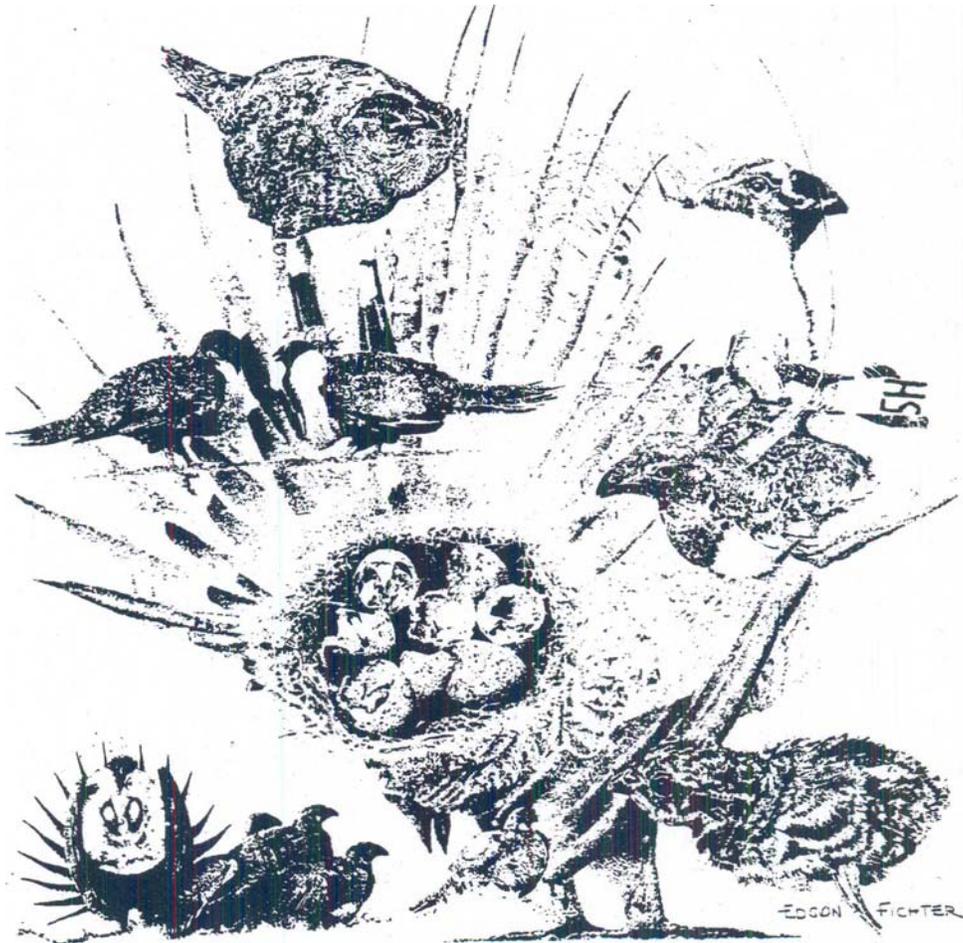


# IDAHO SAGE GROUSE MANAGEMENT PLAN 1997



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**For more information on this  
management plan**

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# 1997 IDAHO SAGE GROUSE MANAGEMENT PLAN

## **1. INTRODUCTION**

The number of sage grouse in Idaho is at a record low. Management efforts directed at this native grouse are often fragmented between different agencies and landowners without common goals or direction. To provide improved cooperation among affected parties, the Idaho Fish and Game Commission is sponsoring development of a comprehensive, ecosystem-based plan for Idaho's sage grouse.

This Plan has been developed by the Idaho Sage Grouse Task Force comprised of representatives from natural resource agencies and agricultural, sportsman, and conservation organizations. The Plan is designed as a framework for local working groups (LWGs) to develop site-specific programs to improve local sage grouse populations. It is organized into 6 major sections: (1) Existing Management Condition: a summary of what we know about sage grouse and trends in their habitat and populations; (2) Statewide Issues: the statewide issues that are affecting sage grouse and their habitat; (3) Statewide Goals: the statewide goals for sage grouse populations and habitat; (4) Statewide Objectives and Conservation Actions: some of the options and tools local working groups need to consider when developing local management programs; (5) Management Area Issues and Strategies: the issues and potential strategies associated with the 13 different Management Areas that exist; (6) Appendices: details on research looking at herbaceous cover and its importance for sage grouse and the protocol for establishing local working groups.

This plan is expected to be in place until populations goals are met in all Management Areas. It will be reviewed by the Statewide Sage Grouse Task Force at least annually and updated and revised as new information becomes available.

## **2. EXISTING MANAGEMENT CONDITION**

### **GENERAL INFORMATION ON SAGE GROUSE**

The sage grouse (*Centrocercus urophasianus*) is a large upland game bird once abundant throughout sagebrush (*Artemisia*) habitats of the western U.S. and Canada. Adult males weigh 4 to 7 pounds and adult females 2 to 4 pounds. During the spring, males gather on traditional breeding areas, called leks, for displaying and mating. Using elaborate plumage displays and inflatable air sacs that produce a loud "popping" sound, males attract females and protect their territory on the lek from other males.

Sage grouse occupying areas with a mixture of wintering, breeding and summering habitats often do not migrate, while those inhabiting mountain valleys or areas with distinct elevational gradients usually do. Most sage grouse populations in Idaho are migratory. In the late summer and early fall, migratory sage grouse congregate into flocks in preparation for movement to traditional wintering grounds. During these migrations, large flocks can be visible flying 50 to 75 feet off the ground with occasional flapping and long gliding flights. Migrations of 50 to 100

miles have been recorded. In many cases, sage grouse winter and breed in the same areas. Sage grouse usually return to specific wintering/breeding areas regardless of weather or food conditions.

## SAGE GROUSE HABITAT

### What Kind of Habitat Do Sage Grouse Need?

Sage grouse are dependent on large acreages (i.e., hundreds of thousands of acres) of sagebrush/grassland habitats that have a 15 to 25% sagebrush canopy cover and good grass and forb (flowering herbaceous plants) cover. Generally, sagebrush habitats provide critical winter range for sage grouse (i.e., grouse depend on these habitats exclusively during the winter and loss of these habitats will cause a loss of the sage grouse population). Similarly, sagebrush/grassland habitats provide critical breeding range for sage grouse and their loss will result in a loss of sage grouse. Meadows, riparian areas, alfalfa fields and other moist areas provide important summer range for sage grouse, but grouse will use a variety of habitats at that time of year. Sage grouse populations decline when sagebrush/grassland habitat is altered or fragmented by reducing or eliminating sagebrush canopy cover, seeded to introduced grass species, converted to agriculture dominated by annual grasses (e.g., cheatgrass), or altered in any way that results in significant reduction of the native grass/forb understory.

Sagebrush and understory grasses and forb cover are key components of sage grouse nesting and early brood-rearing habitat. Most sage grouse nests occur under sagebrush. If sagebrush is eliminated from a large area, it will not support sage grouse populations because nesting success and/or juvenile survival will also be reduced. Recent research (See Appendix A) has shown that herbaceous cover is critical for successful nesting.

Insects are a key component of sage grouse brood habitat. A high-protein diet of insects is necessary for all young upland game birds during the first month of life. Sage grouse chick survival is lower if insects are unavailable probably because of starvation and increased vulnerability to predation while searching for scarce food. Recently-burned sagebrush habitats on the Big Desert of eastern Idaho (an area with less than 11" of annual rainfall) produce fewer insects than unaltered habitats. The best early (June to mid-July) sage grouse brood habitat includes native grasses and forbs as well as a 15 to 25% canopy coverage of sagebrush. Late summer (mid-July to September) brood range consists of a variety of habitats including agricultural fields, meadows and riparian areas adjacent to big sagebrush communities. In years of above average summer precipitation, late summer brood range may overlap early summer brood range.

