

# **East Shoshone Basin Management Area Coordinated Resource Management Plan**



**Shoshone Basin Sage-Grouse Local Working Group  
October 2008**

## Table of Contents

	<u>Page</u>
I. Introduction .....	1
II. Cultural Significance of Sage-grouse for the Shoshone-Paiute Tribes of Southern Idaho .....	2
III. Settlement of European Pioneers .....	5
IV. Shoshone Basin Greater Sage-Grouse .....	7
A. Population Trends .....	7
B. Seasonal Movements .....	8
C. Winter .....	8
D. Nesting .....	9
E. Brood-rearing .....	9
F. Hunting .....	9
G. Predation .....	13
V. Resource/Management Conditions .....	13
A. Sage-Grouse Habitat .....	13
B. Ranching Operations .....	14
VI. Resource Issues .....	15
A. State-wide Issues Potentially Affecting Sage-Grouse in Idaho .....	15
1. Wildfire .....	15
2. Infrastructure .....	15
3. Livestock Grazing .....	15
4. Human Disturbance .....	16
5. Invasive and Noxious Weeds .....	16
6. West Nile Virus .....	16
B. Local Resource Issues .....	16
1. Desired future condition of the landscape .....	16
2. Factors influencing sage-grouse population status .....	17
3. Private property rights .....	18
4. Coordination and planning between private landowners and public agencies .....	18
5. Management of limited water rights .....	18
7. Realistic sage-grouse population goals .....	18
VII. Management/Resource Objectives .....	19
VIII. Future Commitments .....	20
IX. Contributing Members .....	21
X. Literature Cited .....	22
Appendix 1 .....	24
Appendix 2 .....	25

### List of Tables

Table 1. Opening weekend sage-grouse harvest data, Shoshone Basin Check Station, 1950-2007.....	10
Table 2. Sage-grouse nesting habitat quality in the East Shoshone Basin Management Area from mapping efforts in 1992 and 1997.....	14
Table 3. ESBMA Habitat Objectives.....	20

### List of Figures

Figure 1. Horse Creek, Magic Common, South Big Creek, and Kerr-Lost Creek Allotments, East Shoshone Basin Management Area, Twin Falls County, Idaho.....	2
Figure 2. Trend of male sage-grouse counted on the Shoshone Basin lek route, 1950-2007 .....	8

### Acronyms

ATV	All Terrain Vehicle
AUM	Animal Unit Month
BLM	Bureau of Land Management
CRMP	Coordinated Resource Management Plan
ESBMA	East Shoshone Basin Management Area
GIS	Geographic Information System
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
ISAC	Idaho Sage-grouse Advisory Committee
LWG	Local Working Group
MFP	Management Framework Plan
OHV	Off Highway Vehicle
SBPA	Shoshone Basin Planning Area
SVIM	Soil Vegetation Inventory Method
UCC	Utah Construction Company
WMA	Weed Management Area

**EAST SHOSHONE BASIN MANAGEMENT AREA  
COORDINATED RESOURCE MANAGEMENT PLAN  
SHOSHONE BASIN LOCAL WORKING GROUP  
10/03/08**

**I. Introduction**

The Shoshone Basin Planning Area (SBPA), as delineated in the Conservation Plan for Greater Sage-Grouse in Idaho (ISAC 2006), takes in approximately 180,000 acres. The SBPA is located in south-central Idaho along the Idaho/Nevada state line; northeast of Jackpot, Nevada (see Figure 1). Eighty-seven percent of the SBPA is identified as key sage-grouse habitat.

The East Shoshone Basin Management Area (ESBMA) Coordinated Resource Management Plan (CRMP) was prepared by the Shoshone Basin Local Working Group (LWG). The plan addresses rangeland and habitat management issues in the ESBMA. The CRMP broadly defines resource objectives and management guidelines for the ESBMA. Resource objectives and management specific to grazing allotments will be address by the Bureau Land Management (BLM) during the re-issuance of grazing permits. As management plans (AMPs) are completed for the allotments in the planning area, they will be attached to the CRMP as appendices.

The ESBMA is in the southeast portion of the SBPA and includes 34,154 acres. About 63% of the area is public land administered by the BLM, 32% is private land and 5% is state land administered by the Idaho Department of Lands (IDL).

Several family-operated livestock ranches graze cattle in the ESBMA. The BLM grazing allotments included in the ESBMA are the Horse Creek, Magic Common, South Big Creek and Kerr Lost Creek allotments. Livestock use in these allotments is 6,065 Animal Unit Months (AUMs). Cattle use is mostly made by cow/calf pairs; yearling cattle use also occurs in the Kerr Lost Creek Allotment. The livestock permittees either own or lease the private lands in the grazing allotments and have the grazing leases on the IDL administered lands. The Shoshone Basin is an important part of their family history and is an essential part of their livestock/farm operations.

The ESBMA also includes the Shoshone Creek Meadows, a 605-acre parcel acquired by the BLM in 1989 via a land exchange. The Shoshone Creek Meadows includes roughly 3 miles of Shoshone Creek and associated riparian areas that are managed for the maintenance, improvement, and enhancement of riparian, fisheries, and wildlife habitat. Livestock forage was not allocated at the time of the exchange and grazing will occur as a secondary use and used as a tool to meet fisheries, wildlife, and riparian objectives (BLM 1989). The Shoshone Creek Meadows have not been grazed by livestock since 1994.

Shoshone Basin provides habitat for a variety of wildlife. Pronghorn use the area year-long, but migrate southwest out of the ESBMA during winters with deep snow. The ESBMA also provides important habitat for mule deer, especially during the spring and fall migration

periods. Columbian sharp-tailed grouse were reintroduced into the Shoshone Basin, including the ESBMA, from 1992-99 and have expanded their range to include much of the SBPA. A variety of nongame species (i.e. songbirds, ravens, raptor, reptiles, small mammals, and coyotes) are also found in the area.

The sagebrush/grass plant communities found in the ESBMA provide habitat or potential habitat for many “sagebrush obligate” (dependent on sagebrush) and “sagebrush associated” (less dependent on sagebrush) species such as the greater sage-grouse, pygmy rabbit, sage thrasher, sage sparrow, and Brewer’s sparrow. The greater sage-grouse was selected as the focal species for this plan because of concerns over the species’ downward population trend (1980’s and early 1990’s) and the long-term viability of sagebrush steppe habitats in the Shoshone Basin. Since sage-grouse are a “sagebrush obligate” species, enhancement of sage-grouse habitat will also provide benefits for many species identified in the Idaho Comprehensive Wildlife Conservation Strategy (IDFG 2005).

Sage-grouse sometimes move extensive distances between winter, breeding, and brood-rearing habitats, crossing over many governmental and private jurisdictional boundaries. These extensive seasonal movements often confound land management decisions or activities and require coordinated, landscape-level management solutions. Sage-grouse in the Shoshone Basin are known to be part of a meta-population that includes Browns Bench, a portion of the Cassia Division, Minidoka District, Sawtooth National Forest, and a portion of northern Nevada. Effective management to protect and enhance sage-grouse in the SBPA must be coordinated with land use activities in these other areas.

The SBPA provides many recreational opportunities to the public including upland bird and big game hunting, camping, wildlife observation, and the use of off-road vehicles and snowmobiles. Limited waterfowl hunting and fishing opportunities also occur in the area.

