Jarbidge Sage-Grouse Conservation Plan

The Jarbidge Sage-Grouse Local Working Group

Final 12-11-2007

List of Participants/Attendees

Shoshone-Paiute Tribes
Guy Dodson, Sr.
Cletus Paradise
Carol Perugini

Seventy One Grazing Association
Marc Brackett
Mike Henslee

Idaho Department of Fish & Game
Randy Smith
Michelle Commons
Mark Fleming
Scott Bailey

Idaho Department of Lands
Bryce Taylor
Eric Kriwox
Tim Duffner

Idaho Department of Agriculture
Kevin Wright

Bureau of Land Management
Jim Klott
Rick VanderVoet, Sheri Whitfield

Natural Resource Conservation Service
Steve Schuyler
Rich Yankey

US Fish and Wildlife Service
Marilyn Hemker

Idaho Falconers Association
Michael Remming

General Public
Lynn Messman
Jim Prunty
Ray Hoem
Nils Winn
Jerry Veenendaal
Bob Matsouka

Inclusion on this list does not imply participation for the entire time, nor participation in the complete plan development. Meeting notes were sent to the Nevada Division of Wildlife (NDOW), Humboldt-Toiyabi National Forest, the Committee for Idaho's High Desert, and Western Watershed Projects.

Jarbidge Sage-grouse Local Working Group Endorsements

Recognizing this document has no legal authority to bind any individual, agency, or non-governmental organization to any specific action, the following members of the Jarbidge Sage-grouse Local Working Group (JSGLWG) have attached letters of endorsed for the Conservation Plan for Sage-grouse in the Jarbidge Field Office, and agree to work collaboratively to support the intent and actions of this Plan.

Marc Brackett, Mike Henslee
71 Cattleman's Association

Tim Duffner
Idaho Department of Lands

Rick VanderVoet
Bureau of Land Management

Michael Remming
Idaho Falconer's Association

Steve Schuyler
Natural Resource Conservation Service

Dave Parrish
Idaho Department of Fish and Game

Ron Kay
Idaho Department of Agriculture

Rich Yankey
Interested Public

71 Livestock Association

With the completion of the Jarbidge Resource Area Sage Grouse Local Working Group Conservation Plan, the 71 Livestock Association is looking forward to the future. There are many elements of this plan that if implemented could have positive consequences for sage grouse and a multitude of other species. Overall this plan signifies the necessity of cooperation and communication between the numerous parties that hold the keys to the survival of sage grouse in the area. It is with great anticipation that we look forward to a continuation of progressive action driven by the shared concerns all the participants of this plan have shown.

October 5, 2007

Mike Henslee
Mike Henslee

Marc Brackett

SOUTH CENTRAL SUPERVISORY AREA
319 South 417 East
Hwy. 93 Business Park
Jerome, ID 83338
Phone (208) 324-2561
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IDAHO DEPARTMENT OF LANDS

GEORGE B. BACON, DIRECTOR
EQUAL OPPORTUNITY EMPLOYER

September 4, 2007

Jarbidge Sage Grouse Local Working Group
c/o Michael Remming
319 South 417 East
Jerome, Idaho 83338

Dear Mike:

The South Central Area Office of the Idaho Department of Lands has reviewed the Jarbidge Sage Grouse Conservation Plan created by the Jarbidge Sage Grouse Local Working Group. We recognize that this is an advisory plan and imposes no obligation of participants to commit funds or to undertake action. We further recognize that recent wildfires have changed the overall landscape of the areas covered in this plan dramatically since the plan was initially written and that the plan will need to be continually modified in order to reflect these changes as well as rehabilitation efforts and the outcomes of those efforts.

The Idaho Department of Lands must operate according to the Endowment Mission statement, which states that the department ***"is to maximize revenue over time to the endowment funds for the beneficiary institutions consistent with sound long-term management practices based on land capabilities."***

With this understanding, the South Central Area Office of the Idaho Department of Lands endorses the plan and its action items as an advisory plan for addressing management and needs concerning sage grouse. The Department of Lands will consider items in this plan before management changes and improvements are implemented on state land and will continue to submit project proposals to Idaho Department of Fish and Game for review and input prior to implementation.

This office agrees to support the Local Working Group process and provide a department representative to meet as needed to review the existing management plan, and when the need arises, assist with re-writes or updates to the plan. We are willing to participate with the sage grouse working group if and when projects arise that could be implemented on state land while still achieving our mission to generate revenue while protecting the resources.

Sincerely,

Timothy C. Duffner
South Central Area Manager

CC: Bob Brammer

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Jarbidge Field Office
2536 Kimberly Road
Twin Falls, Idaho 83301
http://www.id.blm.gov/offices/jarbidge

In Reply Refer To:
1600 (210) **P**

September 19, 2007

Michael Remming
Idaho Department of Fish and Game
Magic Valley Region
319 South 417 East
Jerome, ID 83338

Dear Mike:

The Jarbidge Field Office is pleased to endorse the Jarbidge Sage-Grouse Conservation Plan. While the Plan itself will continue to be a work in progress, we are encouraged by the successful projects already accomplished, the forum the Working Group provides for constructive dialogue and the potential for continued success in the conservation of sage-grouse habitat.

The current version of the Plan will require substantial updates and revisions. Any active, dynamic planning document or functioning planning process will be subject to ongoing changes over time. We encourage the Working Group to use the planning process to continue to accomplish positive things on the ground instead of focusing on the Plan document as an end in itself. The area covered by the Working Group Plan certainly continues to face many challenges related to sage-grouse conservation.

As you are aware, the aftermath of the Murphy Complex fires represents a tremendous challenge for everyone, particularly with regard to sage-grouse habitat. Over the next several years, we look forward to the Working Group playing a significant role in the extensive post fire rehabilitation and habitat restoration efforts which have already begun. We are also counting on the active participation of the Working Group in the Jarbidge RMP process which will guide our land management activities for the entire Field Office over the long term.

We will continue to attend Working Group meetings and provide appropriate technical and administrative support to the Working Group on request. Again, congratulations on the many achievements the Plan represents.

Sincerely,

Rick VanderVoet

Rick VanderVoet
Field Manager

November 12, 2007

Jarbidge Sage-grouse Local Working Group
Idaho Department of Fish and Game
319 South 417 East
Jerome, ID 83338

Dear Local Working Group Members,

As a member of the Idaho Falconers Association it has been an interesting learning experience for me to be involved with the Jarbidge LWG. It has been a pleasure to work with all of you in writing our Conservation Plan and implementing the many sage-grouse projects that we have completed over the years.

I would like to take this time to thank Jim Klott, BLM, for all of his hard work on writing the draft plan. We would not be here without his help.

I endorse the Jarbidge Sage-grouse Local Working Group Conservation Plan knowing that the landscape of the Jarbidge Field Office Area has changed recently due to the Murphy and Scott fires and that we will need to continue to update the plan to reflect these changes. However, I do not support any restrictions or acreage limits on restorations on public lands and feel that these restrictions could have a negative effect when the US Fish and Wildlife Service is forced to look at listing Sage-grouse as an Endangered Species. I also believe that the Jarbidge Sage-grouse Local Working Group needs to address the serious threat of energy development in the upcoming plan revisions.

Sincerely,

Michael Remming
3146 N 3500 E
Kimberly, ID 83341

IDAHO DEPARTMENT OF FISH AND GAME
MAGIC VALLEY REGION
319 South 417 East
Jerome, Idaho 83338

C.L. "Butch" Otter / Governor
Cal Groen / Director

November 7, 2007

Michael Remming, Chairman
Jarbidge Sage-Grouse Local Working Group
319 South 417 East
Jerome, Idaho 83338

Re: Jarbidge Sage-Grouse Conservation Plan

Dear Mike:

The Idaho Department of Fish and Game (Department) endorses the Jarbidge Sage-Grouse Conservation Plan and commends the Local Working Group (LWG) for its past efforts to benefit sage-grouse. We encourage the LWG to move ahead with a focus on assisting landowners and land management agencies to implement projects and management practices that will benefit sage-grouse.

We are cognizant of the fact that large-scale restoration efforts could lead to hardships or inconvenience for some permittees. However, given the uncertainty in funding for wildlife habitat restoration work, we do not support placing annual acreage restoration restrictions on the Bureau of Land Management (BLM) and their ability to improve sage-grouse habitat. We are confident that by continuing to work together we can avoid the imposition of undue hardships on livestock permittees.

The current version of the plan was largely completed in 2002 and massive wildfires since then have substantially altered the landscape. This continued loss of sagebrush habitat in the Jarbidge area has been a set-back in sage-grouse conservation efforts. The major challenge in the years ahead will be to implement management practices that will allow habitat recovery through plant community succession, management practices and habitat restoration efforts. The Department looks forward to assisting the LWG in its efforts to implement the plan and begin revisions of the out-dated portions.

Sincerely,

David Parrish
Magic Valley Regional Supervisor

Mike Remming

I have reviewed the final draft of the Jarbidge Sage Grouse Plan. I would like to thank everyone that helped develop this plan. Please include my name with the other people, groups, and agencies that endorse this plan. I think this will be a valuable tool in guiding future efforts.

Richard L. Yankey
Sept. 1, 2007

STATE OF IDAHO

DEPARTMENT OF AGRICULTURE
DIVISION OF ANIMAL INDUSTRIES

C.L. "BUTCH" OTTER
Governor
Celia R. Gould
Director

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December 13, 2007

Jarbidge Sage Grouse Local Working Group
c/o Michael Remming
319 South 417 East
Jerome, ID 83338

Dear Mike:

The Idaho State Department of Agriculture (ISDA) has reviewed the Jarbidge Sage Grouse Conservation Plan (July 03, 2007 Draft). ISDA endorses the plan as written while recognizing that the plan imposes no obligation on ISDA to commit funds or personnel to the action items outlined in the plan.

We also recognize that recent wildfires in the planning area have dramatically changed the landscape since the plan was originally written. The Jarbidge Sage Grouse Conservation Plan may need to be modified to reflect the current environment, and reprioritize action items and rehabilitation efforts.

ISDA will continue to support the mission of the Jarbidge Sage Grouse Local Working Group by providing support and expertise in rangeland management.

Sincerely,

Ron Kay
Range Program Manager
Idaho State Department of Agriculture

USDA NRCS
Natural Resources Conservation Service

1441 Fillmore Street, Suite A
Twin Falls, Idaho 83301
208-733-5380 #3

United States Department of Agriculture
Natural Resources Conservation Service

November 30, 2007

Jarbidge Sage Grouse Local Working Group
c/o Michael Remming
319 South 417 East
Jerome, ID 83338

Dear Mike,

The Natural Resources Conservation Service (NRCS) offers its support to the Local Working Group's Jarbidge Sage Grouse Conservation Plan. The plan has had input from many entities and provides opportunities to benefit the natural resources and the land users.

While NRCS assistance is limited by time, we wish to continue to work cooperatively with the Local Working Group. The Plan and NRCS share many goals that can be achieved resulting in improvements of the natural resources on private land.

Sincerely,

Steve Schuyler
District Conservationist, Twin Falls Field Office

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INTRODUCTION

Mission Statement

Declining sage-grouse populations throughout the Jarbidge Field Office are a concern to local ranchers, sportsmen, environmental groups, Native American Tribes, the Idaho Department of Fish and Game (IDFG), and the Bureau of Land Management (BLM). The Jarbidge Sage-Grouse Local Working Group (JSGLWG) will work toward the improvement of sage-grouse habitat and identify and address multiple-use factors affecting sage-grouse populations.

Goals

Maintain and restore a dynamic sagebrush ecosystem.
Increase sagebrush habitat.
Maintain or improve livestock operations.
Restore fragmented and degraded sagebrush habitat to a healthier condition with distribution matching historical patterns.
Link existing and restored sagebrush habitat.
Maintain huntable and sustainable sage-grouse populations.
Sustain, maintain, or improve sage-grouse habitat in the five sub-units of the Jarbidge Field Office.
Encourage cooperation between private, State, and Federal landowners .
Conduct work on private land only with the landowner's cooperation.
Inform and educate landowners and the general public regarding sage-grouse issues as they relate to various uses on lands in the Jarbidge Field Office.

Authority

The JSGLWG was formed under the guidelines provided in the Idaho Sage-Grouse Management Plan to identify local issues and strategies (Idaho Department of Fish and Game 1997 pg. 20).

Sage-grouse were added to the Idaho BLM sensitive species list in 1996. BLM Manual 6840.06D states sensitive species are those designated by the BLM State Director, usually in cooperation with state wildlife agencies. This section of the BLM manual further states, "T he protection provided by the policy for candidate species shall be used as the minimum level of protection." Section 6840.06C states, "The BLM shall carry out management, consistent with the principles of multiple use, for the conservation of candidate species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as T/E [threatened/endangered]." BLM is authorized to manage habitat for special status species and other wildlife under the Endangered Species Act of 1973, Sikes Act of 1960, and Federal Land Policy and Management Act of 1976.

The US Fish and Wildlife Service received three petitions to list the greater sage-grouse as endangered or threatened range-wide, and began a formal status review in April 2004. On January 7, 2005, Steve Williams, US Fish and Wildlife Service Director, announced the species does not warrant protection under the Endangered Species Act at this time.

Sage-grouse were recognized as having management concern in the Jarbidge Resource

Management Plan [RMP] (BLM 1987). Pages II-83 and II-84 of the RMP provide specific recommendations for sage-grouse management. The RMP states, “Priority for habitat management will be given to habitat for listed and candidate Threatened, Endangered, and Sensitive species.” The RMP also provides guidance to “Protect and enhance endangered, threatened, and sensitive species habitats in order to maintain or enhance existing and potential populations within the planning area” (page II-83).

Issues specific to the Jarbidge Sage-Grouse Local Work Group Area include:
Creation and restoration of meadows to enhance brood habitat;
Protection of the remaining sagebrush habitat in fragmented areas;
Rehabilitation efforts following wild fires, and
Use of hazardous fuels, Great Basin restoration, and other funds to restore a portion of those areas burned since 1984 to a sagebrush overstory. Pending funding, a minimum of 3,000 acres per year would be targeted for restoration. The Shoshone BLM District has treated up to 15,000 acres per year.

Membership
The JSGLWG sent letters to a number of state and federal agencies, the Shoshone-Paiute Tribes, several environmental organizations, permit holders, and the 71-Grazing Association. A public meeting was held in Twin Falls in May 1999 to discuss the formation of the local working group. A notice for this meeting was published in the Times News in April 1999.

LOCATION

Sage-grouse occur where suitable sagebrush (*Artemisia* spp.) habitat persists in Washington, Idaho, Montana, North and South Dakota, Wyoming, Colorado, Utah, Nevada, California, Oregon, and Alberta. They occur in the southern half of Idaho where sage-grouse numbers have declined about 40% (Connelly and Braun 1997). Historically, sage-grouse could be found on suitable habitat throughout the entire Jarbidge Field Office, however, large-scale habitat loss due to human encroachment such as military expansion and agricultural development as well as wildfires has limited their distribution to the southern half to three-quarters of the area. The largest populations occur in the southeastern portion of the area near Brown's Bench, Antelope Pocket, and Grassy Hills. Smaller groups can be found in sagebrush patches extending westward across the area.

Geographical boundaries of the JSGLWG area are the boundaries of the Jarbidge Field Office including all BLM administered lands from Salmon Falls Creek west to the Bruneau River and from the Snake River south to the Idaho/Nevada border or the Humboldt-Toiyabe National Forest boundary. This area is divided into five geographical sub-units. The following sub-unit descriptions are approximate. Where practical, the boundaries follow allotment lines to keep allotments from being split (Figure 1). Allotments for each sub-unit are listed in appendix A.

North

South of the Snake River to the road extending from Balanced Rock to Crows Nest, then to Clover Crossing, then following Clover Creek to the Bruneau River. The majority of this area was converted to crested wheatgrass seedings and some exotic annual grasslands. Natural occurring springs and wet meadows are nearly non-existent.

Browns Bench

East of Cedar Creek to Salmon Falls Creek, then south to the Idaho/Nevada state line, then east to Deadwood Creek. This area contains a few large seedings. Wet meadows and springs are more common in the southern half of the areas. Lowlands contain mixtures of low sagebrush, black sagebrush, and Wyoming big sagebrush communities. Higher elevations have mountain big sagebrush, low sagebrush, mountain shrubs, aspen, and mountain mahogany vegetative communities.

Devil Creek

East of Clover Creek to Cedar Creek; south of the road from Clover Crossing, Crows Nest, to Balanced Rock; and north of the Idaho/Nevada state line. The southern quarter of this area contains a mix of habitats similar to the upper elevations on Brown's Bench. The northern two-thirds of the area is a mix of low sagebrush and Wyoming big sagebrush habitats. The northern portion is generally lacking in water and fragmentation is accelerating.

Inside Desert

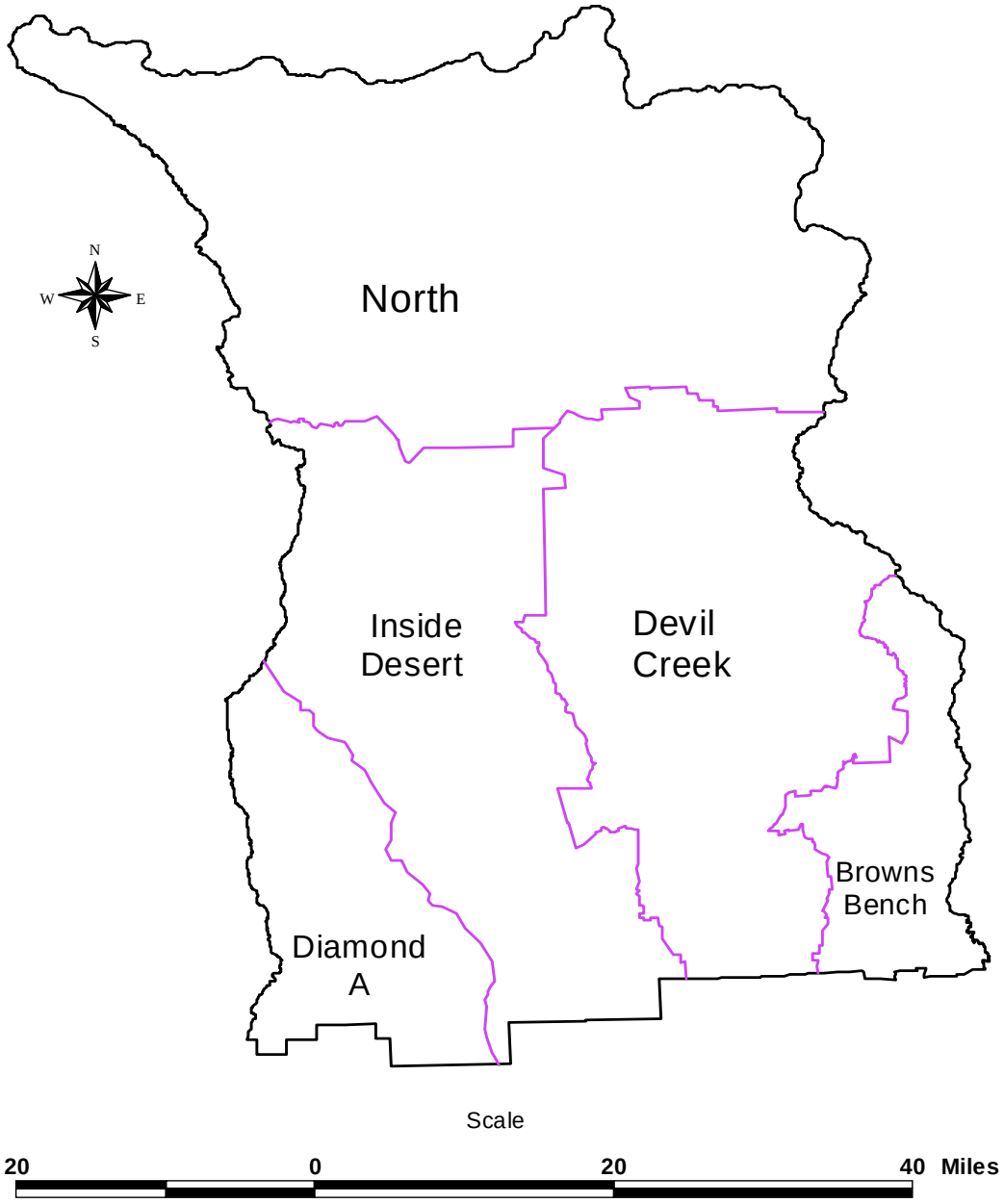
West of Clover Creek/Deadwood Creek and east of the Jarbidge and Bruneau Rivers. This area extends from the Humboldt-Toiyabe National Forest boundary north to the confluence of Clover Creek and the Bruneau River. The northern two-thirds of the area have lost large blocks of Wyoming big sagebrush habitat in the past 20 years. Upland wet meadows and

springs in this portion of the area are very limited. Perennial water is generally restricted to deep canyons. Mountain big sagebrush and low sagebrush communities are prevalent in the southern portion. Upland wet meadows and springs, while present, are not as common as in the previous two units.

Diamond A

West of the Jarbidge River to the Bruneau River. This unit extends from the Humboldt-Toiyabe National Forest boundary northward to the confluence of the Bruneau and Jarbidge Rivers. This unit has the least fragmented sage-grouse habitat. Upland wet meadows and springs are present in the southern quarter of the area. Low sage habitats are present with lesser amounts of mountain big sagebrush and a few aspen patches. Wyoming big sagebrush habitats dominate in the northern three-quarters of the area.

Figure 1. The Geographic subdivisions of the Jarbidge Field Office Area



BIOLOGY

Description

Sage-grouse are large (1,089-3,266 g [2.4 - 7.2 lbs]) chicken-like birds with a prominent black belly and under throat, undertail coverts, and white markings on the breast of males. They are stripped with brown/gray and black bars and have rounded brown wings with some black barring. Males have conspicuous neck plumes; white upper breasts with yellow-green air sacs; and prominent, long, spiked tail feathers during the breeding season (March-May). Both sexes have yellow eye combs, less prominent in females, and a fringe of tiny feathers along the toes which are most noticeable in winter and early spring. Males weigh from 1,587 to 3,266 g [3.5 0 7.2 lbs], while females weigh from 1,089 to 1,814 g [2.4 - 4.0 lbs] (Schroeder et al. 1999).

