present potential of the remaining sagebrush-dominated habitats. This boundary also encompasses major wintering areas for both elk and mule deer, year-round habitat for pronghorn, and major waterfowl nesting areas (See Figure 3).

North Park is rural, with human populations relatively unchanged in this century, remaining at approximately 1 person per square mile. A greater percentage of the population now lives in Walden, the county seat.

V. SPECIES DESCRIPTION

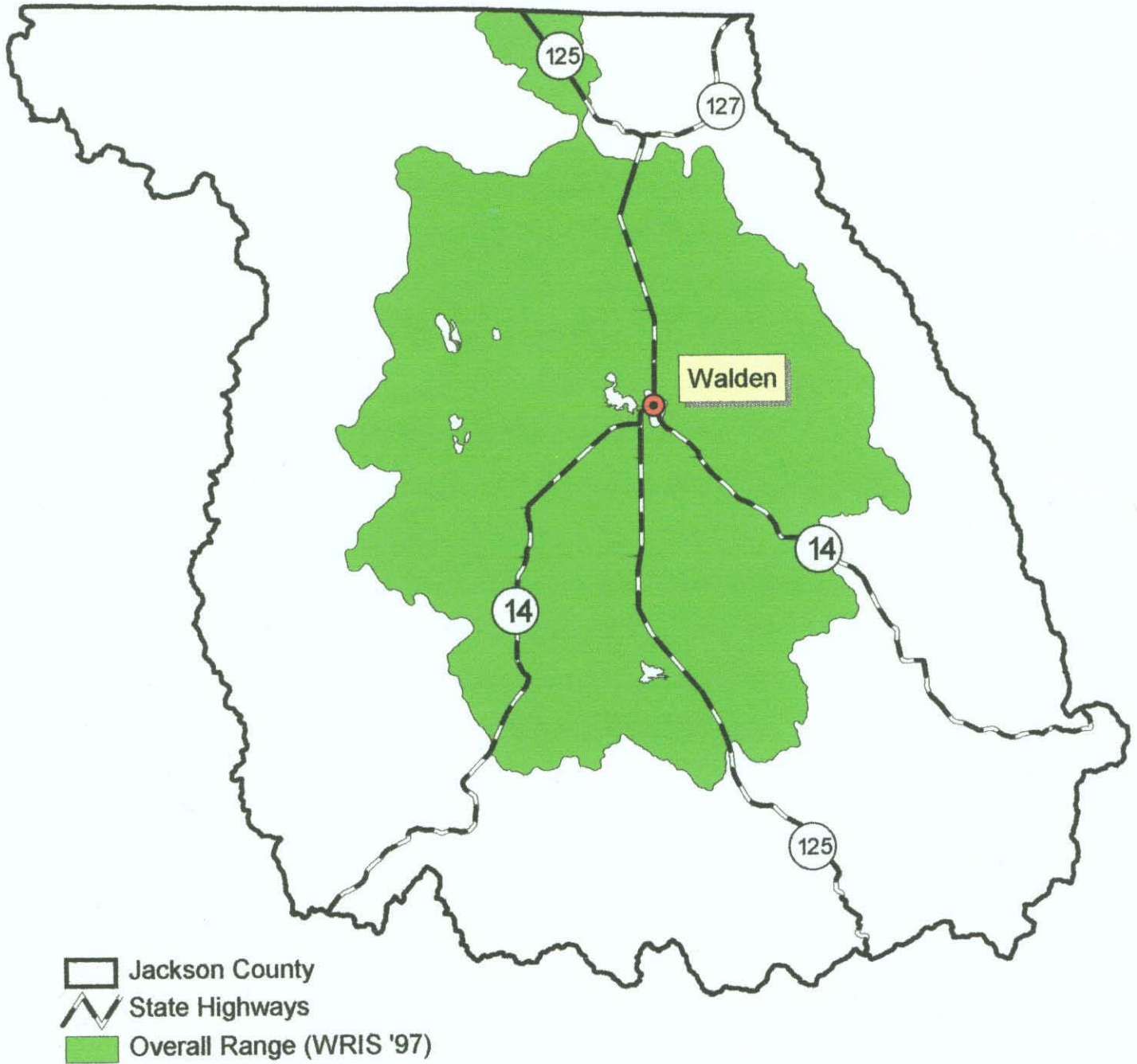
Greater sage-grouse are large (3-7 lbs.) brown/gray chicken-like birds with conspicuous black (belly, under-throat) and white (breast of males, under-tail coverts) markings. They are brown/gray above barred with black, with rounded brown wings with some black barring. Males during breeding season (March-May) have conspicuous neck plumes, a white upper breast with yellow/green air sacs and prominent, long spiked tail feathers. Both sexes have yellow/green eye combs, which are less prominent in females, and a fringe of pectinations (lace work like fringe) along the toes which are most noticeable in winter and early spring. Males weigh from 4 to 7 pounds, while females weigh from 3 to 4 pounds.

VI. SPECIES DISTRIBUTION AND STATUS

Distribution - Greater sage-grouse occur in 11 states and 2 Canadian provinces. Sage-grouse no longer occur in Arizona, Kansas, Nebraska, New Mexico, Oklahoma, and British Columbia. Their range is from southwestern North Dakota and northwestern South Dakota into Montana; north into Saskatchewan and Alberta; west into Idaho, Washington, Oregon, and California; and south into Nevada, Wyoming, Utah, and Colorado. Their distribution at the periphery of their range is highly fragmented and discontinuous.

Status - Greater sage-grouse are classified as resident game birds and are currently hunted in all states, except South Dakota and Washington. Apparent numbers are assumed to have been reduced since settlement. Sage-grouse are listed as threatened or endangered in Canada (1998) and as state endangered in Washington. North Park currently provides approximately 40% of the breeding population of greater sage-grouse in Colorado.

Greater Sage-Grouse Overall Range in North Park



5 0 5 10 15 Miles

VII. SAGE-GROUSE HABITAT

Sage-grouse are restricted to the sagebrush shrub-steppe habitat type and adjacent riparian areas in western North America. They are specialized herbivores as they have no grinding gizzard and feed solely on leaves/flowers of herbaceous forbs, insects, and leaves of sagebrush. They do not eat grasses or seeds and do not ingest grit. In winter, sagebrush leaves comprise 99% of their diet. Thus, they require large expanses of sagebrush-dominated rangelands from September through May. Taller sagebrush serves as escape cover and is especially important near leks, nest sites, brood habitat, and in winter. Most sage-grouse nest under live sagebrush and most early brood rearing is in well-vegetated sagebrush uplands. The presence of grasses and forbs is important during nesting and brood rearing. Forbs provide food and taller grasses provide cover with both attracting insects, which are especially important for chick growth and survival.

Habitat quality is an indication of how well habitat meets the needs of sage-grouse. Higher quality habitat provides more essential components such as food, water, and cover. Generally, the group of factors that affect habitat quality and/or fragmentation are considered to be most important to sage-grouse recovery. Acres of habitat are not equal, as habitat quality varies tremendously within North Park.

Loss of sage-grouse habitat refers to areas that once provided habitat, but no longer do because that habitat no longer exists or is not available. Changes in land use may result in temporary or permanent loss of habitat. An example of permanent habitat loss would be when a subdivision or reservoir occupies an area that was once sage-grouse habitat. An example of a temporary loss would be when a strip coal mine or an oil field occupies an area that once was sage-grouse habitat. Fragmentation refers to the increase in isolation and decrease in size of habitat patches.

HABITAT REQUIREMENTS - NORTH PARK (See Also APPENDIX E)

General - Habitat needs for sage-grouse in North Park relate to survival over winter (November-March), escape cover adjacent to lek sites (March-May), nesting cover (April-June), early brood-rearing habitat (May-June), late brood-rearing habitat (July-August), and fall habitat (August-October). Of these habitats winter, nesting, and early brood-rearing are most important, with suitable escape cover near leks of near equal importance. Data on sage-grouse use of habitats in North Park have been collected through systematic observations and locations of radio-marked birds from 1963 through 1997. These studies have resulted in a series of theses and publications upon which this description is based.

Winter Habitat - Radio-marked sage-grouse extensively use Wyoming and mountain big sagebrush northeast of Walden and north of Owl Ridge from the Arapaho National Wildlife Refuge east to Jackson County Road 25. Because of snow depth adequate winter habitat is limited in some years (1983-84 and 1985-86 for example) from January into March. Winter habitat is limited in severe winters and sage-grouse forage near plowed roads where sagebrush is available. Food eaten in winter is primarily leaves of Wyoming and mountain big sagebrush.

Lek Habitat - Suitable habitats for display do not superficially appear to be limited anywhere in North Park. However, numbers of males on known active leks fluctuate between years because of winter survival, nest success, and chick survival. This does not appear to be related to quality of lek sites but instead to quantity and quality of total sagebrush-dominated habitats within 2-3 miles of leks. Sites presently used for display are in open areas (ridges, flats, valleys, basins) with taller (>20 inches) sagebrush in the near proximity. Presence of taller sagebrush (mountain big sagebrush) appears to be critical for continued use of these sites by displaying male sage-grouse. Examples of escape cover used near leks are those west of Jackson County Road 21, 4 miles south of Colorado Highway 14 and north of Jackson County Road 26, and 0.25 to 0.5 miles east of Jackson County Road 26B.

Nesting Habitat - Sage-grouse hens in North Park select sites for nesting with taller, more dense sagebrush (>20 inches, >20% canopy cover). These sites are frequently at slightly higher elevations (upper edge of occupied habitat) where moisture allows greater and more robust grass and forb cover (>25 inches and 8% respectively, >6 inches total herbaceous height). Nests are typically at the base of taller (>20 inches) sagebrush plants. Nest sites are generally found in denser clumps and heavier sagebrush on north- and east-facing slopes.

Early-Brood Habitat - The description of habitat at hatch is identical to nesting habitat with hens moving their chicks (<5-10 days of age) into areas dominated by forbs and grasses with <20% live sagebrush canopy cover. Females select drainage channels in the sagebrush type that have abundant forbs and frequently have moisture. Grass and forbs dominate at all known use sites with a definite preference for live sagebrush escape cover (>20 inches in height).

Late-Brood Habitat - Females with older broods prefer moist drainage channels and edges of hay fields. Forbs and grasses dominate at preferred use sites with some live sagebrush and other deciduous shrubs (primarily willows). Shrub cover is important for escape while most foraging is on forbs.

Fall Habitat - Sage-grouse of all ages and gender continue to use habitats identical to those used by broods in July and August until plants become desiccated (several successive killing frosts), heavily grazed, or harvested (hay fields). Taller sagebrush (>20 inches) with more canopy cover (>20%) becomes more important. Use increases on north and west facing slopes and diets change gradually from a high proportion of forbs to a high proportion of sagebrush. In North Park, drainage channels and edges of hay meadows continue to be heavily used until major snow falls. During extensive snow cover, in late fall and early winter, use of Wyoming big sagebrush stands is extensive.

VIII. POPULATION ESTIMATES

Population Monitoring - Counts of male prairie grouse on leks provide managers with an index to population size. Studies of sage-grouse across western North America indicate there are about 2 females for each male in the fall population. Thus, if the number of males is known, and there

are about 2 females for each male in the spring population, it is possible to calculate an estimate of population size. It is important to recognize that a count may not represent all males in the population and that any calculated population estimate may be higher or lower than actual population size.

Starting in the 1950's area and district personnel of the CDOW were requested to document sage-grouse presence and general trend within specific areas. Thus, locations of active leks and counts of males on leks were recorded. Generally, only accessible leks were counted and intensive searches for new or relocated leks were not made because of manpower and equipment priorities. Searches and counts were sporadic as firm procedures were not in place. Consequently, lek count data prior to 1973 reflect only general trends in the sage-grouse population in North Park.

Colorado Division of Wildlife (CDOW) has conducted annual lek counts in North Park since 1973. These data show that there is no clear trend in North Park sage-grouse abundance over the past 27 years (See Figure 4 and Table 1).

Overall Population Estimates - The 2001 size of the breeding population of greater sage-grouse in North Park basin was estimated to be between 4,254 and 6,315 birds based on 1,418 males counted on 35 active lek areas. This range is based on the assumption that there are about 2 hens per male in the spring population (1,418 males + 2,836 hens = 4,254). Thus, it is estimated that there were at least 4,254 sage-grouse in the North Park area in May 2001. However, this estimate may be conservative as it has been repeatedly demonstrated that not all males are on leks at the time of the counts; also, locations of all active leks may not be known. Given terrain and early spring access in this area, it is assumed that most active lek areas are known and were counted in spring 2001. However, it is possible that unknown active leks exist and not counted. If we assume that locations of 90% of all active leks are known, there could be 4 unknown active leks (if 35 active leks = 90%, then $35 \div 0.90 = 38.9$ active leks would constitute 100% of all active leks). To reach an upper estimate of population size, the 38.9 calculated active leks was rounded to an estimated 39.