## II. Cultural Significance of Sage-grouse for the Shoshone-Paiute Tribes of Southern Idaho

The Shoshone-Paiute Tribes hold the aboriginal land title for much of their vast historical range, including lands within the ESBMA. Since November 15, 1985, the administrative policy of the Bureau of Indian Affairs states that tribal off-reservation, treaty-reserved rights are potentially exercisable on all federally managed lands within a tribe’s ceded areas, as well as on federally managed lands in other areas traditionally used for those activities, unless applicable treaties/executive orders state otherwise. This is interpreted as acknowledging the reserved rights of the Shoshone-Paiute to access their traditional subsistence resources on public lands that are a part of their traditional homeland. These rights include hunting, fishing, performance of ceremonies, and gathering culturally-important resources such as sage-grouse. The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation are protected by various treaties, Executive Orders, and laws in the matter of their interest in and reliance on the sage-grouse (see Appendix 1).



When discussing sage-grouse, or any other cultural resource, Shoshone-Paiute tribal members invariably point out the interconnectedness of the total environment. These interconnections go well beyond biological interactions to include medicinal, ceremonial, and spiritual interactions. In fact, virtually all resource procurement by the Shoshone-Paiute involves both spiritual as well as practical aspects. Sage-grouse, like other fauna, are believed to have spirits. “The Creator”, who is responsible for all things, intended them to be used by the Shoshone-Paiute people for subsistence and spiritual purposes.

The Shoshone-Paiute learn in early childhood basic principles of proper behavior for using environmental elements. When an element such as sage-grouse is needed by the people, a reciprocal action from the people is necessary in return. Reciprocal actions are usually prayers and/or offerings that serve to confirm the need to take and use sage-grouse, to ask permission of the Creator to use it, and to give thanks to the Creator and the sage-grouse’s spirit for its availability as a blessing to the people. The Creator has shown the Shoshone-Paiute people how He wants resources to be used, so prayers and offerings are also a form of acknowledging that the sage-grouse is being treated according to His intentions.

Offerings are usually token gifts such as a pretty ribbon tied on a tree to decorate it, or small objects left at the site of resource procurement, such as tobacco or coins. Prayers are given at the time a resource is recovered from the environment as well as when it is used. Tribal members often phrase this as “taking care of” or “being respectful of” the environment. Prayers include a statement of need (for what purpose a resource will be used) and wish of good health and well-being both for the resource and for the people who depend on it. In cases where a plant or animal such as the sage-grouse must be killed to be used as a resource, prayers also help its spirit through a regenerative process. One tribal elder stated this process succinctly:

“When [a sage-grouse] is killed during hunting, tobacco or some other offering is left, and prayers are said to help [its] spirit get safely to the spirit world and so that the Creator would establish another one of those beings here and keep them plentiful. The prayer is both to the [sage-grouse’s] spirit and to the Creator. It is done because you have taken something you need to survive, and it helps re-establish the harmony.”

Such reciprocal actions are believed to nourish the sage-grouse and assure that it will continue to be available and be nourishing to the people in the future.

To the Tribes, sage-grouse, also known as Hoojah or Hoocha, are medicine birds. The males impart to certain tribal members a spirit of divination, making the possessor a medicine man with powers of healing, divination, and exorcism. While this has been described in various publications that speak of the spiritual powers of sage-grouse in the past, this power can still be obtained from the sage-grouse, according to Shoshone-Paiute spiritual leaders. Sage-grouse and their leks are still honored by the Shoshone-Paiute Tribes in various ceremonies and sacred dances.

As a subsistence resource, sage-grouse have multiple traditional uses. Depending upon the season, sage-grouse have been traditionally used: as food, in clothing, as manufacturing materials, as food for other animals, as archetypes in stories and legends, in making toys and musical instruments, in ceremonial costumes, to assist prayers on their journeys, and as omens. Sage-grouse can be an important source of meat, a staple in the Shoshone-Paiute diet that is available nearly year-round. In early summer and between major salmon and steelhead adult returns, the Tribes dispersed into family units to hunt sage-grouse, while simultaneously gathering seeds, berries, and roots. Sage-grouse eggs are also important in diet, as are the eggs of other bird species. Sage-grouse feathers are used in fans, on ceremonial costumes, and are preferred as fletching for arrows. Their bones are used for ceremonial whistles which helped prayers ascend to the spirits. Dances, regalia, and observances celebrate the bird's place in Shoshone-Paiute culture and society. The sage-grouse, in some respects, are honored as much as the eagle.

Tribal members assert that sage-grouse leks must be protected because they are sacred. Many leks have been used for generations, while the use of some leks extended indefinitely into the past. Further, leks are often present around buttes and rimrocks, which are significant because the Tribes recognize that buttes and rimrocks have their own sanctity, and the presence of sage-grouse adds another level of sacredness to these significant areas.

### III. Settlement of European Pioneers

Settlers first introduced livestock to the Shoshone Basin in the late 1860's, when both sheep and cattle used the area. The earliest pioneer settlement recorded in the Shoshone Basin was in 1882 (Moon 1976). At that time, at least eight families were recorded as living in the Shoshone Basin. In 1909, the Kuhn Brothers asked for and received the rights to develop a 5,200-acre gravity irrigation project in the Shoshone Creek drainage. Construction activities began that fall. A dam was built on Shoshone Creek just downstream from the Three Bridges Crossing with a canal system running to the south.

Also in 1909 a petition was granted for a Shoshone Basin School District. A school was built approximately 9 miles east and 5 miles south of Rogerson. The area in the central part of Shoshone Basin was called Alta. A Post Office was granted to Alta in 1910. Its location was about 2 miles south and 1 mile east of Kinsey's cabin. In 1912, the Post Office was moved to a site between Cottonwood Creek and Langford Flat Creek. Because of the growing number of families and children in Shoshone Basin, the Big Creek School was established in 1914. It was located near the intersection of the Basin Cutoff Road and the Shoshone Basin Road. Another school was built and ran for a short period 5 miles south and west of the Big Creek School near Hot Creek (Moon 1976).

The 5700 foot elevation and the resulting short growing season and harsh climate led to the abandonment of these homesteads by 1920. Only two families remained in the Shoshone Basin in 1930. Several of the homesteads reverted back to public ownership; however, many remained in private ownership. Two remnant irrigation dam structures, some old canals, and several old cabin foundations are all that remain of this period of history (Moon 1976).

The Utah Construction Company (UCC) acquired the water rights in the Basin. The UCC raised native hay on the meadows for the thousands of cattle they grazed from Rogerson, Idaho to Wells, Nevada. The town of Rogerson was the main livestock shipping center for the surrounding area, including Shoshone Basin. Thousands of sheep and other livestock were shipped annually until markets were moved farther south to Wells, Nevada. Another local ranch was said to have grazed 25,000 sheep, 2,000 cattle, and 700 horses near Rogerson. The UCC sold their water interests to Wilson and Wunderlich, who in 1947 sold them to the Salmon River Canal Company. At the present time, only one meadow, adjacent to the Horse Creek Allotment, is irrigated in the Basin.

During the 1930's, priority for Federal range grazing use and base property qualifications were established. A Civilian Conservation Corp. camp was located in the Basin in the 1930's to work on range improvements/developments. Following a range survey to determine carry capacity on public land, permitted use was allocated through the Lost Creek Unit adjudication in the late 1950's. By 1960, cattle had replaced most of the sheep in the SBPA.

Before settlers brought livestock to the Basin, vegetation probably consisted mostly of sagebrush/grassland plant communities. With the introduction of livestock grazing and no formal livestock management, the vegetation communities began to change from sagebrush/grasslands to sagebrush dominant communities. In 1966, about 72,000 acres of the SBPA were burned in the Magic Wildfire. Thousands of acres of sage-grouse habitat were impacted. The fire also killed livestock that were grazing in the Basin.