During winter, sage grouse feed almost exclusively on sagebrush leaves and buds. If adequate sagebrush is available for winter food and cover, sage grouse are seldom impacted by severe winter weather. Loss of sagebrush on grouse winter ranges can, however, severely reduce sage grouse numbers.

### Sage Grouse Habitat Trends

Sage grouse habitat quality and quantity has declined throughout southern Idaho and coincided with declines in sage grouse numbers. The reasons for habitat loss vary from site to site but

include wildfire, agricultural expansion, herbicide treatments, prescribed fire and rangeland seedings. Data collected by the Interior Columbia Ecosystem Management Project (ICEMP) shows that the amount of historical shrub-steppe habitat present in southern Idaho has declined dramatically. This loss of habitat has been especially large in the Upper Snake Ecological Reporting Unit (ERU) of eastern Idaho where 57% of the big sagebrush and 47% of the mountain big sagebrush habitat has been lost. The actual habitat for sagebrush-dependent wildlife has declined in about 78% of the Upper Snake ERU and 80% of the Snake Headwaters ERU.

A specific example of sage grouse habitat loss impacting numbers of grouse is in the Jarbidge BLM Resource Area. Sage grouse habitat was once abundant here but in 1996 only 18% of the area was classified as sage grouse habitat. This loss of habitat is reflected in sage grouse numbers with over 80% of historic leks surveyed between 1994 and 1996 now unoccupied.

#### Sage Grouse Habitat and Fire

Acres burned by wildfire has increased dramatically in recent years. In the 10 years from 1970 to 1979 about 902,000 acres of BLM rangeland burned in southern Idaho. In the 1980s about 1,316,000 acres burned and from 1990 to 1996 almost 1,600,000 acres burned in just seven years. Many of the fires have been large and were usually followed by increases in annual grasses, especially cheatgrass. This increase in fine fuel has made these habitats more prone to fire and increased fire frequencies. The larger and more frequent fires have caused a loss of shrub species, especially sagebrush, as repeated fire has killed all shrubs in large areas. Sagebrush seed is wind-dispersed and 95% is deposited within 30 feet of the parent plant which largely precludes natural reseeding of large burns.

Prescribed fire may be used to mimic normal fire frequencies in sagebrush habitats. In *Artemisia tridentata* spp. *vaseyana* habitats, normal fire frequency is estimated to have been around 30 years and in *A. t. wyomingensis* habitats 50 to 120 years (reference: Whisenant 1990: "Changing fire frequencies on Idaho's Snake River Plains.") Because of increased fine fuel from exotic annual grasses and more human-caused wildfires and prescribed fire, fire frequencies are now as little as 5 years in some low-elevation habitats. Management strategies to decrease wildfire in these areas include increased fire suppression efforts, focused protection of key habitat areas during a wildfire, aggressive reseeding of perennial grasses and sagebrush in burned areas, and developing greenstrips (strips of fire-resistant vegetation planted to slow wildfires) and other fuel breaks. Unfortunately, prescribed fire is generally not an effective tool in reducing fire hazard in low precipitation sagebrush habitats. Annual grasses typically increase after any fire and actually increase the fire hazard (personal communications from Idaho BLM staff: Pellant, Rosentreter, and Casey). In areas with higher precipitation, prescribed fire may be helpful in reducing how "hot" a wildfire burns and in helping maintain natural fire frequencies, unless those areas support stands of cheatgrass.

#### Sage Grouse Habitat and Livestock Grazing

Few processes outside of fire have the capacity to alter rangeland vegetation more than grazing. Poor grazing practices can degrade not only vegetation but also water and soil quality. As previously noted, successful sage grouse nesting is largely dependent on having adequate

herbaceous nesting cover associated with sagebrush plants. Livestock grazing must be managed to provide this.

In theory, carefully managed grazing may be used to improve some aspects of sage grouse habitat. For example, grazing may enhance late season brood habitat by making succulent meadow vegetation more available to birds. Moreover, intensive early season grazing of roadside sagebrush stands with a cheatgrass understory may be used to reduce the potential for a wildfire that could destroy important sage grouse winter habitat. However, field experiments are needed to improve our knowledge of sage grouse/livestock interactions and develop specific grazing systems that might be used to improve sage grouse habitats over the long-term.

In the 1960s and 1970s, Idaho had large numbers of sage grouse and extensive livestock grazing. This suggests that healthy sage grouse populations and livestock grazing are compatible. In short, livestock grazing that results in rangeland in good ecological condition also provides acceptable sage grouse nesting, chick rearing, and winter habitat.

## SAGE GROUSE POPULATION DATA

### Sage Grouse Population Biology

Sage grouse are long-lived for an upland game bird. Four and 5-year-old birds are not unusual and 60 to 80% of adult birds survive each year. In contrast, most other upland game species are characterized by populations with most individuals under a year of age and adult survival rates of about 30% each year. Adult female (2 years old or more) sage grouse nest about 80% of the time and yearling females nest about 55% of the time. In Idaho, fewer than 15% of sage grouse hens that lose a nest will reneest. In contrast, nearly all sharp-tailed grouse (*Tympanuchus phasianellus*) and ring-necked pheasants (*Phasianus colchicus*) nest each year and may attempt to reneest up to 4 times if previous nests are destroyed. In summary, the sage grouse has the lowest reproduction rate of any North American game bird and its populations are not able to recover from low numbers as quickly as those of most other upland game birds.

### Effects of Spring and Summer Weather on Chick Survival

Spring and early summer weather can strongly influence sage grouse chick survival. Late May and early June snows and cold rains can cause young chicks to die from hypothermia. Cool spring weather and dry early summer weather can limit insect populations. Young chicks may then die from starvation, increased exposure or predation while forced to travel longer distances to find food. In the short-term, spring and early summer weather is often the primary factor influencing sage grouse populations.

### Insecticides and Sage Grouse

Losses of sage grouse from insecticide exposure has been documented in some areas of Idaho. More work is needed to determine if these losses are large enough to affect overall sage grouse populations.

### Population Trends

Recent trends of sage grouse populations in Idaho have shown a statewide decline of about 40% from the long-term average. Lek counts in the Red Road area of the Upper Snake Region

averaged 350 males during the 1961 to 1970 period and less than 100 males over the last 10 years. The Big Desert routes in the Southeastern Region dropped from nearly 900 to under 200 during the last decade. The Shoshone Basin area of the Magic Valley Region has shown similar declines with leks where over 200 males were counted ten years ago, now have fewer than 100 males (Figures 1-3).

Sage grouse breeding populations in other western states have shown similar trends. The average number of males attending leks in Colorado was 31% lower between 1986 and 1995 than the long-term average (1948-1985). Counts were lower by 17% in Wyoming, 30% in Utah, 30% in Oregon, 47% in Washington, and 31% in Montana during similar time periods.

#### Annual Chick Production Trends

Since 1961, over 180,000 wings have been collected from sage grouse harvested by hunters. These wings can be classified by age and sex to provide an index to sage grouse production in a given area. Since the early 1980s, the average number of young produced per hen has declined by 40 to 50% in many areas (Figure 4). Possible reasons for this decline include declining habitat quantity and quality, drought, wet and cold springs, and loss of young birds to insecticides in agricultural fields used as brood habitat.

#### SAGE GROUSE SPORT HARVEST

This grouse is a popular game bird in Idaho and hunting activity has a value of over \$2 million to Idaho's economy. About 17,000 hunters pursue this bird each year, mostly on opening weekend, in hunts that are often long-time family traditions. Fifty-five to 75 percent of the harvest occurs during the first week of the season. From 1990 to 1995, the hunting season was 30 days long with a limit of 3 birds per day. In 1996, the Idaho Fish and Game Commission reduced the hunting season in Idaho to reduce harvest by about 50%. Through sport harvest thousands of sage grouse wings are collected each year. Aging and sexing of the harvested birds represented by these wings has provided much of the long-term population data available on Idaho sage grouse.