Population Monitoring

Lek Counts

Lek counts are a widely used and accepted technique for monitoring sage-grouse population trends. Studies across North America indicate there are approximately two females for every male in the spring population (Braun 1998). Thus, if the number of males is known, it is possible to calculate a rough minimum population size. Although it is not possible to determine population size of sage-grouse in the Jarbidge Field Office, data from our lek counts indicate sage-grouse have declined since 1980 (Figs. 2 and 3). Although lek route data had only been consistently collected since around 1980, the data show sage-grouse have declined or disappeared from large areas in the Jarbidge Field Office. Since 1996, greater effort has taken place to closely monitor known active leks throughout the Jarbidge Field Office.

Hunter Harvest

It is possible to ascertain population size of some animal species by exploiting hunter harvest data using a change-in-ratio method if that population is confined to a small area and there is no immigration or emigration (Krebs 1989). Because sage-grouse tend to use different habitat types in relation to seasonal requirements, it is not possible to conduct these types of tests to determine population size of a local sage-grouse population. Biologists are able to ascertain production for that year by collecting sage-grouse wings. These data provide juvenile/hen ratios which help biologists make appropriate management decisions for sage-grouse. The literature suggests a ratio greater than or equal to 2.25 juveniles per hen in the fall harvest results in a stable to increasing population (Connelly and Braun 1997, Edelmann et al. 1998). Check stations are operated annually at Salmon Dam and Lily Grade to monitor sage-grouse harvest and collect wings for estimating production in the Jarbidge Field Office. Long-term harvest data indicate a slight downward trend in both number of sage-grouse hunted and hunters. Juvenile/hen ratios averaged 1.96 from 1961-2000, which may explain the slight downward trend in sage-grouse numbers across the area. IDFG adopted a 1-week, 2-bird season in 1996 to help alleviate concerns of decreasing sage-grouse populations in the Jarbidge Field Office. However, the data indicates the juvenile/hen ratio has not changed (191 juveniles/100 adult hens) as a result of season changes, suggesting that hunting has little to no effect on overall production.

HABITAT

Sage-Grouse Habitat Status in the Jarbidge Field Office

The decline of sage-grouse in the Jarbidge Field Office has been attributed to a larger decline in the health of the natural landscape in this area. In the past 40 years, in excess of 650,000 acres of the Jarbidge Field Office burned by lightening-caused or man-caused wildfires, resulting in the loss of important sage-grouse habitat. Although some older burned areas have recovered to near pre-burn conditions, the existing sagebrush habitat is highly fragmented and in poor ecological condition in many areas. Sage-grouse are thought to have evolved under a system of low intensity fires and primarily dormant season grazing and browsing by native ungulates. This led to a highly patchy landscape with many different age groups of vegetation and high levels of herbaceous growth and ground cover. Sage-grouse habitat objectives represent small steps toward this more functional landscape pattern, and are more compatible with a move toward greater landscape health as well as existing management objectives such as those found in the present Jarbidge RMP (1987).

Figure 2. Sage-grouse lek attendance trend in eastern Owyhee County (number of males per lek)

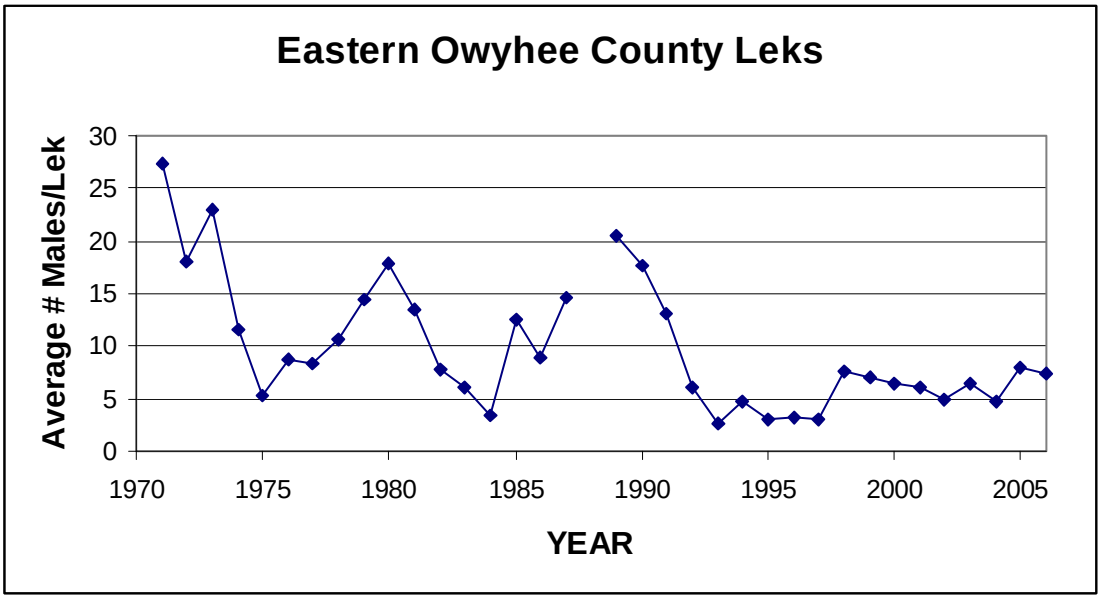
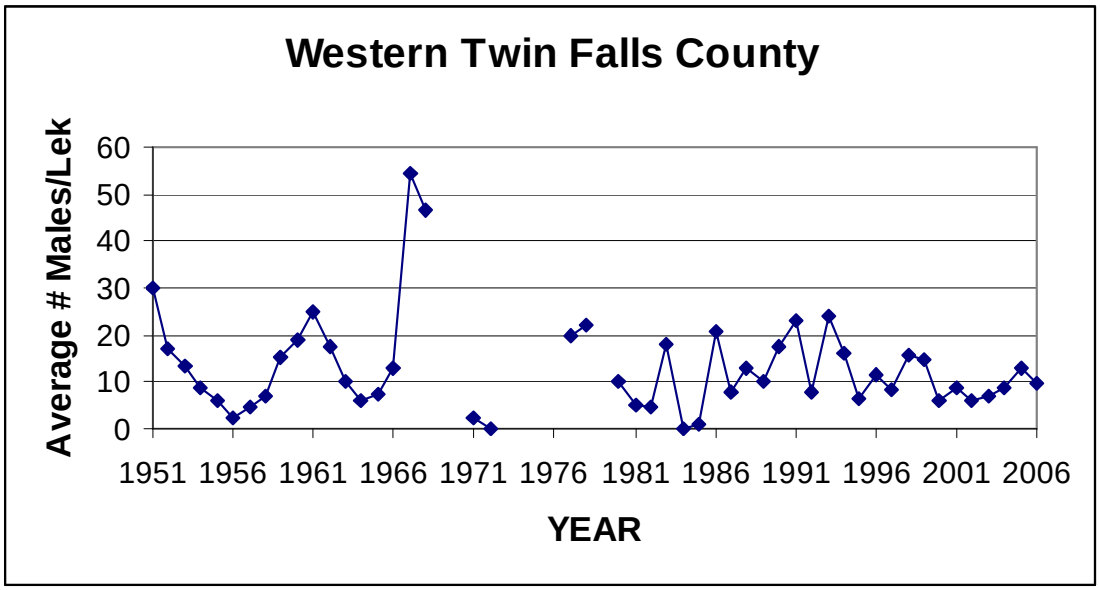


Figure 3. Sage-grouse lek attendance trend in western Twin Falls County (number of males per lek)



Habitat Requirements of Sage-Grouse in the Jarbidge Field Office

Very little information exists on sage-grouse habitat use and movements in the Jarbidge Field Office. IDFG and BLM conducted a study in the Brown's Bench area between 1993 and 1995 to ascertain seasonal distribution and habitat use. More recently, IDFG and BLM proposed a study to determine sage-grouse movements, nest-site selection including sagebrush patch size requirements, and seasonal distribution in highly fragmented sagebrush habitat in the western portion of the Jarbidge Field Office. Although little information exists on the local population, habitat needs for sage-grouse are the same across their range. Requirements relate to over winter survival from November to March, escape cover adjacent to lek sites from March to May, nesting cover from April to June, early brood-rearing habitat from May to June, late brood-rearing habitat from July to August, and fall habitat from August to October. Winter, nesting, and early brood-rearing habitat are the most important for sage-grouse.

Winter habitat

Sage-grouse survive almost exclusively on the leaves of sagebrush during winter (Patterson 1952, Wallestad et al. 1975). Sage-grouse in the Brown's Bench area near Salmon Falls Creek Reservoir were found mostly in low sage (*Artemisia arbuscula*) or Wyoming big sage (*A. tridentata wyomingensis*) within 14 km of capture locations during the winters of 1993 and 1994 (Smith and Klott 1995). Sage-grouse were found scattered in various sized patches of Wyoming big sage in the western portion of the Jarbidge Field Office near Clover Butte. Over winter habitat does not appear limiting in most of the area However, the small, isolated patches of sagebrush in the western portion of the area may not be large enough to sustain a population of sage-grouse, especially if the existing habitat is lost.

Lek Habitat
Lek habitat does not appear limiting in the Jarbidge Field Office. Sage-grouse generally display in open areas adjacent to sagebrush for escape cover. These areas include roads, salting areas, cattle troughs, open meadows, ridges, and stock ponds.

Nesting Habitat
According to the literature, sage-grouse hens tend to nest under sagebrush (29-80 cm tall, $\geq$ 25% canopy cover) with grass understory ($\geq$ 18 cm tall, $\geq$25% canopy cover) (Connelly et al. 2000a). All successful nests in the Brown's Bench area were located under Wyoming big sagebrush and low sagebrush with an average canopy cover of 26%. Average grass height at successful nests was 5 cm and only 4% canopy cover. This may be due to the extensive amount of Sandberg's bluegrass (*Poa sandbergii*) in the area (Smith and Klott 1995). No information is available for sage-grouse nests in the western portion of the area.

Early Brood-rearing Habitat
Hens generally move their brood away from nest sites to areas of greater than 20% sagebrush canopy cover with a variety of grasses and forbs. These areas are typically close to wet meadows with high insect abundance and succulent forbs. In the Brown's Bench area, hens with broods remained within 2 km of nest sites as long as succulent forbs were available.

Late Brood-rearing Habitat
Hens with older broods prefer moist areas near stock ponds, upper drainages, and on north slopes depending upon elevation and site. Forbs and grasses usually dominate at use areas, with forbs making up the majority of their diet. Sagebrush and other shrubs are generally close by for escape cover. Hens with older chicks near Brown's Bench remained close to their nest sites until forbs began to desiccate. When this occurred, hens with broods moved to the higher benches to the south and west.

Fall Habitat
Sage-grouse remain near late summer habitat areas until forbs completely desiccate. Their diet shifts to sagebrush and they begin to move to lower elevations with 20% or greater sagebrush canopy cover.

FIRE

Background

Wildfire was a natural part of the sagebrush steppe ecosystem in the West historically. With few exceptions, sagebrush is killed by fire , however, silver sagebrush (*Artemisia cana*) and three-tip sagebrush (*A. tripartita*) can re-sprout following burning. Other locally present shrubs that re-sprout following burning include gray rabbitbrush (*Chrysothamnus nauseosus*), green rabbitbrush (*C. viscidiflorus*), and gray horsebrush (*Tetradymia canescens*). Natural fire in sagebrush habitats are hypothesized to have occurred in different frequencies depending upon the type of sagebrush. Low sagebrush types burned infrequently at 100- to 200-year intervals (Miller and Rose 1999, Miller and Eddleman 2000). Wyoming big sagebrush types may have burned at 50- to 100-year intervals (Wright and Bailey 1982). However, Ferguson (1964) reported big sagebrush can live over 200 years. Recent scientific evidence on the recovery from disturbance on microbiotic soil crusts suggests fire frequencies were likely 80 years or longer in the Wyoming big sagebrush types (Belnap et al. 2001). Some literature suggests mountain big sagebrush (*A. tridentata vaseyana*) types burned frequently at 12- to 25-year intervals (Miller and Rose 1999, Miller and Eddleman 2000). If fires burned at that frequency, sites would eventually become dominated by rabbitbrush and/or horsebrush, species which sprout vigorously following fire (Wright and Bailey 1982). Fire in the sagebrush steppe communities is considered stand replacement fire, eliminating sagebrush from the burned area for a period of time.

The expansion of cheatgrass or downy brome (*Bromus tectorum*) throughout the Jarbidge Field Office and the West has increased the fine fuel loads (Whisenant 1990, Peters and Bunting 1994). Cheatgrass becomes flammable earlier in the year, increases fire size, and rate of spread. Cheatgrass and other exotic annuals also displace many of the native annual forbs and grasses, as well as out-compete seedlings of native perennial grasses, forbs, and shrubs. Prior to 1996, much of the previously treated and burned areas were seeded to crested wheatgrass (*Agropyron cristatum*), an exotic bunch grass. Cheatgrass can occupy the interspaces between crested wheatgrass plants as seen in the northern portion of the Jarbidge Field Office.

Fire Prevention/Preparedness/Planning

Fire has had one of the most significant negative impacts on sage-grouse habitat in the Jarbidge Field Office. Because of the time it takes an area to recover following a large wildfire, 30 or more years, and costs for suppression and rehabilitation, more proactive fire prevention, preparedness, and planning is believed to benefit existing sage-grouse habitat and future habitat restoration. During times of drought, the burning period occurs earlier in the summer and extends later into the fall. Adverse effects of fire on plants and sage-grouse habitat are magnified by drought. The fire prevention recommendations will address a number of pre-suppression activities including facilities, public outreach, and fuels reduction.

Facilities

Recommendation 1: There are a number of water pipelines in the Jarbidge Field Office. The JSGLWG recommends fill hydrants or large storage ponds be installed on these pipelines at locations where the pipelines cross major roads wherever feasible. Fill hydrants or ponds

should also be installed at a few locations along the pipelines as pipeline roads provide the main access to parts of the area. These locations would be clearly marked on maps for fire crews. We recommend District fire personnel and permittees be involved with the planning of the hydrant/pond locations. The local working group recognizes that the Snake River Basin adjudication is in the process to prioritize water rights in this part of Idaho.

Rationale: Water is scarce or located in inaccessible canyons in much of the Jarbidge Field Office. The presence of pipelines provides an opportunity to increase fill locations for pumper trucks, water tenders, or helicopters to make fire suppression more efficient. Not all pipelines have enough flow or pressure to fill pumper trucks at a rapid rate. The installation of additional water storage ponds would allow pumper trucks or tankers to draft from the pond as well as helicopters to fill buckets. Additional benefits from more storage ponds would be gained by improving wildlife habitat around each pond and increasing the amount of water storage for the pipeline system. Large open metal storage tanks with internal supports are not appropriate for bucket dipping by helicopters for safety reasons.

Responsibility/Timeframe: By 2008, BLM fire and resources staff should identify pipelines where hydrants and/or ponds could be constructed. Construction should begin as soon as possible after the necessary level of NEPA analysis is completed. Estimated time to completion is 4 years.

Recommendation 2a: BLM should establish and staff an additional fire guard station in the southern portion of the Jarbidge Field Office, preferably in the Murphy Hot Springs/Three Creek area. A lookout in the southern portion of the area or adjacent Humboldt-Toiyabe National Forest (Pole Creek - Elk Mountain) should be considered to detect fires when air quality limits visibility from Bennett Mountain and Danskin lookouts.

Rationale: The response time to the southern part of the Jarbidge Field Office where the bulk of the remaining sage-grouse habitat occurs by fire crews based in Bruneau and Hammett is more than an hour. Although the crew based in Rogerson can usually respond to the southeastern portion of the area more quickly, the response time is still more than an hour. The Rogerson guard station has initial attack responsibilities to the east and south of Rogerson and was not always staffed throughout the summer and fall.

Recommendation 2b: BLM could coordination with the Humboldt-Toyiabe National Forest to station a fire crew at the Pole Creek Guard Station if limited funding prevents the implementation of Recommendation 2a.

Rationale: Guard station facilities are present at Pole Creek, about 18 miles down a good gravel road to the Rogerson Highway. Funds would not be required to purchase housing or develop a water source. The road to the Pole Creek area was improved in 2000, reducing the travel time to the paved Rogerson Highway. A crew at Pole Creek could serve as a lookout to complement Danskin and Bennett Mountain lookouts when visibility is poor. A lookout in the southern area would help reduce the response time to some fires, keeping them smaller. It would also provide the same benefits to areas viewed in northern Nevada.

Recommendation 2c: BLM could enter into an agreement with the Air Force to establish a fire

crew at the new Juniper Butte Training Range or allow BLM to station a fire crew at the base. If the Air Force maintained a fire crew, they would have initial attack responsibility in the Three Creek area. The Air Force crew could be released from the fire once BLM crews arrived from other locations.

Rationale: The Air Force will probably have a fire crew station at the Juniper Butte Training range to suppress fires started due to military operations. This crew could serve as initial attack for fires in the Juniper Butte area. Response time to fires in the Juniper Butte, Clover Butte, Middle Butte areas would be reduced compared to that of crews traveling from Bruneau, Hammett, or Rogerson.

Responsibility/Timeframe: The BLM fire organization is planning to station two engines at Juniper Butte from at least mid-July to mid-September, depending upon need in 2002. *Note: This was accomplished for fire season starting 2005.*

Recommendation 3: An upgraded slurry air tanker base should be established at the Twin Falls Airport. The Idaho BLM fire program should consider this a high priority.

Rationale: An upgraded tanker base would reduce air tanker response time to fires located in parts of Shoshone Field Office, Burley Field Office, and Jarbidge Field Office, as well as parts of northern Nevada. The present single engine air tanker (SEAT) cannot meet all of the needs in this area, particularly if there are multiple fires.

Responsibility/Time Frame: Work is in progress to build a new tanker base at the Twin Falls airport. This facility is scheduled to be operational in time for the 2003 fire season. Although it is designed as a reload base for large air tankers, it would facilitate stationing a Type 1 tanker.

Public Outreach

Recommendation 1: In times of drought and/or high to extreme fire conditions, the BLM could prevent some human caused wildfires by adopting a proactive approach involving placing standard Fire Danger signs (Low, Moderate, High, Very High, Extreme) on main roads into public lands to advise the public of potential fire danger.

Rationale: Fire danger signs inform the public of the potential for wildfires. Suggestions for potential sign locations include east of Balanced Rock along the Balanced Rock Road, south of Loveridge Bridge near the junction of Highways 78 and 51, BLM land east of Lily Grade at the top of the hill, and south of the Bliss Bridge. A more complete list of areas recommended for specific sign locations are contained in appendix B.

Responsibility/Timeframe: BLM fire staff should evaluate the locations provided in appendix B for installing fire signs. Fire signs should be installed starting in 2007 and concluded by 2009.

Recommendation 2a: BLM coordinates with the Idaho Department of Lands and the U.S. Forest Service to determine if fire closures are warranted. Fire restrictions are designed to be implemented cooperatively in specific geographic areas after certain criteria are met and all agencies agree fire danger is sufficient enough to proceed. Criteria considered by fire

managers include, but are not limited to, fuel moisture, weather trends, fire activity, and available suppression forces.

Three stages of restrictions exist currently. Stage 1 restricts campfires to developed sites and smoking to defined areas. Stage 2 restricts campfires, smoking, operating a vehicle off designated roads, and places limitations on the use of equipment and blasting. Stage 3 closes of an area and is implemented only in extreme situations where public safety is a concern.

BLM should issue emergency restrictions to off-road motorized travel for recreational vehicles under 'Very High' and 'Extreme' fire danger conditions for local areas as conditions warrant. Paved, gravel, and maintained dirt roads could remain open to the public. BLM should issue periodic news releases when fire danger reaches 'High' and above to remind the public to use caution. These news releases would be in addition to the news releases announcing other restrictions.

Rationale: Each year, fires are caused by off-highway vehicles (OHVs) driving off roads when fire danger is 'High' or above. Restricting OHVs to designated roads during "High" or "Extreme" fire danger would help reduce wildfires, suppression and rehabilitation costs to tax payers, and protect habitat for sage-grouse and other wildlife. This may require the installation of fuels moisture monitoring stations. BLM fire staff would identify specific areas for fuel moisture monitoring.

Responsibility/Timeframe: Fuel moisture monitoring stations need to be selected by the BLM fire staff and operational by the fire season of 2008.

Recommendation 2b: Red flag conditions should be announced on radio and television so land owners are aware there is an increased chance for prescribed burns to escape. The National Weather Service web site, http:www.boi.noaa.gov/FIREWX/BOIRFWBOI.html, includes a section on red flag conditions.

Example: In September 1999, a contractor for the Air Force conducted burning of tumbleweeds from the fence surrounding the exclusive use area of the Saylor Creek Training Range during red flag conditions. Although a road grader was present and had cut a narrow fire line, the fire escaped and burned a few thousand acres.

Rationale: There are times of the year when fronts, wind shifts, and other weather changes dramatically alter burning conditions. Less burning may occur during these periods if radio and television stations notified the public of red flag conditions.

Responsibility/Timeframe: News media can check the National Weather Service web site and broadcast red flag conditions. This should be initiated in the 2008 fire season. Private land owners can also check the web site prior to initiating burning. The JSGLWG urges the BLM fire program to send letters to the news media with the web site address. BLM should also prepare a public service announcement and/or news release with the web site address for during late summer and fall field burning.

Recommendation 3a: Cheatgrass and old leafy material in crested wheatgrass seedings can build up over time, increasing the fuel load and resulting in larger, faster-burning fires in the late summer. Fuels reduction projects will have an Environmental Assessment (EA) providing the specific details of a project including information such as location, objectives, fuel load, treatment methods, rest periods and fencing. A burn plan would also be prepared. EAs will be made available to the public for comment as completed.

In areas with older crested wheatgrass seedings, prescribed fire should be used to reduce the number of grass bunches with old stems.