After the fire, about 6,590 acres of BLM land were seeded to crested and intermediate wheatgrass, alfalfa, and antelope bitterbrush. Bitterbrush and cliffrose were also seeded on about 160 acres of public land west of the Kerr Lost Creek Allotment. An estimated 31,000 acres of private land were seeded to crested wheatgrass. In addition to being seeded, 29,000 acres of private land were contour-ripped to control potential accelerated erosion. Over time sagebrush and other woody plants have gradually become reestablished within the burned area.

About 5,500 to 6,000 acres of existing crested wheatgrass seedings were present in the SBPA prior to the Magic Fire. Most of these seedings were established in the 1950's as watershed improvement projects. These earlier seedings are scattered from Highway 93 east to the Sawtooth National Forest boundary.

Since the establishment of crested wheatgrass seedings and the coinciding loss of sagebrush communities in the Shoshone Basin, there has been much concern over the quality and quantity of sage-grouse habitats and livestock forage. In 1994, a working group consisting of members with diverse backgrounds, and who also have interests in the Basin, was formed. The purpose of the group is to discuss resource issues, including sage-grouse habitats and livestock grazing, and explore management alternatives to resolve them. The working group concept was later endorsed in the 1997 Idaho Sage-grouse Management Plan (IDFG 1997) and again in the Conservation Plan for Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee 2006).

## IV. Shoshone Basin Greater Sage-grouse

### A. Population Trends

Greater sage-grouse habitat quality and quantity has declined throughout southern Idaho and other parts of the West, and coincides with declines in sage-grouse population numbers. Connelly and Braun (1997) reported that sage-grouse breeding populations in Idaho from 1985-1994 had declined by about 40% from the long-term average. Connelly et al. (2004) concluded that sage-grouse populations in Idaho during the late 1960's and early 1970's were 2-3 times higher than current populations. The primary reasons for habitat loss include wildfire, agriculture expansion, herbicide treatments, prescribed fire, and rangeland seedings. In some areas of southern Idaho, cheatgrass or bulbous bluegrass has replaced more desirable grass species, altering nesting habitat quality. The increased distribution of cheatgrass has also increased fine fuels resulting in larger and more frequent wildfires. Another factor that can affect sage-grouse habitat is livestock grazing. Improper grazing practices can degrade habitat quality.

Spring counts of males attending leks are commonly used to monitor sage-grouse population trends (Connelly and Braun 1997). While lek counts have been done in Shoshone Basin for more than 40 years, a standardized lek route has been completed since 1986 and provides the most useful data for monitoring sage-grouse trends. Lek routes are standardized surveys, conducted during late March and April that represent all or part of a breeding population. A lek is defined as an aggregation of two or more displaying males that has been active in at least 2 of the previous 5 years (Connelly et al. 2000).

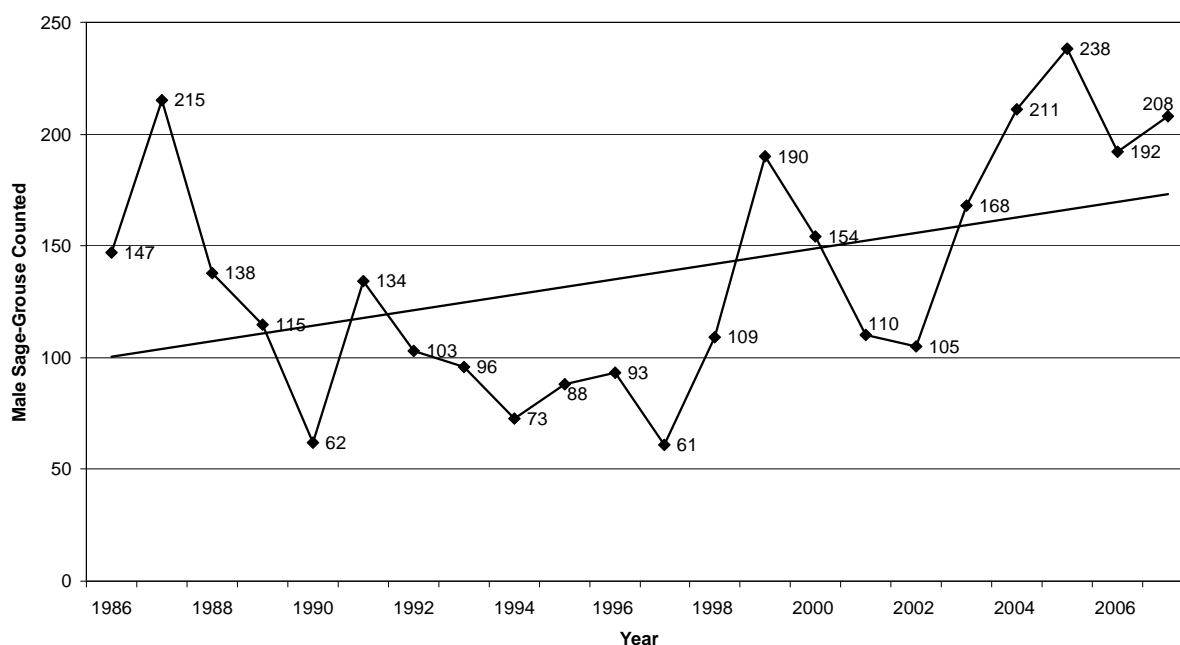
Lek route data suggest the Shoshone Basin grouse population declined from 1986-1997 and has generally trended upward since then. In 2007, the number of males counted on the route (208 males) was 241% higher than the 1997 count (61 males) (Figure 2). This increase coincides with the recovery of habitat and changes in livestock management and sage grouse harvest that have been implemented in the ESBMA. Sage-grouse populations throughout the Magic Valley also increased during 1997-2007 but not to the extent of the grouse population in the Shoshone Basin (IDFG 2007). Counts on 11 lek routes in the Magic Valley increased 37% from 1997 to 2007.

Wings collected from hunter-harvested sage-grouse provide data on reproductive performance (juvenile:adult female ratios). From 1961-2007, wing data showed a mean ratio of 1.72 juveniles per adult female. During 1996-2006, a period of population increases, ratios averaged 2.12 juveniles per adult female. From 1986-1995, a period of population decline, the ratios averaged 1.65 juveniles per adult female. In 2007, the ration of 0.44 juveniles per adult females was the lowest ever recorded for Shoshone Basin sage-grouse (Table 1). At this time, biologists are not sure why the low ratio in 2007 but are evaluating possible causes and think the cause is likely related to biology rather than habitat.

## B. Seasonal Movements

The Shoshone Basin sage-grouse population would generally be described as a one-stage migratory population, exhibiting movements between distinct winter and summer ranges (Connelly et al. 2000). In some years, sage-grouse winter in the Basin using windswept ridges and areas of tall sagebrush. Telemetry studies conducted during the late 1980's and early 1990's showed in most years snow depth triggers sage-grouse movement southwest into Nevada or to Browns Bench, approximately 15 miles west (IDFG *unpublished data*). During mid-late summer, many sage-grouse also move up in elevation toward Deadline Ridge as habitats at lower elevations dry-out. Telemetry studies have also documented movements of sage-grouse that breed on Browns Bench to the west side of Shoshone Basin during the summer (IDFG *unpublished data*).

Figure 2. Trend of male sage-grouse counted on the Shoshone Basin lek route, 1986-2006.



## C. Winter

During winter, sage-grouse are dependent on sagebrush habitat and feed exclusively on sagebrush leaves. Areas of tall sagebrush that protrude above the snow and wind-swept ridges with low or black sagebrush are crucial for their survival (Eng and Schladweiler 1972, Beck 1977, and Robertson 1991). If such areas are not lacking, sage-grouse are seldom impacted by severe winter weather. Loss of sagebrush on winter ranges can severely reduce sage-grouse populations.