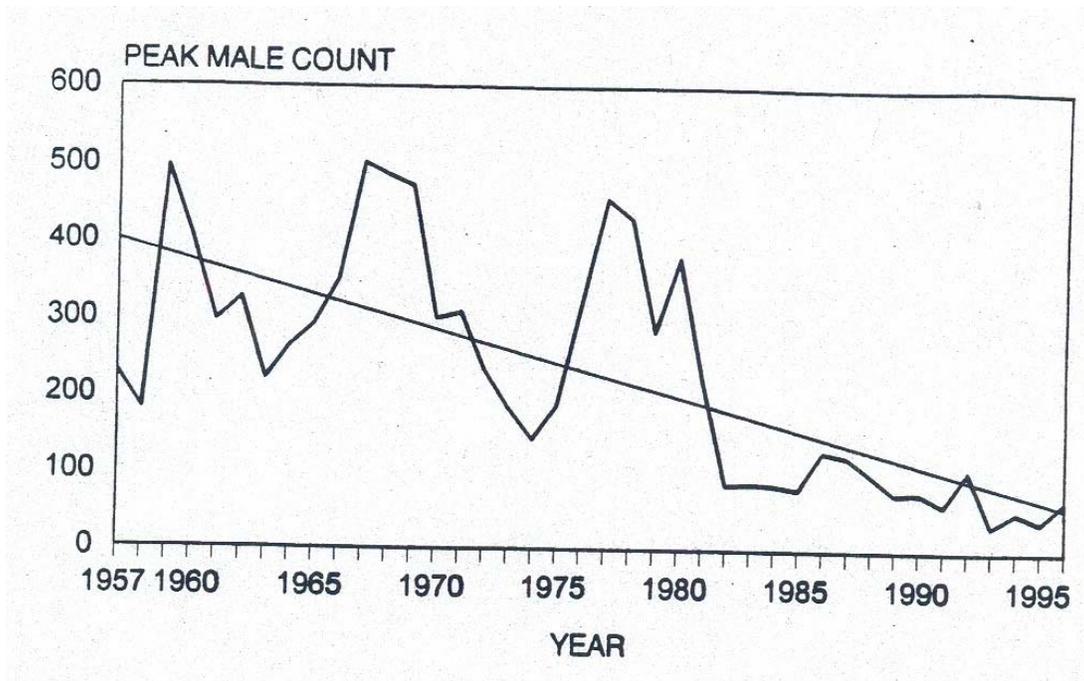


Figure 1. Peak counts and computer-generated trend line of male sage grouse on Red Road leks, eastern Idaho, 1957-1996.

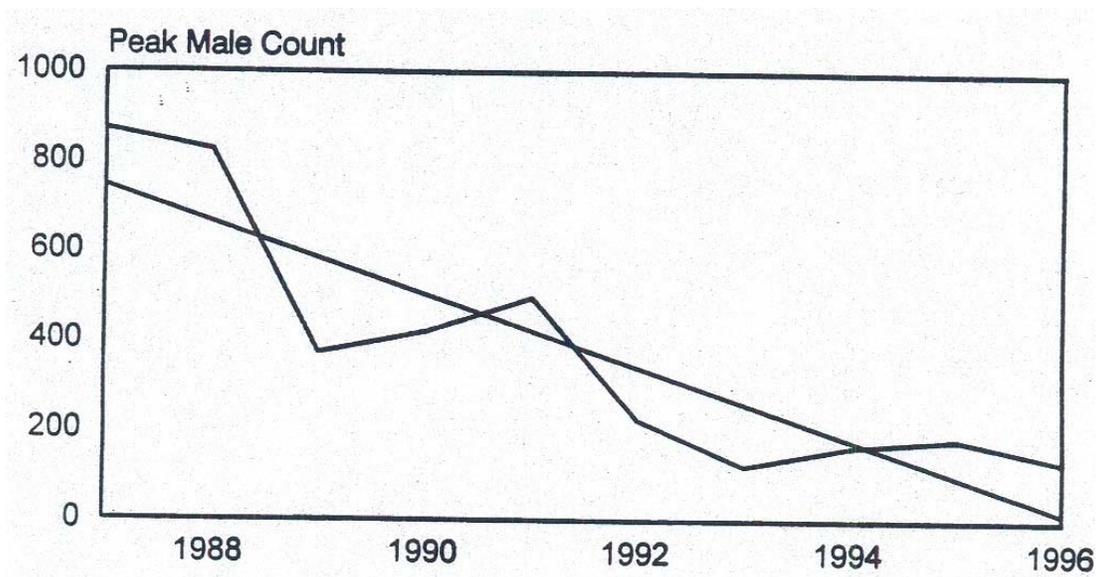


Figure 2. Peak counts and computer-generated trend line of male sage grouse on Big Desert leks, southeastern Idaho, 1986-1996.

Sage Grouse Lek Counts – Shoshone Basin  
Windmill and Grassy Swale Leks

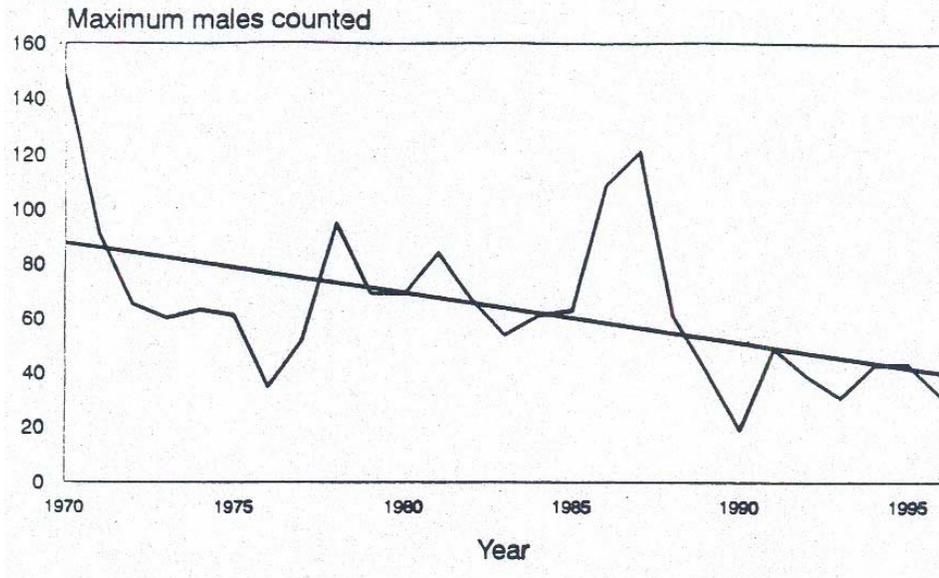


Figure 3. Peak counts and computer-generated trend line of male sage grouse on Shoshone Basin leks, south-central Idaho, 1970-1996.