Rationale: The accumulation of old stems over a period of three or more years increases the fine fuel load. Periodic prescribed burning would help reduce the fuel load. A secondary benefit, would be that the plants would then be more palatable. If this action is taken, the funding mechanism would likely be through the hazardous fuels reduction. This might also be used as an opportunity to re-establish some native vegetation.

Recommendation 3b: Annual grassland areas should be identified and treated to reduce cheatgrass near or adjacent to main roads and private lands.

Rationale: Human-caused wildfires start next to roads or private lands every year. These fires threatened sage-grouse habitat, grazing, and other resources, and have the potential to spread to other private lands. Reducing cheatgrass by treatments would also reduce fire size, the rate of spread, and shorten the burning time.

Responsibility/Time Frame: Jarbidge Field Office has a fuels use specialist who has the lead in planning projects, including preparing environmental analyses to reduce hazardous fuels. Jarbidge Field Office staff will begin identifying areas for possible treatment in 2008. Treatments would be initiated in fiscal year 2008 and out years.

Burning on Private Lands

Recommendation 1: Private land owners that adjoin BLM lands should be encouraged to contact fire dispatch when prescribed burns are conducted on private lands. The land owner could also contact local university extension agents and/or the Natural Resource Conservation District for planning prescribed burns and notify rural fire districts.

BLM should send fire crews to areas where burning permits have been issued to private landowners with land adjoining BLM land. The fire crews would then be in the area in case the fire escaped.

Rationale: Having fire crews nearby, when burns on private land adjoining BLM land are conducted may reduce the number of fires escaping off private land and damaging sage-grouse habitat. This could significantly reduce the size of the escaped fires. Tracking the burn permits would allow fire crews to be in the vicinity of the private land scheduled to be burned. This is consistent with the present Jarbidge RMP (page II-88) which encourages BLM to enter into cooperative efforts to reduce fire hazards. BLM's presence would be based upon available manpower and equipment, but may be limited due to fires on public lands or numerous burn permits in higher priority areas.

Responsibility/Timeframe: BLM cooperates with the state to track burn permits. Note: Because of potential liability and policy, BLM is prohibited from doing prescribed burning on private land.

Recommendation 2: BLM policy is to pursue recovery of fire suppression and rehabilitation costs for human-caused fires from the person(s) responsible for starting the fire. BLM may also seek criminal prosecution in the case of arson. The present policy does not give BLM discretion on enforcement. BLM policy should be modified to allow for some discretion and compassion to evaluate cost recovery on a case by case basis.

When BLM recovers the costs or a settlement is reached, a press release should be issued stating the costs recovered. In some instances, this information can not be made public.

Rationale: Recovery of fire costs and the publicizing of cost recovery may help reduce human-caused wildfires on public lands. It will let the public know that, when appropriate, suppression and rehabilitation costs are being paid by the individuals responsible for the fire rather than tax payers.

Responsibility/Time Frames: BLM has the responsibility and cost recovery is ongoing.

Fire Suppression Priority

The present Jarbidge RMP (page II-88) states all new fires on or threatening public lands will be aggressively suppressed. It also mentions when multiple fires occur simultaneously, priority for suppression will be determined by values-at-risk.

The protection of homes and other structures would remain the highest priority for fire protection. Suppression priority for the Jarbidge Field Office should be followed in the event of multiple fire starts in different areas for initial attack and allocating suppression resources. Fire suppression plans in both the Lower and Upper Snake River Districts should be updated to reflect these recommendations.

Recommendation 1: The highest priority is to suppress wildfires in key habitat in the Wyoming big sagebrush zones. This is defined as areas north of the Rogerson Road with a Wyoming big sagebrush overstory and in general proximity (within 2.5 miles) of active sage-grouse leks. This also includes the lower elevation benches in the Brown's Bench area south of the Rogerson Road.

Rationale: Wyoming big sagebrush habitats in the Jarbidge Field Office have been significantly reduced in the past 25 years. Wildfires in this area are getting larger and greatly contributing to the loss of crucial habitat. These habitats are generally in low, or poor, ecological condition and are more prone to invasion by cheatgrass and other exotic annuals following disturbance. The expense of rehabilitation in these areas is costly and native grass seed (Thurber's needlegrass, bottlebrush squirreltail, and Sandberg bluegrass) is extremely limited in supply. A large number of historic sage-grouse leks are no longer active because of the loss of shrub cover and habitat conversion. Retaining the remaining areas of this habitat is vital to long term recovery of the habitat (local seed sources) as well as providing habitat to

the existing sage-grouse populations and other wildlife.

Recommendation 2: The next highest priority is to suppress wildfires in low sagebrush and mountain big sagebrush habitats. These areas are south of the Rogerson Road at higher elevations.

Rationale: Wildfires are less common and usually much smaller in higher elevations. These habitats generally remain lush well into July. While these areas seem to be very important for summer and winter habitat to sage-grouse, they have not been impacted by fire as much as lower elevation areas. They are typically in better ecological condition and require less intensive rehabilitation following burning. Cheatgrass and other exotic annuals are less likely to dominate the disturbed area.

Recommendation 3: The third highest priority for fire suppression is other areas in sage-grouse Recovery I Zone. Areas classified as Recovery Zone I usually have a perennial herbaceous understory, but lack a sagebrush overstory (Figure 4 - map of sage-grouse key R1, R2, and R3 areas).

Rationale: These areas have already burned and re-burning would allow sagebrush and, if needed, forbs to be added to the area rehabilitation mix to improve sage-grouse habitat.

Recommendation 4: The next priority for fire suppression is the Recovery II Zones.

Rationale: Recovery Zone II has a depleted or undesirable herbaceous component that could be greatly improved in the fire rehabilitation project.

Recommendation 5: Areas not assigned to a sage-grouse recovery zone would have the lowest priority for suppression. These areas were not classified as sage-grouse habitat, however, portions of this area may receive high priority for suppression because of other considerations such as habitat for threatened and endangered species and proximity to private land.

Responsibility/Timeframe: BLM fire staff met with the Jarbidge Field Office resource staff in the fall of 2000. A map has been prepared and is being modified as more data becomes available. This recommendation is being implemented.

On Site Fire Suppression

Recommendation 1: Once the fire perimeter has been secured, all fire in islands of sagebrush on the interior of the fire should be suppressed. Squaring up and burning out islands of brush should be avoided to the extent practical. Suppression of fire in interior sagebrush islands would not proceed if fire fighter safety would be compromised or suppression of interior fires would jeopardize the fire perimeter.

Example: The Blue Gulch Fire in 1995 was contained at about 12,000 acres. Fire crews, including five pumper trucks, did not suppress fire in interior sagebrush islands once containment and control were achieved because these were not considered a threat to the fire perimeter. As a result, large islands of 2,000 or more acres of habitat burned on the third

day of the fire and thousands of additional dollars were required to rehabilitate the additional burned acreage.

Rationale: Islands of unburned brush within a burn provide a local seed source for sagebrush, grasses, and forbs. These islands provide the remaining habitat for sage-grouse and other wildlife within the burn. Allowing islands to burn increases fire rehabilitation costs.

Recommendation 2: All fires should be manned by at least a pumper crew for one burning period, unless the perimeter and an adequate buffer has been "cold trailed" to assure that the fire is out. This is particularly true if red flag conditions or a front with gusty winds are forecast.

Rationale: Escaped fires and/or re-burns damage sage-grouse habitat. In the case of re-burns, additional acreage impacted is unnecessary. Depending upon the area, re-burns and escaped fires may result in much higher rehabilitation costs.

Responsibility/Timeframe: Lower Snake River District (LSRD) BLM fire staff implemented this recommendation for the 2002 fire season.

Fire Rehabilitation

The present Jarbidge RMP states public lands affected by wildfires will be rehabilitated to accomplish multiple use objectives (page II-89). The RMP also contains recommendations regarding the amount of rest from livestock grazing needed in the seedings or burned areas. In some cases, this may require a temporary reduction in the number of Animal Unit Months (AUMs) authorized. Normally, two years of rest will be necessary to protect these areas. The recently adopted Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management state the conversion to exotic communities after disturbance will be minimized (Guideline 14, page 10). Native species are emphasized for rehabilitating disturbed rangelands. The RMP (II-89) states, "Seedings will include appropriate seed mixtures to replace wildlife habitat that is burned."

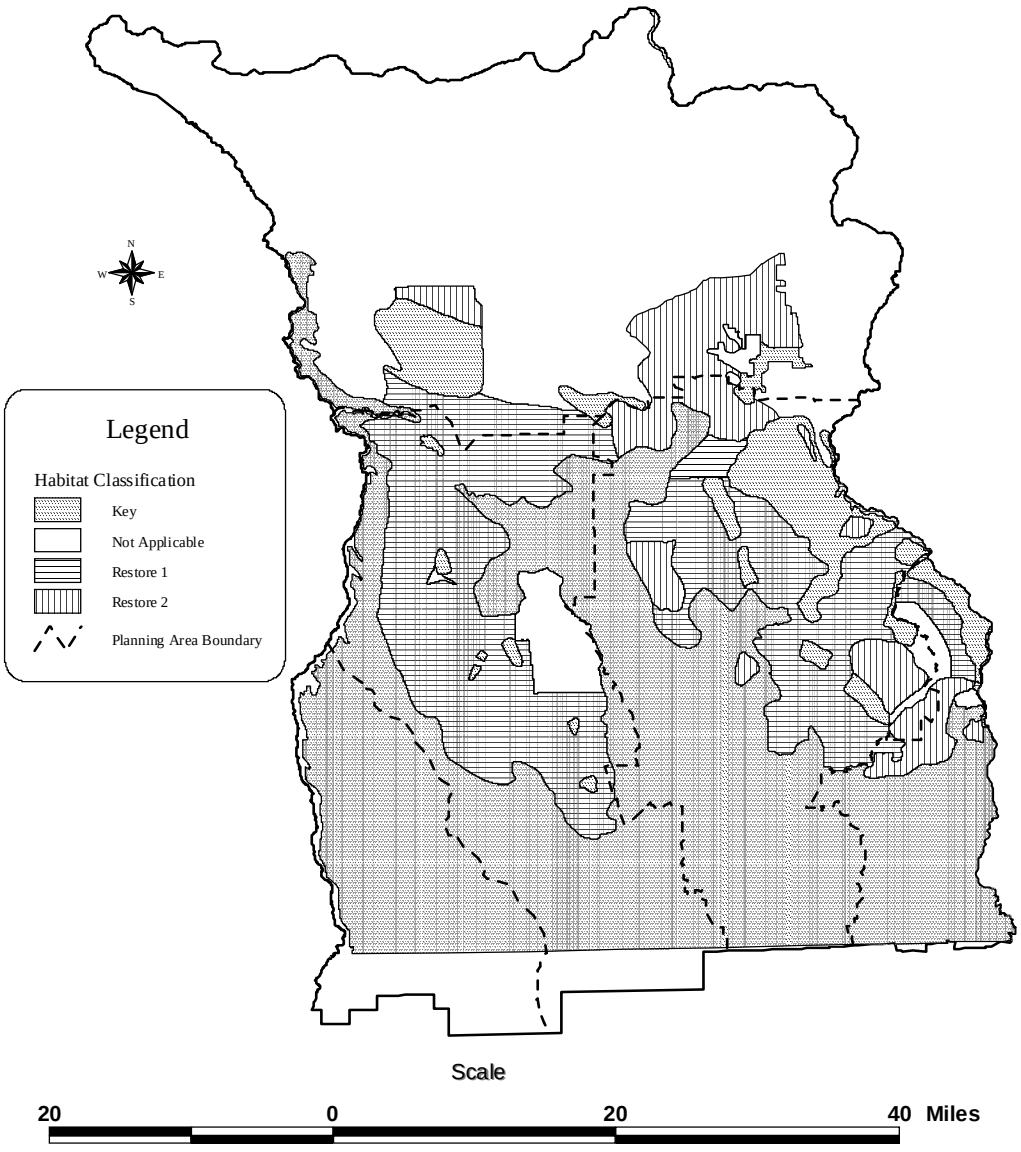
Recommendation 1: To the extent possible, areas to be rehabilitated following wildfire should be visited by the rehabilitation interdisciplinary (ID) team prior to developing the rehabilitation plan. If, because of other large fires elsewhere, it is imperative to reserve seed for rehabilitation, a site visit should be done as soon as possible to determine if any rehabilitation is necessary.

Rationale: Site visits make rehabilitation efforts more efficient and effective.

Responsibility/Timeframe: Jarbidge Field Office staff has been following this recommendation for several years.

Figure 4. A map of the plan area depicting key habitat, restoration priority 1 (Restore 1) and restoration priority 2 (Restore 2).

In general key areas contain an adequate shrub overstory with appropriate understory. Restore 1 area have a perennial understory, but lack sagebrush overstory. Restore 2 areas lack an adequate perennial herbaceous understory and a sagebrush overstory.



Recommendation 2: The ID team should consist of range, wildlife, and cultural resources staff. A wilderness representative may be needed for fires within wilderness study areas (WSAs). The ID team should also include a representative from the IDFG and the permittee(s) for the specific allotment(s) burned. Recent changes in Emergency Stabilization and Rehabilitation (ESR) guidelines require plans be completed within 21 days. In the case of large fires that cross multiple allotments, coordination with all interested parties will be more difficult.

Rationale: Emergency Fire Rehabilitation plans were sometimes prepared without a complete team in the past. This can result in a plan that does not adequately provide for meeting the long-term habitat needs for sage-grouse.

Responsibility/Timeframe: Jarbidge Field Office staff has been following this recommendation for several years.

Recommendation 3: The Jarbidge Normal Year Fire Rehabilitation Plan should be rewritten.

Rationale: The Fire Rehabilitation Plan was written in 1989. At that time, native grass seed was extremely limited in quantity, species selection, and adaptation to lower precipitation zones. Although selection for native grasses and forbs is still limited, some native grass species for seed have been developed. The expansion of cheatgrass can be chemically controlled in some situations to reduce its competitive advantage and allow for the planting of native grass seed. The old normal year fire rehabilitation plan did not contain seed mixes that would help meet wildlife objectives as directed by the land use plan. The new Normal Year Fire Rehabilitation Plan should include the following: seed mixes by similar range sites; a variety of appropriate shrubs in all seed mixes to meet wildlife needs; emphasis on using native grass species to the extent possible; and a variety of forbs, including natives, included in seed mixes to meet wildlife needs.

Recommendation 4: Priority should be given to rehabilitation of areas that were Wyoming big sagebrush habitats prior to burning. This includes areas classified as sage-grouse habitat Recovery Zones I and Recovery II as well as Wyoming big sagebrush key areas [Figure 4] (suppression priority 1). Typically, the higher elevation (suppression priority 1) areas, when they burn, are much smaller and would require less intensive rehabilitation than lower elevation areas. These areas would have a lower priority for rehabilitation efforts.

Rationale: Wyoming big sagebrush habitat is the most impacted by cheatgrass or invasion by other exotic annuals following wildfire within the Jarbidge Field Office. This habitat is rapidly disappearing. Quality sagebrush steppe habitat is still highly used by sage-grouse.

Recommendation 5: Native grass, shrub, and forb species should be used in fire rehabilitation plans. In years when native seed is in short supply, some consideration should be given to seeding parts of burns back to native vegetation in mosaics. Priority for native seed would be given to areas suitable for seeding farthest from water. Consideration should also be given to seeding grazing tolerant species such as crested wheatgrass in close proximity (200 foot radius circle) around water troughs. When native seed is not available,

Siberian or crested wheatgrass could be used based upon the recommendation of an ID team.

Rationale: The use of native species for rehabilitation produces habitat most similar to that burned in the fire. Sage-grouse evolved under this type of vegetation. Native species are expected to co-exist with the least long-term impact on other native plants, animals, and soil organisms. Seeding native grass species near water sources is not necessarily appropriate because of higher utilization levels and trampling by livestock. Seeding these high impact areas to more grazing tolerant species would help reduce the encroachment of exotic annual species into adjacent areas.

Recommendation 6: Oust®, Plateau®, or other herbicides should be used to suppress cheatgrass where there is adequate herbaceous understory. Areas known or likely to have sensitive plant species would require more detailed inventory and evaluation. Use of herbicides is not without some risk. There have been cases where the use of Oust® (at 1.0 ounce/acre) has resulted in relatively high mortality of Sandberg bluegrass. It is believed the effect of Oust® was enhanced by drought prior to the fire and the year following the treatment. Care must be used to insure an adequate buffer between the treated lands and farm land. Until the new Vegetation Environmental Impact Statement (EIS) and a full evaluation and risk assessment is completed, Plateau can only be used for experimental purposes on BLM lands. *Note: BLM has placed moratorium on the use of Oust® on public lands. It is not known when the moratorium will be lifted or what new guidelines will be implemented for future use.*

Rationale: Oust® and Plateau® significantly reduce the establishment of cheatgrass for one to two years following application, allowing perennial native vegetation to more easily establish (Pellant et al.1999). The use of herbicides to reduce exotic annual species can be used where conventional seeding methods would not likely succeed due to competition from exotic annuals (Pellant et al. 1999).

Responsibility/Timeframe: BLM should try to have the new Normal Year Fire Rehabilitation Plan drafted for public review by the 2008 fire season.

Post Fire Management

Recommendation 1: The process of fencing burned areas should be faster. This could be done by creating an emergency fence fund with 8100 money. The 8100 account would be repaid when the ESR plan is funded. Presently, fences are constructed several months to over a year after the fire.

Rationale: More rapid fencing of burned areas would protect areas burned in smaller fires, allow clearances to be done in a more timely manner, and reduce some of the adverse economic impact of fire on permit holders.

Responsibility/Timeframe: BLM management should investigate whether or not the above recommendation is legal and create an emergency fencing fund by the start of the 2008 fire season.

Recommendation 2: Following a wildfire, livestock should be removed from the burned area and into an adjacent pasture as soon as practical, particularly in the early and late fall during potential regrowth. In addition to impacts on vegetation, impacts to the soil need to be considered. This should be evaluated on a **case by case** basis.

Rationale: Grazing of many native grasses such as needlegrasses, bluebunch wheatgrass, and Idaho fescue while they are resprouting following a fire places additional stress on the plant's root reserves and slows the recovery of the vegetation.

Responsibility/Timeframe: BLM and the permit holder(s) should have a dialogue after each fire to determine if and when livestock need to be moved.

Recommendation 3: Adjustment in AUMs at the pasture or allotment level may be necessary in the short-term to prevent grazing damage to the remaining unburned area. As a result, a permittee may not be able to turnout full numbers in that pasture/allotment for the full period of time.

Rationale: Concentrating high amounts of livestock in smaller areas, particularly on native range, can result in long-term environmental damage if use levels are high. A short-term reduction in livestock numbers or amount of time livestock graze may be necessary on a **case by case** basis to prevent habitat damage.

Responsibility/Timeframe: Jarbidge Field Office staff will continue to implement this recommendation.

Recommendation 4a: Burned native vegetation areas should be managed to promote the recovery and establishment of that native vegetation. Recovery of native vegetation following fire is the primary focus of Guideline 16 in the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (page 11). Adequate rest for recovery is also consistent with the present Jarbidge RMP (page II-89, #4).

The amount of rest appropriate for herbaceous species should be matched to the vegetation community burned (Idaho fescue, bluebunch wheatgrass, needlegrass, etc.). Wright et al. (1979 Table 2) lists the recovery times for several grass species found in the Jarbidge Field Office. In cases where more than two growing seasons of rest is best, consideration can be given to allow limited grazing only during the dormant season. In nearly all situations, native plant communities should receive a full year of rest before grazing. Impacts of drought, recovery of litter, and soil stabilization will also have an effect on resuming of livestock grazing. Areas will be evaluated on a **case** by **case** basis.

Rationale: Research has shown native grasses' recovery following fire may be slow under some conditions (Wright et al. 1979). If the vegetation does not have adequate rest following fire, grazing can retard plant recovery and soil stabilization. Recover time for the main grasses found in the Jarbidge Field Office Area are included (Table 1.)

Table 1: Grass species response to fire in the Jarbidge Field Office

Species	Response to Fire	Recovery Time
Nevada Bluegrass	Slight damage	1-3 years
Sandberg Bluegrass	Undamaged	1-3 years
Idaho Fescue	Slight to severe damage	2-30 years
Indian Ricegrass	Slight damage	2-4 years
Needle-and-Thread	Severe damage	4-8 years
Thurber Needlegrass	Severe damage	4-8 years
Bottlebrush Squirreltail	Slight damage	1-3 years
Bluebunch Wheatgrass	Slight damage	1-3 years
Western Wheatgrass	Undamaged	1-2 years
Thickspike Wheatgrass	Undamaged	1-2 years
Crested Wheatgrass	Undamaged	1-2 years

Recommendation 4b: Adequate rest should be allowed to assure seeded shrubs have adequate time to establish and withstand any browsing or trampling. Fire rehabilitation plans should identify areas to be fenced based on shrub seedings.

Rationale: Shrubs are more vulnerable to damage from trampling until they are of sufficient size (Owens and Norton 1992). Damage from trampling may result in seeded shrubs having slow or poor root development, carbohydrate production, and lead to higher mortality from pathogens. Fencing browse plantations would provide additional protection of the planted species and may allow grazing of herbaceous species to resume after recovery.

Recommendation 4c: On a **case by case** basis, livestock should be used as a management tool to reduce cheatgrass cover in the spring following a fire. Grazing on burns will only be authorized when it is consistent with other multiple uses such as soil stabilization and watershed protection, and recommended by an ID team.

Rationale: At certain times of the year, livestock actively select cheatgrass as forage. In some cases, grazing may reduce the vigor or seed production on this annual species.

Responsibility/Timeframes: BLM should incorporate the above suggestions in the new Normal Year Fire Rehabilitation Plan.

Recommendation 5: Manage for only one growing season of rest following a fire for older existing seedings on a **case by case** basis. The burned area would be evaluated by an ID team to assure that watershed, soils, and other resources have recovered adequately for grazing to resume.