As discussed previously, Shoshone Basin sage-grouse utilize sagebrush-steppe habitats in the Basin during winter until deep snows trigger migrations to winter habitat southwest in Nevada and west to Browns Bench. Stands of tall sagebrush used during the winter in Nevada have been reduced by fire but the effect on Shoshone Basin grouse appears to be

minimal. Low sagebrush habitats do not readily burn and are relatively intact and in good condition.

#### D. Nesting

Sage-grouse are dependent on large acreages of sagebrush-steppe habitats with 15-25% sagebrush canopy cover and adequate grass and forb cover (Autenrieth 1981, Wakkinen 1990, and Gregg et al. 1994). Most sage-grouse nests occur in, and are more successful under sagebrush (Patterson 1952 and Connelly et al. 1991). If sagebrush is eliminated from a large area, or severely fragmented into small units, the area will not support strong sage-grouse populations because nest success and/or juvenile survival will be reduced. Herbaceous cover is also critical for nest concealment and successful nesting. Some research suggests that the grass-forb heights in the understory of sagebrush communities should be 7 inches or more during the nesting season to be most beneficial to sage-grouse (Connelly et al. 2000).

#### E. Brood-rearing

The quality and quantity of brood-rearing habitat can have a strong influence on sage-grouse chick survival. Typically, early (June to mid-July) brood-rearing areas are in the vicinity of nest sites, and good habitat contains an abundance of forbs as well as sagebrush cover (Connelly et al. 2000 and Apa 1998). During the mid-late summer, brood use shifts to more mesic habitats where forbs are more abundant. In the Curlew Valley, Apa (1998) found that brood-use sites had twice as much forb cover as independent sites. In Shoshone Basin, grouse broods move to higher elevations and/or seek out meadow and riparian areas as the lower sagebrush habitats dry-out.

Wet meadows associated with Shoshone Creek, Big Creek, Hot Creek, and Horse Creek provide crucial brood-rearing habitats in the ESBMA. Shoshone Meadows, a 3-mile stretch of Shoshone Creek that encompasses roughly 600 acres, provides abundant, high quality habitat for sage-grouse broods. Shoshone Meadows is centrally located to the Horse Creek, Magic Common, and Kerr-Lost Creek allotments and does not have allocated livestock use. The protection and enhancement of wet meadow and riparian areas are a priority for the LWG.

#### F. Hunting

The sage-grouse is a popular game bird in Idaho. In Shoshone Basin, the hunting season has varied from very conservative (1 day and 1-bird daily bag limit in 1953) to very liberal (30 days and 3-bird daily bag limit in 1990-1995). Because of concern over declining sage-grouse populations from entities such as the Shoshone Basin LWG, in 1996 the Idaho Fish and Game Commission modified hunting season in portions of Idaho to evaluate the effects of hunting on sage-grouse populations. The hunting season in Shoshone Basin was reduced from 30 days to 7 days and the daily bag limit was reduced from 3 to 1 sage-grouse per hunter. In Shoshone Basin, these changes reduced sage-grouse harvest by approximately two-thirds.

A check station has been operated in the Shoshone Basin on opening weekend of sage-grouse hunting season since at least 1953. The location of the check station is on the primary access route for the Basin enabling a high proportion of the opening weekend hunters to be checked. Approximately 65% of the total sage-grouse harvest is estimated to occur on opening weekend (IDFG *unpublished data*). Opening weekend hunter participation has ranged from 624 hunters in 1970 to 64 hunters in 1998. The number of sage-grouse checked has ranged from 713 grouse in 1970 to 26 grouse in 1997.

In 2007, opening weekend harvest was 16% lower than the 1979-2007 average. Hunters expended 5.7 hours to harvest a sage-grouse; slightly lower than the 1979-2007 mean of 6.3 hours per bird. Hunters observed an average of 8.8 sage-grouse per hour of hunting in 2007; nearly double the 1979-2007 mean of 4.5 grouse observed per hour (Table 1).

Table 1. Opening weekend sage-grouse harvest data, Shoshone Basin Check Station, 1950-2007.

Year	Bag-Possession Limit	Season Length	Hunters	Sage-Grouse Harvest	Sage-Grouse Harvested / Hunter	Sage-Grouse Harvested / Hunter-Day	Hours / Sage-Grouse Harvested	Sage-Grouse Observed / Hour	Juveniles / 100 Adult Females
1950		Closed							
1951		Closed							
1952		Closed							
1953	2-2	1 day	647	649	1.00	1.00	5.0		
1954	2-2	1 day							
1955		Closed							
1956		Closed							
1959		Closed							
1960		Closed							
1961	2-2	1 day	109	95	0.87	0.87	6.4		48
1962	2-2	2 days	150	88	0.59		5.8		80
1963	2-2	2 days	83	43	0.52		8.3		225
1964	2-2	2 days	55	59	1.07		2.6		100
1965	2-2	2 days	152	73	0.48		8.3		No Data
1966	2-2	5 days	128	136	1.06		3.1		321
1967	2-2	5 days	200	170	0.85		4.5		292
1968	2-2	7 days	367	433	1.18		2.5		237
1969	2-2	9 days	556	628	1.13		2.6		216
1970	3-3	9 days	624	713	1.14		4.3		114
1971	3-6	9 days	538	494	0.92		5.1		141
1972	3-6	9 days	304	205	0.67		7.5		169
1973	3-6	9 days	282	114	0.40		10.1		125
1974	2-4	9 days	262	114	0.44		9.6		134
1975	2-4	9 days	198	67	0.34		14.5		147

Table 1. Opening weekend sage-grouse harvest data, Shoshone Basin Check Station, 1950-2007.

Year	Bag-Possession Limit	Season Length	Hunters	Sage-Grouse Harvest	Sage-Grouse Harvested / Hunter	Sage-Grouse Harvested / Hunter-Day	Hours / Sage-Grouse Harvested	Sage-Grouse Observed / Hour	Juveniles / 100 Adult Females
1976	2-4	9 days	213	152	0.71		5.8		352
1977	2-2	9 days	339	249	0.73		5.8		130
1978	2-2	9 days	420	297	0.71		6.6		101
1979	2-2	9 days	410	359	0.88	0.86	4.0	5.3	268
1980	2-2	9 days	404	248	0.61	0.59	6.2	3.1	104
1981	2-2	9 days	405	299	0.74	0.71	5.9	3.5	108
1982	2-2	9 days	377	203	0.54	0.54	7.8	2.4	93
1983	1-1	9 days	165	71	0.43	0.43	8.8	1.9	206
1984	1-1	9 days	100	44	0.44	0.43	12.4	1.2	179
1985	2-2	9 days	212	132	0.62	0.60	6.6	3.8	181
1987	2-4	14 days	282	256	0.91	0.88	4.6	6.6	181
1988	2-4	16 days	245	176	0.72	0.71	5.7	4.4	80
1989	2-4	16 days	196	139	0.71	0.68	5.4	3.7	215
1990	3-6	30 days	220	225	1.02	0.98	4.3	4.9	133
1991	3-6	30 days	223	156	0.70	0.67	6.0	3.5	138
1992	3-6	30 days	173	89	0.51	0.51	7.5	3.2	143
1993	3-6	30 days	240	122	0.51	0.50	7.5	2.0	210
1994	3-6	30 days	181	103	0.57	0.55	7.5	1.8	238
1995	3-6	30 days	141	73	0.52	0.52	7.5	1.3	141
1996	1-2	7 days	83	37	0.45	0.45	6.4	2.7	225
1997	1-2	7 days	66	26	0.39	0.39	8.2	4.3	200
1998	1-2	7days	64	42	0.66	0.66	4.4	2.7	206
1999	1-2	7 days	140	73	0.52	0.51	4.7	5.5	213
2000	1-2	7 days	101	42	0.42	0.42	6.3	6.6	92
2001	1-2	7 days	95	42	0.44	0.38	8.4	4.3	135
2002	1-2	7 days	105	49	0.47	0.47	6.2	5.3	300
2003	1-2	7 days	108	68	0.63	0.63	4.4	3.9	181
2004	1-2	7 days	159	81	0.51	0.48	6.1	12.8	304
2005	1-2	7 days	142	96	0.68	0.58	3.6	8.5	280
2006	1-2	7 days	174	112	0.64	0.64	4.0	8.9	193
2007	1-2	7 days	165	102	0.62	0.57	6.3	4.5	44
<b>Ave. 1979-2007</b>			<b>196</b>	<b>126</b>	<b>0.60</b>	<b>0.59</b>	<b>6.3</b>	<b>4.5</b>	<b>178</b>