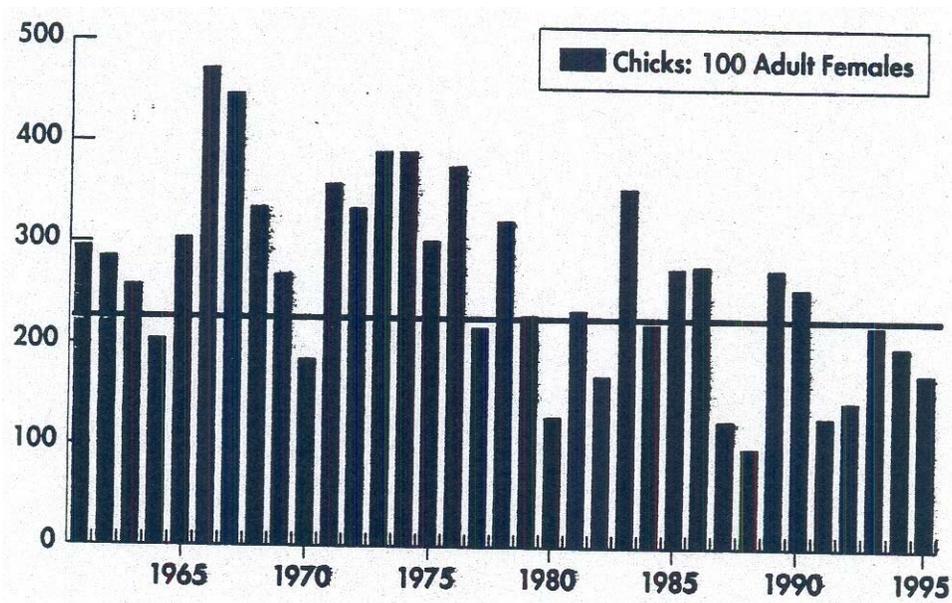


Figure 4. Number of juvenile sage grouse per adult hen sage grouse, Upper Snake Management Area, Idaho, 1961-1995. The horizontal line is the approximate level necessary to keep a population stable.

### **3. STATEWIDE MANAGEMENT ISSUES**

#### Planning Issues

- Management programs for sage grouse must be ecosystem-based recognizing that management actions vary in their impact over both time and space. For example, management actions that impact a sage grouse population negatively in the short-term may benefit it over the long-term.
- Other sagebrush-dependent wildlife will benefit from actions outlined in this plan. If some other important wildlife goals could be negatively impacted by programs designed to meet the goals of this plan, then these conflicts need to be identified by local working groups early and decisions made as to local and ecosystem priorities.
- Major changes in land use have occurred over the last 50 years but have not been compiled in a manner or scale usable for detailed planning.

#### Habitat Issues

- Wildfires, annual weed invasion, agricultural expansion, herbicide treatments, prescribed burns, and seedings have all contributed to the loss of much of the historic sagebrush habitat suitable for sage grouse.
- Many remaining stands of sagebrush rangeland provide poor sage grouse habitat because sagebrush canopy cover is too low and/or the herbaceous understory is depleted.
- Sage grouse use traditional breeding and wintering ranges that need protection.
- Grass and forb cover on rangelands used for nesting may be inadequate for nest concealment and successful nesting by sage grouse.
- Excessive livestock use of meadows, riparian habitats, seeps, and other moist areas can adversely impact chick brooding habitat by reducing vegetation diversity and production.
- Piping water from seeps and springs to other areas can reduce the number, distribution, and quality of moist areas important to sage grouse chicks.
- Sage grouse use of agricultural fields can expose them to insecticides resulting in dieoffs.

#### Population Management Issues

- Sage grouse populations, especially small populations in fragmented or low-quality habitats, may be susceptible to overharvest.
- Low recruitment of juvenile grouse to the fall population.

## Other Issues

- Inventories of key sage grouse winter and nesting habitats still need to be completed.
- Some publics feel strongly that livestock grazing and/or hunting have caused the recent declines in sage grouse populations. They demand these two activities be greatly restricted.

## **4. STATEWIDE GOAL**

The goal of this plan is to reach sage grouse population levels outlined in the objectives for each Sage Grouse Management Area within 10 years. Statewide, this will result in approximately doubling the current 5-year running average number of males counted on leks listed in the plan. After adoption of this plan by the Idaho Fish and Game Commission, the Idaho Sage Grouse Task Force will help establish local working groups (LWGs) where needed. The protocol for organizing LWGs is outlined in Appendix B. The Statewide Plan will provide a framework for LWGs to develop site-specific programs to improve local sage grouse populations. Population and habitat improvement goals for each area will be developed by LWGs.

## **5. MANAGEMENT OPPORTUNITIES, OBJECTIVES AND POSSIBLE CONSERVATION ACTIONS**

### **A. HABITAT PROTECTION AND ENHANCEMENT**

**Objective A1:** Identify, protect, and enhance existing and potential (historic range currently degraded or unoccupied) sage grouse habitat within each Management Area. Critical to this effort is the understanding that land management actions taken by one landowner effect management options available to adjacent landowners.

#### Conservation Actions

A 1.1 All ownerships (with permission on private land)

##### Within each management area:

- a. Prepare and distribute habitat maps which identify key seasonal habitats within one year of plan adoption.
- b. Prepare cover type maps and evaluate habitat conditions using standard methods for key seasonal habitat.
- c. In cooperation with interested and affected parties, develop a site-specific habitat management program within one year (those areas with active local working groups only).

A1.2 Private land habitat (voluntary landowners actions)

a. Technical assistance.

1. Contact landowners in key habitat areas to explain sage grouse needs and seek their support for improving sage grouse habitat.
2. Meet with groups and agencies that work with private landowners to explain and seek support for actions outlined in the Plan.
3. Develop and distribute (within one year) an informational brochure on sage grouse and how to provide habitat for them.

b. Voluntary agreements.

1. Provide cost-share funds to aid private landowners in managing, protecting, and restoring sage grouse habitat. Possible sources of funds include federal farm programs, Pheasants Forever, Idaho Department of Fish and Game, and the U.S. Fish and Wildlife Service's Partners for Wildlife Program.

c. Pesticides

1. Provide an educational pamphlet (within one year) to agricultural producers outlining methods to reduce potential for pesticide poisoning of sage grouse.
2. Request landowners, pesticide applicators, and others to report incidents of dead or apparently intoxicated sage grouse found in and around agricultural fields.

d. Long-term habitat protection.

1. Identify and prepare a prioritized list of the most important sage grouse habitats on private land within each Management Area. Offer conservation easements or acquire critical habitats from willing sellers through land exchange, reserved interest deed, or direct purchase.

A1.3 Public land habitat (including habitat managed by Idaho Department of Lands, Idaho Fish and Game and all federal agencies)

a. Vegetation management.

1. Manage nesting and early brood habitat to provide 15 to 25% sagebrush canopy coverage and about 7 inches or more of grass and forb understory during the May nesting period. Research in Oregon and Idaho (See

Appendix A) shows that this provides 50% nesting success and potential for increasing populations.

2. Manage for late summer brood habitat that includes a good variety of succulent vegetation adjacent to sagebrush escape and loafing cover.
  3. Manage for winter habitat that has sagebrush exposed under all possible snow depths. This can consist of low sagebrush (*Artemisia arbuscula* or *A. nova*) and big sagebrush (*A. t. tridentata*) communities. A sagebrush canopy of 15 to 25% with heights of 10 to 12 inches above the snow is critical to survival of sage grouse.
  4. Other Habitat Guidelines.
    - When needed, timing and application of herbicides should be during the period of active growth of sagebrush but when forbs are dormant.
    - Tebuthiuron is a herbicide that is highly effective at selectively decreasing sagebrush cover when used at low application rates. It should be considered as an alternative when some sagebrush must be retained on a treated area and conservation of forbs is important. However, because little is known about long-term effects of this herbicide on sage grouse habitats, initial use should only be considered experimental.
- b. Lek disturbance.
1. Avoid developing roads, fences, power/transmission poles, and lines within 400 yards of a lek.
  2. Avoid human disturbances within 1 km (0.6 mile) of a lek during the breeding season (March 1 through May 31) from 1 hour before sunrise to 3 hours after sunrise.
- c. Grazing management (domestic and wild).
1. Implement grazing management and big game regulations to achieve and maintain sagebrush and riparian/meadow habitats in good ecological condition (as defined by NRCS Ecological Site Guides or Forest Service Site Guides).
- d. Fire management.
1. Rate sage grouse wintering and nesting habitats as high priority for wildfire suppression.

