

**BLM IDAHO POST-FIRE RECOVERY PLAN  
EMERGENCY STABILIZATION AND BURNED AREA REHABILITATION  
2012 PLAN**

**CAVE CANYON FIRE**

**BLM/TWIN FALLS DISTRICT/BURLEY FIELD OFFICE  
IDAHO STATE OFFICE**

**FIRE BACKGROUND INFORMATION**

<b>Fire Name</b>	Cave Canyon
<b>Fire Number</b>	G4ZV
<b>District/Field Office</b>	Twin Falls/Burley
<b>Admin Number</b>	LLIDT02000
<b>State</b>	Idaho
<b>County(s)</b>	Cassia
<b>Ignition Date/Cause</b>	8/5/2012/Lightning
<b>Date Contained</b>	8/19/2012
<b>Jurisdiction</b>	<i>Acres</i>
<b>BLM</b>	27,948
<b>State</b>	2,383
<b>Private</b>	2,384
<b>Other</b>	USFS – 56,235
<b>Total Acres</b>	88,950
<b>Total Costs</b>	\$4,247,000
<b>Costs to LF2200000</b>	\$3,835,000
<b>Costs to LF3200000</b>	\$412,000

**Status of Plan Submission** (check one box below)

<input checked="" type="checkbox"/>	Initial Submission of Complete Plan
<input type="checkbox"/>	Updating or Revising the Initial Submission
<input type="checkbox"/>	Amendment

## **PART 1 - PLAN SUMMARY**

### **BACKGROUND INFORMATION ON THE FIRE**

The Cave Canyon fire started as a lightning strike on the Minidoka Ranger District; U. S. Forrest Service August 5, 2012 in the Cave Canyon area. The Cave Canyon fire over took the Little Cedar Canyon fire that was burning at the same time late that night. The fire grew rapidly due to erratic winds, steep and inaccessible terrain. On August 9, the fire was transitioned to a Type I management team. The fire burned a total of 88,950 acres in Cassia County approximately eight miles west of Oakley, ID. Of those burned acres, 27,948 acres occurred on lands managed by the BLM. The fire affected multiple grazing allotments. The elevation varies throughout the fire from approximately 4300 to 7500 feet. A large portion of the burned area is inaccessible because of the steep slopes and cliff areas. The burned area's topography is characterized as low uplands, mountain slopes and ridges, as well as summits, rolling foothills, side slopes and terraces. In some areas of the burn, slopes range from 30 – 60 percent, but can reach 80 percent.

The fire burned within a variety of vegetation communities; mid to late seral sagebrush (Wyoming, basin, mountain, and low) steppe communities; phase 1, 2 and 3 Utah juniper and quaking aspen. As a result of past fire history and post-fire rehabilitation, some pre-burn vegetation consisted of mixed native/non-native and older crested wheatgrass seedings, with a few remnant Wyoming big sagebrush stands along the north and east perimeters of the burned area. Cheatgrass is common throughout the burned area and dominant in portions. The bulk of the burn area is highly vulnerable to the expansion of cheatgrass and noxious weeds. Past fires on the same mountain ranges demonstrate the potential conditions if rehabilitated and not rehabilitated. The fire burned quickly with lowest severity in seeding areas and highest in sagebrush and juniper stands.

The area burned by the Cave Canyon fire is critical mule deer winter range for one of Idaho's premier deer herds. Also, the burned area is a high priority for stabilization and rehabilitation because of the Greater sage-grouse (*Centrocercus urophasianus*). The majority of the burned area was mapped as sage-grouse Preliminary Priority Habitat (PPH) in 2012. Of the 27,948 acres of BLM-managed land, 26,168 acres classified as PPH burned, and 1,343 acres of Preliminary General Habitat (PGH) burned. The PPH comprises areas that have been identified as having the highest conservation value to maintain sustainable sage-grouse populations. To best minimize habitat loss in PPH, the Instruction Memorandum No. 2012-043 states that ES and BAR treatments are to be utilized to: 1). Maintain and enhance unburned intact sagebrush habitat when at risk from adjacent threats; 2). Stabilize soils; 3). Re-establish hydrologic function; 4). Maintain and enhance biological integrity; 5). Promote plant resiliency; 6). Limit expansion or dominance or invasive species; and 7). Re-establish native species.