The effect of sport hunting on sage-grouse populations is not clearly understood and has been discussed at length by the LWG. In contrast to most upland game bird species, sage-grouse are relatively long-lived, have low reproductive rates and low annual turnover rates. Thus, hunting mortality might become additive to other causes of mortality at a lower harvest rate. Connelly et al. (2004) using Idaho lek survey data concluded that hunter harvest did influence the rate at which sage-grouse populations increased. In Shoshone Basin, data suggest that the harvest level, as a percentage of the sage-grouse population, is relatively low. From 1989-1993, direct band returns from 111 banded sage-grouse averaged 6.2% with liberal hunting seasons (30 days, 3-bird daily bag limit) (IDFG *unpublished data*). Harvest rates of 10% or less of a fall population are suggested to have minimal effects on the following spring's breeding population (Connelly et al. 2000).

Ranchers on the LWG have requested that the hunting season in Shoshone Basin remain conservative. Biologists generally concur with this recommendation; however, the possibility of increasing harvest may exist as sage-grouse population increase. Connelly et al. (2000) concluded that:

- *If populations occur over relatively large geographic areas and are stable to increasing, seasons and bag limits can be relatively liberal (2-4 bird daily bag limits and a 2-5 week season).*
- *If populations are declining (for 3 or more consecutive years) or trends are unknown, seasons and bag limits should be generally conservative (1-or 2-bird daily bag limit and a 1- to 4-week season).*
- *Where populations are hunted, harvest rates should be 10% or less of the estimated fall population to minimize negative effects on the subsequent year's breeding population.*
- *Populations should not be hunted where less than 300 birds comprise the breeding population (i.e. less than 100 males counted on leks).*

With the implementation of the current conservative hunting season in Shoshone Basin, many of the Magic Valley's sage-grouse hunters shifted their hunting to the north side of the Magic Valley where the bag limit is 2 birds. A consistent season throughout the region would result in a more even distribution of hunters and harvest. The result would be to lessen the harvest rate on some sage-grouse populations and increase the harvest rate on others. It is likely that proposals will be developed in the future to standardize sage-grouse seasons throughout southern Idaho.

Guidelines for deciding hunting season frameworks were developed by the Idaho Sage-grouse Advisory Committee (ISAC) in 2006. The guidelines allow biologists to use population trends determined from lek counts and production data (wing samples) to determine the appropriate season. Any changes to the hunting season in the Shoshone Basin will be based on sound population data with consideration of existing habitat conditions and consistent with the ISAC guidelines. It is important that any changes in

hunting season take into account seasons in adjacent areas (Jarbidge and South Magic Valley Sage-Grouse Planning Areas) to avoid undesirable redistribution of hunters. The LWG will be consulted early in the process of any proposed changes to hunting seasons.

## G. Predation

Predation is the primary mortality agent in sage-grouse populations. In addition, predators such as ravens also depredate nests in the spring. The effect of predation on sage-grouse population dynamics varies by locale and is influenced by habitat quality, as well as, the types and numbers of predators. With a few exceptions, researchers have found that predators generally do not limit sage-grouse populations.

Depredations of sage-grouse nests are not considered to have a limiting effect on sage-grouse numbers. Research in Idaho over the past several decades has consistently shown nest success rates greater than 40% which is acceptable for supporting a healthy, growing sage-grouse population (Connelly and Braun 1997). Recent research has shown that survival of chicks during the first 2 weeks of life may have a profound influence on the reproductive performance of the population. Adequate concealment cover for chicks is critical to their survival (Sveum et al. 1998).

## V. Resource/Management Conditions

### A. Sage-Grouse Habitat

In 1992, BLM staff extensively mapped the vegetation in the ESBMA. This data and data from the BLM 1979 Soil Vegetation Inventory Method (SVIM) efforts were used by IDFG and BLM biologists to develop a sage-grouse “nesting habitat quality” map for the ESBMA. In 1996, the map was updated to reflect herbicide sprays on private and state lands since the initial mapping effort. The data were displayed using Geographic Information System (GIS) technology in 1996. Based on accepted sage-grouse nesting habitat requirements and local expertise and familiarity with the area, the map illustrated “Excellent”, “Fair”, and “Poor” sage-grouse nesting habitat.

Areas classified as excellent nesting habitat support 15-25% big sagebrush canopy cover and a healthy native bunchgrass understory. Polygons with 6-15% big sagebrush canopy cover are rated as fair if composition of the understory vegetation is greater than 40% native plants and poor, if not. Areas seeded with non-native grasses are designated as fair or poor sage-grouse habitat, depending on the extent of sagebrush cover present. In general, seeded areas, particularly those at lower elevations that are dominated by species such as crested or intermediate wheatgrass typically are lacking in forb diversity and would not have the same potential or desirability as native rangelands, regardless of shrub cover. The classification of nesting habitat quality also reflects the condition of early brood habitat, since early brood-rearing habitats are generally in the vicinity of nest sites.

During 2005-2007, the LWG received a grant from the Idaho Office of Species Conservation to reevaluate habitat in the ESBMA using a finer-tuned scale. More accurate

data will help the LWG better assess progress on achieving management objectives. The GIS generated acreages for the aforementioned categories are presented in Table 2. Important winter habitats for sage-grouse include the low sagebrush ridges and are included in the unclassified category in Table 2.

Table 2. Nesting Habitat Quality in the ESBMA

<b>Nesting Habitat Quality (Mapped 2006/2007)</b>	<b>Acres</b>	<b>% Area<sup>1</sup></b>
Excellent	5,483	16
Fair	11,773	35
Poor	11,611	34
Unclassified	5,287	15
<b>Total</b>	<b>34,154</b>	<b>100</b>

## B. Ranching Operations

The establishment of crested wheatgrass seedings in the 1950's and 1960's provided more livestock forage on public lands (BLM *unpublished data*). This forage, along with forage provided on private and state lands, is the foundation used to build current livestock operations in the ESBMA. As sagebrush began to re-establish in seedings (1980s), livestock AUMs declined and conflicts associated with sagebrush habitat and seeding maintenance intensified. The conflicts delayed some of the seeding maintenance treatments on public land necessary to maintain livestock use at levels described in the Twin Falls Management Framework Plan (MFP). In response to the lack of seeding maintenance on public land, some private landowners chemically treated sagebrush on private lands. In 1994, when the LWG was established, the possible decline in long-term forage production was perceived by the local livestock operators as a potential threat to their financial stability.