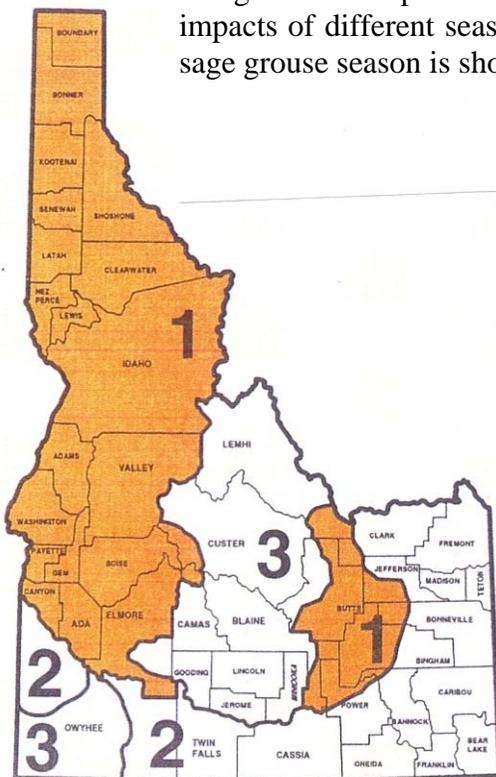
2. Provide maps of important sage grouse winter and breeding habitats to help BLM and USFS fire suppression personnel prioritize fire suppression efforts.
  3. Use prescribed fire in high precipitation (>16") sagebrush communities (e.g. *A. t. vaseyana*) as needed to mimic natural fire frequencies.
  4. Do everything possible to protect remaining sage grouse habitat in *A. t. wyomingensis* habitats where natural fire frequency is 50-130 years and recent wildfire has greatly reduced sage grouse habitat. This should include:
    - (a) increased funding for fire suppression;
    - (b) development of strategically placed firebreaks using greenstripping, mechanical removal of fuel and/or special grazing which, when combined with existing landscape features, will stop or slow the spread of wildfires;
    - (c) better training of fire crews on the importance of sagebrush habitat;
    - (d) better delineation of the most important sage grouse habitat;
    - (e) control of noxious annual weeds along roads.
  5. When making fire management decisions, recognize that remaining islands of sagebrush within a wildfire are very important as a seed source for reestablishing sagebrush in a burned area.
- e. Habitat restoration.
1. Include forbs and native grasses in seeding mixtures on critical habitat areas.
  2. Include sagebrush seed in all seeding mixtures where residual natural seed sources are inadequate.
  3. Improve techniques and seed sources for rehabilitation of areas that are at risk of annual weed establishment.
  4. Following rehabilitation, base grazing use on the biological needs of the range plants.
  5. Rehabilitate gullied meadows to raise the water table and restore meadow characteristics.
  6. Where needed, modify existing pipelines (e.g. install floats on troughs) to enhance or restore springs, seeps, and associated moist areas.

## B. SPECIES PROTECTION AND POPULATION ENHANCEMENT

**Objective B1:** Increase public awareness of the status of sage grouse and their biology and support for their conservation.

### Conservation Actions

- B1.1 Establish an Idaho Sage Grouse Task Force including agencies and private groups that meets at least once a year and provides information, technical advice, and direction to interested parties throughout Idaho. Form local working groups where needed to develop solutions to local management problems.
- B1.2 Conduct at least one open house within each sage grouse Management Area within one year of Plan adoption. These open houses would be designed to provide the public with information on the status and management needs of Idaho sage grouse and outline the contents of this Plan.
- B1.3 Develop a television piece for “Incredible Idaho” and an article for *Idaho Wildlife* outlining the Plan. Develop a series of news releases to encourage additional media coverage of sage grouse and its needs.
- B1.4 Establish a hunting season consistent with the population biology of sage grouse and goals of this plan. Develop an adaptive management approach to measure the impacts of different seasons on sage grouse populations. The Department’s 1996 sage grouse season is shown in Figure 5.



Area 1: Closed. Include all areas currently closed as well as parts of the Big Desert and Birch Creek.

Area 2: 7 Days, 1/2 bag/possession limit.

Area 3: 23 days, 2/4 bag/possession limit.

Statewide Falconry: Close any areas without a gun season to falconry hunting.

Figure 5. Idaho sage grouse hunting season framework, 1996.

The Idaho Fish and Game Commission adopted the 1996-1997 season frameworks at its July, 1996 meeting following initial public input on this plan. The framework will be maintained for at least 5 years and the Commission will provide funding to evaluate restricted harvest on sage grouse population sizes.

- B1.5 Conduct briefings for USFS, BLM, IDL and other affected parties and staff on the needs of sage grouse within 1 year.
- B1.6 Have the cooperating state and federal agencies sign an MOU committing specific resources to this effort within 3 months of adoption.

## **C. INVENTORY AND MONITORING**

**Objective C1:** Improve the base of knowledge on the status and distribution of Idaho sage grouse and their habitats.

### Conservation actions:

- C1.1 Continue and expand cooperative interagency efforts to determine presence/absence, baseline population data, distribution information, and key habitats using methods appropriate to the specific situation.
- C1.2 Update seasonal distribution and key habitat maps and provide maps to local land management agency offices and NRCS offices within 1 year of adoption.

**Objective C2:** Monitor abundance and distribution of sage grouse.

### Conservation actions:

- C2.1 Conduct an adequate number of lek routes in each Management Area each year (including closed areas) to allow monitoring of population trends. Seek assistance from other natural resource agencies in this effort.
- C2.2 In areas where sage grouse are hunted, collect an adequate sample of wings from check stations and wing barrels to monitor annual production.

**Objective C3:** Monitor the condition and trend of sage grouse habitat.

### Conservation actions:

- C3.1 Develop a GIS database of historic and current habitat conditions throughout Idaho's sage grouse range.
- C3.2 After adoption of site-specific management plans, conduct evaluations at appropriate intervals to determine if management objectives are being met. These should include:

1. Evaluation of current Landsat imagery to classify habitats and quantify loss/gain of sagebrush.
2. Establishment of permanent transects in sagebrush habitats measuring shrub canopy coverage with line intercept and grass/forb cover and presence with Daubenmire frames. Shrub and grass height will also be measured along these transects.
3. Completion of an evaluation report at least every five years to determine if management changes are needed.

## **D. RESEARCH**

**Objective D1:** Complete research to improve management of sage grouse in Idaho.

### Conservation actions:

- D1.1 Experimentally evaluate the effects of hunting on sage grouse populations.
- D1.2 Develop more effective habitat restoration techniques for sage grouse habitat to improve success of rehabilitation efforts after wildfire and to restore previously degraded sagebrush communities, meadows, and riparian areas in uplands.
- D1.3 Evaluate effects of predation, pesticides, and other sources of mortality on the juvenile segment of sage grouse populations.
- D1.4 Develop and validate a Habitat Suitability Model for sage grouse to help better quantify the value of specific parcels of land to sage grouse.
- D1.5 Evaluate effects of fire on sage grouse habitats in higher precipitation (>12") areas that are generally *A. vaseyana* habitats.
- D1.6 Evaluate the impact of loud noises (e.g. jet aircraft, explosions etc.) and other disturbances on sage grouse attending leks.
- D 1.7 Evaluate the effects of pesticides on adult sage grouse.
- D1.8 Experimentally evaluate the effects of grazing on sage grouse populations.