Rationale: Crested wheatgrass is more fire tolerant than some of the native grass species. Depending upon conditions, it may not need more than one growing season of rest to recover from a fire. Resuming grazing would be contingent upon other resource values being recovered.

The following three recommendations are only peripherally related to fire rehabilitation.

Recommendation 6: Establish a base amount of native seed to be purchased annually by BLM. Species should included: bluebunch wheatgrass, Thurber needlegrass, bottlebrush squirreltail, and Sandberg's bluegrass. This could be expanded to other native grasses, subspecies of big sagebrush, and perennial native forbs.

Rationale: The purchase of native seed would have three potential benefits. First, it would provide a baseline market to help stabilize the market for native seed producers. This would lead to a more consistent supply. Second, consistent demand may result in more growers supplying seed, which may stabilize or even reduce prices. Third, a seed supply could be used and would be readily available for the reclamation/restoration of smaller projects.

Recommendation 7: If such a system does not already exist, BLM should examine the feasibility of developing a tracking system to match the seed source to the area to be rehabilitated or restored. Consider collecting local seed where possible particularly for specific subspecies of sagebrush and possibly forbs.

Rationale: The seeding success of sagebrush and some forbs is highly variable. Better tracking of the seed source to appropriate precipitation zones and elevations may increase the success of some fire rehabilitation or future restoration efforts. Seed collected locally would more closely match the environmental conditions of the rehabilitation/restoration.

Recommendation 8: The development of seed materials for specific native perennial plants used by sage-grouse for rehabilitation and restoration should be encouraged. Specific perennial plant genera of interest include milkvetches (genus *Astagalus*), pussy-toes (genus *Antennaria*), hawksbeard (genus *Crepis*), buckwheat (genus *Eriogonum*), aster (genus *Aster*), fleabane (genus *Erigeron*), prairie star (genus *Lithophragma)*, biscuit-root (genus *Lomatium*), phlox (genus *Phlox*), and clover (genus *Trifolium*).

Rationale: A number of plants are known to be important food for sage-grouse in addition to providing for habitat for insects important for developing sage-grouse chicks. Some of these species are harmed by fire. Specific plant species would enhance sage-grouse habitat rehabilitation and restoration efforts.

Responsibility/Timeframe: BLM should work with the Shrub Sciences Lab, Agricultural Research Service, universities and other groups to develop native forb seed production for use in fire rehabilitation. This is a long term effort, 15 or more years, to develop seed for several species. If agreements with cooperating agencies do not already exist, they should be initiated now so the research can begin 2008. The IDFG, Office of Species Conservation (OSC), and other groups are encouraged to support this effort.

NOXIOUS WEEDS/INVASIVE ANNUALS

Noxious weeds are rapidly expanding within the Jarbidge Field Office. Table 2 lists the noxious weeds found in the Jarbidge Field Office. The table underestimates the noxious weed problem due to the lack of a complete inventory. Noxious weeds pose a long-term threat to rangeland health and sage-grouse habitat. BLM districts will work with their respective county governments to monitor the location and spread of noxious weeds and to maintain up-to-date inventory records. BLM will control the spread of noxious weeds on public lands where possible, where economically feasible, and to the extent that funds are prioritized for that purpose. The LSRD prepared a draft EA to cover general noxious weed control on BLM lands within its boundaries, however, the record of decision has yet to be signed. This EA is being written to update and replace analyses contained in the LSRD's existing weed control program EA.

Some noxious weed infestations can be controlled by small spot treatments. Where large scale weed control is warranted, BLM will consider alternatives including herbicide applications, plow and seed, burn and seed, livestock grazing strategy, and biological controls. If large scale herbicide treatment is selected as the preferred method of control, all pertinent data including chemicals, rate, method of application, and target plant species will be detailed in the environmental analysis process. Herbicides will be applied under the direction of a licensed pesticide applicator and every effort will be taken to assure public safety. The control of noxious weeds is consistent with the present Jarbidge RMP. Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management considers the increase of noxious weeds as a downward indicator of rangeland health.

Recommendation 1: BLM should become more active in controlling noxious weeds on public lands. Idaho BLM should request additional funding from the Washington Office for noxious weed control.

Rationale: Noxious weeds are a serious long-term threat to sage-grouse habitat. Priority for treatment for controlling noxious weeds is as follows: existing sage-grouse nesting and brood habitat near private land, other nesting and brood habitat, meadows and riparian zones in sage-grouse habitat, other meadows/ riparian zones, seedings, and annual grasslands. BLM should target the treatment of 2,000 to 20,000 acres of public lands annually. This target is not meant to be the treatment of continuous blocks of land, but includes some large untreated areas within much larger emphasis areas. Areas to be treated will depend upon funding.

Responsibility/Timeframe: Jarbidge Field Office staff should review noxious weed locations, prioritize treatment areas, and prepare a funding request by the end of 2007 for the 2008 field season. Priority areas should also be forwarded to county and local weed districts.

Table 2: Noxious weeds, numbers of know sites, and estimated size of infestation in the Jarbidge Field Office

Species	Number of Sites	Size in acres
Black Henbane	8	3.5
Bull Thistle	20	1.3
Canada Thistle	72	72.3
Diffuse Knapweed	74	1411.4
Field Bindweed	5	4.3
Puncture Vine	2	3.8
Rush Skeletonweed	155	106.6
Russian Knapweed	25	77.5
Scotch Thistle	85	1144.0
Spotted Knapweed	1	0.1
White-top	10	67.8
Purple loose-strife	5	1.2
Perennial Pepperweed	2	0.3

Recommendation 2: Some BLM fire pumper trucks should be rigged to spray noxious weeds early in the fire season or in low fire years throughout the summer or into the fall.

Rationale: Adapting some fire pumper trucks to spray noxious weeds would help reduce the invasion of noxious weeds. Fire crews would benefit by becoming familiar with some of the area prior to fire season. Pumper trucks used to control noxious weeds need to be clearly marked so that crews are not un-necessarily exposed to herbicides when they use the same equipment to suppress fires. This may require that engines be washed down and flushed in order to be ready for fire calls.

County Involvement

Recommendation 1: BLM should closely coordinate with county weed departments or cooperative weed management areas (CWMAs).

Rationale: Closer coordination with county weed programs, especially by participation in CWMAs, will help control noxious weeds on and adjacent to public lands. Noxious weed control efforts should generally follow the same priorities for fire suppression (i.e. control within occupied sage-grouse habitat would have higher priority than unoccupied sage-grouse habitat, which in turn has higher priority than non sage-grouse habitat). Smaller infestations should have higher priority than large noxious weed infestations.

Responsibility/Timeframe: BLM (District and Jarbidge Field Office), CWMAs, and weed departments should maintain a close working relationship into the future.

Recommendation 2: Cleaning of road, fire, and spray equipment such as road graders, transports, dump trucks, fire equipment, spray trucks, and ATV's by BLM, road districts, and contractors should be encouraged to minimize the spread of noxious weeds prior to entering other areas.

Rationale: Noxious weeds are easily transported by equipment used in road grading and/or road repair, suppressing wildfires, and spraying noxious and invasive weeds. Cleaning equipment with high pressure water spraying would help remove blossoms, seed or rhizomes, from tires, blades, and under carriage of equipment, and thereby reduce the spread of noxious weeds.

Responsibility/Timeframe: BLM, contractors, and various highway districts should adopt this recommendation in 2008.

Permittee Involvement

Recommendation 1: BLM should work with permit holders to control noxious weeds on public lands. BLM should provide the appropriate noxious weed species identification training as well as herbicide to permittees who are willing and have up-to-date applicator certification to control noxious weeds on BLM lands. BLM should also assist in providing training to permittees who are interested, but do not have up-to-date training/certification. Part of the training would include noxious weed species identification, appropriate chemicals to use on specific weeds, and time of year for the most effective treatment. Some of this training could be accomplished cooperation with the Idaho Department of Agriculture, county extension agents, and local weed boards/districts by helping sponsor general public training.

Rationale: Noxious weeds are increasing very rapidly in some locations within or adjacent to sage-grouse habitat. Species such as rush skeletonweed and Canada thistle are wind dispersed and can easily travel several miles to infest new areas. Noxious weeds readily invade both uplands and riparian zones or meadows.

HABITAT IMPROVEMENT/MANIPULATION/RESTORATION

Wetlands/Springs, Riparian Zones, and Meadows

The present Jarbidge RMP (II-83) states new spring developments would be designed and **existing** spring developments would be modified to protect wet areas. The RMP specifically mentions fencing reservoirs and providing water for livestock away from reservoirs. The RMP (II-87) states riparian and wetland habitat will have high priority for protection and improvement in accordance with national policy. Wetland/riparian areas are important to sage-grouse during the late brood-rearing period from the early summer into the fall (Connelly et al. 2000a). The following recommendations are consistent with recommendations developed by Connelly et al. (2000a) and Call and Maser (1985). The recommendations are also consistent with guidelines 2, 5 and 6 in the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (1997). Potential wetland protection/enhancement projects are listed in appendices C, D, and E. These lists are not all inclusive and coordination and NEPA analysis need to be completed. Additional projects may be added or dropped pending upland assessments, site visits, coordination with permit holders and interest groups.

Recommendation 1: Meadows with associated stock ponds should be enhanced. Water troughs with a shut-off float valve 200-500 feet down gradient of stock ponds should be installed and the associated wet meadow areas including some uplands for sage-grouse habitat should be fenced. Areas immediately adjacent to ponds may require additional rehabilitation such as seeding because of previous high levels of use. To the extent possible, multiple projects of the same type should be batched into a programmatic environmental analysis. BLM should consider using 8100 funds to contract this type of environmental analysis. Appendix C lists some of the potential project areas.

Rationale: Upland meadows are important components of summer and fall sage-grouse habitat. Putting water in water troughs and fencing the pond would allow livestock a cleaner water source. Research has shown clean drinking water from troughs is preferred by livestock and it promotes overall livestock productivity (Surber et al. 1998). The float valve would keep water in the pond longer and prevent water from spilling over the side of the trough. Once the meadow vegetation recovered, periodic summer grazing within the exclosure would be allowed to favor some of the early succession plants favored by sage-grouse such as dandelion, yarrow, clover, and bluegrass.

Responsibility/Time Frame: BLM and permit holders should begin coordination in 2007 so the necessary environmental analysis can be done in 2008 and project work can begin in 2009 to be implemented over the next six years. These types of projects could also be incorporated into the EA for permit renewals.

Wet meadow improvement/restoration

Recommendation 1: Meadows that have been impacted by head cuts should be restored. A combination of rock and filter cloth can be used to construct a series of small dams to trap sediments to allow the gully to fill and re-establish meadow hydrology and vegetation.

Rationale: Once the gully has filled with sediments, the water table should increase and meadow vegetation should again dominate the site. Fencing may be required so vegetation establishes more rapidly. Summer and fall habitat would be improved for sage-grouse.

Responsibility/Timeframe: BLM should examine wet meadow areas as part of the ongoing upland assessment process for the next five years. Projects to repair these area should be incorporated into the EA for the permit renewal. Specific construction should be initiated the year following the permit renewal.

Recommendation 2: Dams for ponds that have down-cut should be reconstructed. Depending upon the location of other water sources, water troughs should be installed with a shut-off float valve 200-500 feet down gradient of stock ponds preferably in the uplands. If needed, associated wet meadow areas including some uplands for sage-grouse habitat should be fenced. Potential project locations are listed in appendix D.

Rationale: Upland meadows are important components of summer and fall sage-grouse habitat. Restoration of these areas would result in water retained on site much longer and the creation of more meadows for use by sage-grouse. Once the meadow vegetation recovered, periodic summer grazing would be allowed to favor some of the early successional plant species favored by sage-grouse such as dandelion, yarrow, clover, and bluegrass. Other species that could be included in restoration efforts include alfalfa, globemallow, small burnett, sainfoin, and bluebunch wheatgrass.

Recommendation 3: Water flowing out of the trough overflow should be piped at least 400 feet from the trough to an exclosure where a wetland can be created to replace the dried spring when flows are adequate and wetland vegetation is not present at the spring head and the trough is located within 100 feet of the developed spring. As an alternative, the trough could be moved further down gradient and fitted with a float valve. This would force excess water back into the spring and would re-establish wetland vegetation at the spring source. The spring head would be fenced to enhance sage-grouse habitat (Call and Maser 1985). Specific locations should be identified during allotment assessments.

Rationale: In the past, a number of springs were developed as water sources for livestock. Some lost all wetland characteristics important to sage-grouse in the summer and fall. This loss of wetlands has likely affected sage-grouse distribution. Once meadow vegetation is established, periodic grazing should be allowed in the early summer or late spring to maintain the desired vegetative composition. Plant species suitable for rehabilitation include Kentucky bluegrass, Canby bluegrass, Sherman bluegrass, clover, alfalfa, yarrow, bentgrass, and small burnett.

Responsibility/Timeframe: BLM and permit holders should work together to identify and correct or mitigate these situations over the next 10 years through the permit renewal process.

Recommendation 4: BLM should work with permittees to provide management consideration compatible with summer and fall sage-grouse needs in riparian zones in shallow valleys or plateau.

Rationale: Riparian zones in deep canyons are generally not used by sage-grouse. However, riparian areas that are located in relatively shallow valleys or on the plateau areas are often highly used by sage-grouse, particularly in the summer and early fall.

Responsibility/Timeframe: BLM and permit holders should identify these important areas and incorporate appropriate management during the permit renewal process.

Recommendation 5: A number of water pipelines use water from riparian areas to provide water to livestock in the uplands. Projects identified the creation of wetlands for wildlife as mitigation for the improved livestock distribution. In a few cases, the mitigation was either not completed or not maintained. BLM and permit holders need to create wetlands to meet mitigation objectives of the projects and improve sage-grouse habitat.

Rationale: The Jarbidge Field Office and permit holders installed several hundred miles of water pipeline to improve livestock distribution from the 1970s through the 1990s. As a result, livestock have more access to upland areas at times of the year when livestock grazing was previously minimal.

Responsibility/Time Frame: BLM and permittees have a joint responsibility to ensure mitigation for projects is constructed and maintained. This should be checked during the permit renewal process.

Upland Shrub Treatments

BLM is in the process of preparing a vegetation manipulation EIS. The JSGLWG does not know when the EIS will be published for review or when a final decision will be signed. Any shrub treatments in the Jarbidge Field Office would be jointly planned with the permittee, IDFG, and BLM. EAs will be developed and completed as required by NEPA including participation and review by interested publics. The EAs would provide details on the treatment method, time of year for the treatment, acres to be treated, seeding requirements, and post treatment management and monitoring plan. Shrub treatments will be considered only after a "landscape" perspective of the general areas has been evaluated. If substantial portions of the area are burned in a large or a series of smaller wildfires, treatment may have to wait several years until recovery of the burned area is well under way. This is consistent with the present Jarbidge RMP (II-89) regarding prescribed burns and vegetation treatments. Shrub treatments to restore habitat is covered in detail in Connelly et al. (2000a). Recommendations for shrub treatment are generally consistent with this report.

Recommendation 1: Rabbitbrush is a perennial native shrub that can gain dominance following repeated disturbances. Gray rabbitbrush and green rabbitbrush are present in the Jarbidge Field Office and may be locally abundant. Rabbitbrush is a moderately long lived shrub species and can reach an age of between 25 and 65 years. Rabbitbrush vigorously sprouts following burning (Wright et al.1979). Fires or other disturbances of less than 25 years can lead rabbitbrush to dominate the shrub community. Rabbitbrush does not provide a quality nest shrub for sage-grouse (Connelly et al. 1991). As rabbitbrush density increases, herbaceous cover used by nesting and brooding sage-grouse decreases. The JSGLWG does not have information on individual herbicides or their concentrations to make specific recommendations for rabbitbrush treatments. The herbicide, the concentration of active

ingredient, timing of the treatment, treatment method (ground, aerial), and follow-up seed mix will be clearly detailed in the environmental analysis prior to the project(s) being implemented. Potential rabbitbrush treatment locations are listed in appendix F.

Rationale: Rabbitbrush does not make a quality nest shrub for sage-grouse. The reason for this may be in part because rabbitbrush has deciduous leaves that do not bud until after nesting begins, whereas sagebrush has leaves year-long. There may be other characteristics such as a more open canopy or columnar growth form that lessen rabbitbrush's value as a nest shrub. To improve sage-grouse habitat in the long-term, areas where rabbitbrush is the dominant shrub and total shrub cover is at least 15% will be considered for possible treatment. Other stipulations include big sagebrush cover of less than 5% of the total shrub cover and the desirable forb component lacking or less than 1% of the total cover. Aerial application of herbicide is likely the most cost effective control method for rabbitbrush in large areas. This does not imply ground application of herbicide would not be done. The treated areas will be seeded to a mixture of sagebrush, alfalfa, yarrow, small burnett, sainfoin, or possibly other forbs within two years of treatment. If the understory is dominated by cheatgrass, the area may require an additional treatment of burning, and/or the application of another herbicide, to reduce cheatgrass competition. If the understory is dominated by annual grasses, seeding with appropriate native grasses will occur. Areas with high amounts of annual vegetation will have lower priority for treatment, compared to areas with perennial native grasses and forbs.

Responsibility/Timeframe: BLM will coordinate with affected permittees and IDFG to start working on the environmental analysis for this type of treatment in 2002. BLM and permit holders should identify other potential treatment areas during the permit renewal process so the area can be evaluated to determine if treatment is appropriate. Rabbitbrush treatments should be concluded within seven years.

Recommendation 2: The following criteria were established for evaluating areas with very dense sagebrush canopy for potential treatment (i.e. thinned because it is too dense). Connelly et al. (2000a) define this as less than 40%, however, shrub cover at lower levels has been documented to reduce herbaceous cover. The present Jarbidge RMP prohibits sagebrush control until sagebrush cover exceeds 20% (II-83). Herbaceous species data will be collected by the point step transect method to evaluate the understory. No more than 20% of the habitat around a lek will be eligible for treatment at any one time and treatments will be scheduled seven to twenty years apart to assure adequate shrub cover remains for wintering. Understory herbaceous species should be adequate to provide the desired response. Areas proposed for treatment will be checked for at least two years prior to treatment to determine if the area is used by wintering sage-grouse. At this time, no specific areas have been identified for treatment.

The preferred method of treatment to improve habitat conditions for sage-grouse is mechanical (Dixie harrow, chaining, brush beating, railing, etc.). Even though mechanical treatment is usually more expensive, it provides more precise control compared to other treatment methods. Dixie harrow, chaining, and railing also allow for young, more limber sagebrush to survive the treatment and speed recovery of the shrub component. Treatment will be in irregularly shaped, alternating strips on the contour. Connelly et al. (2000a) recommend alternating strips of untreated areas with treated areas which creates more

diversity in shrub and herbaceous cover. Call and Maser (1985) recommend treated and untreated strip widths be approximately equal and should not exceed 100 feet for herbicides or more than 400 feet for chaining. Call and Maser (1985) further recommend the objective is not to kill all sagebrush, rather create appropriate conditions for herbaceous vegetation to regenerate. Block treatments will be avoided.

Dixie Harrow Action Item: The JSGLWG will add an appendix H to this plan by August 2007 identifying areas for future Dixie Harrow treatments.

Burning may be used in rare cases, however, it has the lowest. Big sagebrush is a relatively long lived shrub (80+ years) (Perryman and Olson 2000) and intolerant of fire (Wright et al. 1979). Scientific literature indicates sagebrush can be burned in the winter (Neuenschwander 1980), which decreases the damage to native forbs and grasses. In the event prescribed fire is used, a line around the fire perimeter will be constructed and reinforced with back burning prior to the fire being lit. Spring burning may also be an option during some years. Summer and early fall should be avoided due to possible dry, dangerous conditions. Nelle et al. (2000) conclude overall burning can result in long-term negative impact on sage-grouse nesting habitat due to the 20-year post-fire recovery period required by big sagebrush for nesting habitat. The objective of a fire treatment would be to create a good mosaic of unburned islands (50%) within the overall burn. The goal is to create irregular burn lines, not exceeding 300 feet, alternating with unburned strips of equal width.

Rationale: With the fragmented and altered habitat in the Jarbidge Field Office, it would appear there is no biological reason to treat any of the remaining areas of big sagebrush. However, in areas with dense shrub cover, the understory frequently becomes depauperate and lacks adequate grass and forbs for nesting or brood habitat (Call and Maser 1985). Miller and Eddleman (2000) report the highest herbaceous production occurs when sagebrush cover is between 3 and 17%. Call and Maser (1985) mention most sage-grouse broods in southern Idaho were found in areas with more open sagebrush canopy which average 14.3%. However, nesting areas usually have greater than 20% sagebrush cover. Treating some of these dense sagebrush areas may improve sage-grouse nesting and brood rearing habitat. The treated sites will be seeded with native herbaceous species, if necessary.

Responsibility/Time Frame: No specific project areas have been identified. When a potential project area is suggested, BLM, the permit holder, and IDFG shall jointly evaluate the proposed treatment area.

Burning Action Item: The JSGLWG will conduct a field trip to ascertain the value of burning the upland areas located south of the Three Creek Road by August 2008.

Post-treatment management

Recommendation 1: Post-treatment management is crucial to obtain the desired results to benefit sage-grouse. Prior to treating an area, BLM and the permittee will agree to a post-treatment management plan as part of the overall project. A post-treatment management plan may include shifts in seasons of use, temporary fencing, and/or a time of rest from livestock grazing. Post-treatment monitoring is essential to determine if the treatment is successful and provides benefits to sage-grouse. Work months will be added to the project

cost to cover future monitoring. Permanent monitoring points will be established so comparisons over time can be made. Line intercept, step point, or nested frequency plots could be used for monitoring. Pre- and post-treatment monitoring will include the following: recording grass and forb cover; recording changes in plant species diversity; recording changes in sage-grouse use of the areas; recording the rate of sagebrush re-establishment; and recording the amounts of biological soil crust, litter, and bare ground.