The LWG acknowledges the historical, cultural, and economic importance of family-operated ranches in south central Idaho. These ranches provide undeveloped areas that are important habitat for many wildlife species. A primary goal of the Shoshone Basin LWG is to develop a management plan that enables livestock operations to maintain the following levels of grazing: Horse Creek Allotment - 1,820 AUMs; Magic Common Allotment - 792 AUMs; Kerr Lost Creek Allotment - 3,659 AUMs; South Big Creek Allotment - 115 AUMs. These AUMs include forage allocated on BLM and IDL lands and forage levels historically recognized on private lands. BLM rangeland health assessments and determinations for these allotments (BLM 1999 - 2003) have documented healthy rangelands are being maintained or improved on public lands at these stocking levels. While the Shoshone Basin LWG does not have the authority to determine stocking rates on public, state, or private lands, the LWG supports these levels providing rangeland health standards are being achieved and resource objectives identified in this plan are reached.

<sup>1</sup> Percent includes the unclassified acreage, i.e. ridges and meadows lacking the ecological potential to produce nesting habitat and reflects the entire acreage within the ESBMA boundary.

## VI. Resource Issues

### A. State-wide Issues Potentially Affecting Sage-Grouse in Idaho

The ISAC (2006) identified numerous state-wide threats that could potentially affect sage-grouse and its habitats. Higher ranking threats and their relative importance statewide include: wildfire, infrastructure, annual grasslands, livestock grazing, human disturbance, and West Nile Virus. Threats applicable to the ESBMA are wildfire, infrastructure, livestock grazing, human disturbance (e.g. off highway vehicles), invasive and noxious weeds, and West Nile Virus.

#### 1. Wildfire

Wildfire is considered the most pressing threat to sage-grouse and their habitats in the ESBMA. Large fires can remove significant amounts of nesting and winter habitats. Once burned these habitats may take decades to recover. Habitat fragmentation may also result from wildfire. Fragmentation can reduce the size of existing habitats, isolate habitats and the grouse populations dependent on them, and impair the progress of sagebrush-steppe restoration efforts. Adequate wildfire suppression, rehabilitation, restoration and education, would help reduce the impacts of wildfire.

Wildfire in the ESBMA has mostly been caused by lightning. A number of fires, 16% over a 23-year period, have been started by humans (ISAC 2006). Most human-caused fires are from the use of heavy equipment in the area. Education, prevention, and enforcement should help reduce the frequency of human-caused wildfires in the future. The Shoshone Basin LWG will coordinate with the BLM and local fire organizations to educate and help prevent human-caused wildfires in the ESBMA.

#### 2. Infrastructure

Infrastructure is not a current issue in the ESBMA; however, interests in wind power and communication towers could eventually impact the area. Impacts from infrastructure may include the establishment and spread of noxious and invasive weeds, facilitate predation, increase risk of mortality, increase human disturbances, and influence the behavior of sage-grouse. Presently, infrastructure is confined largely to roads in the ESBMA. Communication and energy infrastructure is mostly located in the western portion of the SBPA near State Highway 93.

#### 3. Livestock Grazing

This plan identifies and supports resource objectives and management guidelines that promote healthy sage grouse habitats and proper livestock management.

#### 4. Human Disturbance

Human disturbance in the ESBMA is largely related to off highway vehicle (OHV) use. All terrain vehicles (ATV) are commonly used to hunt sage grouse. OHV use, including ATV and four-wheel drive vehicles, can potentially disturb lek activity and nests during the spring. Noise, ground disturbance, spread of weeds, damage to vegetation, and risk of human-caused wildfire can result from OHV use. Although not specifically addressed in this plan, the Shoshone Basin LWG will work with IDFG, BLM and OHV groups to identify and resolve issues regarding off-road use.

#### 5. Invasive and Noxious Weeds

Few noxious weeds have been found in the ESBMA. Diffuse knapweed is found along the Magic Hot Spring Road and black henbane plants have been observed along the Basin Road, near the Idaho/Nevada state line. The ESBMA is located in the Twin Falls Weed Management Area (WMA). Twin Falls County and the BLM are working cooperatively to control/eradicate these noxious weeds. Because of their presence, there is the threat of diffuse knapweed and black henbane spreading to nearby uplands. If weed treatments continue and the uplands are maintained in healthy condition the threat of weed expansion is low. The LWG will work with the Twin Falls WMA on current and future noxious weed issues.

#### 6. West Nile Virus

Mortality of sage-grouse to West Nile Virus has been documented in several western states (Walker et al. 2004). During summer 2006, West Nile Virus was implicated in the deaths of radio-monitored sage-grouse in Owyhee County (IDFG 2007). In addition, one radioed sage-grouse on Browns Bench, 10 miles west of Shoshone Basin, died of West Nile Virus. No mortality in Shoshone Basin has been documented; however, if its presence is suspected, monitoring efforts will be increased to document its affect on grouse populations.

### B. Local Resource Issues

In addition to the threats listed above the Shoshone Basin LWG also identified the following local resource issues:

#### 1. Desired future condition of the landscape.

- Healthy rangelands and wildlife habitat
- Healthy riparian areas and wetlands
- Watershed protection
- Crested wheatgrass seedings vs. native range

The LWG addressed the desired future conditions of the landscape in the development of resource and management objectives stated in this plan.

## 2. Factors influencing sage-grouse population status.

### - Predation

The LWG assumed that if sufficient habitat is available, sage-grouse populations are able to withstand predation. However, if research and monitoring shows predation is significantly impacting sage-grouse numbers, the LWG will address opportunities to resolve the issue.

### - Hunting seasons and bag limits

Improper use of motorized vehicles during the hunting season was identified as a concern by landowners. The LWG discourages cross-country motorized travel and if necessary will pursue actions available to them to reduce it.

The LWG recommends future seasons and bag limits be established using the guidelines identified by the ISAC (2006). Any changes in sage-grouse season in the Shoshone Basin would be coordinated with the Shoshone Basin LWG.

### - Grazing

Healthy rangelands that sustain properly managed livestock grazing can provide adequate sage-grouse nesting, chick rearing, and winter habitats. In general, livestock management practices that promote the sustainability of desired native perennial grasses and forbs should maintain or minimally impact sage grouse habitat (ISAC 2006). As a general approach, healthy, functioning rangelands provide most, if not all, of the habitat components comprising suitable sage-grouse habitat relative to site potential. The primary focus for conservation and improvement of sage-grouse habitat is consistent with long-term grazing management programs that support ecological conditions or trends towards healthy rangelands (ISAC 2006).

### - Weather

Weather, particularly spring weather, can influence sage-grouse survival.

### - Insects

Grasshopper and Mormon cricket infestations and control treatments were identified as a potential issue in the Shoshone Basin. Infestations have not been an issue in the ESBMA since at least 1970. If grasshoppers and Mormon crickets do become an issue, they will be reported to the Animal and Plant Health Inspection Service for evaluation and possible treatment.

### 3. Private property rights

About 32% of the ESBMA is privately owned. The inclusion of private lands in this plan is strictly voluntary. It is also understood that management of private lands is controlled by the private landowner.

### 4. Coordination and planning between private landowners and public agencies

Forming the LWG has improved coordination between the parties. The intent of this plan is to better ensure coordinated resource management continues to occur in the future.

### 5. Management of limited water rights

This issue was not addressed by the LWG due to the group's lack of influence or control of water rights.

### 6. Future vegetation treatments

A primary objective of this plan is to maintain a mixture of shrub cover with diverse healthy understories of grasses and forbs. To achieve this objective, occasional vegetation treatments will be necessary. Shrub cover, overtime, can become so dense that understories of grasses and forbs decline in plant numbers and health. Allowing wildfire to naturally manage plant communities is not a desirable option because wildfires can result in the loss of sagebrush cover on large areas. The Shoshone Basin LWG supports the concept of maintaining healthy plant communities for livestock and wildlife through vegetation management practices. Maintaining healthy rangelands will also reduce the probability of large wildfire occurrences.