## **6. LOCAL MANAGEMENT AREA ISSUES AND STRATEGIES**

As a result of an analysis of existing wing data, 13 Sage Grouse Management Areas have been delineated by combining populations that show similar population trends with discrete geographical areas (Figure 6). Upon acceptance of this plan by the Idaho Fish and Game Commission, interested parties may form local working groups to develop local management programs on how to meet the needs of sage grouse and sage grouse habitat in their area. An important part of solving the habitat management problems that this species faces is to work together closely so that all landowners and land managers are aware of the needs of local populations and how to meet them. Although many of the potential strategies to better manage local sage grouse populations are listed above in the “Statewide Opportunities, Objectives and Conservation Actions” section, the following key local issues, strategies, and population goals (expressed as maximum males observed per lek route) are provided as a starting point for local working groups to develop their own programs.

### **Management Area 1 (North Owyhee)**

#### Local Issues:

- Juniper encroachment/eradication.
- Lowering of water tables and loss of meadows and riparian habitats. Crested wheatgrass seedings on the western side have replaced large amounts of sage grouse habitat.
- Annual grass and weedy forb encroachment.

#### Local Strategies:

- Manage vegetation with sage grouse needs as a priority.
- Improve rehabilitation efforts after wildfires.
- Identify key meadow/riparian habitats and improve their condition.
- Restore sagebrush cover to key habitats.

### **AREA 1 LEK ROUTE GOALS**

Lek Route	1970-1979 Average	1991-1995 Average	1996 Count	Goal
Jackson Creek	30	15	15	50
Cow Creek	7	25	3	25
Flint Creek	38	25	6	25

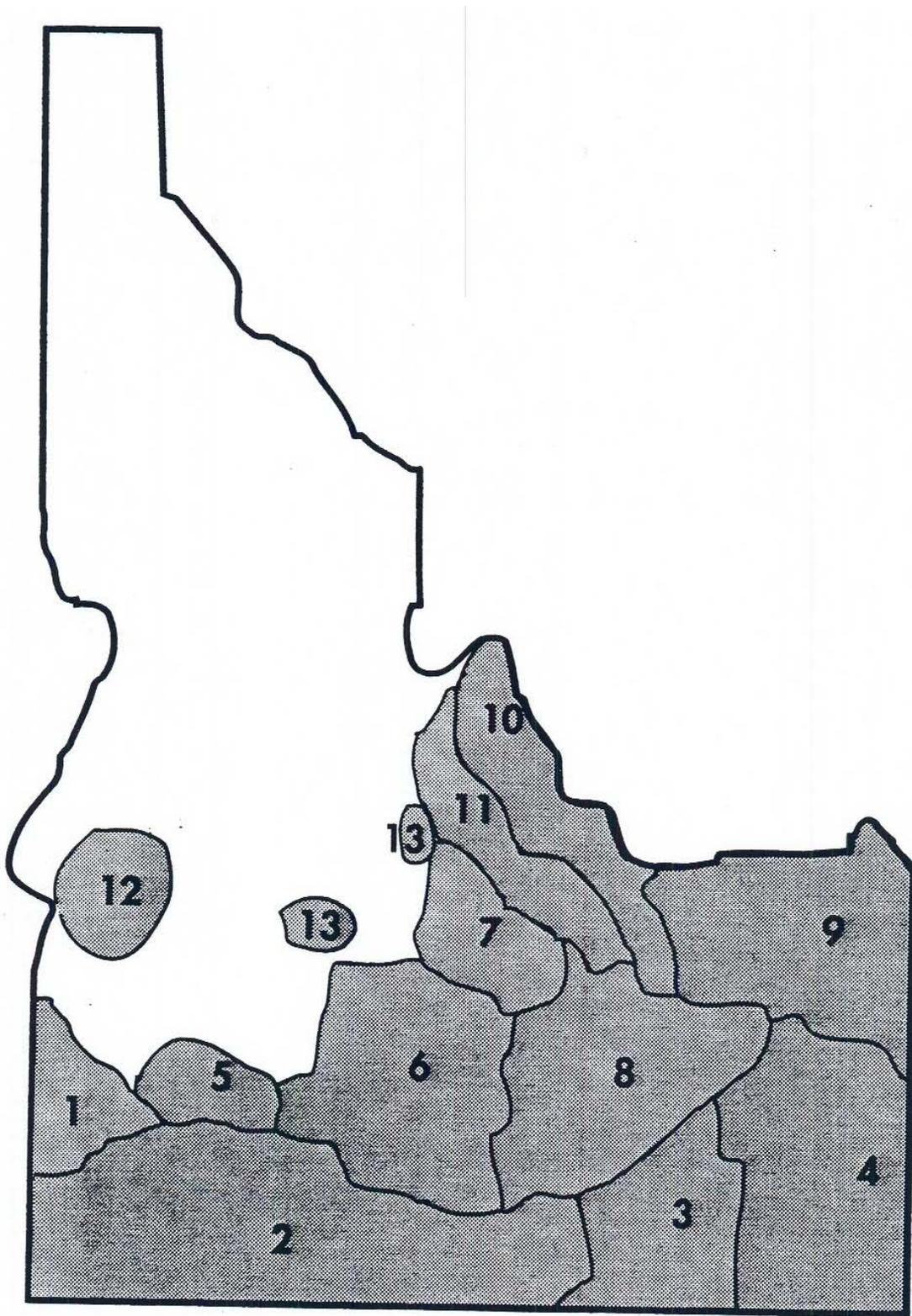


Figure 6. Idaho sage grouse Management Areas, 1997.

**Management Area 2 (South Owyhee/Twin Falls/Cassia)**

Local Issues:

- Wildfire destruction of winter habitat.
- Water/meadows declining in availability and quality.
- Annual grass and weed encroachment.
- Grass seedings replacing large blocks of habitat.
- Loss of habitat because of fires on proposed Air Force bombing range. Checkerboard land ownership in some areas makes management difficult.
- Sagebrush management on private lands.

Local Strategies:

- Manage vegetation with sage grouse needs as a priority.
- Establish firebreaks around any new bombing range impact areas. Minimize disturbance to leks from bombing range activities. Improve rehabilitation efforts after wildfires.
- Restore sagebrush/grass communities in key areas.
- Consolidate ownership in key habitats.
- Restore meadows and riparian areas in uplands.
- Support the Shoshone Basin Working Group’s on-going efforts to coordinate livestock and sage grouse habitat management on federal, state and private lands in the Shoshone Basin area of southern Twin Falls County.

**AREA 2 LEK COUNT GOALS**

Lek Route	1986-1990 Average	1991-1995 Average	1996 Count	Goal
Wickahoney	no count	35	26	60
Rocky Knoll	20	44	27	50
Blue Creek	18	incomplete	incomplete	50
Brown’s Bench	no count	101	87	120
Shoshone Basin	135	99	93	125
Grassy Hills	77	58	13	70
Antelope Pocket	no count	34	12	45
Lyman Pass	17	31	22	45
Bridge	33	14	4	30

### Management Area 3 (South Power/Oneida)

#### Local Issues:

- Sagebrush treatments in the Curlew National Grasslands (CNG) area may have detrimental effects on sage grouse winter and nesting habitat. Seedings and wildfire rehabilitation projects do not include planting sagebrush and forbs as needed to maintain good sage grouse habitat. Many riparian areas need improvement.
- Loss of CRP land.
- There may be conflicts between habitat management for sage grouse and sharp-tailed grouse.
- Sagebrush treatments are sometimes conducted without taking into account other landscape changes like wildfire and private agricultural uses.

#### Local Strategies:

- Use the current Curlew Grasslands Working Group to develop a 5-year plan for the CNG that outlines a program to improve sage grouse habitat and resolve any sage grouse and sharp-tailed grouse conflicts. Include sagebrush in seed mixtures for fire rehabilitation projects. Include native grasses and forbs in seeding mixtures.
- Restore sagebrush cover to grass seedings in key areas.
- Work with landowners to retain and improve CRP lands to meet the needs of sage grouse.