Restoration of Sage-Grouse Habitat

Recommendation 1: Wildfires burned approximately 925,000 acres in the Jarbidge Field Office since the mid 1970s. Since 1984, in excess of 625,000 acres have burned (Table 3). This led to habitat fragmentation and net habitat conversion from native plant communities with a sagebrush overstory to crested wheatgrass seedings and annual grasslands. The objective is to sustain or increase current sage-grouse populations. Thus, some habitat restoration will be necessary. Restoration needs include increasing selected exotic and native perennial forbs, native perennial grasses, and sagebrush cover. Call and Maser (1985) state good sage-grouse habitat should have between 5,000 and 10,000 sagebrush plants per acre. There is very little information on patch sizes used by sage-grouse and limited research on patch size in sagebrush steppe habitats. Recent information indicates sagebrush patches less than two acres are used for nesting. In other species, larger patch size enhances bird populations (Estades 2001, Howard et al. 2001).

Areas selected for restoration will be ranked by the following criteria: connecting large islands to the main block (core area) of sage-grouse habitat, connecting occupied large islands together distant from the main body of existing habitat, restoring areas that have recently burned and still have a decent mix of native grasses and forbs, treating areas likely to be used by sage-grouse (breeding/nesting, brood-rearing, winter-use) prior to areas not being used by sage-grouse, and selecting treatment areas at least 0.25 miles from existing water troughs.

One goal in the present Jarbidge RMP is to maintain existing vegetative treatments. Each multiple use area (MUA) listed the amount of acres for seedings, acreage for future brush control (31,600 acres), and total amount of brush control and seeding (72,900 acres). Since 1984, wildfires have burned far more acres than the RMP identified for treatment. The year 1984 was selected as the base year because all of the information was collected in 1982 and 1983 for the Proposed Jarbidge RMP and Final EIS, released in 1985. The JSGLWG believes a portion of this burned acreage should be considered for restoration to improve sage-grouse habitat.

Table 3. Year, number of fires, and acres of Federal land burned in the Jarbidge Field Office.

Year	Number of Fires	Acres of Federal Land Burned
1984	39	64,303
1985	29	116,110
1986	17	60,099
1987	31	64,485
1988	6	2,843
1989	9	1,840
1990	17	2,839
1991	17	10,534
1992	17	17,145
1993	6	639
1994	14	16,513
1995	26	152,970
1996	28	94,705
1997	27	7,616
1998	21	4,756
1999	35	65,464
2000	16	63,250
2001	14	32,152
2002	24	25,358
2003	4	4,942
2004	6	1,589
2005	20	220,240
2006	18	71,588

Restoration would be specific to the area of interest, condition, and how that relates to proposed restoration criteria (presence of leks, presence of large islands or blocks of native shrub steppe, connectivity, etc.).

The JSGLWG believes restoration goals should be assigned to specific grouse areas. Specific acres to be treated are not yet identified because of lack of appropriate data and unknown budgets. An accurate GIS layer should be developed depicting habitat alteration by wildfires (1984 to present), historic, seedings, and RMP proposed vegetation treatments. Table 4 provides information on acres of proposed vegetative treatments and vegetative projects to be maintained. More of the area has been altered by wildfire than was proposed for treatment in the present Jarbidge RMP. Figure 5 shows the various treatments specified in the RMP. This information has not been input into GIS.

Table 4. Proposed vegetation treatments in acres in the present Jarbidge RMP by MUA.

MUA	Seedings (Maintained)	Livestock			Wildlife
		Brush Control (Only)	Brush Control & Seed	Seeding (Only)	Vegetation Treatments
4	499	0	0	0	0
5	5,414	0	0	2,000	0
6	75,107	0	0	0	150
7	155,612	0	0	0	0
9	0	0	0	0	0
10	1,866	0	0	0	1,150
11	21,177	5,000	6,400	9,600	2,500
12	23,518	4,100	38,500	2,000	3,000
13	47,510	0	9,600	4,000	4,550
14	0	0	0	0	0
15	24,159	7,500	6,400	0	4,900
16	0	15,000	10,000	0	1,350
Total	354,862	31,600	72,900	15,600	17,600

MUA's 1, 2, and 3 are now managed by the Four Rivers Field Office and are not included.
Most of MUA-8 is now Hagerman Fossil Beds National Monument managed by the National Park Service.
MUA-9 is the RMP designated Owsley Off Road Vehicle area.
MUA-14 is the Salmon Falls Creek Canyon (ACEC and WSA). This WSA is a rim to rim and covers primarily Salmon Falls Creek Canyon.

The Owyhee Sage-Grouse Plan recommended a minimum 1,000 acres per year be restored to benefit sage-grouse. Pending funding, the JSGLWG believes a greater acreage needs to be restored in the Jarbidge Area because of the loss of habitat. A minimum targeted for restoration in the Jarbidge area should be 3,000 acres per year.

No specific restoration sites are being recommended because of the limited information available to the group on restoration. Potential general restoration areas are listed in appendix G. One technique that may be used to restore sagebrush habitat is to interseed sagebrush and selected forbs into crested wheatgrass seedings. Interseeding sagebrush into crested wheatgrass seedings may reduce vigor of crested wheatgrass. This may be necessary before other species can be planted. Little is known on how to establish native perennial forbs into existing crested wheatgrass seedings. Possible treatment areas will have to be mapped and evaluated to see how well they meet the various criteria.

Permittees will be asked to volunteer to restore portions of their allotments to benefit sage-grouse. These permittees can demonstrate restoring habitat to benefit sage-grouse also benefits livestock. Rabbitbrush control, sagebrush interseeding, and native species restoration may be some of the projects proposed on these "showcase" allotments. As an incentive, showcase allotments would receive funding priority for restoration projects.

The JSLWG recognizes that restoration projects may pose a financial and operational hardship for permittees and suggest BLM take this into consideration when planning treatments. The Group's interest is to conduct Field Office-wide treatments, rotating treatments through all five sage-grouse planning geographical subdivisions. When a project will reduce or disrupt grazing practices, project size should be no more than five percent of the allotment unless the permittee is willing to work on a larger scale. Allotments that are recovering from wildfire should be exempted from intrusive restoration treatments, as such projects would further complicate management decisions. Restoration practices that require no changes in allotment management should be pursued as BLM funding and planning is available on the largest scale possible. Prior to large scale restoration work commencing in the JRA there should be some small field trials displaying restoration techniques and representing the success of restoration work.

Responsibility/Timeframe: BLM will work to obtain funding through various restoration initiatives such as the Great Basin Restoration. Proposals should be written in 2008 and out years.

LAND OWNERSHIP

Idaho Department of Lands

There are approximately 80,000 acres, 120 or more sections, of State of Idaho Endowment land within the area. Idaho Department of Lands will do as much as possible, within manpower and budget constraints, to maintain or improve sage-grouse habitat to avoid listing the species. Burned lands will be rehabilitated when native component is not present. Fire suppression on endowment lands is handled through BLM under a cooperative agreement. Noxious weeds will be controlled in cooperation with county weed control.

Private Lands

There are thousands of acres of private lands within the boundary covered by this plan. Most private lands are ranches with some farms in the Roseworth area. No subdivisions nor have ranches been split up into much smaller ranchettes. Holechek (2001) commented that fragmentation and urbanization of rangelands leads to increased property taxes, marauding dog problems, vandalism, spread of noxious weeds and invasive plants, and declining ecological trend. For every acre lost directly to subdivisions, another three to ten acres may be lost from the ranching base due to fragmentation (Liffman et al. 2000). Holechek (2001) recommends counties do long range planning to maintain the private ranching land base and keep ranching viable. There has been a loss of valuable habitat for wildlife including sage-grouse, mule deer, and elk where subdivisions have occurred in other parts of Idaho. Recommendations in this plan are provided to any land owner that **voluntarily** chooses to undertake actions to improve sage-grouse habitat.

The working group recognizes the importance of private lands retaining sagebrush and meadow habitat for sage-grouse throughout the year, but particularly as late brood rearing habitat in the fall. Hundreds of sage-grouse concentrate in these meadows in the late summer and into the fall. Private lands with high value for sage-grouse include those in the Brown's Bench/Antelope Pocket areas, as well as the private lands along Cherry, Devil, Flat, House, Deadwood, Three, Clover Creeks and the Diamond A. Many of the meadows on the private lands are hayed in the late summer and grazed in the winter. Most of the meadows contain a variety of native species such as basin wild rye (*Elymus cinereus)*, meadow foxtail (*Horedum brachyantherum*); introduced grasses such as timothy (*Phleum pretense)* and smooth brome (*Bromus inermis);* and forbs like alfalfa (*Medicago sativa)*. Private lands in the higher elevations in Beaver Meadows, Deadman, Upper House, and North Fork Salmon Falls Creek provide important nesting, summer, and winter habitat. Vegetation in these areas are primarily dominated by native species. A number of programs are available with the potential to benefit sage-grouse habitat on private lands with various agencies.

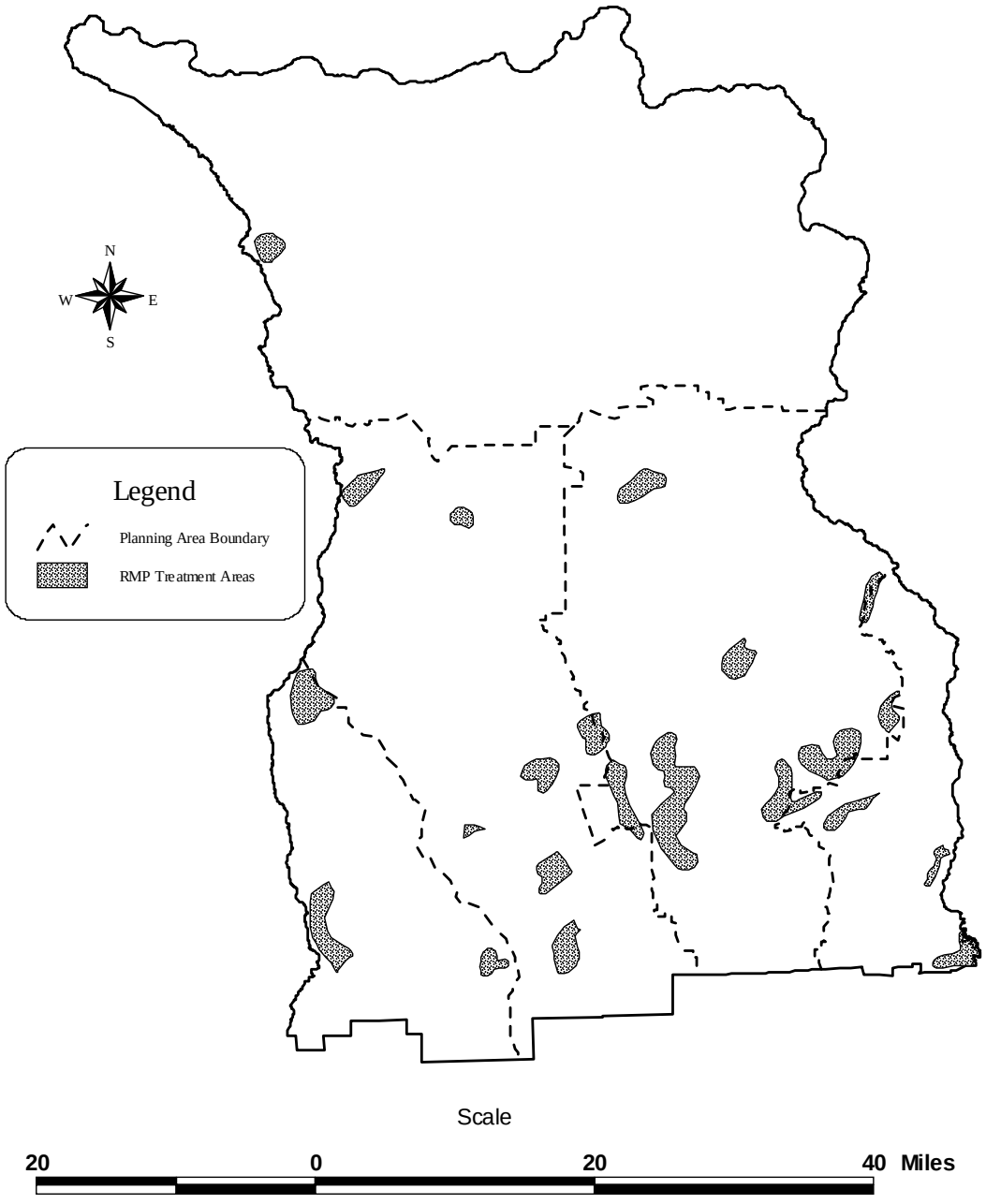


Figure 5. Map showing the wildlife vegetation treatments proposed in the Jarbidge Resource Management Plan.

Natural Resource Conservation Service (NRCS)
The Natural Resource Conservation Service, part of the U.S. Department of Agricultural, offers voluntary programs for soil conservation, wildlife habitat, water quality, wetlands restoration, and natural resource conservation planning, usually through local conservation districts and/or Idaho Soil Conservation Commission.

NRCS offers both technical and financial assistance, along with help with resource inventories and emergency disaster recovery. Financial assistance varies by program but may be up to 50% of a specific project. Some of the programs that NRCS administers or assists with include: Environmental Quality Incentives, Soils and Water Conservation Act, Wildlife Habitat Incentives Program, Resource Conservation and Rangeland Development loan program, Resource Conservation and Rangeland Development grant program, Grazing Lands Conservation Initiative, and State Water Quality program.

More information can be obtained by contacting the local NRCS offices (Twin Falls County, Twin Falls 733-5380; Owyhee County, Marsing 896-4544; Elmore County, Mountain Home 587-3613).

Recommendation 1: The Natural Resources Conservation Service (NRCS) has a number of programs where funds are available for habitat improvement on private lands. The JSGLWG **encourages** the Soil Conservation Districts to consider those projects that provide the benefits to sage-grouse habitat funding priority over projects that do not benefit sage-grouse, all other things being equal.

Rationale: Projects enhancing wetlands and/or maintaining wet meadows to improve herbaceous and shrub cover in uplands have the potential to benefit sage-grouse. Given that budgets are limited and projects compete for the same funds, decision makers should consider giving funding priority to those actions that would benefit sage-grouse habitat.

Responsibility/Time Frame: NRCS and soils conservation districts are responsible for implementing this recommendation.

Recommendation 2: The JSGLWG encourages CRMP or similar processes that recognize the importance of intermingled land ownership and coordinated management to benefit sage-grouse habitat.

Habitat Improvement Program (HIP)
IDFG has funding for Habitat Improvement Program (HIP) projects on private land. IDFG requires a written agreement for 10 to 30 years. For 10-year agreements, IDFG will provide up to 75% of the project funding. A 30-year agreement allows IDFG to provide 100% funding. IDFG can pay for 100% of the materials cost for fences. There are limits to the amount of money spent on an individual project or with a cooperator. The HIP agreement generally requires the project be maintained in good condition for the life of the agreement. The land owner retains control of his private land under HIP agreements. For more information regarding HIP projects in the Magic Valley Region, contact Idaho Department of Fish & Game in Jerome (208) 324-4350.

Conservation Lease/Agreements and Easements
A number of options are available that benefit private landowners participating in conservation practices. Conservation contracts are established between a willing landowner and the contract holder. Contract holders can be any qualified agency or non-profit organization. Conservation contracts generally fall into two categories: conservation leases/management agreements and conservation easements. Agreements or easements can be written to specify that current management be continued (for example: haying of natural grass meadows and grazing) which meets specific conservation objectives. For specific information on agreements and easement, interested landowners are encouraged to contact The Nature Conservancy of Idaho (208) 726-3007.

Conservation leases/ management agreements are voluntary contracts entered into by private landowners and the agreement holder with specific conservation goals. They are usually short, up to five years in duration. The leases or agreements detail the objectives, restrictions, and responsibilities for the landowner and the lease/agreement holder. These agreements are sometimes used prior to the landowner deciding to enter into an easement.

Conservation easements are legal agreements in which the landowner voluntarily restricts or limits the type or amount of development that could occur on their private property. Each conservation easement is tailored to a particular property or portion of the property in the interest of the landowner and the resource being protected. Conservation easements are used to preserve wildlife habitat, wetland/riparian areas, scenic open space or agricultural lands, while allowing the owner to continue to own and use his property. Easements are permanently attached to property. In exchange for the easement, the land owner may receive income and/or estate tax benefits.

Recommendation 1: Conservation agreements or easements should be obtained from willing land owners to maintain the sparse human population and the rural nature of the area. Easements for continuing the management meadows as native hay fields, protecting wetlands and riparian zones, and maintaining sagebrush/grass habitat on private land would benefit sage-grouse.

Rationale: The present sparse population and ranch-based economy helps maintain habitat conducive for sage-grouse including hay meadows, shrub, and grass and forb cover in the uplands. The breakup of ranches into smaller units for development or shift to confined animal feeding operation is perceived to be a long-term threat to maintaining quality habitat for sage-grouse and the rural way of life.

Responsibility/Time Frame: Private land owners have the opportunity to implement this recommendation at such time they wish to enter into a conservation agreement.

Land Ownership Adjustment
In portions of the Jarbidge Area there is an intermingling of private and public land. Intermingled ownership patterns result in management inefficiencies and difficulties. Currently, a land use plan amendment is needed to pursue an exchange if the parcel of public land has not specifically been identified for disposal in the RMP. Priority sage-grouse habitat could be obtained through an exchange or purchase from **willing** landowners.

Recommendation 1: Various tracts of public land should be evaluated for possible exchange to block-up ownership to facilitate management.

Rationale: Identification of exchange parcels would aid in future land use planning efforts. The priority for exchange would be those parcels of private land with high value for sage-grouse, but would not preclude private lands with other high resource values. Private land owners and the BLM could more effectively manage their lands by reducing the intermingled ownership. No exchanges are proposed at this time.

Responsibility/Timeframe: Individual proposals they would be evaluated as they are submitted. BLM may update the Jarbidge RMP in the future to facilitate exchanges. Until there is a specific proposal, BLM and IDFG would not assess the habitat for sage-grouse on private land. Private lands with native hay meadows, upland meadows, and sagebrush steppe uplands in good condition would likely rate as higher wildlife value.

PREDATION/PREDATOR CONTROL

Sage-grouse evolved with a variety of native mammalian and avian predators. Predation is an important proximate cause of sage-grouse mortality and influenced by habitat quality (Gregg 1991, Connelly and Braun 1997). Connelly et al. (2000b) note few studies have documented predation as the cause of declining sage-grouse populations. In Idaho, the annual male sage-grouse survival ranges from 46% to 54%, whereas, female survival ranges from 68% to 85% (Connelly et al. 2000b). Predators can hunt sage-grouse through all stages of development from eggs (nesting) to adults. In Idaho, predation rates are highest for both males and females during the spring (March through June), however, very low during the winter (November through February) (Connelly et al. 2000b). Adult sage-grouse are more vulnerable when the males conspicuously display or females are nesting. Mammalian predators include bobcat, coyote, badger, skunks, and ground squirrels. These predators take eggs or damage nests and larger predators are believed to take adult sage-grouse. Avian predators such as ravens and magpies frequently take eggs, but others, such as golden eagles and ferruginous hawks, can prey upon young and adults. Other raptors, such as red-tailed hawk and northern harrier, likely prey upon juvenile sage-grouse, but are not large enough to regularly kill adult sage-grouse. Recent research in Idaho shows that the majority of the predation on sage-grouse chicks occurs in the first two weeks.

Predators are more effective when they can search small "islands" of habitat rather than large contiguous habitat areas (Schroeder and Baydack 2001). The best long-term solution is to create larger blocks of habitat, link smaller blocks of habitat, and manage to restore or improve habitat quality.

It is not clear how the role of predation on sage-grouse is influenced by the amount of alternate prey species. Black-tailed jackrabbit numbers are down over most of the Jarbidge Field Office. Ground squirrel numbers may have declined or are absent in many areas. This may have resulted in some predators shifting use to sage-grouse. Bekoff (1982) notes coyotes increase litter sizes when their populations are reduced. He also commented when coyote pair and packs are territorial and defend home ranges, the coyote tend to occur in lower densities. With the removal of a pair or pack, an area may support more coyotes.

Nest predators

The scientific literature suggests quite a number of bird and mammal species have the potential to consume sage-grouse eggs. In the Shoshone Basin area, nest predators are split between coyote and ravens. Avian nest predators include ravens and magpies. Other nest predators include ground squirrels, skunks, badgers, and coyotes. Some nest predators, such as ground squirrels, are not likely to be significant in portions of the Jarbidge Field Office. Predators may remove or break single eggs or the entire clutch. While incubating, the female is subjected to potentially higher chance of predation by some predators.

Predation on young

Mortality on young sage-grouse is greatest during the first three days following hatch. It is not clear how much mortality is due to climatic events such as cold rain while the young are downy, predation, or other factors such as starvation or accident. Connelly et al. (2000a) describes a number of species that prey on young sage-grouse. Recent research in Oregon

found predation on young sage-grouse was not significant, however, recent research in southeastern Idaho found a substantial amount of predation of sage-grouse chicks less than two weeks old (Burkepile et al. 2001).

Predation on adults

Golden eagles are believed to be the most effective predator on adult sage-grouse, especially during the display period. This needs to be confirmed and/or supported in the scientific literature to the extent practical. The majority of the impacts of predation are on nests and young birds. In the Strawberry Valley area of Utah, increasing red fox populations are believed to be limiting sage-grouse survival and nest success (Flinders 1999). Red fox in the Jarbidge Field Office are presently uncommon and are usually more closely associated with agricultural crop land. BLM does not have the authority to regulate wildlife populations including predators.

Predator control is most frequently conducted by the Wildlife Services (formerly Animal Damage Control) section of the Animal and Plant Health Inspection Service (APHIS) branch of the U.S. Department of Agriculture. In a few cases, IDFG participated in predator control efforts on state wildlife management areas.

Recommendation 1: Predator control may be considered in the short-term in areas of highly fragmented habitat. However, research shows when coyotes are removed from the population, that area may actually support a higher density of coyotes because resident coyotes are not present to defend territories against others moving into the area. The group lacks data to make a specific recommendation for predator control. The Owyhee County Sage-Grouse Plan directed a number of research projects be conducted on predators to evaluate their impact on sage-grouse. Pending the results of this research, predator control may be recommended in specific areas.