### 7. Realistic sage-grouse population goals

Sage-grouse population goals were identified in the 1997 Idaho Sage Grouse Plan (IDFG 1997). The goal identified for Shoshone Basin was to increase the 5-year average of males counted annually to 125 by 2007. This goal was achieved. The 5-year average of males counted (2003-2007) was 203. For the purpose of the Shoshone Basin CRMP, the LWG decided not to identify a specific sage-grouse population target but to focus on providing quality habitat over the long term. It was recognized that lek counts may vary with weather patterns and other factors such as wildfire that are beyond the LWG's control. Management of human influences on vegetation and habitat can be controlled and is the focus of the LWG.

To address the resource issues and concerns listed above the LWG crafted the following mission statement to guide development of this plan:

**“The current plant community composition in portions of the East Unit of the Shoshone Basin is unsatisfactory. It is perceived that current livestock, bird, and vegetative management are inadequate in these portions. A coordinated effort is needed to establish and maintain acceptable components of brush and grass within each allotment in order to provide for the needs of livestock and sage-grouse.”**

## VII. Management/Resource Objectives

The following objectives were developed by the Shoshone Basin LWG.

- Provide sufficient nesting and brood rearing habitat to reverse downward trends and increase sage-grouse populations.

Throughout the ESBMA the primary goal is to provide and maintain at least 30% of the land base in excellent nesting habitat condition and manage for no more than 20% of the land base to have less than 5% canopy cover. It is recognized that on an annual basis shrub cover objectives may not be attained due to natural occurring events such as wildfire. When these events occur, adaptive management will be used to work toward achieving shrub objectives.

Herbaceous cover should be managed to ensure that it provides the height and cover necessary for sage-grouse nesting habitat. Connelly et al. (2000) recommended that, when possible, herbaceous understory vegetation in sage-grouse breeding habitat should be more than 7” in height and more than 15% cover. However, most research on nesting habitat reports values that represent herbaceous nesting cover following hatching (late May and early June) when measurements could be made without disturbances to nesting hens. Data regarding herbaceous cover values present during nest site selection are unavailable. Research is currently ongoing in southern Idaho by IDFG to refine the understanding of herbaceous understory requirements for nesting sage-grouse (Connelly and Musil 2007).

Until this research provides more definitive direction regarding the needed levels of grass-forb height and cover for nest selection, utilization levels will be used as an indicator tool to determine appropriate levels of livestock use. Currently, only up to 25% of the ESBMA is used by livestock during the sage-grouse nesting season (April 1-June 15). This figure may be less depending on grazing rotations.

Since early brood-rearing habitats are generally in the vicinity of nest sites, the LWG concluded managing for quality nesting cover will also benefit broods during the first 2-4 weeks following hatching. Management of late brood-rearing habitats will focus on maintaining and enhancing wet meadows and riparian vegetation.

Important winter habitat for sage-grouse includes the low sagebrush ridges found throughout the ESBMA. The areas are considered to be in good condition and generally the risk of losing these habitats to wildfire is low. Additionally, deep snow triggers sage-grouse migrations out of the Basin during the winter. Active management to maintain low sagebrush habitats will be minimal.

- Provide a stable long-term forage base to sustain existing cattle operations.

Maintain up to 20% of the land base in less than 5% shrub canopy cover to provide areas primarily for livestock forage. These areas are predominantly crested wheatgrass seedings.

- Manage both uplands and riparian vegetation to ensure properly functioning systems.

Appendix 2 identifies management considerations common to all allotments. As the BLM and livestock permittees update or complete allotment management plans (AMPs) for the Horse Creek, South Big Creek, Kerr Lost Creek, and Magic Common allotments, the AMPs will be attached to this plan as appendices. Habitat objectives for the ESBMA are summarized in Table 3.

Table 3. ESBMA Habitat Objectives

Nesting Quality Habitat	% of Area
Excellent	$\geq 30$
Fair	$\approx 35$
Poor	$\leq 20$
Unclassified	15

## VIII. Future Commitments

The BLM, IDFG, Natural Resources Conservation Service, IDL, Idaho Department of Agriculture, private land owners, livestock permittees, and interested parties are committed to a plan that meets both resource management goals and the expectations of group members. Thus, to better ensure that the group's efforts are successful, it is anticipated that the committee will continue to meet at least once each winter to review progress, evaluate monitoring data, discuss any problems in the previous year operations, and make recommendations if necessary for both annual and future management adjustments.

The Shoshone Basin can be described as a patchwork of public and private lands. Because sage-grouse are dependent on large acreages and do not recognize property boundaries, it is important to recognize that actions occurring outside the scope of the committee may significantly impact sage-grouse populations. Therefore, when analyzing the success of this plan, cumulative impacts associated with these actions will also be considered.

If livestock forage and sage-grouse habitat goals in the CRMP cannot be achieved, revision and modifications to the plan will be made. The inclusion of private lands in this plan is voluntary and participation in present and future management practices is discretionary on the part of the private land owners.

Members proactively support the CRMP and its goals. Support of the plan will result in healthy rangelands that provide sage-grouse habitat and meet the needs of local livestock operators.

#### IX. Contributing Members

Eric Kriwox (IDL)	Mark Fleming (IDFG)
Jim Baker (Rancher)	John Haxby (Retired BLM)
Gary Dickard (Rancher)	Rob Rogerson (Rancher)
Randy Smith (IDFG)	Charles Thompson (Rancher)
Richard Wright (retired BLM)	Rich Yankey (Retired NRCS)
Mike Remming (Interested Public)	Scott Sayer (BLM)
Jim Tharp (BLM)	Elena Shaw (BLM)
Jeremy Bisson (BLM)	Kevin Wright (IDA)
Mike Courtney (BLM)	

Past Committee Members who have contributed to the plan include Paul Makela (BLM), Tony Apa (IDFG), Larry Adams (Rancher), Bob Molyneux (Rancher), Howard Kestie (IDL), Ron Blake (NRCS), Bryce Taylor (IDL), and Glenn Bushcher (Sportsman).

Consultation with the Shoshone-Paiute Tribes also resulted in contributions to the plan.

## X. Literature Cited

- Apa, A. D. 1998. Habitat use and movements of sympatric sage and Columbian sharp-tailed grouse in southeastern Idaho. Moscow, ID: University of Idaho. 199 p. Dissertation.
- Autenrieth, R.E. 1981. Sage grouse management in Idaho. Idaho Department of Fish and Game. Wildlife Bulletin Number 9. Boise, ID. 239 p.
- Beck, T.D.I. 1977. Sage grouse flock characteristics and habitat selection in winter. *Journal of Wildlife Management* 41:18-26.
- Bureau of Land Management (BLM). 1989. Schnell Exchange Land Use Plan Amendment. Bureau of Land Management, Boise District, Snake River Resource Area, Burley, ID.
- Connelly, J.W., and C. E. Braun. 1997. Long-term changes in sage grouse *Centrocercus urophasianus* populations in western North America. *Wildlife Biology* 3/4: 123-128.
- Connelly, J.W., W.L. Wakkinen, A.D. Apa, and K.P. Reese. 1991. Sage grouse use of nest sites in southeastern Idaho. *Journal of Wildlife Management* 55:521-524.
- Connelly, J.W., A.D. Apa, R.B. Smith, and K.P. Reese. 2000. Effects of predation and hunting on adult sage grouse *Centrocercus urophasianus* in Idaho. *Wildlife Biology* 6:227-232.
- Connelly, J. W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation assessment of Greater Sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, WY.
- Connelly, J. and D. Musil. 2007. Greater sage-grouse habitat and population trends in southern Idaho. Idaho Department of Fish and Game. Federal Aid to Wildlife Restoration Progress Report. Project W-160-R-34. Boise, ID. 37pp.
- Eng, R.L, and P. Schladweiler. 1972. Sage grouse winter movements and habitat use in central Montana. *Journal of Wildlife Management* 36:141-146.
- Gregg, M.A., J.A. Crawford, M.S. Drut, and A.K. DeLong. 1994. Vegetational cover and predation of sage grouse nests in Oregon. Thesis. Oregon State University, Corvallis, OR.
- Idaho Department of Fish and Game (IDFG). 1997. Idaho sage grouse management plan. Boise, ID.
- IDFG. 2005. Idaho Comprehensive Wildlife Conservation Strategy. Idaho Conservation Data Center. Boise, ID. <http://fishandgame.idaho.gov/cms/tech/CDC/cwcs.cfm>
- IDFG. 2007. Upland Game Surveys and Inventories. Federal Aid to Wildlife Restoration Progress Report. Boise, ID.