The proposed treatments also address conservation measures identified in the 2006 Conservation Plan for the Greater sage-grouse in Idaho, which recommended seeding or planting the appropriate species and subspecies of sagebrush as part of restoration or burned area rehabilitation treatments (pp. 4-19 through 4-20), re-establishing sagebrush in seeded perennial grasslands (pp. 4-85 through 4-87), and noxious weed control in burned areas (p. 4-20).

## LAND USE PLAN CONSISTENCY

The following treatments are proposed under this Emergency Stabilization (ES) and Burned Area Rehabilitation (BAR) plan.

### **Emergency Stabilization**

S2 Ground Seeding

S3 Aerial Seeding

S5 Noxious Weeds

S6 Soil Stabilization

S7 Fence/Gate

S9 Cultural Stabilization

S12 Closures (Livestock)

### **Burned Area Rehabilitation**

R5 Noxious Weeds

R7 Fence/Gate

R12 Closures (Livestock)

The applicable land use plan for the Emergency Stabilization (ES) and Burned Area Rehabilitation (BAR) project area is the Cassia Resource Management Plan (RMP) 1985. The RMP was amended in 2008 by the Fire, Fuels and Related Vegetation Management Direction Plan Amendment (FMDA). The treatments outlined in this plan are also consistent with the treatment analyzed in the Burley/Shoshone Field Office Normal Fire Rehabilitation Plan and Environmental Assessment (#ID-077-2004-008).

**Ground Seeding/S2:** Objectives and management actions from the FMDA state (page 17) that objective 1 is to make progress towards desired future conditions (DFC) in low-elevation, perennial grass and invasive annual grass areas. Strategically place treatments on a landscape scale to reduce the likelihood of fire spreading into important sagebrush steppe habitat. In addition, management actions for objective 2 states that following a wildland fire the use of chemical, mechanical, and seeding treatments will be used to stabilize sites and prevent dominance of invasive annual vegetation and noxious weeds in order to maintain, protect and enhance sage-grouse habitat. Therefore, the planning for ground seeding treatments and activities that meet these objectives are in conformance with the RMP as amended by the FMDA.

**Aerial Seeding/S3:** Objective 2 of the FMDA's objective and management actions is to maintain, protect, and expand sage-grouse source habitats. Following wildland fire, use seeding treatments with appropriate plant materials to attempt to stabilize sites and prevent dominance of invasive, annual vegetation, and noxious weeds. Therefore aerial seeding meets this objective and is in conformance with the RMP as amended by the FMDA.

**Noxious Weeds/S5/R5:** Management actions for objective 1 states (page 17) that to achieve DFC chemical, mechanical and seeding treatments will be used. Also, management actions for objective 2 states that following wildland fire, wildland fire use and prescribed fire treatments, use of chemical, mechanical, and seeding treatments with appropriate plant material to attempt to

stabilize sites and prevent dominance of invasive, annual vegetation, and noxious weeds. Therefore, the planning for noxious weed treatments and activities that meet these objectives are in conformance with the RMP as amended by the FMDA.

**Soil Stabilization/S6:** Using straw wattles and/or wood straw to control erosion will implement the FMDA action to maintain, protect and enhance key ecological components in plant and animal communities. Therefore, soil stabilization meets this action and is in conformance with the RMP as amended by the FMDA.

**Fence/Gate /S7/R7:** Existing pasture and allotment fences will be repaired to ensure that livestock remain within their area of authorized use and off the burned areas until resource objectives are met. Also, temporary fence will be installed to ensure the investment of the seeding treatment will be protected. The FMDA states on page 31 that all treatment areas would be rested from livestock grazing until project-specific monitoring identified in site-specific project plans and/or NEPA documents show that resource objectives have been met. Resumption of grazing would be determined on a case-by-case basis. Therefore, fence treatments that ensure livestock will remain in authorized areas of use are in conformance with the RMP as amended by the FMDA.