Given a total of 1,418 males counted on 35 active known leks, there would be 1,579 males on 39 active leks (1,418 divided by 35 = 40.5 males/active known lek x 39 assumed leks, $39 \times 40.5 = 1,579.5$ rounded to 1,579). Further, given that not all males associated with a lek are counted on one count day, it is reasonable to assume the actual number, based on data from radio-marked males, lies between 50 and 100%. Assuming this percentage to be 75, there would be 2,105 males (1,579 males [on 39 possible leks] $\div 0.75$ present during the high count = 2,105). Thus, if it is assumed that there are 2 hens per male in the spring population, the upper estimate for the population would be 6,315 (2,105 males + 4,210 hens = 6,315).

There are problems with both lower and upper estimates as sex ratios may be closer to 1:1 and all active lek sites may be known and counted. However, it is probable that the true population number lies within the range calculated.

Figure 4 Population Trends Based on Male Lek Counts

North Park Sage Grouse Lek Count Trends: 1973-2001

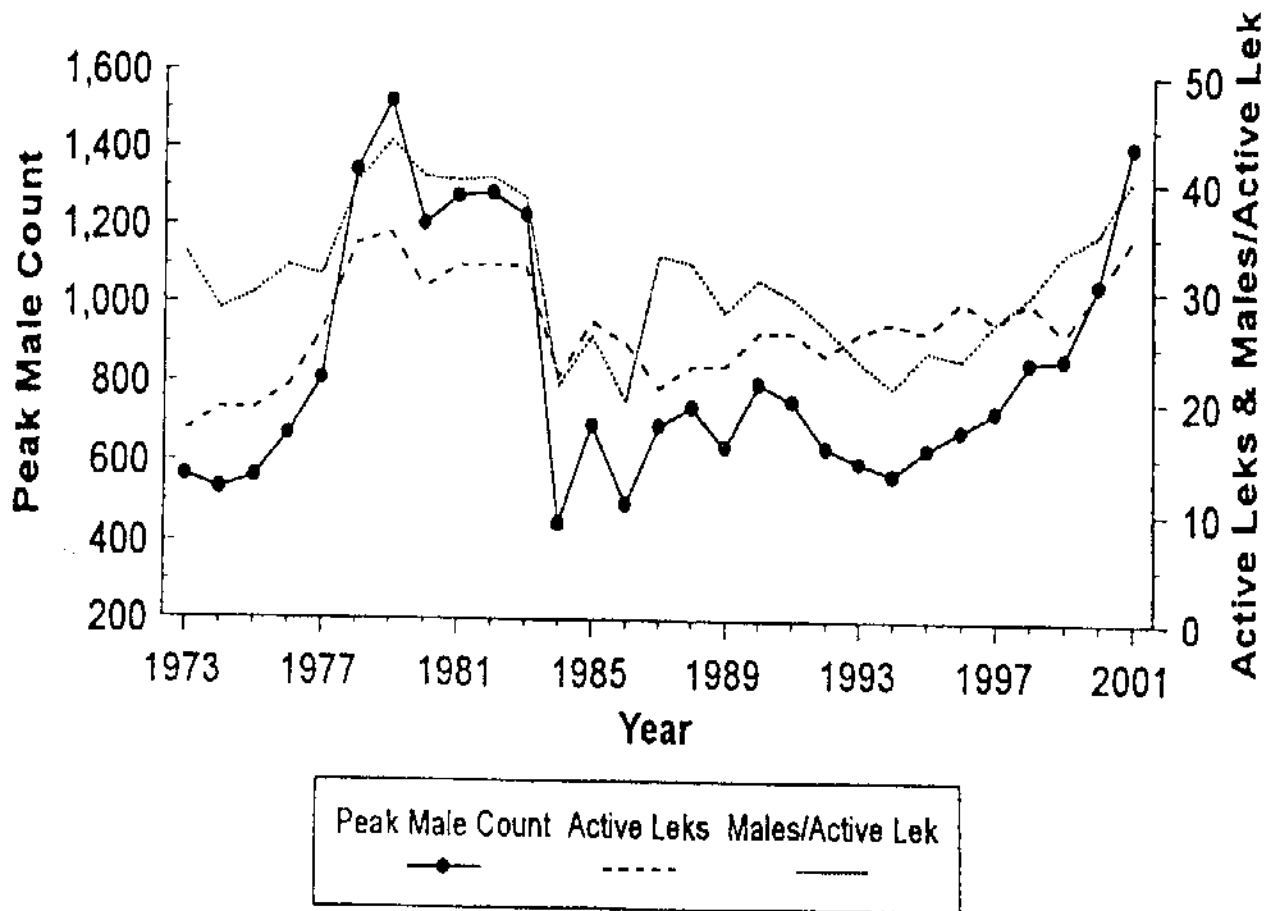


Table 1. Sage-grouse population data for North Park (Jackson County, Colorado).

Year	Total Males	Active Leks	Males/Lek	Estimated Population
<u>Current Population Levels</u>				
2001	1,418	35	40	4,254-6,315
2000	1,056	30	35	3,168-4,647
1999	867	26	33	2,601-3,864
1998	855	30	28	2,565-3,759
1997	732	27	27	
1996	684	29	24	
1996-98	757	27-30	24-28	
<u>Historic High Population Levels</u>				
2001	1,418	35	40	
1980	1,204	30	40	
1979	1,521	35	43	4,563-6,708
1978	1,342	34	39	
1978-80	1,356	30-35	39-43	
<u>Historic Low Population Levels</u>				
1986	497	25	20	
1985	695	27	26	1,659-2,300
1984	466	22	21	
1984-86	553	22-27	20-26	

Source: Colorado Division of Wildlife Annual Lek Counts

Spring population size of sage-grouse in North Park has fluctuated considerably in the past 29 years. The highest was in 1979 when 1,521 males were counted on 35 leks. The lowest was in 1984 when 466 males were counted on 22 leks. Since 1984 there has been a gradual increase to 1,418 males counted on 35 leks in 2001. Ranges in overall population estimates for these referenced years can be calculated utilizing the assumptions and calculation procedures set forth above.

IX. POPULATION GOALS

For purposes of assigning numbers to a population of sage-grouse, the NPSGWG will use a minimum population of 500 cocks on 20 leks and a desirable population of 850 or more cocks on 25 leks. These numbers will serve to guide this plan as conservation actions will be initiated at four population levels from less than 500 to more than 850 cocks. A three-year running average of lek counts of cocks will determine the numbers.

X. CONSERVATION ACTIONS

The backbone of the North Park Greater Sage-Grouse Conservation Plan, Jackson County, Colorado, is the plan's purposes and the guiding principles which together establish a framework for developing conservation actions. Conservation Actions are designed to be consistent with the plan's purposes. These actions also address issues that affect sage-grouse and/or their habitat. Due to the interrelationship of the habitat components, resource values, and issues, many actions may apply to more than one objective. However, to avoid duplication, these actions have been listed under the objective where the link is most direct. Any additional actions identified at a later date will be analyzed by the North Park Sage Grouse Working Group for application and designed to ensure appropriateness and compliance with the goals and objectives set forth in this plan.

The topic of hunting seasons was the most controversial conservation action addressed in the plan. It is the position of the Colorado Division of Wildlife and some sportsmen that regulated hunting has no significant effect on long-term sage-grouse populations. They are able to express support for this viewpoint in terms of biological evidence and expert opinion. Other research, such as a Master of Science Thesis at the University of Nevada by Gary W. Zunino entitled *Harvest Effect on Sage Grouse Densities in Northwest Nevada* would indicate hunting of sage-grouse may affect fall sage-grouse densities. The Summary set forth in this work states "Apparent high harvest rates on low density grouse populations accompanied with low annual recruitment appeared to affect fall sage-grouse densities in north western Nevada. During the two years of this study, recruitment into each grouse population was not significantly different between years on each study area nor between the areas. However, after one year of protection from hunting the percent increase in estimated fall sage-grouse densities on the non-hunted (Hart Camp) area was 4 times greater than the increase in estimated grouse densities on the hunted area (Grassy). These changes were more than 2 times the variation around the mean estimated

densities found during the helicopter censuses, therefore, these changes were attributed to the treatments no harvest and harvest." Many North Park landowners and residents feel that, regardless of biological argument, any hunting of sage-grouse is no longer socially or economically acceptable. They feel threatened that they may be faced with possible loss of property rights and income should greater sage-grouse become listed under the Endangered Species Act. After discussions, the two sides could not agree. The hunting season structure outlined in the conservation actions is strictly a compromise arrived at to expedite completion of the plan. Neither side is fully satisfied with this compromise. It is understood that employees and staff of the Colorado Division of Wildlife are not bound by this plan to support the recommended hunting season structure contained in this plan when making statewide hunting season recommendations to the Colorado Wildlife Commission.

CONSERVATION ACTIONS AT VARIOUS LEVELS OF POPULATIONS OF MALES ON LEKS

POPULATION 850 or more (3-Year Running Average of Males on Leks)

1. Recommend a 7-day season with a bag and possession of 2 and 4, with no overlap of antelope season. Recommend that all sage-grouse hunters register before hunting and complete a questionnaire on hunting activities, exact locations and success. Inform the public that population levels determine seasons and bag limits. Explain why seasons will be reduced or eliminated if populations are low. Hold one public meeting in Jackson County, followed by one local newspaper article each year to gain support.
2. Identification and mapping of Critical Winter Habitats and Production Areas will be refined. Colorado DOW and Jackson County GIS will coordinate refinement.
3. Governmental agencies involved will begin steps to acquire or protect critical habitat through use of land exchanges, conservation easements on critical habitat, or payments for non-use of identified critical habitat. It is desirable that each land exchange, conservation easement or payments for non-use agreement be accomplished within five years of its initiation.
4. Severe Winters: Experiment with use of coal dust and other methods in an area or areas of limited aerial extent to remove or melt snow from wintering areas and monitor use of these areas by sage-grouse. Inform the public about importance of winter range for grouse.
5. Plan and select areas for vegetative treatment and target annual treatment of 300 to 500 acres of sage-grouse habitat areas for vegetative treatment and monitoring and inform the public that increased vegetative treatments may be needed if populations decline. Select and plan areas for burning, seeding, chemical treatments including fertilization, and mechanical treatments.

6. Review literature, on-going research and current land fertilization treatments to determine the most effective fertilization methods to enhance and improve sage-grouse winter range habitat.
7. Rodent control experimentation relating to sage-grouse nest predation is being conducted by the Colorado Division of Wildlife in Moffat County. NPSGWG will review and evaluate results of this research for its applicability to the North Park Basin. If this research shows that rodent control is safe and effective in reducing sage-grouse nest predation, undertake rodent control within a 2-mile radius of one or more leks, and monitor results.
8. Encourage coyote hunting by community sponsorship of an annual predator-calling workshop. Enlist cooperation of private landowners to allow hunting during the event.
9. Continue to allow and encourage lek viewing within established protocols. Inform the public about effects of human disturbance on sage-grouse populations during one public meeting and in one newspaper article each year. Adherence to Colorado Division of Wildlife lek-viewing protocols will be enforced (See Appendix G - Lek Viewing Etiquette and Protocol). Undertake "Adopt-a-Lek" Program to supplement and/or assist in lek counts.
10. Conduct interviews with landowners and other researchers to document historical perspective on sage-grouse range, numbers, etc. Landowners will be asked what they feel is needed to improve range conditions, and efforts will be made by agencies to evaluate effectiveness of those suggested range improvements for sage-grouse.
11. Identify and map areas where county roads are near or pass through critical sage-grouse habitats.
12. The North Park Sage Grouse Working Group will cooperate and work with the Arapaho National Wildlife Refuge (ANWR) in development of a Comprehensive Conservation Plan for the Refuge which will include conservation of sage-grouse to help minimize the chance of grouse being listed as threatened or endangered.
13. Work with Mountain Parks Electric and other utility companies to determine feasibility of installing devices on power line poles near critical habitats to eliminate raptor perching for the purpose of mitigating predation by raptors.
14. Encourage initiation of a literature search and review to identify the best management practices for establishing clover and other legumes in sage-grouse habitats to enhance grouse production and survival.
15. Review literature and on-going research to evaluate procedures for counting sage-grouse hens and for determining brood production and survival. Research is being conducted in Grand County to determine feasibility of protocols for sage-grouse hen census, brood production, and survival. NPSGWG will review and evaluate results of this research for its applicability to the North Park Basin.

16. Range treatment improvements will continue with monitoring of various methods to see which has shown the most benefit to sage-grouse habitat.