- Idaho Sage-grouse Advisory Committee (ISAC). 2006. Conservation plan for greater sage-grouse in Idaho. Boise, ID.
- Moon, J.H. 1976. Early history of Filer, Idaho school communities. The Print Shoppe, Filer, ID. 415 p.
- Patterson, R.L. 1952. The sage grouse of Wyoming. Sage Books, Inc. Denver, CO. 341 p.
- Robertson, M.D. 1991. Winter ecology of migratory sage grouse and associated effects of prescribed fire in southeastern Idaho. Thesis. University of Idaho, Moscow, ID.
- Sveum, C.M., J.A. Crawford, and W.D. Edge. 1998. Use and selection of brood-rearing habitat by sage grouse in south-central Washington. Great Basin Naturalist 58: 344-351.
- Wakkinen, W.L. 1990. Nest site characteristics and spring-summer movements of migratory sage grouse in southeastern Idaho. Thesis. University of Idaho. Moscow, ID. 57 p.
- Walker, B.L., D.E. Naugle, K.E. Doherty, and T.E. Cornish. 2004. Outbreak of West Nile virus in greater sage grouse and guidelines for monitoring, handling, and submitting dead birds. Wildlife Society Bulletin 32:3, 1000.

## Appendix 1

## Treaties, Executive Orders, and Laws that Protect Vested Rights of the Shoshone-Paiute Tribes

### TREATIES:

Treaty with the Sho-Sho-Nee Nation of Indians, 1855 (not ratified)  
Treaty with the Eastern Shoshone, 1863  
Treaty with the Shoshoni-Northwestern Bands, 1863  
Treaty with the Western Shoshone, 1863  
Treaty with Mixed Bands of Bannocks and Shoshonees, 1863 (not ratified)  
Treaty with the Snake, 1865  
Treaty with the Eastern Band Shoshoni and Bannock, 1868  
Treaty with the Shoshones, Bannacks, and Sheepeaters, 1888 (not ratified)

### EXECUTIVE ORDERS:

Executive Order 12875, Enhancing the Intergovernmental Partnership  
Executive Order 13007, Indian Sacred Sites  
Executive Order 13084, Consultation and Coordination with Indian Tribal Governments

### LAWS:

National Historic Preservation Act  
National Environmental Policy Act  
American Indian Religious Freedom Act  
Archaeological Resources Protection Act  
Native American Graves Protection and Repatriation Act  
Department of Defense American Indian and Alaska Native Policy

## Appendix 2

### Recommended Management Guidelines East Shoshone Basin Management Area

- Flexibility

Since many factors can influence rangeland health and wildlife habitat, the Shoshone Basin LWG recommends that adaptive livestock management be applied annually. Adaptive management should allow for changes in management that are needed in consideration of drought, wildfire, and other influences outside the management control of the BLM and IDL. For example, grazing systems may need to be temporarily modified (i.e., change pasture rotations and time of use) to ensure rangeland health standards are achieved or when annual adjustments are needed due to natural event occurrences such as drought or wildfire. Adaptive management will require close coordination between the permittees, land management agencies, and the LWG.

- Future Vegetation Projects

The plan identifies varying shrub cover. In order for these mixtures of shrub cover to be maintained it will likely be necessary to periodically conduct shrub control. The following discussion identifies a variety of considerations that should be used to make future determinations concerning vegetation treatments in the ESBMA. Considerations include:

- Is the objective to maintain a stable, long-term forage base being achieved in each allotment? If not, determine if shrub cover is influencing the ability to meet identified stocking levels (refer to BLM/IDL grazing licenses/permits).
- Is the objective to manage for varying shrub cover on a landscape scale being achieved? (Refer to management/resource objectives).
- Are rangeland health objectives being achieved? Are upland and riparian communities properly functioning in respect to proper nutrient cycling, hydrologic cycling, and energy flow? A variety of attributes and monitoring data are used to determine rangeland health.
- When is it time to initiate the application of a treatment? Planning for rest periods and modified grazing systems (pasture rotations) must occur prior to treatment so to avoid undue economic and management hardship on livestock permittees and excessive (large blocks) treatments in nesting habitat. Some treatment methods (i.e. thinning), particularly in nesting habitat, may not require rest periods depending on when and where they occur.

- What level of canopy cover is desired to trigger treatment? Due to differences in potential vegetative communities, there is no standard for determining a “trigger”. The goal of maintaining AUMs as identified in the plan and achieving landscape scale objectives to achieve at least 30% of the area in excellent nesting habitat should ultimately be the driving force to complete future land treatments.
- Treatments would need to be effective and completed timely so that they are not hindering overall progress in meeting the objectives and intent of the plan.
- Sagebrush canopy cover measurements must be taken periodically in order to evaluate the need for future shrub treatments and progress in achieving landscape scale objectives. This information is critical for making timely decisions on treatment areas and size.
- What type of treatment method should be used? A variety of treatment methods could be used depending on the area to be treated and the desired outcome.
  - Mechanical (harrowing, chaining, rotobearer, disking, and/or drilling)
  - Chemical
  - Prescribed Fire
  - Native Cultivars Seeding/Interseeding (i.e. wildfire rehabilitation, habitat restoration)
  - New techniques (i.e. Dixie harrow) for improving rangeland health could be experimented on a small scale within the project area.
- Who is responsible for determining if treatment is needed in an area? A well represented sub-group should be assigned to periodically determine where and when future treatments are needed on public and state land. Private landowners are responsible for identifying treatments on their private lands. Landowners would communicate/convey future treatments on private lands to the committee to better ensure that the overall intent of the plan is maintained and landscape resource objectives are achievable.
- Are rabbitbrush and other shrubs impacting nesting habitat and AUM goals? Rabbitbrush has a lifespan of about 20 years and under certain conditions can dominate a range site resulting in less than desirable conditions. If rabbitbrush becomes a deterrent to rangeland health and wildlife habitat quality, shrub control should be considered.
- Evaluation of Management Objectives for all Allotments

#### Monitoring Studies

Studies established in the allotment by the BLM, IDL, IDFG, and private landowners will be the basis for monitoring progress toward achieving resource and management objectives listed in Section VII. Monitoring studies can include actual use, utilization,

climate, trend, rangeland health assessments, vegetation mapping including shrub cover, sage-grouse lek counts, juvenile /adult ratios, and harvest data.

The Shoshone Basin LWG will explore funding opportunities to complete the monitoring and research studies necessary for this plan to succeed. The group will also support the agencies and private landowners in their efforts to complete annual studies.

### Evaluation

Periodically, an allotment evaluation analyzing monitoring data collected in the allotments is completed by the BLM. This evaluation will be reviewed to help determine if management actions are successfully working toward achieving resource objectives and meeting Rangeland Health Standards. If resource objectives and rangeland health standards not being realized, the Shoshone Basin LWG will reexamine management practices and objectives identified in the ESBMA Coordinated Resource Management Plan and revise as needed.