**Cultural Stabilization/S9:** The Island cemetery will be aeri ally seeded to aid in the recovery from soil erosion and an exclosure will be built around to further protect the site. This is in conformance with the Cassia RMP and it states on page 5 under the Cultural Resources heading; BLM will manage cultural resources so that representative samples of the full array of scientific and socio-cultural values are maintained or enhanced consistent with State and federal laws.

**Facilities/R11:** Existing troughs and water pipeline will be repaired to would maintain the future integrity of the existing livestock grazing systems. Repair of damaged exclosure would also help to manage vegetation recovery. This is in conformance with the Cassia RMP. On page 7 under the Resource Management guidelines for Rangeland Improvements, it states: A variety of range improvements, grazing systems and other range management practices will be considered in conjunction with livestock management on individual allotments.

**Closures (livestock)/S12/R12:** The management restrictions, conservation measures, and guidelines for livestock grazing, on page 31 of the FMDA, states that all burned areas would be rested from livestock grazing until project/site-specific monitoring identified in site-specific project plans and/or resource objectives have been met. The resumption of grazing would be determined on case-by-case basis. Therefore, resting the burned area under the rehabilitation plan from grazing would ensure that the area recovers and is in conformance with the RMP as amended by the FMDA.

## **COST SUMMARY TABLES**

### **Emergency Stabilization (LF2200000):**

Action/ Spec. #	Planned Action	Unit	# Units	Unit Cost	FY12	FY13	FY14	FY15	Total Cost
S1	<b>Planning (Project Mgmt)</b>	WM's	3		\$0	\$25,000	\$20,000	\$20,000	\$65,000
S2	<b>Ground Seeding/Chaining</b>	Acres	14,600	\$43.15	\$372,000	\$258,000	\$0	\$0	\$630,000
S3	<b>Aerial Seeding</b>	Acres	27,948	\$95.50	\$2,445,000	\$224,000	\$0	\$0	\$2,669,000
S5	<b>Noxious Weeds</b>	Acres	27,948	\$0.72	\$0	\$20,000	\$0	\$0	\$20,000
S6	<b>Soil Stabilization</b>	Acres	118	\$2,618.64	\$0	\$309,000	\$0	\$0	\$309,000
S7	<b>Protective Fencing</b>	Miles	7.0	\$8,142.86	\$0	\$47,000	\$0	\$10,000	\$57,000
S9	<b>Cultural Protection</b>	Acres	1	\$4,000.00	\$0	\$4,000	\$0	\$0	\$4,000
S13	<b>Monitoring</b>	Acres	27,948	\$2.90	\$0	\$27,000	\$27,000	\$27,000	\$81,000
<b>TOTAL COSTS</b>					\$2,817,000	\$914,000	\$47,000	\$57,000	\$3,835,000

**Burned Area Rehabilitation (LF3200000):**

Action/ Spec. #	Planned Action	Unit	# Units	Unit Cost	FY13	FY14	FY15	Total Cost
R1	<b>Planning (Project Mgmt)</b>	WM's	1		\$5,000	\$2,000	\$2,000	\$9,000
R5	<b>Noxious Weeds</b>	Acres	27,948	\$0.72	\$0	\$20,000	\$20,000	\$40,000
R7	<b>Fence Repair</b>	Miles	42	\$6,357.14	\$267,000	\$0	\$0	\$267,000
R11	<b>Facilities Improvements</b>	No.	10	\$9,600.00	\$96,000	\$0	\$0	\$96,000
<b>TOTAL COSTS</b>					\$368,000	\$22,000	\$22,000	\$412,000

**PART 2 – POST-FIRE RECOVERY ISSUES AND TREATMENTS**

Issues relate to resource problems caused by the wildfire and include both the immediate wildfire effects as well as effects predicted to occur as a result of the wildfire. Determining the appropriate funding code must be based on the scope of the issue, purpose of the treatment, and the availability of funds.