**POPULATION 676 to 850
(3-Year Running Average of Males on Leks)**

1. Recommend restricting hunting season to 2 days with a season bag limit of 2, with no overlap of antelope season. When hunters register for grouse hunting, issue 2 grouse tags.
2. Mapping and analyses of critical winter habitats and production areas will be reviewed and any new data or research information will be used to refine habitat boundaries.
3. Land exchanges, conservation easements and incentives for management, which could include payments for non-use of critical habitat, will be a high-priority activity. It is desirable that each land exchange, conservation easement or payment for non-use agreement be accomplished within five years of its initiation.
4. Severe Winters: Inform public that snow removal on critical winter range may be required if populations continue to decline. Plan which treatments will be used and where, if necessary, they will be applied. Secure a source of materials.
5. Plan and select areas for vegetative treatment and target treatment of 500 to 1,000 acres of nesting and brood-rearing areas for annual vegetative treatment.
6. Winter Range Improvements: Fertilize 250 acres of critical winter ranges in early June with 60 pounds per acre of nitrogen.
7. If found safe and effective, apply approved rodent control measures to nesting and brood rearing areas for at least 15 percent of active leks.
8. Encourage Jackson County to investigate initiating a bounty on coyotes.
9. Allow lek viewing within established protocols, but inform the public that if populations continue to decrease it will be restricted or eliminated. The Colorado Division of Wildlife shall, in cooperation with the North Park Sage Grouse Working Group, the North Park Chamber of Commerce, private landowners, and appropriate land management agencies, develop and implement a comprehensive lek viewing and counting protocol (Adopt-a-lek), in order to benefit local economy, to utilize recreation man-hours associated with viewing to enhance the recovery effort, and minimize perception of negative impacts of viewing to sage-grouse lek activity.
10. Continue to interview landowners and other researchers to document historical sage-grouse range, numbers, etc.

11. Initiate discussions with the Board of County Commissioners of Jackson County to consider relocation of those county roads that have been identified as negatively impacting critical sage-grouse habitat.
12. The North Park Sage Grouse Working Group will continue to cooperate and work with the Arapaho National Wildlife Refuge (ANWR) in development of a Comprehensive Conservation Plan for the Refuge which will include conservation of sage-grouse to help minimize the chance of sage-grouse being listed as threatened or endangered.
13. Recommend installation of devices on power lines near critical habitats to eliminate raptor perching to mitigate predation by raptors.
14. Develop a best management practice for establishing clover and other legumes along pastures, hay meadows, and ditch banks to enhance sage-grouse production and survival.
15. If found to be feasible, establish procedures and protocols for sage-grouse hen census, brood production, and survival for the North Park Basin.
16. Grazing plans have been, or will, be started with governmental agencies and private landowners. Inform public and landowners that changes beyond normal grazing systems, utilization, and deferrals may be needed if population continues to decline.
17. Range treatment improvements will continue with monitoring of various methods to see which has proven most beneficial to sage-grouse habitat.

**POPULATION 500 to 675
(3-Year Running Average of Males on Leks)**

1. Recommend closing hunting season for the coming fall. Inform the public about the reasons for closure such as drought, severe winter, and predators. This will be a temporary closure until population recovers to higher levels as the result of increased conservation actions. This will be done at one additional special public meeting in Jackson County followed by one local newspaper article in June or July.
2. Continue to review and refine identified Critical Winter Habitats and Production Areas.
3. It is desirable that land exchanges, conservation easements and payment for non-use agreements will be accomplished within five years of initiation.
4. Severe Winters: Use snow removal/melting treatments that have been determined to provide best results on 250 to 500 acres of winter range.

5. Plan and select areas for vegetative treatment and treat 1,500 to 2,000 acres of nesting and brood-rearing habitat as planned.
6. Winter Range Improvements: Fertilize 250 to 500 acres of critical winter ranges in early June with 60 pounds per acre of nitrogen.
7. Recommend county pays an approved bounty on coyotes.
8. If found safe and effective, apply approved rodent-control measures to nesting and brood rearing area for at least 25 percent of active leks.
9. Continue to document historical information on sage-grouse.
10. Restrict lek viewing to organized tours to a limited number of days on public lands. Encourage private landowners to limit viewing by the public. Explain this action at one special public meeting in Jackson County and in one follow-up newspaper article. Continue the Adopt-a-Lek Program.
11. Relocation of county roads that are perceived to negatively impact sage-grouse will be accomplished in five years.
12. Assist the Arapaho National Wildlife Refuge (ANWR) in implementation of sage-grouse conservation actions set forth in long-range management plan to help minimize the chance of grouse being listed as threatened or endangered.
13. If found effective, encourage installation of devices on power lines near critical habitats to eliminate raptor perching to mitigate predation by raptors.
14. Develop methods and funding sources for payment incentives to implement the best management practices for establishing clover and other legumes to enhance grouse production and survival.
15. Review effectiveness of procedures for counting sage-grouse hens and determining brood production and survival.
16. Develop methods and funding sources to implement incentive payments to landowners to change grazing management for grazing systems, reduced utilization, and deferrals on 1,000 to 5,000 acres of nesting and brood-rearing habitat.
17. Range treatment improvements will continue with monitoring of various methods to see which has proven most beneficial to sage-grouse habitat.

POPULATION 0 to 499
(3-Year Running Average of Males on Leks)

1. Recommend that the hunting season for sage-grouse remains closed. Inform the public about the reasons for closure, such as drought, severe winter, and predators.
2. Continue to review and refine critical sage-grouse habitats.
3. Encourage incentives payments be paid to landowners for non-use or restricted use of identified critical sage-grouse habitat.
4. Severe Winters: Use snow removal or melting treatments proven to be most effective on 500 to 1,000 acres of winter range.
5. Plan and select areas for vegetative treatment and treat 2,000 to 2,500 acres of nesting and brood-rearing habitat as planned.
6. Winter Range Improvements: Fertilize 500 to 1,000 acres of winter ranges in early June with 60 pounds per acre of nitrogen.
7. Recommend county pays an increased bounty on coyotes. Recommend that one full-time professional animal damage control specialist be hired to remove coyotes. Hold one special public meeting in Jackson County to explain this action, followed by one newspaper article.
8. If found safe and effective, apply approved rodent-control measures to nesting and brood rearing area for at least 50 percent of the leks.
9. No lek viewing allowed on public land and private landowners encouraged to also prohibit it. Hold one special public meeting in Jackson County and print one newspaper article to explain this action. Continue the Adopt-a-Lek Program.
10. Continue to document historical trends in sage-grouse populations, such as range, production, and brood survival.
11. Review road systems county-wide to determine if any roads may be negatively impacting sage-grouse production and survival.
12. The Arapaho National Wildlife Refuge (ANWR) will continue to implement sage-grouse conservation actions to restore sage-grouse habitats and populations on refuge lands to minimize the chance of grouse being listed as threatened or endangered.
13. If determined effective, recommend installing devices on new powerlines near critical habitats to eliminate raptor perching to mitigate predation by raptors.

14. Pay incentives to landowners for implementing best management practices for establishing clover and other legumes to enhance grouse production and survival.
15. Pay incentives to landowners to change grazing management for grazing systems, reduced utilization, and deferrals on 5,000 to 10,000 acres of nesting and brood-rearing habitat.
16. Land owners will be asked to stop grazing on critical sage-grouse habitat areas and financial compensation will be awarded for loss, or suitable grazing land will be found as a substitute.
17. Encourage research on competition between species for clover, specifically competition by geese.
18. If found that forage competition from geese is detrimental to sage-grouse, recommend an increase in daily bag limit and possession limit for geese in the North Park basin.
19. Range improvement will continue with monitoring of various methods to see which has shown most benefit to sage-grouse habitat.

XI. IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS SET FORTH IN THE NORTH PARK, COLORADO, GREATER SAGE-GROUSE CONSERVATION PLAN

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>Educate and inform the public, landowners, governmental agencies and other interested parties about the greater sage-grouse resource in North Park in order to foster a better understanding of sage-grouse needs, the Conservation Plan and its purpose.</p> <p><u>Sage-grouse Hunting Seasons</u> Inform the public that population levels decrease seasons and bag limits. Hold public meetings and publish news articles to gain support.</p> <p><u>Lek Viewing</u> Inform the public about effects of human disturbance or sage-grouse populations. Develop protocols for lek viewing.</p> <p><u>Vegetation Treatments</u> Inform public that increased vegetative treatments may be needed if sage-grouse populations decline. Inform public and landowners that changes beyond normal grazing systems, utilization, and deferrals may be needed if grouse population continues to decline.</p> <p><u>Predation</u> Community sponsorship of an annual predator-calling workshop (See Appendix D). Emphasize importance of collecting biological data on coyotes, inform the public about effects of ground squirrels on grouse nest failures.</p> <p><u>Critical Winter Range</u> Inform public that snow removal on critical winter range may be required if grouse populations continue to decline.</p>	<p>a. Distribute copies of Conservation Plan to local libraries, schools, government agencies, community groups and interested parties.</p> <p>b. Maintain a current mailing list of interested citizens, and state, local, and federal agencies.</p> <p>c. Prepare and distribute maps, newspaper articles, displays, etc. about importance of sage-grouse, sage-grouse habitat needs and conditions, historic and current sage-grouse population levels, predation of sage-grouse, and general opportunities to improve conditions for sage-grouse in the North Park area.</p> <p>d. Outreach activities will include meetings with key individuals, groups, government officials and agencies, programs at local schools, field trips, and public workshops.</p> <p>e. Produce a video on sage-grouse conservation and recovery efforts in North Park.</p> <p>f. Produce and distribute brochure on sage-grouse conservation and recovery efforts in North Park.</p> <p>g. Maintain contact with other sage-grouse working groups.</p> <p>h. Enhance the self-guided auto tour route in McCallum Oil Field area with appropriately placed informational signs regarding greater sage-grouse, its habitats and management.</p> <p>i. Put NPSGWG Conservation Plan on North Park home page.</p>	<p>a. Ongoing</p> <p>b. Ongoing and updated annually</p> <p>c. Ongoing</p> <p>d. Ongoing</p> <p>e. By January 2005</p> <p>f. By January 2001</p> <p>g. Annually</p> <p>h. Initiate by August 2001</p> <p>i. By April 2005</p>	<p>a. NPSGWG</p> <p>b. NPSGWG</p> <p>c. NPSGWG</p> <p>d. NPSGWG</p> <p>e. CDOW and the NPSGWG</p> <p>f. CDOW Lead with NPSGWG coordination</p> <p>g. Assigned individuals of the NPSGWG</p> <p>h. BLM lead, with NPSGWG subcommittee coordination</p> <p>i. Designated individual working in cooperation with Walden</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>Work with landowners, land management agencies and other groups to identify specific habitat treatment areas in order to prioritize and implement sage-grouse habitat improvements.</p> <p><u>Winter Range</u> Develop methods to remove or melt snow from wintering areas, techniques to monitor use of these areas by sage-grouse as specified in conservation actions for various population levels.</p> <p><u>Brood Rearing and Nesting Habitat</u> Treat specified acres of habitat based on population levels set forth in conservation actions. Pay incentives to landowners to change grazing practices to protect or enhance nesting and brood rearing habitat.</p> <p><u>Habitat Enhancement:</u> Develop a best management practice for establishing clover along margins of wet meadows to enhance sage-grouse production and survival. Develop payment incentives for implementing the best management practices for clover establishment. Make incentive payments for establishing clover.</p>	<p>a. Hold meetings with interested/affected landowners, land management agencies and potential funding entities to identify potential habitat treatment areas and treatments and to develop a long-range plan of work</p> <p>b. Prepare and maintain a list of BMP's to be used for sage-grouse habitat improvements in North Park and update annually (See Appendix C).</p> <p>c. Review long-range plan of work and prioritize treatment areas, treatments and management to develop an annual plan of work.</p> <p>d. Coordinate management of sage-grouse with that of other species to avoid duplication of efforts.</p> <p>e. Identify and cultivate potential partners and funding sources needed to accomplish specific habitat treatments for long-range plan and annual plan of work.</p> <p>f. Apply for funding to accomplish treatments</p> <p>g. Develop individual plans, contracts, and cooperative agreements as needed to accomplish treatments and subsequent management as needed to accomplish long-range plan and annual plan of work.</p> <p>h. Periodically monitor changes in vegetative conditions, sage-grouse use and abundance brought about by specific treatments and changes in management. Make modifications as needed in future treatments and management to ensure most effective use of available funding and manpower.</p> <p>i. Prepare an annual report which summarizes accomplishments and recommendations.</p>	<p>a. Annually</p> <p>b. March 2000</p> <p>c. By March 1, 2000 and January, 2001 and annually thereafter</p> <p>d. Ongoing</p> <p>e. Ongoing</p> <p>f. Annually</p> <p>g. By March annually</p> <p>h. Ongoing</p> <p>i. By January 1 annually</p>	<p>a. NPSGWG</p> <p>b. NPSGWG</p> <p>c. NPSGWG will assign subcommittee</p> <p>d. NPSGWG working with HPP, OMP, CDOW, BLM, USFS, USFWS and NRCS</p> <p>e. HPP, OMP and NPSGWG subcommittee</p> <p>f. HPP, OMP and NPSGWG</p> <p>g. NPSGWG working with HPP, OMP, CDOW, BLM, USFS, USFWS and NRCS</p> <p>h. NPSGWG working with HPP, OMP, CDOW, BLM, USFS, USFWS and NRCS</p> <p>i. NPSGWG subcommittee</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>NPSGWG will recommend that sage-grouse hunting seasons in North Park do not coincide with firearms pronghorn season and that season lengths and bag and possession limits conform to those specified in the conservation actions for specific population levels indicated by 3-year running average of males on leks .</p> <p><u>POPULATION</u> (5-Year Running Average of Males on Leks)</p> <p>850 or more Recommend a 7-day season with a bag and possession of 2 and 4.</p> <p>676 to 850 Recommend restricting hunting season to 2 days with a season bag limit of 2.</p> <p>675 or less Recommend no open hunting season for sage-grouse</p>	<p>a. Determine schedule for steps in the season setting process established by the CDOW and the Colorado Wildlife Commission and advise the NPSGWG in time to assign specified members to attend meetings, write letters, and make personal contacts.</p> <p>b. Assigned NPSGWG members will attend meetings, write letters, and make personal contacts in order to ensure season dates and limits comply with intent of the Conservation Plan according to current three-year running average of male sage-grouse on leks.</p> <p>c. Make personal contacts with Governor's Office, Wildlife Commission, Department of Natural Resources, and State Senators and Representatives to obtain support for grouse hunting season recommendations set forth in Conservation Plan.</p> <p>d. Recommend that no sage-grouse hunting would occur if CDOW fails to make lek counts.</p>	<p>a. Annually</p> <p>b. Following the season-setting process as scheduled by CDOW and Wildlife Commission</p> <p>c. Prior to season-setting process</p> <p>d. Annually</p>	<p>a. CDOW</p> <p>b. Assigned NPSGWG members</p> <p>c. NPSGWG, County Commissioners and other County and Town officials, President of North Park Stockgrowers Association, President of North Park Soil Conservation District, Chairman of Jackson County Planning Commission and other concerned individuals.</p> <p>d. CDOW</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS
GENERAL CONSERVATION ACTIONS
(Undertaken At All Population Levels)