Rationale: If predator control is found to be an effective method to increase sage-grouse populations, the JSGLWG would identify specific areas for potential treatment. Restoration of habitat is crucial to maintain sage-grouse populations long-term.

Responsibility/Timeframe: No predator control projects are proposed at this time.

Recommendation 2: Different portions in the Jarbidge Field Office should be evaluated to determine prey base levels. This should be done over a period of years to evaluate natural fluctuations.

Rationale: If alternate prey such as mice, ground squirrels, and jackrabbits are not available, there may be higher predation rates on sage-grouse. Data would need to be collected prior to any additional recommendations on alternative prey. Long-term habitat restoration is necessary to provide habitat for species such as black-tailed jackrabbits, sagebrush voles, least chipmunk and other prey species that rely on sagebrush/grass communities.

Responsibility/Timeframe: This would likely be accomplished through a joint research project between BLM, IDFG, and a university. Long-term monitoring of prey base is in the purview of IDFG.

HUNTING

In February 2005, the Idaho Sage-grouse Science Panel ranked hunting 17th of 19 threats at the statewide level. Controversy over the impacts of sage-grouse hunting dates to the early part of the 20th century (Hornaday 1916). Sage-grouse hunting has been a tradition in Idaho for many generation and many families spent opening weekend camped in sage-grouse country. During the early 1980s over 30,000 hunters pursued safe-grouse every year. Early research suggested hunting had little impact on sage-grouse populations (June 1963, Crawford 1982, Braun and Beck 1985). Wallestad (1975) reported that despite fluctuating trends, Montana maintained liberal sage-grouse seasons because of high annual turnover, "law of diminishing returns," and "opening day phenomena." Harvest was generally thought to be a compensatory form of mortality, meaning the proportion of the population that was harvested would die from some other factor if hunting did not occur. Recent research suggests sage-grouse may be more susceptible to over-harvest than other upland game bird species because they have population characteristics that include relatively low reproductive rates, long lives, low annual turn-over, and high over-winter survival (Schroeder et al. 1999). The Brown's Bench Area located in the southeast portion of the Jarbidge Field Office remains a stronghold for sage-grouse populations and is typically the most hunted of the five subdivided areas.

Recommendation 1: The limited information on sage-grouse in the Clover Butte/Poison Butte area suggest these birds do not move north. The Snake River Unit including Salmon Falls Creek north of the Balanced Rock Road to Crows Nest, then southwest from Crows Nest to Clover Crossing, then north along Clover Creek to the Snake River should be closed to sage-grouse hunting.

Rationale: This area has highly fragmented sagebrush habitat. Numbers of active sage-grouse leks and number of male sage-grouse leks have declined since the early 1990s. Wildfires in the past two years have burned in excess of 80,000 acres, 12,000 acres which were important sage-grouse habitat. Five known active leks have less than 50 males. A large 10,000 acre fire in the summer of 2000 burned through the largest remaining block of habitat in the area. Connelly et al. (2000a) suggest sage-grouse should not be hunted if the population is less than 300.

Responsibility/Timeframe: IDFG Commission needs to consider closing this area to hunting in the next planning cycle for printing hunting regulations.

Recommendation 2: Pending additional information from an ongoing study, the group may request that the IDFG Commission also close sage-grouse hunting from Clover Creek west to the Jarbidge River and from Rogerson Highway, north to confluence of Clover Creek with the Bruneau River. This generally conforms to the Inside Desert Unit.

Rationale: A number of large wildfires in the past 10 years have burned well over 150,000 acres in the area. A number of historic sage-grouse leks in the area are no longer active.

Responsibility/Timeframe: Pending future monitoring, the IDFG Commission would decide whether or not to close hunting in this area.

Recommendation 3: If hunting appears to be a significant source of mortality statewide, the group may make a recommendation to the IDFG Commission to delay the sage-grouse season until October.

Rationale: Delaying the opening of the sage-grouse season may reduce some of the hunting pressure on sage-grouse, particularly if hunting seasons on other species are open. Fall rains may help disperse sage-grouse, which may reduce hunter success. If the hunting season is delayed, more hunting opportunity could be provided by slightly extending the hunting season on sage-grouse. Hunting by falconers is not an issue because of the small number of falconers and the few sage-grouse taken.

Responsibility/Timeframe: IDFG changed the hunting season in several areas from no hunting, to one sage-grouse/day, to three birds and a 30-day season to determine population trends under various hunting scenarios. IDFG
Commission needs to consider the results of the changes in hunting on sage-grouse prior to new regulations being printed.

Figure 6. Opening weekend sage-grouse harvest, Salmon Dam check station 1961-2006.

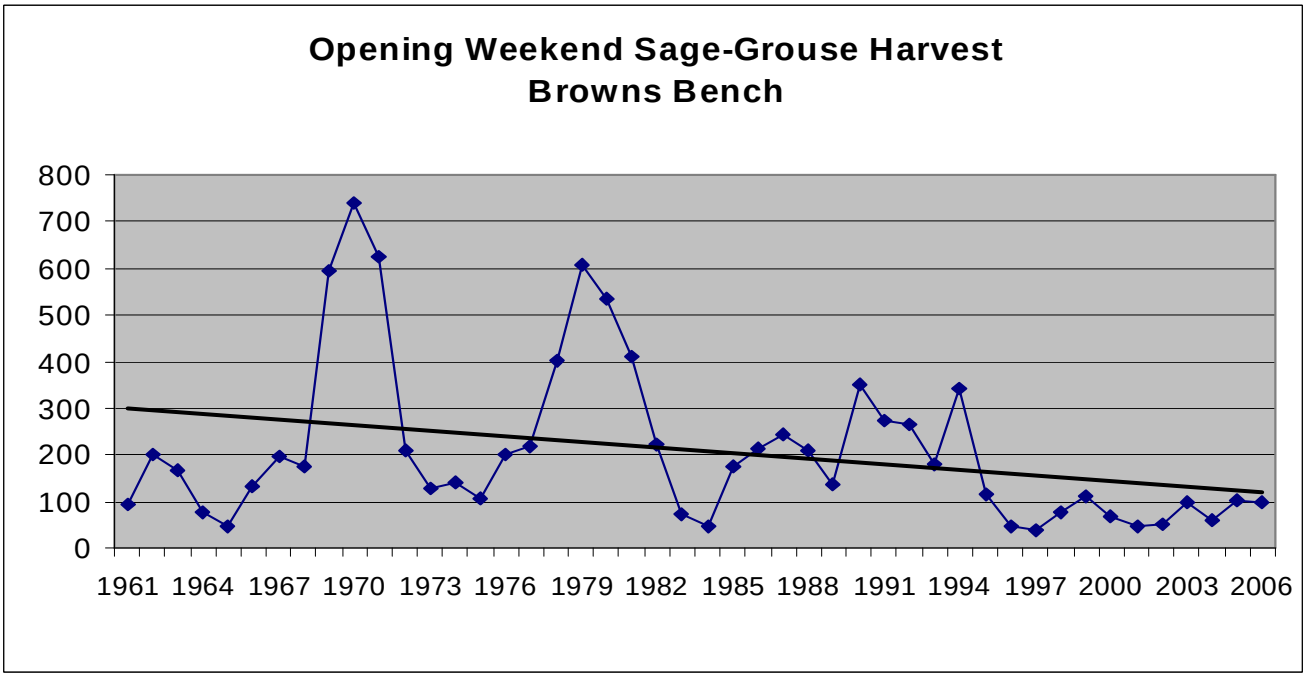
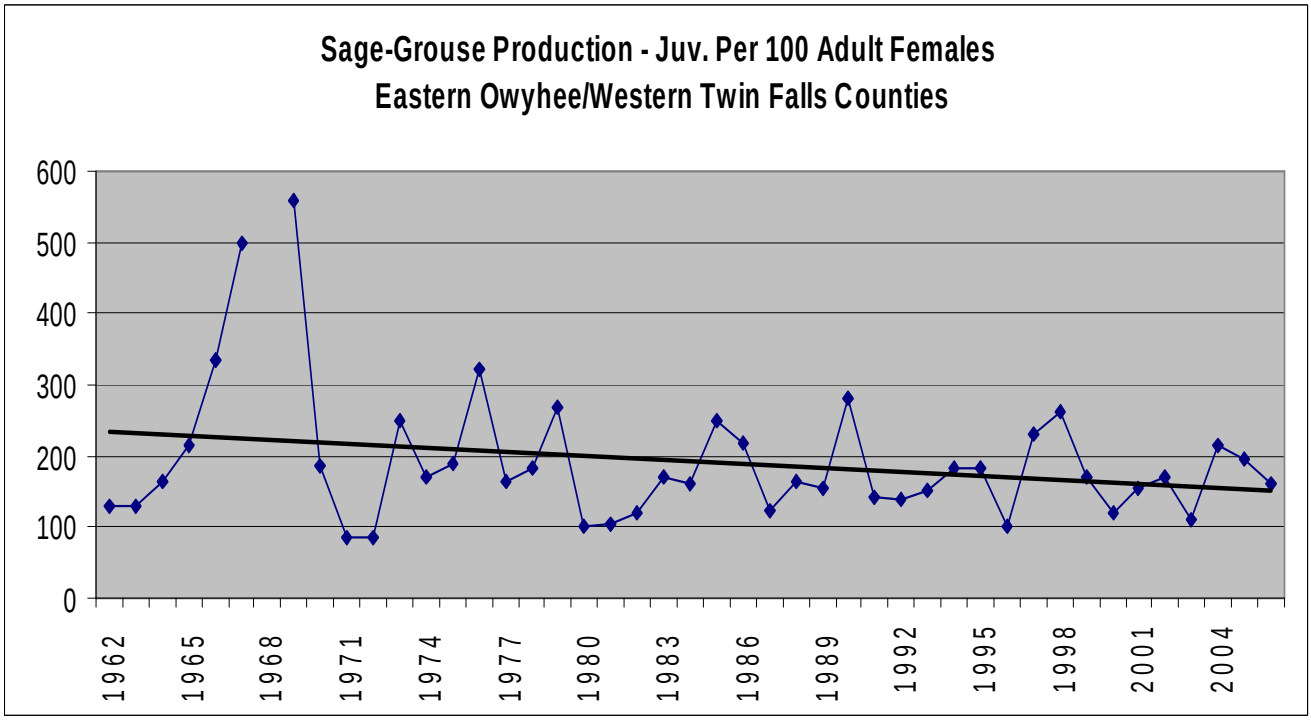


Figure 7. Sage grouse production trend estimated from opening weekend hunter-harvested grouse, Salmon Dam check station, 1962-2006.



LIVESTOCK GRAZING

Perceived livestock grazing impacts can be generally lumped into two categories: direct and indirect affects. Direct impacts are considered (1) competition for forage, (2) nest abandonment, and (3) potential trampling of nests or sage-grouse. The scientific literature for these potential impacts is not particularly supportive of direct competition as significant on properly managed rangelands (Miller and Eddleman 2000). There are no known peer-reviewed papers indicating livestock and sage-grouse significantly compete for forage. Anecdotal information indicates livestock can cause female sage-grouse to abandon their nests (Autenrieth 1981). Nests from which the female was flushed by livestock may also have higher nest predation rates. Researchers documented nests where the female sage-grouse was flushed had higher nest predation rates than nests where the female was not disturbed. A brief review of the literature did not show any studies where livestock trampled sage-grouse nests, although Call and Maser (1985) indicate it is a possibility. Most sage-grouse nests are directly under shrubs and, because livestock typically walk around shrubs, nest trampling is probably uncommon. Anecdotal information indicates young sage-grouse can be trampled by livestock prior to being able to fly.

Indirect impacts of grazing to sage-grouse habitat include (1) long term alteration of plant communities and (2) removal of herbaceous cover in nesting areas (Miller and Eddleman 2000). Terminology in range management texts regarding “ice cream plants”, “decreasers”, “increasers,” and “invaders” acknowledges grazing can result in shifts in the plant community. Pechanec and Stewart (1949) and Ellision (1960) describe long-term vegetation changes due to livestock grazing. The degree of vegetal change is related to the intensity, season of use, and duration of grazing. Cheatgrass increases as more desirable perennial vegetation decrease. Sagebrush, rabbitbrush, and juniper also increase because these species thrive in disturbed sites when competition from herbaceous species is reduced. As a result, native perennial grasses and forbs are less able to regenerate.

Most grazing impacts to sage-grouse nesting are based upon the reduction of herbaceous cover. Research suggests nests with lower herbaceous cover are less successful (Gregg 1991, Connelly et al. 2000a). Residual herbaceous cover will be measured under the shrub canopy at key areas. Key areas are where sage-grouse nesting is known or believed to occur. Site selection criteria for key areas include: distance not closer than 0.2 miles from water, 0.10 miles of salt/supplement locations, and readily available to grazing livestock (slopes less than 30%, no topographic or physical features that prohibit livestock access). Vegetation measurements would be conducted either after the area has been grazed (summer, fall, and winter) or following growth in the spring.

Utilization levels were adopted, rather than stubble height, to address drought impacts because net primary production is less and herbaceous growth may be greatly reduced during drought years. For the evaluation of brood habitat, the interspace (between sagebrush plants) would be monitored. Nesting habitat will be evaluated based on herbaceous cover within a shrub canopy. Utilization, percent of current annual growth, of herbaceous species would be measured at the end of the growing season or when livestock leave the pasture, whichever is later. According to Call and Maser (1985), acceptable use levels on herbaceous species in the shrub interspaces should not exceed 50% on native grasses. However,

Connelly et al. (2000a) indicate greater herbaceous residue is needed to enhance nesting success. Adopting conservative or moderate stocking rates as outlined by Holechek et al. (1998) should allow for proper grazing and maintain adequate residual cover for sage-grouse nesting recommended by Connelly et al. (2000a). Holechek et al. (1999) writes only 30% to 35% use should occur if the goal is to improve range vegetation. Improvement of range vegetation was the first range objective for every MUA in the present Jarbidge RMP. Utilization mapping may also be a useful tool in assessing overall utilization in specific nesting and or brood rearing areas by pasture and or allotment.

Recommendation 1: In order to minimize disturbance of nesting sage-grouse, BLM will work with permittees to alter grazing systems during April and May in critical nesting habitat. Grazing use during this time could be shifted onto seedings or delayed to later in the year for deferred systems. Additional fencing or water developments may be required to shift use to seedings long-term.

Rationale: BLM will work with permit holders to develop grazing systems to keep nesting habitat in a particular allotment from being annually grazed in the spring. This will assure sage-grouse nesting and brood-rearing habitat will receive rest during the nesting season. Recent scientific literature suggests crested wheatgrass seedings are most palatable during the early growing season, whereas they are less palatable than native plants later in the year (Cruz and Ganskopp 1998). Palatability decreases even more if the plants contain a preponderance of dead stems, forcing livestock to increase use on native grasses (Cruz and Ganskopp 1998). Jones (1999) noted crested wheatgrass has low preference in mixed stands of grass.

Responsibility/Timeframe: BLM and the permit holder should design appropriate livestock grazing systems during the permit renewal process to reduce impacts on sage-grouse habitat and still meet the operator's livestock management. Jarbidge Field Office range staff will clearly define grazing systems, with the above recommendations, for permits renewed in 2002 and out years.

Recommendation 2: General residual herbaceous cover for mid-size grasses such as Idaho fescue, bluebunch wheatgrass, and needlegrasses and short grasses such as Sandberg bluegrass and bottlebrush squirreltail will be monitored closely for utilization under the shrub canopy. Utilization on native grasses should not exceed light (40%) use in the interspaces of native range. Light use in the interspaces should leave adequate herbaceous residue for nesting under the shrub canopy. Use levels should not exceed 60% for seeded non-native perennial grasses such as crested wheatgrass and intermediate wheatgrass. This use level may be less if a range health assessment or other monitoring determines there are resource concerns. The limited data for the Jarbidge Field Office suggest sage-grouse are not successful nesting in large blocks of non-sagebrush habitat.

Rationale: Connelly et al. (2000a) provide guidelines for grazing management conducive for sage-grouse and its habitat. Because sage-grouse nest under shrubs, herbaceous cover (residual cover) is of primary interest for nesting habitat. Proper grazing use levels should provide adequate cover in the interspaces in native plant communities.

Responsibility/Timeframe: Sage-grouse nesting and brood habitat will be evaluated during rangeland health assessments during the permit renewal process. Assessments should be completed for all of the allotments by 2008.

Range Projects

Fences and water developments are range projects commonly used to improve livestock distribution. Fences provide additional perching sites for raptors (Connelly et al. 2000a) and cause injury or mortality when sage-grouse fly into fences (Call and Maser 1985). Call and Maser (1985) suggest water developments such as reservoirs and water pipelines are a benefit to sage-grouse. However, pipelines and associated roads can function as conduits for invasive species, habitat fragmentation, and increased use by humans (Trombulak and Frissell 2000, Safford and Harrison 2001).

Recommendation 1: Locating fences near leks, ridge lines, or in swales should be avoided when possible. All new fences should have colored flagging or metal tags tied to the wires between fence posts to make the fence more visible to flying sage-grouse. "T" posts with white tops should be considered to increase the visibility of the fence.

Rationale: Fences are a known source of mortality for sage-grouse (Call and Maser 1985). Tying flagging on the wires of new fences increases the visibility of the fences and should reduce collisions. After a couple years, sage-grouse become aware of the fence and collisions decline. Using white topped fence posts or shiny metal tags would also improve the visibility of fences long term, but may not be suitable in areas with high Visual Resource Management (VRM) values.

Recommendation 2: New water developments such as reservoirs, reservoirs with troughs, or guzzlers should have a fenced storage pond or overflow area of adequate size to benefit sage-grouse. A trough should be run down gradient a few hundred feet to a trough with a float valve at reservoirs. Water should be maintained in the exclosure into September if possible.

Rationale: Water projects enhancing or creating wet areas will improve sage-grouse brood habitat in summer and fall habitats. These areas will provide succulent forbs for sage-grouse at a time when other vegetation has dried out. The water source will also be used by sage-grouse.

Recommendation 3: New pipelines should be routed along existing roads or jeep trails in native plant communities. The disturbed corridor should be seeded to native species in the fall after construction. Seed mixes will be determined based upon existing vegetation. New pipeline routes in existing seedings should avoid patches of native plant communities and to the extent practical follow old roads or jeep trails.

Rationale: Routing new projects along existing disturbed areas reduces the number of disturbance corridors.

Responsibility/Timeframe: BLM should consider adopting these suggestions in 2002. Private landowners may use these suggestions on their private land.

Temporary Non-Renewable (TNR) Grazing.
Under BLM regulations, any permittee can apply for excess herbaceous production in any one year. A number of allotments in the Jarbidge Field Office have been issued extra animal unit month (AUMs) over their regular permitted AUMs because of seedings from large fire rehabilitation projects. These projects have greatly increased the amount of herbaceous vegetation produced annually. One AUM is the amount of forage a cow/calf pair consumes in a month. Some permittees have built up their herds or extended their seasons of use as a result of these seedings. A number of allotments have been granted temporary non-renewable (TNR) AUMs for a decade or longer. In 1996, BLM wrote a NEPA document (Environmental Assessment ID 01-96-073) to qualify the criteria for issuing TNR. The granting of extra grazing AUMs was to be focused primarily on crested wheatgrass seedings. However, the EA had some unexpected ramifications. Some permittees shifted their grazing rotations to use native range early in the season on a regular basis so TNR could be taken on crested wheatgrass seedings later in the year. Permittees were delaying use on seedings as a direct result of the TNR EA, which stated TNR would be granted in areas predominantly seeded to crested wheatgrass in the fall or winter following normal grazing. Permittee's are uncertain about how many AUMs they would be allowed annually under the TNR process.

Recommendation 1: Convert TNR AUMs to permitted use AUMs as appropriate.

Rationale: Converting TNR AUMs to permanent AUMs shifts more livestock use to crested wheatgrass seedings in April and May and reduces use on native plant communities. It would also stabilize the permittee's ranching operation and reduce an annual workload for BLM.

Responsibility/Timeframe: BLM should convert the TNR AUMs, **as appropriate**, when the grazing permits are renewed. BLM should schedule assessments for TNR allotments to occur in the next six years. *Note: The conversion has been completed on two allotments to date.*

Recommendation 2: Allow TNR to be taken on seedings during the spring until the excess herbaceous production conversion occurs to minimize impacts to native range.

Rationale: This would allow permittees to use seedings early in the growing season when crested wheatgrass is more palatable (Cruz and Ganskopp 1998) and minimize the use of native range early in the sage-grouse nesting season.

Responsibility/Timeframe: BLM should adopt this recommendation for the 2008 grazing season.

OFF-HIGHWAY VEHICLES (OHVS)

A number of concerns were discussed by various members of the JSGLWG regarding OHV use. Numerous wildfires in the past seven years have been attributed to OHVs. In at least four instances, fires were caused by catalytic converters in four wheel drive trucks driven off road. At least three fires were started by motor-cycles or four wheelers. Several permittees have reported cut or knocked down fences due to an OHV user lowering or cutting a fence rather than going through an existing gate. A number of hunters have been observed chasing sage-grouse, and other game, cross country with OHVs. Although damage to fences and chasing game is done by a small segment of the OHV riders, it reflects negatively on all sportsmen that enjoy these activities.

Concentrated OHV use has led to a number of trails and portions of hillsides denuded of vegetation. This causes damage to perennial vegetation, damage to cultural sites, adverse impacts to sensitive plant species, and soil loss. OHVs are also a source of spreading noxious weeds into other areas (Schmidt 1989).

Recommendation 1: BLM should encourage less environmentally damaging OHV use on public lands.

Rationale: Unrestricted OHV use is an increasingly important source of resource damage including wildfires, the spread of invasive plant species and noxious weeds, and soil erosion.