### SOUTH POWER/ONEIDA MANAGEMENT AREA LEK ROUTE GOALS

Lek Route	1995 Count	1996 Count	Goal
Black Pine	23	6	30
Curlew	new route	16	70
Rockland	new route	15	65

### Management Area 4 (Southeast)

#### Local Issues:

- Many sage grouse populations in this Management Area are small and isolated and susceptible to extirpation.
- There are limited data on populations.
- As brush develops in Conservation Reserve Program fields, CRP has begun to provide important sage grouse habitat.
- There are large acreages managed by the Idaho Department of Lands (IDL) that could provide important sage grouse habitat.

Local Strategies:

- Gather more information on the size and characteristics of these populations.
- Work with landowners to retain and improve CRP lands to meet the needs of sage grouse.
- Work with the IDL to increase sage grouse habitat on their land.

**SOUTHEAST MANAGEMENT AREA LEK ROUTE GOALS**

Lek Route	1995 Count	1996 Count	Goal
Bear Lake County	17	0	50
Caribou County	32	6	55

**Management Area 5 (Ada/Elmore)**

Local Issues:

- Most historic habitat has been replaced by annual and seeded grasslands where potential for rehabilitation is limited.
- Little data exists on these populations.

Local Strategies:

- Identify areas suitable for habitat restoration and initiate projects. Expand data collection on these populations.

**ADA/ELMORE MANAGEMENT AREA LEK ROUTE GOALS**

Lek Route	1970-1990 Average	1991-1995 Average	1996 Count	Goal
Long Tom	45	7	11	50

**Management Area 6 (North Magic Valley)**

Local Issues:

- Loss of habitat to wildfire.
- Residential development.
- Invasion by exotic annual grasses.

Local Strategies:

- Include sagebrush, native grasses and forbs in fire rehabilitation efforts.
- Use conservation easements to protect Blaine County grouse habitat.
- Identify and restore key habitats.

## NORTH MAGIC VALLEY LEK ROUTE GOALS

Lek Route	1986-1990 Average	1991-1995 Average	1996 Count	Goal
Bliss/Hill City	119	60	93	80
North Shoshone	77	27	58	100
Rock Creek	101	47	28	65
Timmerman	119	51	89	120
Picabo Hills	89	44	51	90
Camas West	74	19	13	50

### Management Area 7 (Upper Big Lost/Copper Basin)

#### Local Issues:

- Very limited data on these populations.
- Disposal of isolated BLM tracts.
- Mineral development impacts on sage grouse habitat.
- Sagebrush treatments and seedings not considering sage grouse needs.
- Riparian areas and wet meadows being lost to irrigation and hydropower development.

#### Local Strategies:

- Improve data collection; reestablish a lek route.
- Work with BLM to retain and consolidate key areas in public ownership.
- Survey all known historical leks and search for additional leks.
- Establish a new lek route in the management area.

#### Lek Count Goals:

- No leks are currently counted in this Management Area; goals will be established when new data are collected.

### Management Area 8 (Big Desert)

#### Local Issues:

- Mixed ownership in the eastern part of the unit complicates habitat management planning.
- Other habitat losses in the eastern portion of the Management Area.
- Huge acreages burned by wildfires over the last 5 years.
- Losses of sage grouse to pesticide exposure have been documented here.
- Spring hunting on leks by Native Americans.
- Invasion by exotic annual grasses.

Local Strategies:

- Identify and rehabilitate/restore key habitats.
- Identify key habitats for acquisition to restore habitat and maintain traditional migration corridor.
- Work with Native Americans to ensure that spring hunting of birds on leks is minimized.

**BIG DESERT LEK ROUTE GOALS**

Lek Route	1986-1990 Average	1991-1995 Average	1996 Count	Goal
Minidoka	151	49	32	100
Paddleford Flat	109	78	44	100
Big Desert #1	135	33	54	120
Big Desert #2	140	19	13	120
Big Desert #3	123	62	39	110
Big Desert #4	38	6	4	50
Big Desert #5	181	70	22	175

**Management Area 9 (Upper Snake)**

Local Issues:

- Sagebrush habitat fragmentation makes remaining habitat more valuable.
- Pesticide use on fields used by sage grouse is common and has resulted in grouse die-offs.
- Proposed sagebrush treatments are not adequately considering sage grouse needs.
- The needs of sharp-tailed grouse need to also be considered where the two species overlap.

Local Strategies:

- Develop a GIS database that provides current and historical information on habitat conditions in this area.
- Maintain publicly-owned sage grouse habitat in public ownership.
- Identify key habitats for acquisition to restore habitat and maintain traditional migration corridors.
- Make wildfire suppression a priority in critical sage grouse habitat.
- Ensure the needs of sage grouse are considered for all sagebrush manipulation proposals on public and private land.

**UPPER SNAKE LEK ROUTE GOALS**

Lek Route	1970-1979 Average	1991-1995 Average	1996 Count	Goal
Crooked Creek	218	96	61	190
Lidy	139	108	26	140
Medicine Lodge	226	56	35	180
Jacoby Road	292	54	86	200
Red Road	286	59	69	200

**Management Area 10 (Lemhi/Birch Creek)**

Local Issues:

- Water diversions have impacted brood habitat.
- Riparian habitat needs improvement.
- Degraded sagebrush/grass communities.

Local Strategies:

- Work to improve brood habitat.
- Improve grazing management in nesting habitats.

**LEMHI/BIRCH CREEK LEK ROUTE GOALS**

Lek Route	1970-1979 Average	1991-1995 Average	1996 Count	Goal
Lower Lemhi	39	4	0	35
Mid Lemhi	new route	39	20	55
Clear Creek	new route	56	32	70
18-mile	73	51	19	60
Upper Birch Creek	41	1	8	50
Lower Birch Creek	113	30	6	90

**Management Area 11 (Pahsimeroi/Little Lost)**

Local Issues:

- Water diversions have impacted brood habitat.
- Riparian habitat needs improvement.
- Degraded sagebrush/grass communities.

Local Strategies:

- Improve brood habitat.
- Improve grazing management in nesting habitats.

**PAHSIMEROI/LITTLE LOST LEK ROUTE GOALS**

Lek Route	1970-1979 Average	1991-1995 Average	1996 Count	Goal
Pahsimeroi	84	27	8	75
Mulkey Bar	234	81	44	200

**Management Area 12 (Adams/Washington Counties)**

Local Issues:

- Limited data on populations.
- Loss of sagebrush to wildfire.
- Large areas infested with annual grasses.
- Fragmented ownership pattern.

Local Strategies:

- Improve data collection.
- Focus on core populations for habitat work.
- Consolidate public ownership in key habitats.

**ADAMS/WASHINGTON COUNTY LEK ROUTE GOALS**

Lek Route	1970-1979 Average	1991-1995 Average	1996 Count	Goal
Monday Gulch	24	40	27	50
Lava Flat	no count	46	7	50
Rock Creek	33	no count	no count	40

**Management Area 13 (Morgan Creek/East Fork Salmon and Sawtooth Valley)**

Local Issues:

- These populations are very small and largely isolated from other sage grouse and susceptible to extirpation.

Local Strategies:

- Identify leks in the Morgan Creek area.
- Monitor these populations carefully.
- Initiate lek counts.

Lek Count Goals:

- Stanley Route: 20
- Challis Route: 20

## **7. APPENDICES**

Appendix A:

### **Herbaceous Cover, Grass Height and Nesting Sage Grouse: Where Did an Average of 7 Inches Come From?**

**Dr. John W. Connelly, Idaho Department of Fish and Game, Pocatello, Idaho**

#### **INTRODUCTION**

Early work on sage grouse nesting habitat largely focused on sagebrush. In the 1960s, some evidence of the importance of herbaceous cover was provided by Klebenow (1969) who found greater grass cover at nest sites than at random sites in Idaho. Similarly, Pyrah (1970) indicated that grass cover was greater at successful nests than unsuccessful nests in Montana. The importance of herbaceous cover was not seriously addressed again until the late 1980s when researchers working independently in Oregon and Idaho provided strong evidence that grass height was a critical component of nesting habitat. The purpose of this note is to summarize those findings, offer definitions for commonly used terms, and indicate why biologists support average grass heights of 18 cm (7 inches) during the nesting season.