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>Continue to gather or initiate collection of specific resource data on greater sage-grouse and their habitats</p> <p><u>Historical Information</u> Conduct interviews with landowners and other researchers to document historical perspective on sage-grouse - i.e. range, numbers, etc.</p> <p><u>Species Competition</u> Initiate research on competition between species for clover, specifically competition by Canada geese. If it is found that forage competition from Canada geese is detrimental to sage-grouse, request CDOW to increase daily bag limit and possession limit for geese in North Park.</p> <p><u>Population Monitoring</u> Establish procedures for counting sage-grouse hens and for determining brood production and survival.</p> <p><u>Captive Breeding</u> Capture and confined breeding of sage-grouse for release will be researched</p>	<p>a. Sage-grouse population monitoring/census, i.e. lek counts</p> <p>b. Encourage and support funding requirements to enable CDOW personnel to continue lek counts</p> <p>c. Initiate "Adopt-a-Lek Program to supplement and/or assist in lek counts</p> <p>d. Monitor sage-grouse habitat condition</p> <p>e. Compile and maintain library on sage-grouse studies and research.</p> <p>f. Identify deficiencies in sage-grouse resource data and implement additional monitoring or research to rectify.</p> <p>g. Continue to refine mapped boundaries for all sage-grouse critical habitats</p> <p>h. Continue to identify changes in sage-grouse populations size (use 3-yr. average of lek counts).</p> <p>i. If the CDOW is unable to make annual lek counts, NPSGWG would determine appropriate course of action to take in regards to conservation plan and annual work plan.</p>	<p>a. Annually, March-May</p> <p>b. Ongoing as requested</p> <p>c. By January 2003</p> <p>d. Ongoing</p> <p>e. Initiate immediately and continually update.</p> <p>f. Ongoing</p> <p>g. Ongoing</p> <p>h. Annually</p> <p>i. If lek counts are not made</p>	<p>a. CDOW, others</p> <p>b. NPSGWG and partners</p> <p>c. CDOW, NPSGWG, Interested parties, and Chamber</p> <p>d. NRCS coordinating with HPP, OMP, CDOW, BLM, USFS, USFWS and NPSGWG</p> <p>e. CDOW, NPSGWG, land management agencies, universities, and all interested parties</p> <p>f. Same as d. above</p> <p>g. Jackson County GIS, CDOW and interested parties</p> <p>h. CDOW</p> <p>i. NPSGWG</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
Address factors and activities associated with human population growth and development that have potential to impact sage-grouse, their population levels or habitat. Assist in developing recommended policies and guidelines to mitigate potentially adverse impacts to sage-grouse, which may result from future land use changes and physical development in North Park area.	<p>a. Monitor and track land-use changes and infrastructure development, i.e., expansion of dispersed recreation activities, big and small game hunting activities, mineral exploration and development, recreational facilities development, seasonal or second home development, urbanization, new road construction, and utilities expansion.</p> <p>b. Hold meetings and workshops with Jackson County Planning Commission to review Jackson County Comprehensive Master Plan and the goals, objectives, and policies set forth therein, in order to develop recommendations regarding master plan revisions and implementation of land use regulations to mitigate potential adverse impacts to sage-grouse and their habitats. The document "Guidelines to Manage Sage-Grouse Populations and Their Habitats" by <i>John W. Connelly, Michael A. Schroeder, Alan R. Sands, and Clait E. Braun</i> will serve as a reference document in developing recommendations and revisions to local land-use regulations to help mitigate impacts to sage-grouse and their habitats.</p> <p>c. Meet with land management agencies to address and recommend management actions to mitigate adverse impacts to sage-grouse.</p> <p>d. Reduce fragmentation of high-priority grouse habitat by modifying or relocating roads and utilities.</p> <p>e. Modify improvements/developments that cause sage-grouse predation.</p>	<p>a. Ongoing</p> <p>b. Initiate by June 2002 and continue as deemed necessary</p> <p>c. Ongoing</p> <p>d. Initiate by June 2002 and continue</p> <p>e. Ongoing</p>	<p>a. Jackson County, BLM, NRCS, USFS, USFWS, CSFS, CDPOR, CDOW, CSU Extension, landowners and interested parties.</p> <p>b. NPSGWG, Jackson County Planning Commission, Board of County Commissioners, CDOW, USFWS, BLM and interested parties.</p> <p>c. County, BLM, SIJB, USFS, USFWS, CDOW, permittees and affected landowners.</p> <p>d. Same as c. above</p> <p>e. Power companies, land management agencies, county, permittees and landowners.</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
Develop, improve and encourage credibility and success while maintaining local control	<ul style="list-style-type: none"> a. Continually seek public input and involvement. b. Involve landowners, local communities, and local land management agencies in all aspects of sage-grouse management and conservation. c. Encourage all local agencies, landowners, groups and interested parties to elicit local representatives' support of decisions regarding sage-grouse conservation actions. 	<ul style="list-style-type: none"> a. Ongoing b. Ongoing c. Ongoing 	a. b. & c. NPSGWG, HPP, OMP, CDOW, BIM, USFS, NRCS, USFWS, County and all interested groups and parties involved

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>The Arapaho National Wildlife Refuge (ANWR) will be encouraged to develop, in cooperation with NPSGWG, a new long-range habitat management and implementation plan that will include a section addressing sage-grouse habitats and population on Refuge lands in order to minimize chance of sage-grouse being listed as threatened or endangered.</p>	a. Identify and classify sage-grouse habitats on ANWR	a. Summer 2000	a. Refuge/CDOW
	b. As part of the Comprehensive Conservation Plan (CCP) process, identify Refuge goals and objectives for sage-grouse.	b. Spring 2002	b. Refuge w/input from NPSGWG
	c. Develop in CCP a habitat management plan to improve/maintain Refuge habitats including sage-grouse concerns.	c. 2003	c. Refuge w/input from all outside concerns
	d. CCP process will consider what effects any new or existing management tool might have on sage-grouse habitats. (i.e. burning, grazing, mowing, disk harrow, herbicide spraying, wetland construction, and road development.)	d. 2003	d. Refuge w/input from all outside concerns
	e. Implement habitat management plan.	e. Spring 2003	e. Refuge
	f. Monitor progress of plan implementation to determine if goals and objectives are met.	f. 2003 and on	f. Refuge/CDOW
	g. Re-evaluate sage-grouse objectives in habitat management plan and make necessary changes.	g. Annually, when plan is in place	g. Refuge/CDOW & NPSGWG

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>Acquire or obtain an interest in identified parcels within sage-grouse critical habitats and encourage land management agencies to identify lands/tracts that could be offered for exchange</p> <p>It is desirable that all land exchanges, conservation easements and payment for non-use agreements be accomplished within five years after being initiated</p>	<p>a. Identify parcels within sage-grouse critical habitats that should be acquired or a conservation interest obtained for said parcels to prevent fragmentation and/or loss of habitat.</p> <p>b. Prepare reference tabulation that provides legal description, acreage, ownership, type of critical habitat, and development risk assessment for all identified parcels.</p> <p>c. Prioritize parcels for acquisition.</p> <p>d. Acquire identified parcels through land exchanges.</p> <p>e. Acquire identified parcels by donation of land.</p> <p>f. Acquire an interest in identified parcels through conservation easements.</p> <p>g. Acquire identified parcels in fee title, when there is a willing seller and a willing buyer.</p> <p>h. Identify and assess other methodologies to acquire identified parcels, i.e. Transferable Development Rights, etc.</p>	<p>a. By April 2000 and updated whenever critical habitat data is refined or revised.</p> <p>b. By May 2000 and updated as necessary</p> <p>c. By June 2002 and annually thereafter</p> <p>d. As soon as practical</p> <p>e. As soon as practical</p> <p>f. As soon as practical</p> <p>g. As soon as practical</p> <p>h. Ongoing</p>	<p>a. NPSGWG, CDOW, USFWS and County GIS</p> <p>b. NPSGWG, CDOW, USFWS and County GIS</p> <p>c. NPSGWG, CDOW, USFWS and all interested parties</p> <p>d. Affected landowners, all land management agencies and the agency, entity or organization that will hold title</p> <p>e. Affected landowners, all interested parties, and proposed holder of title</p> <p>f. Affected landowners, all land management agencies and the agency, entity or organization that will hold conservation easement</p> <p>g. CDOW or other identified entity or organization that will hold title to acquired parcel</p> <p>h. NPSGWG and all interested parties</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>Control sage-grouse predation by lethal and non-lethal methods</p> <p><u>POPULATION</u> (3-Year Running Average of Males on Leaks)</p> <p><u>850 or more</u> Experiment with approved rodent control measures within a 2-mile radius of one or more leaks and monitor results.</p> <p><u>676 to 850</u> If found safe and effective, apply rodent control to nesting and brood rearing areas on at least 15 percent of active leaks.</p> <p><u>500 to 675</u> Recommend county pays an approved bounty on coyotes. Apply rodent control to nesting and brood rearing area for at least 25 percent of active leaks.</p> <p><u>0 to 499</u> Recommend county increases bounty on coyotes. Recommend that one full-time professional animal damage control specialist be hired to remove coyotes. If found safe and effective, apply rodent control to nesting and brood-rearing areas for at least 50 percent of active leaks.</p>	<p>a. Encourage coyote hunting by community sponsorship of an annual predator calling workshop (See Appendix D). Enlist the cooperation of private landowners who will allow hunting during the event.</p> <p>b. Experiment with rodent control, monitor results, and determine best methods to achieve increased nesting success.</p> <p>c. Investigate, and if feasible, implement bounties on appropriate sage-grouse predators.</p> <p>d. Recommend installing devices on powerlines near critical habitats to eliminate raptor perching to mitigate predation by raptors.</p>	<p>a. Annually</p> <p>b. By Sept., 2002</p> <p>c. Ongoing</p> <p>d. Ongoing</p>	<p>a. NPSGWG, Chamber of Commerce, Lions Club, other groups.</p> <p>b. NPSGWG and animal control specialists</p> <p>c. NPSGWG, Colorado Dept. of Agriculture, County Commissioners and other authorized agencies.</p> <p>d. NPSGWG, CDOW, land management agencies, power companies, landowners, and others.</p>

IMPLEMENTATION SCHEDULE FOR CONSERVATION ACTIONS

GENERAL CONSERVATION ACTIONS
(Undertaken At All Population Levels)

GENERAL CONSERVATION ACTIONS (Undertaken At All Population Levels)		IMPLEMENTATION	
Action	Specific Steps To Accomplish	When	Who
<p>The NPSGWG will cooperate with the public land management agencies and livestock grazing permittees to assure habitat needs of sage-grouse are addressed in livestock grazing permit renewals and implementation of livestock grazing management systems.</p>	<p>a. Provide guidelines to land managers and livestock producers, which describe vegetation components of sage-grouse winter, nesting, and early brood habitats as well as maps that identify priority habitats in North Park.</p> <p>b. Encourage use of grazing management practices which promote periodic rest or deferment from grazing during critical vegetative growth periods and provide residual vegetation, especially grasses, at end of grazing period. Residual grass cover is important to sage-grouse, particularly for nesting cover.</p> <p>c. Upon request, assist private landowners with an analysis of their property to determine current sage-grouse use and potential of their land to support sage-grouse. Analysis would include recommendation of livestock-grazing management practices, which would be implemented to improve sage-grouse habitat productivity.</p> <p>d. Where feasible livestock grazing on public rangelands and private land should be managed to limit forage utilization to moderate levels, 41-60% of current annual growth of key grass species, in sage-grouse nesting and brood-rearing habitat.</p>	a. At completion of NP plan	a. NPSGWG, CDOW, permittees
		b. Continuous-ongoing	b. NPSGWG, BLM, NRCS, OMP, ANWR, HPP, permittees
		c. Continuous	c. NPSGWG, BLM, NRCS, OMP, CDOW, HPP, permittees
		d. Continuous	d. NPSGWG, BLM, NRCS, OMP, CDOW, HPP, permittees

XII. GLOSSARY/ACRONYMS

Adopt-a-Lek - a comprehensive lek viewing and counting protocol, in order to benefit local economy, utilize recreation man-hours associated with viewing, enhance the recovery effort, and minimize the perception of negative impacts of viewing to sage-grouse lek activity.