Responsibility/Timeframe: BLM will be more closely examining OHV activity on a large scale in the near future. This issue is best specifically analyzed at the time a new land use plan is written. A new land use plan for the Jarbidge Field Office has not been scheduled. However, a resource plan revision is tentatively scheduled for FY2005. *Note: The Jarbidge Field Office is currently writing a new RMP.*

Recommendation 2: Encourage the IDFG Commission to adopt more specific rules regarding the use of OHVs for hunting. The sportsmanship aspect of using OHVs to chase game should be included or emphasized in hunter education programs.

Rationale: Indiscriminate OHV use by hunters damages habitat. Chasing game with an OHV calls into question the sportsmanship of those hunters.

Responsibility/Time Frame: IDFG could make the changes to the hunter education program this fall.

DATA NEEDS

Sage-Grouse Biological Data Needs

Recommendation 1: The Jarbidge Field Office needs better data on seasonal sage-grouse movements and types of populations, migratory or resident, for most of the area. This will require telemetry studies to determine use areas for each geographic area.

Rationale: It is unknown if there are critically important geographical wintering areas in the area other than Brown's Bench. Radio telemetry is the only effective method of determining where sage-grouse attending strutting grounds go throughout the year.

Responsibility/Timeframe: BLM and IDFG will initiate a radio telemetry study using the Challenge Cost Share program in the spring of 2002. Sage-grouse will be trapped at a number of leks to determine where they winter. *Note: Sage-grouse were monitored through the 2002-2005 winter seasons with grant money supplied from the OSC. A preliminary report was written for the 2002-2004 seasons and the final report is in process.*

Recommendation 2: The lek inventory should continue for areas in the central and southern part of the area. Greater emphasis needs to be placed on aerial inventory efforts to cover the area in an efficient manner.

Rationale: BLM, IDFG, and NDOW need to know where sage-grouse leks are to evaluate the potential for habitat protection through fire suppression, habitat restoration, and to assess impacts of future projects.

Responsibility/Timeframe: BLM, IDFG, and NDOW should coordinate aerial survey efforts. A request for funding aerial surveys should be sent to the OSC for work in 2003 and 2004. BLM should also seek add on funding from Washington, DC for the inventory. Aerial surveys for both wintering and spring lek sage-grouse started in 2004 and will continue through the 2007 field season.

Recommendation 3: Existing lek routes should be continued and new lek routes established in certain geographic areas. IDFG enters the submitted data into its state-wide database. New lek routes could be established at the discretion of IDFG as leks are found in other areas. Interested people or groups should be sought to assist with lek monitoring.

Rationale: The data are needed to evaluate long-term sage-grouse population trends and to assess habitat improvement projects and restoration.

Responsibility/Timeframe: The recommendation is ongoing. IDFG should continue coordinating lek route counts with BLM, Shoshone-Paiute Tribes, and other interested groups/individuals to gather lek count data. IDFG should continue to maintain the state-wide lek database. New lek locations and route counts are to be reported to the land management agencies and working groups annually starting the winter of 2002.

Recommendation 4: IDFG should continue to collect harvest data including wing barrels at appropriate locations.

Rationale: Although IDFG has harvest information for the Brown's Bench area and a wing barrel at Lily Grade, little is known about the harvest of sage-grouse over much of the western and northern portions of the Jarbidge Field Office. Long-term harvest data is currently known only for the Brown's Bench area.

Responsibility/Timeframe: IDFG should continue to collect harvest data in the western and northern portion of the area for at least five more years unless seasons are closed.

Recommendation 5: Telephone hunter questionnaires gathering data on sage-grouse harvest should be continued. Data should be compiled and distributed to the public.

Rationale: The current telephone questionnaire provides information about sage-grouse harvest from hunters not passing through check stations. This data includes general geographic location of harvest, number of sage-grouse seen, weather conditions, and number of sage-grouse harvested.

Responsibility/Timeframe: This is an ongoing responsibility of IDFG.

Habitat Mapping of Existing Vegetation Communities to GIS

Recommendation 1: GIS maps with habitats for low/black sagebrush, mountain big sagebrush, Wyoming big sagebrush, and other cover types should be placed into GIS and maps should be prepared. "Condition" of the areas should be included as a way to evaluate sage-grouse habitat quality. Historic vegetation improvements and fire rehabilitation projects should be mapped. Seedings need to be evaluated to determine if they were successful or not and native plant components should be examined.

Rationale: GIS mapping is an important tool for information on target fire suppression, historic crested wheatgrass seedings, past wildfires, and potential future restoration projects.

Responsibility/Timeframe: Mapping existing habitats and its condition should be a high priority for BLM. Condition can be evaluated to some degree during the range health assessment process. BLM should start collecting the data in 2002 and out years and seek funding for seasonal positions for mapping and ground truthing. Where possible, communities should be mapped using a geographical positioning system (GPS) for inclusion into a vegetative data base. The data would also be useful for fire suppression (fuel loads) and fire rehabilitation.

RESEARCH NEEDS

The following were the major categories of future sage-grouse research that were identified.

Recommendation 1: Research should be conducted on patch size used by sage-grouse in fragmented habitats. This would include distance between patches, size of patches, function as winter habitat, and function as nesting/brood habitat. A comparison of survival and nesting success to more continuous habitat needs to be completed to determine if sagebrush islands function as population sinks or sources.

Rationale: Preliminary data suggest smaller patches of sagebrush may act as population sinks. Knowledge of the size of patch in which this phenomenon occurs if it occurs would be useful for potential restoration.

Recommendation 2: Research should be conducted to compare predation on sage-grouse nests, young, and adults between fragmented and non-fragmented habitats.

Rationale: Predators are assumed to more efficiently hunt smaller, isolated areas or islands of habitat compared to large continuous blocks. If true, predator control may be appropriate in areas where restoration efforts are underway in fragmented habitat.

Recommendation 3: The possibility of crested wheatgrass seedings as sage-grouse habitat should be evaluated to discover the degree of sagebrush shrub invasion and the extent native and/or exotic forbs are needed to make good quality habitat for sage-grouse in crested wheatgrass seedings.

Rationale: The present Jarbidge RMP calls for the maintenance of vegetative improvements. However, some degree of sagebrush and forbs are necessary for sage-grouse habitat. Research on this topic would allow the development of criteria for the level the forb and shrub components in seedings used by sage-grouse. This may also relate to the potential restoration of existing seedings to improve habitat for sage-grouse.

Recommendation 4: Forbs should be evaluated to determine which species can be planted within seedings to maintain themselves and provide for sage-grouse needs.

Rationale: Many of the upland assessments in crested wheatgrass seedings show they are lacking in perennial native forbs. This, along with a lack of shrub cover, may explain why sage-grouse are not successful using seedings as nesting and brood-rearing habitat, particularly in the lower precipitation zones. Native plant species such as daisy (*Erigeron* sp.), hawksbeard (*Crepis* sp.), milkvetch (*Astragalus* sp.), pussy-toes (*Antennaria* sp.), and other forb species are used by sage-grouse, but seed is not available for large plantings. Technology for successful seed production, propagation, and establishment of these forb species and shrubs (low sagebrush, winterfat, spiny hopsage) is essential to make restoration adequate for sage-grouse.

Recommendation 5: Research is needed to evaluate the role of alternative prey abundance on sage-grouse predation.

Rationale: There are areas with low or non-existent ground squirrel and jackrabbit numbers in the Jarbidge Field Office. Prey densities appear to be lower within seedings and in adjacent shrub islands. Jackrabbit numbers have been depressed for the past 15+ years, with only a slight increase in the early 1990's. Golden eagles and coyotes are known to consume large amounts of both prey species when available. It is not known if low numbers of mammalian prey increase predation on sage-grouse.

Recommendation 6: Research is needed to evaluate the impact of spring grazing on sage-grouse.

Rationale: Current scientific literature implicates livestock grazing as impacting sage-grouse nesting by reducing herbaceous cover around nest sites. Anecdotal observations suggest livestock grazing in the spring can flush hens from nests and result in the desertion of nests. There is no data as to whether this is a significant impact to the population.

Responsibility/Timeframe: BLM, Shoshone -Paiute Tribes, and IDFG should coordinate with universities to get data on specific research topics. There is a study being conducted currently by the University of Idaho to evaluate fragmented habitat. The project is to be completed by 2004.

Recommendation 7: Research is needed to improve seed planting technology to end discing while drill seeding and minimize discing impacts. Disced furrows may vary from 1 to 5 inches deep.

Rationale: Rangeland drills are fitted with discs which partially turn up the soil to plant seed. Discing damages root systems, bulbs of native plants, and harms the microbiotic soil crusts. Microbiotic soil crusts play an important role in nutrient cycling, water infiltration and moisture retention, reducing soil erosion, and slowing the invasion of exotic annual grasses (Belnap 1999, Belnap et al. 2001). Discing causes additional disturbance to the soil and roots following fire and contributes to greater wind erosion. Minimum or no till equipment would reduce soil disturbances and allow greater control over the depth the seed is planted.

Responsibility/Timeframe: An experimental range drill, Truax, was developed and tried by BLM which seems to address this issue. BLM should seek restoration and fire funding to acquire a number of these new drills. The target date for new equipment should be 2003 to 2008. *Note: Depth bands have been installed on some of the existing rangeland drills to better control the depth that discs penetrate the soil. Depth bands reduce some of the damaged to plants and soil surface from drill seeding.*

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Appendix A. List of allotment names and numbers in each sage-grouse planning unit.

Allotment Name	Allotment Number
Area A: Browns Bench	
Antelope Springs AMP	1096
Bear Creek	1026
Brackett Bench AMP	1008
Cedar Creek	1131
China Creek	1025
North Fork Field	1088
Player Butte	1047
Player Canyon	1027
Area B: Devil Creek	
Buckflat AMP	1122
Camas Slough	1095
Cedar Butte No. 9	1085
Cedar Butte No. 10	1007
Cedar Butte/Devil Creek	1002
Cedar Butte East	1001
Cedar Canyon	1013
Cedar Creek Canyon	1023
Cedar Crossing Seeding	1022
Conover	1013
Coonskin AMP	1123
Devil Creek/Balanced Rock	1133
East Juniper Draw	1132
East Roseworth Point	1061
East West Deadwood Trap	1020
Grassy Hills AMP	1121
Grassy Hills	1029
Grassy Windmill	1134
Guerry Patrick	1094
Horse Butte AMP	1120
House Creek CRMP	1042
Kinyon	1046
Little Grassy/Deadwood	1017
Little House FFR	1093
Noh Field	1140
Pigtail	1125
Roseworth Point	1014
Roseworth Tracts	1009
Signal Butte	1092
South Crows Nest	1135

Allotment Name	Allotment Number
South Deadwood	1086
South Roseworth	1151
Three Creek/Devil Creek	1076
Turner/Cedar Butte	1000
Area C: Diamond A	
Black Rock Pocket	1102
Bruneau Canyon	1100
Diamond A	1021
Taylor Pocket	1077
Wilkins Island	1084
Area D: Inside Desert	
Crawfish	1118
Deadwood Pocket	1067
Juniper Butte	1119
Juniper Draw	1138
Juniper Ranch AMP	1031
North Antelope Butte	1087
Poison Creek West	1050
Poison Creek East	1051
Seventy One Desert	1099
Three Creek No. 8	1071
Three Creek No. 8 Pvt	1066
Three Creek No. 8	1075
Three Creek No. 8	1070
Winter Camp	1064
Area E: North	
Black Mesa	1080
Blue Butte	1149
Brown's Gulch	1053
Bruneau Arm	1052
Bruneau Hill	1057
Cheatgrass	1069
Clover Crossing	1136
Dove Springs	1146
Echo/Jewett	1052
Echo Group	1149
Flat Iron	1060
Flat Top	1059
Grindstone	1062
Hagerman Group	1150
Hallelujah	1149
Kubic	1147
Little Three Island	1074
Lower Salmon Falls	1141

Allotment Name	Allotment Number
Lower Saylor Creek	1055
Magic Waters	1056
North Balanced Rock	1139
Notch Butte	1144
Saylor Creek/North Three Island	1078
River Bridge	1072
Thompson	1079
Three Island	1073
Thousand Springs	1142
Twin Buttes	1145
West Saylor Creek	1137
Yahoo	1143
Names and numbers are current as of December 01, 2001.	

Appendix B: Potential Sites for Fire Danger Signs

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

These are primary access routes for the public into the Jarbidge Field Office. Presently, the only fire danger sign in the area is located along the Rogerson Highway east of Salmon Falls Creek Dam. The signs would list the current fire danger as low, moderate, or high and the phone number of the nearest dispatch for reporting wild fires.

Area	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
Lily Grade	T11S, R13E, Section 25 NW¼ of SE¼	Ongoing	BLM	$500.00	2005
Balanced Rock Crossing	T10S, R13E, Section 30 SE¼ of SW¼	Ongoing	BLM	$500.00	2005
Magic Waters Road	T08S, R14E, Section 30 SE¼ of SW¼	Ongoing	BLM	$500.00	2005
Bliss Bridge	T06S, R12E, Section 12 SE¼ of SE¼	Ongoing	BLM	$500.00	2005
Loveridge Bridge[1]	T06S, R06E, Section 34 NW¼	Ongoing	BLM	$500.00	2005

Area	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	of NW¼				
Indian Cove Bridge	T05S, R08E, Section 33 SW ¼ of SW ¼	Ongoing	BLM	$500.00	2005
Rosevear Gulch Road	T06S, R10E, Section 05 SE¼ of NW¼	Ongoing	BLM	$500.00	2005
Grindstone Farms Road	T05S, R09E, Section 34 SW¼ of SE¼	Ongoing	BLM	$500.00	2005
Pasadena Valley Road	T05S, R10E, Section 26 SE¼ of NW¼	Ongoing	BLM	$500.00	2005
Crows Nest Road	T08S, R13E, Section 02 SW¼ of SW¼	Ongoing	BLM	$500.00	2005
[1] A location south of Mountain Home but north of the Snake River site on BLM lands could be substituted for this site.					

Appendix C: Potential Sites for Trough Placement Below Existing Reservoirs

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

Reservoirs would be fenced with an adequate exclosure and rehabilitated to desirable vegetation. The trough would provide livestock clean water from the existing pond.

Reservoir Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
Nevada					
Upper Coyote Spring	T47N, R60E, Section 15 NW of NE	Ongoing	BLM	$4,500	2007
	T47N, R60E, Section 03 SW of SE	Ongoing	BLM	$4,500	2007
	T47N, R59E, Section 05 NW of SE	Ongoing	BLM	$4,500	2007
	T47N, R59E, Section 14 NW of SW	Ongoing	BLM	$4,500	2007
	T47N, R59E, Section 08 SE of NE	Ongoing	BLM	$4,500	2007
	R47N, R58E, Section 13 SE of SE	Ongoing	BLM	$4,500	2007

Reservoir Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	R47N, R58E, Section 02 SE of NE	Ongoing	BLM	$4,500	2007
Barrel Spring	R47N, R56E, Section 14 NW of SE	Ongoing	BLM	$4,500	2007
Idaho					
Player Butte Pond/Spring	T16S, R14E, Section 26 NW of NW	Ongoing	BLM	$4,500	2007
	T15S, R14E, Section 23 NW of SW	Ongoing	BLM	$4,500	2007
	T15S, R14E, Section 26 NE of SW	Ongoing	BLM	$4,500	2007
Grassy Hills #2	T15S, R12E, Section 05	Ongoing	BLM	$4,500	2008
Grassy Hills #3	T15S, R12E, Section 08	Ongoing	BLM	$4,500	2008
	T14S, R12E, Section 28 NW of NW	Ongoing	BLM	$4,500	2008
Horse Pond	T14S, R12E, Section 22 NE of NW	Ongoing	JSGLWG/BLM	$2,600	12/2003
	T14S, R12E, Section 19 SW of NE	Ongoing	BLM	$4,500	2006
	T14S, R12E, Section 17 SE of NE	Ongoing	BLM	$4,500	2007

Reservoir Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	T14S, R12E, Section 18 NE of SW	Ongoing	BLM	$4,500	2008
	T14S, R12E, Section 07 NE of NW	Ongoing	BLM	$4,500	2008
Worley Draw Ponds	T14S, R12E, Section 25 NW of NW	Ongoing	BLM	$4,500	2007
Worley Ditch Pond	T14S, R12E, Section 34 SE of SW	Ongoing	BLM	$4,500	2008
Johns Pond	T15S, R13E, Section 28 SW of NW	Complete	JSGLWG	$2,400	06/2004
Rollie's Pond	T15S, R11E, Section 24 SE of SE	Ongoing	BLM	$4,500	2008
Little House Creek Pond	T15S, R12E, Section 35 SE of SE	Ongoing	BLM	$4,500	2009
Middle Fork Pond	T15S, R12E Section 34 SW of SE	Ongoing	BLM	$4,500	2008
Mud Flat Draw Pond	T16S, R12E, Section 05 NE of SW	Ongoing	BLM	$4,500	2008
Mud Flat Hill Spring	T15S, R12E, Section 31 NW of NE	Ongoing	BLM	$4,500	2008
Unnamed Pond	T16S, R12E, Section 05	Ongoing	BLM	$4,500	2005

Reservoir Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	SW of SE				
Upper 71 Draw Pond	T14S, R11E, Section 26 NE of SW	Ongoing	BLM	$4,500	2007
Shirk Reservoir	T14S, R11E, Section 02 NW of NW	Ongoing	BLM	$4,500	2008
Poison Creek Ponds	T14S, R09E, Section 35 NE of SE	Ongoing	BLM	$4,500	2008
Little Spring Creek Reservoir	T16S, R10E, Section 01 SE of NE	Ongoing	BLM	$4,500	2005
Gardner Spring	T16S, R08E, Section 30 NW of NE	Ongoing	BLM	$4,500	2009
Aiker's Reservoir	T13S, R11E, Section 23 NW of NW	Ongoing	BLM	$4,500	2008
Aiker's Draw Pond	T12S, R11E, Section 31 NE of NE	Ongoing	BLM	$4,500	2008
Juniper Lake	T13S, R10E, Section 33 SW of NW	Ongoing	BLM	$4,500	2009
Buck Flat Draw Pond	T12S, R10E, Section 06 SE of NE	Ongoing	BLM	$4,500	2009

Appendix D: Potential Sites Where Reservoirs Could be Installed or Reconstructed to Create Wetlands/Wet Meadow

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

Reservoir Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
Brown's Bench	T16S, R14E, Section 27, Lot 3	Ongoing	BLM	$5,000	2007
Unnamed Spring	T16S, R14E, Section 28	Ongoing	BLM	$5,000	2007
Camas Slough	T14S, R12E, Section 33	Ongoing	BLM	$5,000	2007
Devil Creek	T14S, R12E, Section 27	Ongoing	BLM	$5,000	2008
Unnamed Draw	T14S, R13E, Section 26 SE of SW	Ongoing	BLM	$5,000	2007
Indian Jim Draw	T14S, R13E, Section 27 SE	Ongoing	BLM	$5,000	2008
Unnamed Draw	T14S, R12E, Section 21 NW of SW	Ongoing	BLM	$5,000	2008
Camas Slough Draw	T14S, R12E, Section 33 SW of NW	Ongoing	BLM	$5,000	2008
Unnamed Draw	T16S, R12E, Section 06 SW of NE	Ongoing	BLM	$5,000	2008
Unnamed Draw	T16S, R09E, Section 30 NE of SE	Ongoing	BLM	$5,000	2008

Appendix E: Potential Wetlands/Wet Meadows to Receive Additional Fencing

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
Nevada					
Spring	T47N, R60E, Section 10 SE of SW	Ongoing	BLM	$3,000	2008
Chicken Spring	T47N, R60E, Section 09 SE of SE	Ongoing	BLM	$3,000	2007
Spring	T47N, R60E, Section 09 NE of NW	Ongoing	BLM	$3,000	2007
Dry Lake	T47N, R58E, Section 05 NW of NW	Ongoing	BLM	$3,000	2008
Playa	T47N, R57E, Section 06 SW of NW	Ongoing	BLM	$3,000	2008
Spring	T47N,	Ongoing	BLM	$3,000	2009

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	R57E, Section 07 SW of SW				
Idaho					
Box Spring	T14S, R14E, Section 33 SE of SE	Ongoing	BLM	$3,000	2007
Tank Spring	T14S, R14E, Section 34 NW of SW	Ongoing	BLM	$3,000	2008
Black Canyon Spring	T15S, R14E, Section 04 SW of SW	Ongoing	BLM	$3,000	2008
Unnamed Spring	T16S, R14E, Section 20 SE of NE	Ongoing	BLM	$3,000	2007
Unnamed Springs	T16S, R14E, Section 20 SE of NE	Ongoing	BLM	$3,000	2009
Unnamed Spring	T16S, R14E, Section 17 NE of NE	Ongoing	BLM	$3,000	2009
Unnamed Spring	T16S, R14E, Section 09 SE of NW	Ongoing	BLM	$3,000	2008
Black Canyon Pond	T15S, R14E, Section	Complete	JSGLWG/BLM	$3,200	04/2004

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	20 NW of NE				
Lower Monument Spring	T15S, R14E, Section 19 NE of NW	Ongoing	BLM	$3,000	2009
Worley Ditch	T14S, R12E, Section 34	Complete	JSGLWG/BLM	$1,660	12/2003
Bengeochea Crossing	T14S, R12E, Section 33	Complete	JSGLWG/BLM	$2,800	12/2003
Sage Hen Spring	T14S, R13E, Section 24 SW of NW	Ongoing	BLM	$3,000	2005
Whiskey Slough Pond	T14S, R14E, Section 24 NW of NW	Ongoing	BLM	$3,000	2008
Unnamed Pond	T15S, R14E, Section 11 SE of SW	Ongoing	BLM	$3,000	2008
Unnamed Spring	T16S, R13E, Section 29 NW of SE	Ongoing	BLM	$3,000	2009
Unnamed Spring	T16S, R12, E, Section 24 SE of SE	Ongoing	BLM	$3,000	2009
Lily Spring	T15S, R13E, Section	Ongoing	BLM	$3,000	2009

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	12 NW of NW				
Mosquito Lake Reservoir	T14S, R10E, Section 09 SE of SE	Complete	JSGLWG/BLM	$1,650	03/2004
Upper Juniper Draw Ponds	T14S, R10E, Section 22 SW of SW	Ongoing	BLM	$3,000	2010
Rattlesnake Draw Reservoir	T14S, R09E, Section 13 SW of SE	Complete	JSGLWG/BLM	$2,000	03/2004
Poison Creek Pond	T15S, R09E, Section 12 SE of NW	Ongoing	BLM	$3,000	2009
Poison Creek Pond	T15S, R10E, Section 07 NW of SW	Ongoing	BLM	$3,000	2009
Little Spring Creek	T16S, R10E, Section 13 NW of NE	Ongoing	BLM	$3,000	2009
Crawfish	T15S, R10E, Section 14 SW of NE	Ongoing	BLM	$3,000	2006
Poison Creek Reservoir	T16S, R10E, Section 17 NW of SE	Complete	BLM	$1,450	03/2004
Upper	T16S,	Ongoing	BLM	$3,000	2010

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
Poison Creek Pond	R10E, Section 29 NE of NE				
Unnamed Pond	T16S, R10E, Section 21 SE of SE	Ongoing	BLM	$3,000	2010
Unnamed Spring	T16S, R10E, Section 20 SE of SE	Ongoing	BLM	$3,000	2010
Cougar Creek Wetland	T16S, R07E, Section 13 NW of SE	Ongoing	BLM	$3,000	2008
Lake Pit Pond	T14S, R09E, Section 28 SW of NW	Ongoing	BLM	$3,000	2010
Valley Waterhole	T13S, R09E, Section 31 SE of NE	Ongoing	BLM	$3,000	2010
Felix Reservoir	T12S, R11E, Section 05 SE of NE	Ongoing	BLM	$3,000	2009
Sailor Creek Lake	T11S, R11E, Section 27 NW of NE	Ongoing	BLM	$3,000	2010
Unnamed Pond	T11S, R11E, Section 08 NW	Ongoing	BLM	$3,000	2010

Name	Legal Description	Status	Responsibility	Cost Estimate	Completion Date
	of SW				
Buck Flat Draw Ponds	T12S, R10E, Section 15 SW	Ongoing	BLM	$3,000	2011
Unnamed Pond	T12S, R10E, Section 10 SW of NE	Ongoing	BLM	$3,000	2010
Cedar Flat Pond	T15S, R63E, Section 08 NW of SW	Complete	JSGLWG/ Private	$1,335	07/2004
Pond Behind House	T12E, R13E, Section 36	Complete	JSGLWG/ Private	$3,518	01/2004
Wilkins Island Pond	T16S, R9E, Section 27	Complete	JSGLWG/ Private	$1,250	03/2004

Appendix F: Rabbitbrush Areas Warranting Evaluation for Treatment

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

Rabbitbrush is the dominant shrub species in the areas under consideration. Actual costs may vary from projected costs depending upon clearances, forb understory, and density of rabbitbrush.