#### **DEFINITIONS AND METHODS**

The terms “stubble,” “residual cover,” “grass height/cover,” and “herbaceous cover” are often (and incorrectly) used interchangeably causing confusion and unnecessary arguments. Therefore, I offer the following definitions. “Stubble height” refers to grass height immediately following the livestock grazing season. “Residual cover” refers to forbs and grasses left from the previous growing season (whether or not the area has been grazed by livestock). “Grass height or cover” refers to average height or cover of grass at a specific time (e.g., early summer) and includes the current year’s growth. “Herbaceous cover” is a general term referring to the amount of forbs and grasses in a given area at a specific time and includes the current year’s growth.

Virtually all measurements of vegetation associated with sage grouse nesting habitat are made in late April, May and June. Usually measurements are made as hens cease nesting efforts (whether successful or not). Because of the timing of these measurements, data are collected on both residual cover and current growth. Thus, the terms "stubble height" and "residual cover" do not usually apply and researchers generally report on "grass height/cover" or "herbaceous cover."

#### **FINDINGS**

Research in Oregon and Idaho has indicated that grass height and herbaceous cover can affect sage grouse nest site selection and nest success. In Idaho, Wakkinen (1990) reported that average grass height at sage grouse nest sites was 18.2 cm (7.2 inches), compared to 15.3 cm (6.0 inches) at random sites. Average grass height at successful nests was 19.0 cm (7.5 inches) while height at unsuccessful nests was 16.5 cm (6.5 inches) (Wakkinen 1990). However, Wakkinen (1990) also reported that his entire study area provided good sage grouse nesting habitat. This suggests

that areas with lower grass heights or a variety of conditions would have greater differences between average grass heights at nest and random sites (see Delong et al. 1995).

In a related study, Connelly et al. (1991) indicated that the height of grass associated with sage grouse nests under sagebrush was 19 cm (7.5 inches) and that nest success was 53% (generally considered very good for gamebirds). They also provided evidence indicating that both herbaceous cover and sagebrush are important components of sage grouse nest sites. Gregg et al. (1994) indicated that canopy coverage of grass taller than 18 cm (7 inches) was 18% at successful sage grouse nests but only 5% at unsuccessful nests. Similarly, Delong (1993) and Delong et al. (1995) reported that artificial grouse nests had higher survival rates when associated with grass with average heights of 25 cm (10 inches) when compared with artificial nests in grass with an average height of 15 cm (6 inches).

## CONCLUSIONS

Virtually all research conducted on sage grouse nesting habitat in the 1980s and 1990s indicated one or more of the following points:

1. Herbaceous cover is more important to nesting hens than previously thought.
2. Grass height is a factor in both nest site selection and nest fate.
3. Provided adequate sagebrush cover is present, average grass height of 18 cm (7 inches) or more (measured in May and early June) provides adequate herbaceous cover for successful sage grouse nesting.
4. Management activities should allow for maintenance of tall grass, or if necessary, restoration of tall grass cover in sagebrush stands.

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## **Appendix B:**

### **Local Sage Grouse Working Groups**

#### **Background**

The Idaho Sage Grouse Task Force has developed a statewide plan that provides for local working groups (LWGs) to assist in the development of area-specific management programs to maintain, improve and restore local sage grouse populations and their habitat.

#### **Goal of LWGs**

To assist in development of sage grouse management efforts that achieve local population goals.

#### **Membership**

Membership in LWGs is open to anyone that has interest in sage grouse management.

#### **Organization of LWGs**

The Idaho Department of Fish and Game will organize the first meeting of each LWG. Subsequent meetings will be organized by a leadership team chosen by the LWG and should include at least one representative from an agricultural group, one from a federal or state land management agency, one from the Idaho Department of Fish and Game, and one from a wildlife conservation group. The leadership team should be chosen at the first meeting and if larger than 4 members, include a balanced membership.

A neutral and trained facilitator will lead all meetings. If possible, the local BLM Resource Advisory Council (RAC) or other existing groups will be used to provide support for the LWGs. Volunteer LWG subcommittees could be formed to accomplish specific tasks. The entire working group will review all products of these subcommittees.

#### **Schedule**

With adoption of the Idaho Sage Grouse Plan by the Idaho Fish and Game Commission, the Idaho Department of Fish and Game will organize initial meetings of LWGs in those areas suggested by the Idaho State Task Force and any other areas where an LWG is requested. Initial meetings will occur within 3 months of identification of a need for an LWG.

Within 1 year of their first meeting, each LWG will use the State Management Plan to develop a program to manage local sage grouse and their habitat. All local management programs will be submitted to the State Task Force for review and incorporation into the statewide plan. Once the local management program is adopted, each LWG will meet at least annually to review progress, address new issues, and modify actions as necessary.

It is crucial that groups that want to help develop local management programs be involved from the beginning and commit to involvement throughout the process. All LWGs should be balanced in composition so that all interests are given fair representation.

## ADDENDUM #1

### IDAHO SAGE GROUSE MANAGEMENT PLAN

Since the Idaho Sage Grouse Management Plan was adopted by the Idaho Fish and Game Commission in August of 1997, public and private land managers have received copies of the plan and tried to apply it to projects under consideration. As is often the case, some questions have arisen on how to apply some of the information provided by the Plan. This addendum is designed to use available scientific data to clarify portions of the Plan. Again, these guidelines are provided as a starting point for Local Working Groups (LWGs) but can be modified to meet local conditions with consensus of all members. For example, the 7" nesting cover guideline is inappropriate on some less productive soils and will need to be modified by some LWGs. In other areas, sagebrush stands may be so scattered that fewer sagebrush treatments may be wanted by the LWG. The following text is from the executive summary and pages 12-13 of the Plan. New text is designated by underlining.

**Nesting and early brood habitat** should have 15-25% sagebrush canopy coverage and about 7 inches or more of grass and forb understory during the May nesting period. Nesting habitat is associated with sage grouse leks (maps of known leks available from Idaho Fish and Game). In areas with uniform stands of sagebrush habitat around a lek, all sagebrush stands with 15-25% canopy coverage within 2 miles of a lek should be considered critical nesting habitat. In areas where sagebrush habitat is fragmented, the location of nesting habitat must be evaluated on a case-by-case basis but will still be sagebrush stands with 15-25% canopy coverage and may include sagebrush stands over 2 miles from a lek. All critical nesting habitat should be managed to provide 15-25% sagebrush and 7" of herbaceous nesting cover. This will usually preclude any sagebrush removal in these stands. These guidelines do not apply to leks that have not been active for more than 5 years though efforts to increase sagebrush coverage around these historic leks should be encouraged.

**Late summer brood habitat** consists of a variety of habitats including agricultural fields, meadows and riparian areas. These habitats need to include a good variety of succulent vegetation and be adjacent to sagebrush escape and loafing cover.

**Winter habitat** must have abundant sagebrush, the sage grouse's only winter food, exposed under all possible snow depths. This can consist of low sagebrush (*Artemisia arbuscula* or *A. nova*) or big sagebrush (*A. tridentate*) communities and is often the same stands that are used as nesting habitat. A sagebrush canopy of 15 to 25% with heights of 10-12 inches above the snow is critical to survival of sage grouse. This habitat has been greatly diminished by recent wildfires and other causes. Identified winter habitats (maps available from Idaho Fish and Game) should be protected from any actions that reduce winter habitat.