ANWR (Refuge) - Arapaho National Wildlife Refuge

BLM - Bureau of Land Management

BMP's - best management practices

CCP - comprehensive conservation plan for Arapaho National Wildlife Refuge

CDOW or DOW- Colorado Division of Wildlife

CDPOR -Colorado Department of Parks and Outdoor Recreation

Conservation easement - legal agreement a property owner makes to restrict type and amount of development that may take place on his or her property. Each easement's restrictions are tailored to the particular property and to interests of individual owner.

Critical winter range - an area mapped for a species, thus indicating that within a given population, loss of area would adversely affect that species.

CSFS - Colorado State Forest Service

CSU - Colorado State University Extension Service

Endangered species - any species which is in danger of extinction throughout all or a significant portion of its range.

GIS - geographic information system

HPP - Habitat Partnership Program

Lek or lek site- an area where male sage-grouse display for purpose of gaining breeding territories and attracting females. These are usually open areas with short vegetation within sagebrush habitats, on broad ridges, benches, or valley floors where visibility and hearing acuity are excellent.

Lek count - high count of male sage-grouse of 4 counts taken at 7-10 day intervals between late March and mid-May on all lek sites within a lek area taken on same day.

North Park Sage Grouse Working Group (NPSGWG)- The North Park Sage Grouse Working Group originated in 1997 when interested groups and individuals organized to discuss current and potential future status of the sage-grouse in North Park, Colorado. Participants representing the Bureau of Land Management, Colorado Division of Wildlife, Jackson County, North Park Stock Growers, Natural Resource Conservation Service, US Fish and Wildlife Service, US Forest Service and several individuals from the general public formed a core group (15-25 individuals) who began working on strategies intended to increase sage-grouse populations in North Park. The goal of the group was to create a conservation plan that would establish a process and put into place a framework that would guide management efforts directed at improving sage-grouse populations and reverse long-term decline.

NRCS - Natural Resource Conservation Service

OMP - Owl Mountain Partnership

Prairie grouse - Sage-grouse, and subspecies of prairie chickens which inhabit open areas.

Riparian - relating to banks of a natural course of water.

Riparian area - a geographically delineated area with distinctive functions and characteristics. Includes both riparian ecosystem and adjacent aquatic ecosystem.

Sagebrush, sagebrush rangelands, sagebrush shrub-steppe - as referred to in this plan, includes the following species: Basin Big - *Artemisia tridentata*; Mountain Big - *Artemisia tridentata vaseyana*; Wyoming Big - *Artemisia tridentata wyomingensis*; and Black - *Artemisia nova*.

SLB - Colorado State Land Board

Threatened species - any species which is likely to become an endangered species within foreseeable future throughout all or a significant portion of its range.

USFS - U. S. Forest Service

USFWS - U. S. Fish and Wildlife Service

WRIS - Wildlife Resource Information System of the Colorado Division of Wildlife

XIII. PLAN PREPARERS

The following individuals are members of the North Park Sage Grouse Working Group and contributed to this plan.

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Date

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Date

Joseph A. Lance

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Date

ISSUE DESCRIPTIONS

The following issues were brought forth by people involved in the North Park Sage Grouse Working Group. During group meetings, individuals were able to explain why he or she felt the sage-grouse population, as a whole, was declining. All reasons were to be treated equally and no limitations were placed on what could be an issue. Thus, a long and varied list of possible reasons for sage-grouse decline was developed. The issues are listed in no particular order. The issues listed may not include all issues discussed and some issues may be not resolved and are out of the scope of plan.

Issues That Affect Sage-grouse Populations and Their Habitat

- **Vegetative Habitat:**

Poor habitat quality and quantity - The major factors that drive sage-grouse populations are quality and extent of habitat. No other bird is so habitat specific to one particular plant type (sagebrush) in meeting its annual life requirements. Size of habitat is important, because sage-grouse move seasonally between suitable habitat types. Sage-grouse are unable to adjust their life processes to fit a pattern of land use that eliminates or adversely disturbs large tracts of sagebrush.

Lack of grasses and forbs - Quality and quantity of residual herbaceous cover have important roles in sage-grouse production and survival. Residual herbaceous vegetation (grasses and forbs) in sagebrush areas which provide adequate cover, both horizontal and vertical, is necessary to hide nests and nesting hens, and broods, as well as provide habitat for insects upon which chicks depend.

Condition of winter habitat - Winter habitat is most critical to sage-grouse because without sufficient areas of exposed sagebrush they cannot survive winter to reproduce in spring. Although sage-grouse are widely distributed in winter, suitable winter feeding areas are limited. Despite improvements made to other habitat types, sage-grouse will not survive unless their wintering areas are protected from fragmentation or factors that destroy or degrade them.

- **Land Treatments:** Land treatments include projects such as: plowing and seeding, prescribed burning, herbicide, and chaining/cabbling. The effects of land treatments on sage-grouse populations can be either positive or negative, depending upon location, method, objective of treatment, and follow-up management. Some historic land treatments such as herbicide application, plowing and seeding, conducted in the North Park area have not benefitted sage-grouse. Effects of poorly designed treatments on sage-grouse include reduction of brood-carrying capacity of an area, loss of escape cover around leks making birds more vulnerable to predators, elimination of nesting habitat, and loss of winter habitat.

Effects of land treatments on winter habitat - Some land treatments which attempt to remove sagebrush to increase livestock and/or big game forage in sage-grouse wintering areas, can have a detrimental impact on sage-grouse. As snow accumulates, sage-grouse winter use areas become limited and birds are restricted to areas that support taller, dense sagebrush stands. Removal of sagebrush at those sites would force sage-grouse to use other terrains where sagebrush forage could be buried by snow. This would reduce survival due to greater exposure to winter weather, predators and starvation. As a result, treatment of sagebrush in critical areas has a disproportionate detrimental effect on winter habitat availability.

Poor management of land treatments - A major problem resulting from historic land treatments in the North Park area involves alteration of plant community structure in each of the sage-grouse habitat types. Increases in alterations combined with a lack of subsequent management needed to maintain health of plants resulted in treated areas often being overgrazed and reinvaded with sagebrush with little herbaceous understory, especially forbs and native grasses.

Lack of land treatments - Within sagebrush habitat, there are many areas where vegetative components other than sagebrush are needed for sage-grouse survival and production. As sagebrush densities increase, about 30% canopy cover of sagebrush may depress production of herbaceous understory species. Sage-grouse could benefit from beating of sagebrush in limited areas, and removal of pinon and juniper. Control of deciduous shrubs could also benefit sage-grouse in some areas.

Fire suppression - Wildfires are natural with varying effects that vary depending upon size of burned areas and the intensity and severity of the fire. In the past, natural fires were not a problem because they burned relatively small areas and burned areas did not have large numbers of confined grazing animals using them afterwards. For the past several decades, public land management agency policy was to suppress all natural fires. Controlling and preventing fires may have resulted in degraded habitat conditions for sage-grouse.

- **Land Planning/Mitigation:**

Fragmentation - Habitat fragmentation occurs when areas of suitable habitat are fragmented and divided into smaller areas due to such processes as physical destruction or degradation. Any patch of habitat isolated from similar habitat or by different habitats and/or unsuitable terrain may be considered fragmented. As habitat becomes increasingly fragmented, fewer individual birds exist. Sage-grouse are especially sensitive to fragmentation because of their fidelity to lek, nest, winter, and brood-rearing sites. Even when their habitat is absent or degraded, they will continue to attempt to use these areas and will subsequently be exposed to higher mortality risks further reducing their population size.

Changes in land uses - Sage-grouse require habitats dominated by sagebrush from October through April. During May through September they prefer habitats with abundant forbs (food) and grasses (cover plus habitat for insects used as food) with some live sagebrush or areas adjacent to live sagebrush which is used as escape cover. Removal of sagebrush cover to benefit livestock grazing and development of hay production areas have changed land uses either positively or negatively in the North Park area.

- **Utilities:**

Powerlines - Effects of powerlines on sage-grouse are severe. Powerlines have been documented to serve as predator perches in Utah and Colorado with subsequent loss of all leks visible to raptors (primarily golden eagles) from powerline poles. Further, sage-grouse pellets decrease as distance to powerlines decrease up to one-half mile. Thus, a strip about one-half mile on each side of powerlines is generally avoided by sage-grouse. These observations are supported by measurement of distances to powerlines of radio-marked sage-grouse throughout sage-grouse habitats in Colorado. Clearly, sage-grouse avoid powerlines when possible.

Pipelines - Development of pipelines is becoming more common in sage-grouse habitats. Pipeline construction can be negative if not properly managed to avoid adverse effects to breeding (March-mid May), nesting (mid April-early July), and early brood rearing (mid May-mid July). However, reseeding of areas with desirable forbs and taller grasses disturbed can be beneficial to sage-grouse, especially if the width of the area disturbed is minimal (<100 yards) and roads/trails used during construction are closed and reseeded after completion of the pipeline construction interval.

Roads - Roads can be classified as primary, secondary, and trails. Primary roads are those classified as state and federal highways. These roads are generally high speed and paved. Secondary roads generally have county designations, although some BLM and USFS roads can fit in this category. Some of these roads may be paved but most are generally gravel or dirt. These roads have moderate to low-speed ratings. Trails generally are unsurfaced, lack formal designation, and have low-speed ratings. Sage-grouse prefer walking to useable habitats throughout the year, except when snow cover increases their conspicuousness. Sage-grouse that walk across primary and secondary roads face great risk of death from moving vehicles. The end result of all primary roads and many secondary roads is reduction in the size of the sage-grouse population as those birds adjacent to the road are killed by road traffic. Because young sage-grouse learn from older sage-grouse, populations that traditionally used areas prior to road establishment or improvement decrease over time as the older (and young) birds die due to road disturbance resulting in death. Thus, traditional movements are often eliminated. Trails have less impact.

Fence designs - Fences are necessary for livestock management. However, wood fence posts can provide perches for sage-grouse predators. Also, sage-grouse have been

observed flying into fence wires, especially near preferred use areas such as leks. Fence management that reduces potential perch sites (metal posts) and allows larger spacing between wires could prove less negative for sage-grouse.

- **Loss of Topsoil & Productivity:** Soil is the primary factor determining potential for vegetation production of a given site. With reduction of herbaceous understory cover in sagebrush ecosystems, soils have become more vulnerable to wind and water erosion. Accelerated soil erosion has altered soil characteristics and quality by decreasing soil fertility due to loss of plant cover, reduction of organic matter and moisture retention, and increased soil compaction. The loss of topsoil reduces vegetation production on many sites impacting critical nesting and brooding areas through reduced herbaceous plant production.
- **Poor Nest and Brood Survival:** Poor nest and brood survival has been attributed to lack of herbaceous understory within the sagebrush community. This lack of herbaceous cover in sagebrush stands also negatively affects survival of young sage-grouse and nests. Since grouse initiate nesting prior to spring herbaceous vegetation growth, it is important that sufficient herbaceous residue remains from previous years. Such residual cover is lacking in some sites in the North Park area.
- **Timing, Intensity, and Duration of Livestock/Big Game Grazing:** Timing and intensity of livestock/big game grazing may affect sage-grouse nesting and brood-rearing success. The peak of sage-grouse hatch is the last week in May and the first week in June, depending on weather conditions. Concerns are that livestock/big game grazing could directly compete with sage-grouse for food (forbs and insects) and nesting cover during this time, or could physically disturb nests. Fall grazing could remove residual cover needed the following spring for nest and brood cover. Also, persistent early spring and summer grazing could reduce plant vigor of herbaceous species causing undesirable long-term changes in vegetative composition.

In some areas existing grazing practices, timing and duration may be having a negative effect on nesting and early brood habitat quantity, especially near and around water sites. Winter grazing by sheep on lek sites may be beneficial by keeping them free of thick, shrubby vegetation, and stimulating grass and forb growth.