Name	Legal Description	Size	Status	Responsibility	Cost Estimate	Completion Date
Vosburg Place	T14S, R14E, Section 28	300 Acres	Ongoing	BLM	$28,500	2010
Cedar Canyon	T13S, R14E, Sections 9, 10, 15, 22	600 Acres	Ongoing	BLM	$57,000	2009
Devil Creek	T15S, R12E, Sections 20, 21, 22	640 Acres	Ongoing	BLM	$60,800	2008
Juniper Butte	T13S, R09E, Sections 29, 30, 31, 32	1800 Acres	Ongoing	BLM	$171,000	2011
Buckflat Draw	T12S, R10E, Sections 34,	1,800 Acres	Ongoing	BLM	$171,000	2010

Name	Legal Description	Size	Status	Responsibility	Cost Estimate	Completion Date
	35; T13S, R10E, Sections 2, 3, 11					
Aiker's Draw	T12S, R11E, Sections 28, 29, 30, 31, 32	2,000 Acres	Ongoing	BLM	$190,000	2011
Horse Butte	T11S, R11E, Section 31; T12S, R10E, Section 1; T12S, R11E, Sections 5, 6, 7, 18	2,400 Acres	Ongoing	BLM	$228,000	2008
Halogeton	T16S, R10E, Sections 20, 29	600 Acres	Ongoing	BLM	$57,000	2012
North Cowan Reservoir	T15S, R09E, Sections 18, 19, 30	700 Acres	Ongoing	BLM	$66,500	2009

Appendix G: Areas for Evaluation for Sagebrush Interseeding/ Restoration

The following table identifies potential projects. The general project areas will require specific evaluation to determine if they are suitable for treatment, consultation, coordination, and cooperation with permittees and interested publics, and environmental analysis. There is no specific priority assigned to categories of projects or projects within categories. Listed acres are only estimates. The actual acreage in treatment areas and locations will be finalized during the environmental analysis. A variety of funding sources will be sought. Great Basin Restoration Initiative, Hazardous Fuels Reduction, OSC, and 8100 monies are possible funding sources to implement various projects.

Actual costs may change pending new information such as seed cost, seed availability, and clearances and some projects may not be done if BLM does not get permitte cooperation.

Although sage-grouse still are present in the area, wildfires since the 1980s have fragmented sage-grouse habitat. Subsequent fire rehabilitation converted large portions of the areas to exotic perennial grass seedings, however, residual native grasses and forbs persist in many cases. Treatments to establish sagebrush and forbs would be designed in mosaics with irregular shapes. The following list of project areas was complied in 2002 and should not be considered a comprehensive list of all possible projects due to recent fires since 2002. The JSGLWG expects BLM to work very closely with permittes so **no unnecessary financial burden** is placed on any one person. *Note: **Not** all of the area within listed sections would be treated. Actual cost may vary from projected cost due to forb understory, clearances, and seed availability.*

Name	Legal Description	Size	Status	Responsibility	Cost Estimate [1]	Completion Date
Lookout Butte	T10S, R08E, Sections 28, 29, 32, 33, 34	3,000 Acres	Ongoing	BLM	$135,000	2008
Lookout Point/Long Draw	T13S, R07E, Sections 17, 20, 21, 29	1,500 Acres	Ongoing	BLM	$67,500	2010
Camp Butte	T13S, R09E, Sections 4, 5, 6, 7, 8,	11,000 Acres	Ongoing	BLM	$495,000	2009

Name	Legal Description	Size	Status	Responsibility	Cost Estimate [1]	Completion Date
	9, 14, 15, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32, 33, 34					
Clover Butte SW	T12S, R09E, Sections 19, 20, 21, 28, 29, 30, 31, 32, 33, 34	5,000 Acres	Ongoing	BLM	$225,000	2010
Inside Desert	T12S, R08E, Sections 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35	11,000 Acres	Ongoing	BLM	$495,000	2011
Mosquito Lake Butte	T14S, R10E, Sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 17, 18, 19, 20,	9,000 Acres	Ongoing	BLM	$405,000	2010

Name	Legal Description	Size	Status	Responsibility	Cost Estimate [1]	Completion Date
	21, 22, 27, 28, 29, 32, 33, 34					
Middle Butte	T14S, R09E, Sections 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29, 33, 34, 35	6,000 Acres	Ongoing	BLM	$270,000	2010
Poison Butte	T15S, R08E, Sections 1, 2	500 Acres	Ongoing	BLM	$22,500	2011
Cedar Creek Reservoir	T14S, R13E, Sections 1, 2, 3, 4, 9, 10, 11, 12, 14, 15; T14S, R14E, Sections 6, 7, 8, 9, 17, 18, 20, 28, 29, 30	10,000 Acres	Ongoing	BLM	$450,000	2012
Horse Butte	T11S, R11E, Section 21; T12S, R11E, Sections 6, 7,	1,400 Acres	Ongoing	BLM	$63,000	2009

Name	Legal Description	Size	Status	Responsibility	Cost Estimate [1]	Completion Date
	18					
Bruneau Desert	T10S, R09E, Sections 4, 5, 6, 7, 8, 9, 10, 15, 17, 18, 19, 20, 21, 22, 23, 26, 28, 29, 30, 31, 32, 33, 34	11,000 Acres	Ongoing	BLM	$495,000	2010
Estimated Total					$3,123,000	
[1]Cost estimate @$45.00 per acre for seed, planting and NEPA						

Appendix H: Areas for Evaluation for Dixie Harrow Treatments

Appendix I: Cooperative Agreement Form

Form
4120-6
(April
1992)

FORM APPROVED
OMB NO. 1004-0068
Expires: March 31, 1995

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

COOPERATIVE AGREEMENT
FOR RANGE IMPROVEMENTS

Project Number(s)

INSTRUCTIONS - Cooperator(s) to receive original, and one copy each to the District case or lease file and District project file.

Project Name(s)

1. I, (We) of ,

of ,

of ,

and of ,

hereinafter called cooperator(s) and the United States of America, by the Bureau of Land Management, hereinafter called the Bureau, for and in consideration of the mutual benefits hereunder, and in accordance with the Taylor Grazing Act (43 U.S.C. 315, 315a-r), as amended, the National Soil Conservation Act (16 U.S.C. 590a-q(1)), as amended, the Federal Land Policy and Management Act (43 U.S.C. 1701, et seq.), and the Public Rangelands Improvement Act (43 U.S.C. 1904) do enter into this cooperative agreement for the construction and/or maintenance of range improvements, installation of conservation works or establishment of conservation practices, hereinafter referred to collectively as improvements, for the benefit of the public lands and of the cooperator(s).

2. The improvements known as the

___ will be ___ are located upon: ¼, Sec(s). , T. , R. ,
Meridian, County of , State of .

3. IT IS MUTUALLY AGREED:
(a) The parties hereto will furnish labor, materials and equipment as required, the total cost or value not to exceed the amount listed below for each of the parties respectively for the initial construction and/or installation of the improvements indicated in paragraph 2.

BUREAU OF LAND MANAGEMENT		

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any

(Continued on reverse)

(b) Upon notice from the authorized officer for the Bureau, cooperator(s) will promptly supply labor, materials, and equipment as specified in paragraph 3(a) as required. Contributed materials in excess of the amount required shall be returned to the contributor. Equipment contributed shall be returned promptly following completion of the work. Work will be conducted under the supervision and direction of the authorized officer and shall be pursued with diligence until completed.

4 (a) The cooperator(s) shall be liable, jointly and severally, for the repair and maintenance of the improvements following completion, in good and serviceable condition. The cooperator(s), without further notice from the authorized officer shall do the necessary work promptly. If work is not performed as necessary, the authorized officer shall notify the cooperator(s) an specify a period within which to complete the work as required.

(b) In event the cooperator(s) default in the repair and maintenance of the improvements the authorized office may do or cause such work to be done for and in behalf of the cooperator(s); and the necessary cost and expense thereof shall become a change and obligation upon and shall be paid by the cooperator(s). It is further understood in case of default that any grazing permit or lease may be cancelled and may not be renewed or extended or any transfer of grazing preference may not be approved unless and until all charges and costs owed by the cooperator(s) hereunder shall have been paid; and provided that the Bureau may pursue such other remedies, legal or administrative, as may be authorized.

(c) Repair and maintenance, as herein required, shall mean normal upkeep and maintenance necessary to preserve, protect, and prolong the useful life of the improvements, but shall not include major repairs where the damage is due to floods, earthquakes, or other acts of God, or fire not the result of fault or negligence of the cooperator(s) as determined by the authorized officer.

5. IT IS FURTHER AGREED:

(a) This agreement does not convey right, title, or interest in any lands or resources held by the United States.

(b) Title to nonstructural or nonremovable improvements authorized by this agreement shall be in the United States of America.

(c) Title to permanent range improvement(s) specified in Section 2 of this cooperative agreement shall be in the United States. The improvements may be removed, in whole or in part, during the term of this agreement or any extension thereof, by mutual consent of the parties or by direction of the authorized officer; such removal shall be made by the cooperator(s), or by the Bureau at its option. During the course of salvaging material, the United States assumes no responsibility for the protection or preservation of said material. Upon removal of the improvements, any salvageable materials, after deducting an amount to compensate for the actual cost of removal, shall be available for distribution to the parties then subject to this agreement in proportion to the actual amount of their respective contributions to the initial construction of the improvements. The parties shall take possession and remove their portion of the salvaged materials within one hundred and eighty (180) days after first notification in writing that such material is available; upon failure to do so within the time allowed, the materials shall be deemed to have been abandoned and title thereto shall thereupon vest in the United States.

(d) In the event lands containing improvements described under (a) or (b) above are devoted to another public purpose which precludes grazing, including disposal, the cooperator(s) shall be entitled to reasonable compensation for the adjusted value of the cooperator's interest to the improvements.

6. If the cooperator(s) shall assign or transfer the grazing preference embracing the lands upon which the improvements are constructed or in connection with which they are used, the cooperator(s) shall include in such assignment or transfer his interest in this Cooperative Agreement. Before the assignee or transferee will be recognized as successor to the cooperator(s)'s interest hereunder, such assignee or transferee will be required by the authorized officer to accept an assignment of this agreement and agree to be bound by the provisions respecting the use and maintenance of the improvements.

7. The cooperator(s) use of the improvements will be in conformance with any special conditions, the grazing permit(s) or lease(s), and regulations of the Secretary of the Interior.

8. This agreement shall not accord to cooperator(s) any preference, privilege, or consideration with respect to any grazing permit or lease not expressly provided herein or in the rules and regulations governing such grazing permit or lease.

9. Items 2, 3, and 4(a) of this agreement may be modified or cancelled by written agreement of the parties, which agreement shall become a part hereof.

10. This agreement is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the nondiscrimination clauses. A copy of this order may be obtained from the authorized officer.

11. This agreement shall remain in effect indefinitely from date of signature unless (1) otherwise designated under item 12. **Special Conditions**, or (2) terminated by mutual written consent of parties, or (3) terminated by the authorized officer after notice in writing because of the cooperator(s) default or violation, or (4) terminated by the authorized officer after notice in writing because the improvements are not compatible with adopted land use plans, or (5) terminated, renegotiated, or modified by the authorized officer following consultation with the parties involved, as a result of changes in law, regulation, or national BLM policy.

12. Special Conditions

COOPERATOR(s) THE UNITED STATES OF AMERICA

State of

(Signature) (Date)

District

(Signature) (Date)

By

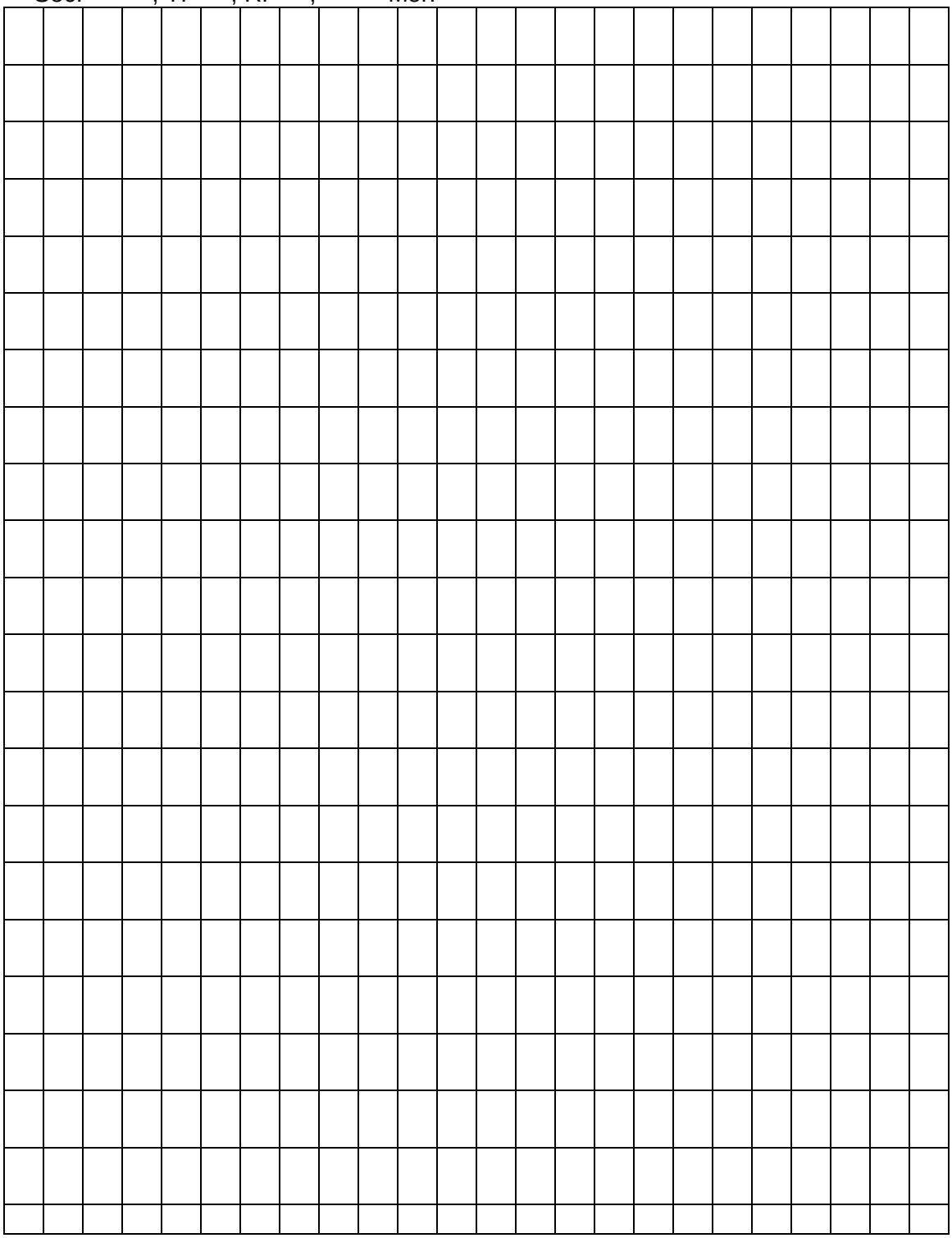
(Signature) (Date) (Signature)

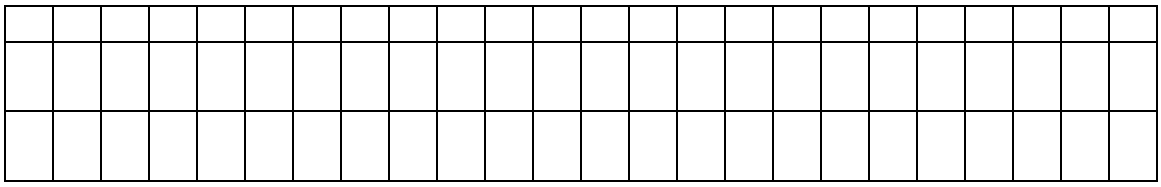
(Signature) (Date) (Title)

(Signature) (Date) (Date)

LOCATION PLAT

Sec. , T. , R. , Mer.





Scale: inches equals one mile

NOTICE
The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 43 U.S.C. 315, 3215a-r; 43 U.S.C. 1701; 43 U.S.C. 1904.

PRINCIPAL PURPOSE: The information is to be used to authorize and document participation for constructions, use and maintenance of range improvements.

ROUTINE USES: (1) Identify applicants share or interest in an improvement placed on Public Lands. (2) Documentation for public information in support of notations made on land status records for the management, disposal, and use of public lands and resources. (3) Transfer to the appropriate Federal agencies when concurrence is required prior to granting a permit to use public lands. (4) Transfer to the U.S. Department of Justice in the event of litigation involving the records or the subject matter of the records. (5) Transfer, in the even there is indicated a violation or potential violation of a statute, regulation, rule, order, permit, lease, or agreement whether civil, criminal or regulatory in nature, to the appropriate agency or agencies, whether Federal, State, local or foreign, charged with the responsibility of investigation or prosecuting such violation or charged with enforcing or implementing the statue, rule, regulation, rule, order, permit, lease, or agreement violated or potentially violated.

EFFECT OF NOT PROVIDING INFORMATION: If you do not file this application and furnish the requested information, you will not be authorized to place improvements on the public lands. If the improvement is placed without proper authorization, you will be liable for damages and immediate removal of the facility.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) requires us to inform you that:

Information is being collected to develop a cooperative agreement for the construction, use, and maintenance of range improvements on its public land.

Information will be used to document the specific pariticipation of each cooperator on the range improvement(s) to be accomplished under the cooperative agreement. By signature, each cooperator agrees to participate in the manner specifically described in the agreement.

Public reporting burden for this form is estimated to average 10 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing

and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Alternate) Bureau Clearance Office, (WO-771), 18 and C Streets, N.W., Washington, D.C. 20240 and the Office of Management and Budget, Paperwork Reduction Project (1004-0068), Washington, D.C. 20503.

Appendix I. BLM Implementation Schedule.

Fire

Install fire stand pipes/hydrants along existing pipelines	2008-2010
Fire station at Juniper Butte fully functional	Active 2005
Up grade of slurry tanker base in Twin Falls	Unknown
Install fire danger signs	2008-2010
Fuel moisture monitoring	Started in 2002
Fire Closures	As needed
Red flag web site/public service announcement	2008

Fire Rehabilitation

Use ID teams for fire rehab site visits and plan including permit holder and others	Started 2001
Rewrite JFO Fire Rehab Plan draft to be completed	2008

Fuels Reduction

NEPA for projects to be started	2008 and out years

Noxious Weeds

Meeting with county weed boards	On going
Set internal weed control priorities for Jarbidge Field Office	2008 and out years
Adapt some fire equipment for noxious weed control	2008 and out years

Habitat Restoration

Wet meadow improvement/restoration	2003-2010
Dam Reconstruction for wet meadows	2008-2011
Wetland Creation from developed springs & pipelines	2009-2012
Rabbitbrush treatment	2008-2015
Restoration/Interseeding shrubs and forbs	2008 and out years

Range Recommendations

Recommendations for new range projects	2008
Adopt TNR recommendation for early use on seedings	??
Conversion of excess forage as appropriate	??

Data Needs

Sage-grouse population monitoring (BLM, IDF&G)	On going
Sage-grouse harvest data (IDF&G)	Ongoing
Winter use areas to be identified by 2007	In Progress
Aerial lek inventory to be completed by 2006	Started 2004
Habitat type and condition mapping to be completed by 2010	2010 and out years