Distribution and potential over-browsing by deer and elk on big game winter ranges have had significant effects on important forage shrubs and associated plant communities which may have influenced sage-grouse habitat quality. Large deer herds and resultant over-browsing between 1940 and the mid 1970s is well documented. Over-browsing of forage shrubs on winter range by elk has generally occurred only during winters of heavy snowfall. In some areas shrub canopy and height have been reduced to less than desirable, and may not be sustainable. Also, heavy winter and early spring grazing by elk has reduced cover, probably affected nest and brood cover, and possibly influenced long-term vegetative composition.

- **Drought:** Sage-grouse production is indirectly affected by drought. While sage-grouse are not limited by water in most cases, they are limited by vegetative growth and insects lost

during drought conditions. In the North Park area, both nesting success of females and brood survival severely decline during years with low-soil moisture as calculated by the Palmer Drought Index. This effect is probably compounded if land management practices remain unchanged during these years. However, drought does not appear to impact lek attendance of males.

- **Predators (coyotes, ground squirrels, badgers, eagles, hawks):** Losses of sage-grouse nests and young to predation are often high and can, in some locations, be the most significant factor in determining annual recruitment to the population. Studies have shown that ground squirrels and badgers can destroy up to 50% of the current year's nest and egg production. There is also a concern over coyote populations, which appear to be increasing, and the effects they may have on the sage-grouse population. Eagles and hawks can be significant predators on sage-grouse and some suggest eagle predation is increasing. Quality and quantity of grasses and forbs and other vegetation cover may influence rates of predation. Predation is reduced when sufficient vegetation exists to conceal nests.
- **Scientific Lek Harassment (i.e., Physical Disturbance Resulting From Scientific Studies):** Research on sage-grouse frequently requires capture and marking (bands, radios) of individual grouse. Capture of grouse is usually most easily accomplished when birds are concentrated on or near leks for purpose of display and mating. Methods range from spotlighting to locate grouse that are then captured using long-handled nets to walk-in traps placed on or near leks. Repeated disturbance of sage-grouse on leks has been demonstrated to make individuals more wary and flush more readily. Yearling males may change leks following marking but available data suggest that this age/gender class commonly investigates a series of leks during their first year. Studies of radio-marked male and female sage-grouse demonstrate strong attachment to the lek of capture despite repeated trapping activities.
- **Conflicting Uses During Critical Biological Activity Periods:** Critical biological activity periods of sage-grouse are during winter, breeding, nesting, and early brood rearing (December-mid July). Conflicting uses during this period are those that physically prevent sage-grouse from using preferred habitats. These uses range from human disturbance (including pets), motorized vehicles, to herding livestock and heavy grazing/browsing by deer and elk and domestic livestock.
- **Recognition of Private Landowner's Rights:** Most landowners are willing to work collectively toward a goal, as long as the recommendations or actions concerning sage-grouse do not impact their efforts to make a living. Private landowners are usually environmentally concerned, appreciate wildlife and try not to negatively affect habitat useful to wildlife.
- **Monitoring/Research:** Monitoring sage-grouse populations through counts of males on leks has been used to estimate trends in population size. This effort requires vehicle access via roads and trails during the late March-mid May interval. Properly conducted, spring counts are not known to affect sage-grouse. Research on sage-grouse is periodically needed to learn more about specific requirements and responses to habitat treatments. The need for monitoring and periodic research will continue. Monitoring of vegetation in relation to

grazing by domestic livestock and big game on public lands will continue, especially in response to vegetation treatments.

- **Reservoirs:** Construction of large reservoirs may inundate brood habitat and reduce total sage-grouse habitat. However, construction of smaller ponds/reservoirs and irrigation ditches may benefit sage-grouse through creation of wet meadow sites and provision of open water.
- **Recreational Uses:** Based on native American artifacts and ceremonies sage-grouse were hunted and their mating rituals observed prior to European settlement. Sage-grouse are presently hunted in the North Park area and organized watchable wildlife viewing exists within the boundary. Other recreational uses of the area such as big game hunting, blue grouse hunting, and predator hunting are not thought to be negative, although accidental killing may occur. Use of all-terrain vehicles could potentially impact sage-grouse negatively, especially in winter. Much of the area could be seasonally closed to all-terrain vehicles, primarily to preclude disturbance of big game.
- **Poaching:** Poaching is the intentional harvest of sage-grouse outside of established seasons; it includes intentional harvest of more than the established bag/possession limit during legal hunting seasons. Intentional harvest of sage-grouse outside established seasons has occurred in all months in Colorado but most commonly occurs during big game seasons (October-November) and in winter when flocks of sage-grouse may be more visible. It has also been documented in the spring during the display period. No particular age or sex class is more susceptible to poaching.
- **Wildlife Impacts:** Wildlife is a product of the land and, while dependent upon both private and public lands for survival, it belongs to the citizens of Colorado. That is, they are not privately owned except in certain defined situations. Sage-grouse and other wildlife do not recognize land boundaries and may forage on agricultural crops on private land. In these situations, they may reduce their amount or value. Elk and mule deer are managed under herd objectives for specific data analysis units (groups of several game management units). The State provides damage control materials and, in certain instances, financial reimbursement for demonstrable losses to private property from big game animals. The State's preference is to manage herd objectives to keep damage to low levels on private lands. It is possible that big game herd objectives may conflict with sage-grouse population goals. By statute, the State does not provide reimbursement for agricultural crop loss due to sage-grouse. However, if this loss can be identified when sage-grouse populations increase, incentives may be used to increase landowner acceptance of sage-grouse numbers that meet population goals of this Conservation Plan.
- **Subdivision/Ranchette Development:** Demand for second or summer homes in Colorado has increased, as has the demand for rural residences. Most rural subdivision and ranchette development has occurred when large parcels have been divided and sold in 35-to-90 acre tracts. When these developments have occurred within sage-grouse range, they have caused habitat fragmentation, habitat degradation, and habitat loss. It is thought that sage-grouse tend to avoid areas within 1/3-1/2 mile of permanently occupied dwellings.

- **Agriculture:** Production of agricultural commodities from ranches and farms was a major basis for land settlement. Importance of agricultural production will continue and will produce other benefits, such as open space in the future. Maintenance of viable sage-grouse populations will require more intensive management of large landscapes. Sage-grouse have demonstrated they can coexist with ranch management. Thus, maintenance of ranches/farms as productive units will benefit sage-grouse populations.
- **Unintentional Agricultural Losses:** Agricultural practices have the potential to enhance (by providing high quality seasonal food and habitat) or detrimentally impact sage-grouse populations. Detrimental practices may be those that increase field size (eliminating native cover), result in loss of nests or young broods (timing of mowing and plowing activities), or reduce overall habitat security (grazing, cultivation, trail maintenance, etc.). Some unintentional losses of sage-grouse due to agricultural practices can be minimized by slight alterations in timing of cultivation/grazing/farm maintenance practices. For example, cultivation and mowing of agricultural fields used by sage-grouse could be discouraged in the April 15 - July 15 period to benefit nesting sage-grouse hens and their subsequent young (<2 months of age) chicks.
- **Incentives:** Recent programs (state and federal) have specifically been designed to improve habitat for sage-grouse. These programs are voluntary but landowners are encouraged to participate. Financial incentives are available to landowners to participate in federal and state conservation programs designed to reduce erosion, maintain wildlife habitat, preserve water quality, reduce crop surpluses, and stabilize farm income.
- **County Regulations:** County governments are encouraged to consider wildlife and sage-grouse as valuable assets in terms of economic benefits as well as a measure of quality of life.

FIVE LISTING FACTORS

The Service must determine if presence of one or more of five factors listed below have caused a species' status to decline to where it meets the definition of endangered or threatened.

Endangered: Any species which is in danger of extinction throughout all or a significant portion of its range.

Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Five Factors considered by USFWS for listing a species as endangered or threatened under the Endangered Species Act:

1. **The present or threatened destruction, modification, or curtailment of its habitat or range.**

The undeveloped nature of the sagebrush ecosystem in Jackson County is currently providing the habitat necessary to support a viable population of sage-grouse. No large-scale threats to sage-grouse habitat are present or predicted in the foreseeable future. Currently, vegetative modifications are occurring in North Park to improve habitat for sage-grouse by treating old-age sagebrush stands to stimulate establishment of young sagebrush. Different age classes of sagebrush and increased understory vegetation that result from various treatments are expected to provide long-term habitat needs of sage-grouse in North Park.

2. **Overutilization for commercial, recreational, scientific, or educational purposes.**

This factor is not occurring in North Park nor is it expected to occur in the foreseeable future. Hunting, photographing, and viewing of sage-grouse do occur in North Park, however these uses are small scale and well-monitored by the CDOW and landowners in Jackson County. No commercial take of sage-grouse or scientific research which could adversely impact sage-grouse populations are occurring in Jackson County.

3. **Disease or predation.**

Although sage-grouse predation is occurring in North Park, the extent and impact are unknown at this time. Recent lek counts in North Park indicate the sage-grouse population is currently near historic high levels, therefore, it would appear that neither disease nor predation are causing declines in North Park sage-grouse.

4. **Inadequacy of existing regulatory mechanisms.**

Existing regulatory mechanisms are currently meeting the needs of sage-grouse in North Park. Regulations which affect the viability of sage-grouse populations and their habitat requirements are in place and utilized on a daily basis in Jackson County.

5. **Other natural or manmade factors affecting its continued existence.**

No natural or manmade factors that would affect the continued existence of sage-grouse in North Park are present. Recent interest in the continued well-being of sage-grouse has alerted local government, residents, landowners, land management agencies, wildlife management agencies, and concerned citizens to be cognizant of any potential factors, manmade or natural, which could affect continued existence of sage-grouse in North Park.

**NORTH PARK SAGE GROUSE WORKING GROUP
BEST MANAGEMENT PRACTICES**

- MAMMALIAN PREDATOR MANAGEMENT POLICY
Colorado Division of Wildlife, September 10, 1999.
Best Management Practices found in: Colorado Biology Technical Note #12.
Management Practices for Sage Grouse. April 9, 1997
- BRUSH BEATING
- REST ROTATION GRAZING
- SPRING DEVELOPMENT AND PROTECTION
- FERTILIZATION OF SAGEBRUSH RANGELANDS
- CHEMICAL TREATMENT OF SAGEBRUSH
- RESTORATION OF CONVERTED SAGEBRUSH STANDS
- FENCING OF RIPARIAN AREAS
Habitat Management Guidelines found in: Colorado Biology Technical Note #1.
November, 1992
Best Management Practices found in Section IV NRCS FIELD OFFICE
TECHNICAL GUIDE:
- RIPARIAN HERBACEOUS COVER
- RESTORATION AND MANAGEMENT OF DECLINING HABITATS
- EARLY SUCCESSIONAL HABITAT DEVELOPMENTAL/MANAGEMENT
- GRAZING LAND MECHANICAL TREATMENT
- NUTRIENT MANAGEMENT
- WILDLIFE UPLAND HABITAT MANAGEMENT
- PRESCRIBED BURNING
- WILDLIFE WATERING FACILITY
- RANGE SEEDING
- PLANNED GRAZING SYSTEM
- DEFERRED GRAZING
- FENCING
- BRUSH MANAGEMENT
- PRESCRIBED GRAZING
- SPRING DEVELOPMENT
- POND
- PROPER GRAZING USE
- PASTURE AND HAY MEADOW PLANTING
- LIVESTOCK EXCLUSION
- CRITICAL AREA PLANTING

ANNUAL COYOTE-CALLING WORKSHOP

A community sponsored annual coyote calling workshop will emphasize the importance of collecting biological data on coyotes. This workshop will be held annually in late fall or early winter, with the cooperation of private landowners who will allow calling during the event. The workshop will:

- gather biological information to find out type of predators in and around lek and nesting sites (lek and nesting sites will be predetermined by CDOW and NPSGWG with landowners' permission)
- act as a public forum to educate and inform the public about sage-grouse and their predators. Explain reason for predator control using biological information gathered during workshop
- help determine trends in population levels between grouse and their predators from year to year

HABITAT RECOMMENDATIONS

LEKS:

- Habitat Function:** Used for display and mating, require good acoustics and visibility for display activity and predator detection.
- Location:** Within at least 300 yards to ½ mile of nesting habitat. Within 200 yards of escape cover (large expanses of sagebrush). Typically in broad valleys or benches, broad ridges or mesas. At least 200 yards from trees or other potential raptor perches.
- Size:** 1-5 acres.
- Shape:** Irregular, but usually circular or short and linear.
- Time of use:** Mid March to early June.
- Composition:** Perennial grass cover >20%.
Total sage cover <10%.
Total forb cover >10%.
- Structure:** No trees or deciduous shrubs >3 feet tall.
Grass and forb height 5-10 inches.
Sage up to 15 inches.

NEAR LEK AREAS:

- Habitat Function:** Provides escape cover for displaying males, visiting females, and resting birds.
- Location:** Within 200 yards of lek.
- Size:** >1 acre up to 40-60 acres.
- Shape:** Irregular, if linear, then >200 yards in width.
If patches, then >200 yards in diameter.
- Composition:** Perennial grass cover >20%.
Total shrub cover (sage + mountain shrubs) 20-30%.
Total forb cover >10%.
- Structure:** Sagebrush and other shrubs >15 inches tall.
No potential raptor perches.

NESTING/EARLY-BROOD REARING AREAS:

- Habitat Function:** Provides good hiding and nesting cover and high levels of insects and succulent forbs to meet brood-rearing nutritional requirements.
- Location:** Within 3 miles of a lek.
- Size:** Overall nesting area >10 acres made up of 1/4-1 acre patches of sage ranging from dense to sparse.
- Shape:** Need high level of interspersion within heavier sagebrush areas.
- Time of use:** April through July.

Composition: Patchy: Foraging areas:

Total sage cover <20%.

Total forb cover >15%.

Total grass cover >25%.

Hiding Areas:

Total sage cover >25%.

Total forb cover >10%.

Total grass cover >20%.

Structure: Sagebrush >18 inches tall.

Abundant standing herbaceous material.

Herbaceous average height >8 inches.

LATE-BROOD REARING AREAS:

Habitat Function: Provides moisture and high levels of succulent forbs, insects, and hiding cover. Typically edges of hay meadows riparian areas, ponds, seeps, drainage bottoms.

Location: Near stands of live sagebrush or other deciduous shrubs close enough for escape. Less than ½ mile from early-brood rearing areas, often north-facing slopes.

Size: >100 yards, usually around 200 yards wide.

Shape: Irregular, frequently linear, high interspersion of stand and cover types.

Composition: Sagebrush <20%.

Total shrub cover <25%.

Perennial grass cover >25%.

Perennial forb cover >15%.

Structure: Herbaceous vegetation >10 inches tall.

FALL AND WINTER HABITAT:

Habitat Function: Provides thermal and hiding cover, and requires abundant supply of taller sagebrush (15-25 inches).

Location: Usually broad basins, ridges, and north to northwest facing slopes.

Size: Extensive stands of sage, usually in patches larger than 100-2200 acres.

Shape: Interspersion of shorter stands of sage (ridges) with taller stands (swales, valley bottoms).

Composition: Total sage cover >20% (25-30% preferable).

Total forb cover >10%.

Perennial grass cover >15%.

Structure: Tall sage 15-25 inches.

Shorter sage >10 inches.

Summary of North Park Sage-Grouse Research

A large-scale and long-term analysis of effects of spraying sagebrush with 2,4-D on sage-grouse distribution and abundance was begun in 1963 following a 1962 proposal by the BLM to spray all land they controlled in North Park. Gill studied sage-grouse habitat use and movements and conducted intensive lek counts prior to spraying study area around Lake John. About four thousand acres were sprayed from 2-5 June, 1965. Two large blocks of 515 and 1,801 acres were sprayed with an intervening block of 1,600 acres. Two strip-spray designs were employed: the largest encompassed 1,180 acres and consisted of 50-yard wide sprayed areas separated by 200-yard wide unsprayed areas. About 484 acres were sprayed with 17 variable-width treated areas: 4 each at 50, 100, 150 yards wide, 3 at 200 yards wide and 2 at 250 yards wide. Poley and May looked at sage-grouse abundance and distribution and vegetation response following spraying. Leks around the areas treated in 1965 were still used and had similar or higher numbers in 1969. Three leks were abandoned within the sprayed area by 1974, although two new leks formed or were discovered. Radio-transmitters were attached to 28 hens in April (24) or June (2) or July (2). Eight hens nested an average of 3.9 miles from their lek of capture (range 1.4-8.5 miles). Twelve of 14 nests were under live sagebrush, 1 was under greasewood and 1 was under rabbitbrush. Height of sagebrush over nest bowls was 35 cm (range 280-430 cm). Known clutch sizes were 7 (4 nests) or 8 (3 nests) eggs. Nest searches were conducted in 41, 10-acre blocks in 1964 (pre-spray by Gill, and in 60, 5-acre blocks (27 sprayed, 33 unsprayed) by Carr in 1965 and 1966 and by Beck in 1973. Block spraying essentially eliminated nesting, but sprayed strips were used in the same proportion for nesting as unsprayed areas. Usually nest plots within sprayed strips encompassed a continuum from total kill to no kill of sagebrush and grass and other cover usually responded to spraying.

Beck described winter use areas as documented by ground and aerial searches in January into early March of 1974 and 1975. No significant use was made of areas south of Owl and Peterson Ridges because very little sagebrush was exposed above snow. Seven intensive winter use areas were identified which encompassed 79% of grouse observations in 1974 and 51% in the winter of 1975 when snowfall was substantially lower. These intensive use areas encompassed 4.5% of available sagebrush areas within the park. Only 4 of 199 flocks observed were in areas altered by 2,4-D spraying, plowing, seeding, or burning since 1957, despite the fact these areas comprised 32% of the sagebrush areas in North Park. Winter flocks were typically located on south, southwest, or west facing slopes of less than 5%. Movements from banding sites (usually leks) to wintering areas averaged 6.5 and 3.2 miles in 1973-74 and 1974-75 for males, and 11.5 and 9.5 for females.

Heather Alexander attempted to use tape-recorded chick distress calls to develop a method of censusing hens with broods. By foot, or running previously established brood routes with a vehicle hens with broods were located by systematically searching drainages and irrigated hay meadows within two miles of leks. Only two of 12 hens with broods responded to the chick distress call.

Emmons studied lek attendance patterns of radio-marked male sage-grouse in 1978 and 1979 in

an effort to improve lek counts as an index to sage-grouse populations. In 1978, 17 males (9 adults and 8 juveniles) were captured on or near leks and followed to observe lek attendance patterns. Data from 7 birds was excluded due to radio failure, movement out of study area or predation. Adult males attended 1 or 2 leks, remaining on the alternate lek only one day. Juvenile males visited from 2 to 4 leks, remaining on each an average of 3.4 days. Sagebrush at feeding-loafing sites during this period averaged 29.3% canopy cover and 45 cm in height, although 80% of roosting locations occurred in sagebrush with a canopy cover less than 20% and height less than 22.5 cm tall (no doubt due to the inclusion of roosts on leks). Results of this study are clearly biased since most birds were captured on or near leks, and Emmons was unable to locate birds often enough early in the morning.

Peterson conducted a similar study on female sage-grouse lek attendance patterns. His study was also biased by capturing hens on or near leks and by his inability due to manpower constraints to locate hens often enough to document all of their lek attendance. He captured and radio-marked 42 hens. He found 90% of adult females attended one lek while 10% attended two leks. Adults attended 1 (44%), 2 (24%), or 3 (33%) days. Juveniles attended 1 (82%) or 2 (18%) leks for 1 to 5 days. Multiple lek attendance usually did not occur on consecutive days. These numbers are almost certainly biased low because hens were captured on or near leks; some lek attendance occurred prior to capture. He censured data from 17 of the 42 hens because of "late transmitter attachment", although it was not clear what criteria was used to censor some hens and leave others in the data set. Hens who lost or abandoned their first clutch after beginning incubation attended leks a second time 1-3 days after nest loss. Egg laying commenced from 4-13 days following last day of lek attendance, although 8 of 11 adult hens began egg laying within 6-8 days while 8 of 11 yearlings began egg laying within 10-13 days. Adult hens traveled an average of 5.4 km from lek of breeding to nest sites (15) while juveniles moved an average (range 0.4-5.8) of 2.1 km to nest sites (13). Length of incubation was 25 (2 nests) or 26 days (11 nests). Twelve adult hens averaged 7.4 eggs per clutch (range 6-9), while 17 yearling nests averaged 6.8 (range 5-9). Seven egg clutches were most common for adults and yearlings. Renesting was documented for both adult and yearling hens although at different rates; 71% of surviving adults renested while only 20% of yearlings did. Overall nest success over both years was 40%, hen success was 64% for adults and 47% for yearlings. Nest losses were caused by predation (14 of 35) or abandonment (7). Nest predation was attributed to ground squirrels (20%), badgers (11%), coyotes (3%), and unknown (6%). Four of the 7 abandoned nests were attributed to the researcher. Average egg hatching success (from successful nests) was 93% in 1979 and only 76% in 1978 which was attributed to snowstorms that occurred while hens were still laying. Thirty four of 35 nests were under sagebrush plants. Average height of nest bush was 32 cm (range 11-60). Sagebrush canopy cover at nest sites averaged 24% (range 9-43), although text and table do not agree internally.

Schoenberg (1982) studied movements and habitat selection of 16 male (12 adults, 4 yearlings) and 22 female sage-grouse in 1979 and 1980. Movements and habitat selection were based on birds trapped primarily on Raven lek but also from Perdiz and Denmark. Winter habitat use was assessed in February and March of 1980. Three males traveled an average of 17 miles to lek sites from wintering areas, while 4 hens traveled an average of 18.6 miles from wintering areas

to nest sites. One male attended a lek within his winter home range. Only 1 of 9 adult males, but all 3 yearling males attended more than 1 lek during breeding season. Males moved an average of 0.6 miles from leks to feeding-loafing sites and moved in non-random directions. Eleven hens moved an average of 1.68 miles from leks to nest sites. Three of 10 nests located in 1980 were successful, 3 were abandoned (2 due to researcher), and 4 were predated by ground squirrels (3 of 4) or most probably a badger (1). Average sagebrush canopy cover at nest sites was 44%. Average sagebrush canopy cover of male feeding loafing sites in spring was 35%. Hens with broods moved an average of a mile during the first week after hatching and generally remained in sagebrush uplands for 2-3 weeks before moving to meadows. All birds restricted movements during late June through August to relatively small areas along the Canadian and Michigan river meadows. Mortality was low, but deaths of hens were caused by hunting (3), great horned owls (1), raptors (1) and unknown (1) while male deaths were attributed to golden eagles (3). Golden eagles were observed pursuing sage-grouse frequently in wintering areas. Wintering areas used intensively following deep snows were characterized by topographic diversity including deep draws and windswept ridges. These areas comprised only 3.7% of sagebrush-dominated land in North Park. Sage-grouse selected sites to feed and loaf during winter where snow depth was half that of random sites. Males and females used the same wintering areas and had similar movements; daily movements averaged about a mile during this period. Winter home ranges averaged 17,800 and 13,125 acres for males and females, respectively. Discriminant function analysis and principal components analysis suggested habitat use was non-random, and that winter and nesting habitat was most limiting

Remington studied sage-grouse food selection, diet quality and energy reserves of sage-grouse in 1980-81 and 1981-82. He documented strong selection for Wyoming big sagebrush and avoidance of Mountain big sagebrush leaves as winter food. Ninety percent of plants identified as fed-upon by sage-grouse were Wyoming big sagebrush, 7% mountain big sagebrush and 3% were alkali sagebrush. This selection was related to a higher protein (14.1% vs. 10.8%) and lower monoterpene content of Wyoming big sagebrush compared to mountain big sagebrush. Sage-grouse selectively fed on plants of both subspecies containing highest amounts of crude protein. Energy reserves from stored fat, glycogen and muscle mass would sustain fasting juveniles 3 to 4.5 days, fasting adult females 4-6 days and fasting adult males 5-8 days. Energy reserves increased over winter.

Myers evaluated sage-grouse response to application of nitrogen fertilizer (112 kg N/ha) to sagebrush rangelands. He also documented a strong preference by sage-grouse for leaves of Wyoming big sagebrush over mountain big sagebrush, both in the wild and by wild and captive-reared birds in captivity. Fertilized Wyoming big sagebrush plants were preferred over non-fertilized plants of same subspecies the year following fertilization but not the second year following fertilization. Fertilizer did not improve the palatability of mountain big sagebrush relative to Wyoming big sagebrush, or to non-fertilized plants. He observed extensive sage-grouse use (for roosting and feeding) on areas north and south of the Walden Coal Company mine site where earth-moving activities during closing operations caused coal dust to settle and melt snow, exposing sagebrush. Wyoming big sagebrush comprised 92.5% of relative consumption when offered to captive birds in equal amounts with mountain big sagebrush. Fertilizer substantially increased leaf crude protein content, but this effect was significant for only one spring. The probability that sage-grouse fed on Wyoming big sagebrush plants was strongly correlated to their crude protein content, which indicated sage-grouse sought out and selectively

fed on plants containing highest crude protein.

Zablan analyzed band recovery data from sage-grouse (5,627 birds banded, 856 recoveries) marked over a 14-year period (1973-1987) in North Park to estimate survival rates. Female annual survival (54.7%) did not differ between adults and yearlings or across years, although small sample sizes inhibited ability to detect differences. Survival of males banded as adults was 38.4%, while survival of yearling males was 51.7%. Gary White at CSU is re-examining this data set and incorporating data from additional years of marking and recovery.

Benson (1990) studied response of male sage-grouse to fires that occurred near two lek sites in North Park (Perdiz and Deer Creek) and one in Moffat county. The Deer Creek fire, a prescribed fall burn of 94 acres, followed pre-treatment data collection in 1987. The Perdiz fire, a wildfire in August of 1987, burned about 300 acres about 1-km west of the lek. Twenty-six (13 adults, 13 yearlings) males were captured on the Deer Creek lek during April-May of 1988-1990, while 10 males (5 adult, 5 yearling) were radio-marked on Perdiz in 1988 and 1990. Sage-grouse generally avoided burned areas unless there were remnant sagebrush stands within them, even where these habitats had been heavily used prior to burning. Re-locations averaged 0.8 km from the Deer Creek lek and 0.9 km from the Perdiz lek. Home-range size averaged 716 acres (range 296-1,451) and 865 (range 42-1,433) acres at the two lek sites, respectively. There was no difference in home-range size for adults and yearlings. Basal grass cover increased 3-6 times between the end of the first and third growing seasons, although forbs responded to a much smaller degree. Sagebrush seedlings were observed the second and third growing season after the fire.

Giesen trapped 71 hens on 4 strutting grounds in North Park (Boettcher, Coalmont, Delaney Butte, and Spring Creek #1) in 1993 and followed them through 1994 to document movements to nests and nest success. Movements from lek of capture to nest sites (42) averaged 3.5 km and ranged from 0.6 to 28.7 km in 1993, and averaged 2.6 km for 20 nests located in 1994 (range 0.7-7.8 km). Nearly one third of marked hens moved farther than 3 km from the lek to nest. Nesting success was generally poor: 22% in 1993 and 27% in 1994. Most nest loss (87%) was due to depredation, primarily from Richardson's ground squirrels. Eight of 31 (25.8%) unsuccessful hens re-nested in 1993, while 2 of 14 (14%) unsuccessful (adult) hens re-nested in 1994. All re-nesting attempts were unsuccessful. Characteristics of vegetation at nest sites were measured. Sage-grouse selected areas with significantly greater canopy cover of sagebrush and vertical obstruction. Sagebrush canopy cover and height averaged 43.4% and 37.5 cm in 1993 and 47.2% and 37.5 cm in 1994, respectively. Vegetative characteristics did not differ between successful and unsuccessful nests.

LEK VIEWING ETIQUETTE AND PROTOCOL

Viewing Etiquette

Much can be learned about sage-grouse and their surroundings by observing the impressive displays of male sage-grouse on leks. We are fortunate that their mating ritual allows human observation. At the same time, however, this accessibility can invite human disturbance and interference. Observance of the following guidelines protects the birds and will ensure that these displays can be observed by the public in the future.

To Enjoy Displays You Should:

1. Arrive at the lek between 4:30 and 5:00 a.m. (Arriving later may disturb birds.)
2. Dress for cold weather, including a hat, gloves, warm boots and a blanket.
3. Be prepared for muddy road conditions.
4. Bring binoculars, spotting scope, field guides and camera (a lens of 200-500 mm and film with an ISO of at least 200 are recommended for best photographs).

Please Observe the Following Rules:

1. Remain in your vehicle at all times.
2. Park in designated parking areas only.
3. Do not park so as to restrict access and view of other visitors.
4. Do not camp overnight on or near lek.
5. Leave pets at home.

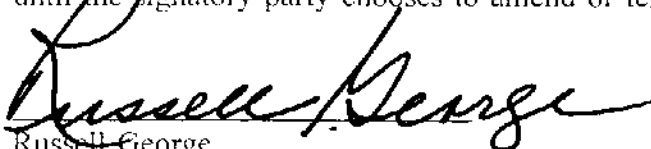
**NORTH PARK GREATER SAGE-GROUSE CONSERVATION PLAN
CONSERVATION AGREEMENTS**

CONSERVATION AGREEMENT

The **Colorado Division of Wildlife** hereby states its intent and commitment to assist with and participate in the implementation of the *North Park Greater Sage-Grouse Conservation Plan* as prepared by the North Park Sage Grouse Working Group. Specific commitments made hereby are as follows:

1. To provide one staff person to coordinate the implementation of this plan and represent the Division on the North Park Sage Grouse Working Group, which consists of representatives from state and federal agencies, local government, conservation organizations, landowners, private industry, and interested members of the local community.
2. To assume lead responsibility for the inventory and monitoring (including harvest) of Greater Sage Grouse in North Park, Colorado, and to annually compile and report inventory and monitoring information.
3. To implement and enforce specific State statutes and Wildlife Commission Regulations (Colorado Revised States, Title 33, Article 3 and 6, and Colorado Wildlife Commission Regulations Chapter 3) that control the taking and possession of Greater Sage-Grouse in Colorado.
4. To make recommendations to, and cooperate with, other state and federal agencies, local governments, private landowners, and land developers to avoid, minimize, or mitigate negative impacts of development and other land uses on Greater Sage Grouse populations and their habitats in North Park.
5. To make recommendations to, provide some funding for, and cooperate with, other state and federal agencies, local governments, private landowners, and conservation organizations to conserve and enhance Greater Sage-Grouse habitats in North Park.
6. To continue to support and conduct research on the population dynamics and habitat relationships of Greater Sage Grouse in Colorado.

Performance of the commitments described above is contingent on adequate funding being available and allocated to the signatory agency. This agreement shall not prohibit the signatory agency from engaging in management actions regarding Greater Sage-Grouse beyond those described in this agreement and in the Conservation Plan. This agreement shall become effective on the date of signing by the participating party and shall remain in effect until the signatory party chooses to amend or terminate the agreement.



Russell George
Director, Colorado Division of Wildlife

12/6/01
Date

CONSERVATION AGREEMENT

The U.S. Bureau of Land Management, Kremmling Field Office, hereby states its intent and commitment to assist with and participate in the implementation of the *North Park Greater Sage-Grouse Conservation Plan*. This plan was prepared by a work group of affected stakeholders and is designed to conserve and enhance populations and habitats of Greater sage-grouse, a BLM sensitive species. This plan is in no way meant to be construed as a Resource Management Plan Decision. All projects or management actions implemented through these guidelines will be subject to site specific environmental analysis required under the National Environmental Policy Act. Specific commitments made hereby are as follows:

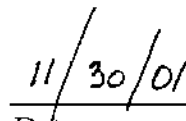
1. All proposed projects or actions funded, implemented or authorized by the BLM will be analyzed with respect to impacts on Greater sage-grouse and their habitats in accordance with the guidelines set forth in this plan.
2. To implement the guidelines, conservation actions, and intent set forth in this plan within the constraints of existing laws, policies, regulations, and management plans, and while considering the needs or implications to other species and multiple uses.
3. To work with private landowners, companies, organizations and other state or federal agencies to implement necessary conservation actions to enhance sage-grouse habitat as outlined in this plan.
4. To protect or mitigate any sage-grouse populations and suitable habitat which may be located on BLM lands from negative impacts which may be caused by other land use activities. Authority for the protection of Greater sage-grouse and its habitat is pursuant to provisions in the BLM Policy Manual and the Federal Land Policy and Management Act.

Performance of all activities described above is contingent on adequate staff and funding being allocated to the signatory agency. This agreement shall not prohibit the signatory agency from engaging in management actions regarding Greater sage-grouse conservation beyond those described in this agreement and in the Conservation Plan. Such management actions shall be coordinated with the North Park Sage Grouse Working Group.

This agreement shall become effective on the date of signature by the participating party, and shall remain in effect until the signatory party chooses to terminate the agreement, or the agreement is terminated by consent of the North Park Sage Grouse Working Group. This agreement may be terminated by providing 90 days written notification to the North Park Sage Grouse Working Group.



Linda Gross, Kremmling Field Office Manager
Bureau of Land Management, USDI



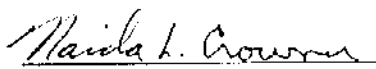
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CONSERVATION AGREEMENT


The **County of Jackson, State of Colorado** hereby states its intent and commitment to assist with and participate in the implementation of the **North Park Greater Sage-Grouse Conservation Plan** as prepared by the North Park Sage-Grouse Working Group. Specific commitments made hereby are as follows:

1. To provide staff personnel to coordinate the implementation of this plan and represent Jackson County, Colorado on the North Park Sage-Grouse Working Group, which consists of representatives from state and federal agencies, local government, conservation organizations, landowners, private industry, and interested members of the local community.
2. To assume lead responsibility for integrating applicable Greater sage-grouse data into the Jackson County Geographic Information System.
3. To make recommendations to, and cooperate with, other state and federal agencies, local governments, private landowners, and land developers to avoid, minimize, or mitigate negative impacts of development and other land uses on Greater sage-grouse populations and their habitats in Jackson County, Colorado.
4. To make recommendations to, provide some funding for, and cooperate with, other state and federal agencies, local governments, private landowners, and conservation organizations to conserve and enhance Greater sage-grouse habitats in Jackson County, Colorado.
5. To continue to support research on the population dynamics and habitat relationships of Greater sage-grouse in North Park.

Performance of the commitments described above is contingent on adequate funding being available to the County of Jackson, State of Colorado. This agreement shall not prohibit the County of Jackson, State of Colorado from engaging in management actions regarding Greater sage-grouse beyond those described in this agreement and in the North Park Greater Sage-Grouse Conservation Plan. This agreement shall become effective on the date of signing by the Board of County Commissioners of Jackson County, Colorado, and shall remain in effect until the Board chooses to amend or terminate the agreement.


Naida L. Crowner
County Commissioner


Richard F. Wyatt
County Commissioner


Dennis V. Brinker
County Commissioner

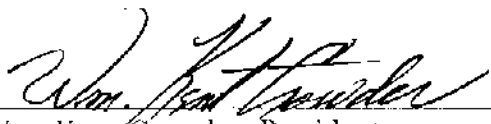
November 30, 2001
Date

CONSERVATION AGREEMENT

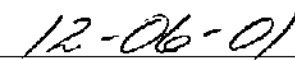
The **Jackson County Water Conservancy District** hereby states its intent and commitment to assist with and participate in the implementation of the *North Park Greater Sage-Grouse Conservation Plan* as prepared by the North Park Sage Grouse Working Group. Specific commitments made hereby are as follows:

1. To cooperate and work with the North Park Sage Grouse Working Group in the implementation of the *North Park Greater Sage-Grouse Conservation Plan*.
2. To provide District data on water development, water conservation and water quality to the North Park Sage Grouse Working Group.
3. To make recommendations to, and cooperate with, private landowners, other local governments, and state and federal agencies to minimize, or mitigate negative impacts of water development projects on Greater sage-grouse populations and their habitats in Jackson County, Colorado.
4. To cooperate with private landowners, other local governments, and state and federal agencies to conserve and enhance Greater sage-grouse habitats in Jackson County, Colorado.
5. To continue to support research on the population dynamics and habitat relationships of Greater sage-grouse in North Park.

Performance of the commitments described above is contingent on adequate funding being available to the Jackson County Water Conservancy District. This agreement shall become effective on the date signed by the President of the Jackson County Water Conservancy District, and shall remain in effect until the Board of Directors of the District amend or terminate the agreement.



Wm. Kent Crowder, President
Jackson County Water Conservancy District



Date

AGREEMENT FOR COOPERATION

The North Park Stockgrowers hereby enters into this agreement with the North Park Sage Grouse Working Group for the intent and purpose of implementing the conservation plan prepared by the North Park Sage Grouse Working group. The plan was developed in a cooperative effort of private landowners (and members of the North Park Stockgrowers), governmental employees and interested citizens to set forth a long-term strategy for the management of the greater-sage grouse. The plan addresses concerns of individual stockgrower members, landowners, private groups and governmental agencies about the security and long-term viability of the species in North Park. The plan has the intent of keeping the population of greater-sage grouse healthy enough to avoid listing them as an endangered species and subjecting undo restraints on members of North Park Stockgrowers as private landowners and livestock growers. Listing of the greater-sage grouse as an endangered species would put burdens on landowners and livestock growers that could possibly endanger their viability as private businessmen. The plan will be reviewed and updated annually, or as needed. The North Park Sage Grouse Working Group believes that a locally developed conservation plan will provide opportunities for governmental agencies, individual landowners, and private groups to join together for a workable solution to have a viable population of greater-sage grouse in North Park. Participation by members of the North Park Stockgrowers in this agreement shall be strictly voluntary.

Thomas W. Halpern
President, North Park Stockgrowers

11-5-01
Date

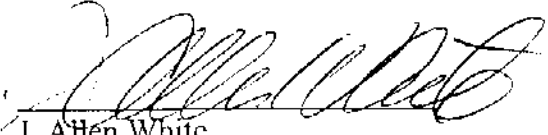
James A. Baller Jr.
Vice-President, North Park Stockgrowers

Mary Lea Brinker
Secretary-Treasurer, North Park Stockgrowers

CONSERVATION AGREEMENT

The USDA Natural Resources Conservation Service (NRCS) hereby states its intent to assist with and participate in the implementation of the North Park Greater Sage-grouse Conservation Plan as prepared by the North Park Sage-grouse Working Group.

Performance of all activities described in the plan pertaining to the NRCS is contingent on availability adequate funding and staff being made available and allocated to the agency. This agreement shall become effective on the date of signature by the participating parties and shall remain in effect until the parties choose to terminate the agreement, or the agreement is terminated by consent of the North Park Sage-grouse Working Group.



J. Allen White
NRCS District Conservationist
Jackson County, Colorado



Date