**EMERGENCY STABILIZATION ISSUES AND TREATMENTS**

Emergency Stabilization Objectives: “Determine the need for and to prescribe and implement emergency treatments to minimize threats to life or property or to stabilize and prevent unacceptable degradation to natural and cultural resources resulting from the effects of a fire.”

620DM3.4

Emergency Stabilization Priorities: 1). Human Life and Safety, and 2). Property and unique biological (designated Critical Habitat for Federal and State listed, proposed or candidate threatened and endangered species) and significant heritage sites. 620DM3.7

**ES Issue 1 - Human Life and Safety.** N/A

**ES Issue 2 - Soil/Water Stabilization.** The scope of this issue includes: Placing structures to slow soil and water movement, stabilizing soil to prevent loss or degradation or productivity, increasing road drainage frequency and/or capacity to handle additional post-fire runoff, installing protective fences or barriers to protect treated or recovering areas.

*Fire Intensity and Vegetation*

The fire removed the vegetation cover across the majority of the burn and was characterized as moderate to high fire intensity. Due to a combination of topography and terrain, extremely low fuel moisture and hot and dry weather conditions, the fire grew and spread rapidly. The majority of the burned area had not burned for 80-100 years. The vegetation in the fire area was varied from juniper to late seral sagebrush mix with an understory of cheatgrass and scattered native and non-native understory grasses to mountain shrubs and quaking aspen. Areas with a dense canopy-cover of juniper and a late seral sagebrush or shrub step had higher fire intensity and removed most of the plant cover. In the areas of higher elevation (5500 feet to 7500 feet), cheatgrass was observed in unburned islands within the fire perimeter. There is a high potential of the burned area to be encroached by cheatgrass because of the previous existence of the invasive annual. With the combination of the high fire severity and presence of cheatgrass, there is a great possibility of the area being invaded. The burned area is vulnerable to accelerated soil erosion through wind and water. Also, the area is a major concern to the expansion of noxious weeds.

*Straw Wattles and Wood Straw*

A large portion of the fire is on moderate to steep mountain slopes, hills and ridges. The elevation ranges from approximately 4300 to 7500 feet. Straw wattles and/or wood straw will be employed in identified ephemeral drainages without hydrophytic vegetation to slow soil and water movement and to prevent degradation and capacity to handle additional post-fire runoff. Structures will be employed on slopes greater than a 30 percent where no vegetation or rock occurs naturally. These structures will be a temporary structure.

*Treatment/Activity: S6 Soil Stabilization*

A. Treatment/Activity Description. *Soil erosion structures were identified in the following areas; Mackey Canyon (2 acres), Cold Springs (16 acres), Mountain Meadow Creek (26 acres), Buckhorn Canyon (28 acres), Little Cedar Canyon (13 acres), Big Cedar Canyon (17 acres) and Robber Gulch (15 acres). The structures would be placed within ephemeral drainages to prevent erosion and sediment deposition in perennial and intermittent streams. These areas would be stabilized using straw wattles and/or wood straw to prevent water from eroding soil, cutting the*

creek beds and creating gullies. All materials would be weed-free and biodegradable. Straw wattles would be secured with wooden stakes and on-site rock.

B. How does the treatment relate to damage or changes caused by the fire? *The Cave Canyon Fire burned at a high intensity with high severity on steep slopes (some with deeper soils) such that there is a high likelihood for a release of sediments. The straw wattles and/or wood straw will dissipate the energy of runoff leading into perennial streams and will reduce the amount of sediment.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Straw wattles relatively inexpensive compared to other soil erosion treatment methods and highly effective at reducing the effects of runoff on sedimentation.*

Closures (Livestock)

Nine allotments were affected by the fire. Of the nine affected allotments, four will be temporarily closed because of the number of AUM’s that burned. The remaining five allotments can be managed according to their permit that will allow grazing on unburned portions. Appropriate rest will be applied to the burned portions of the allotments from livestock under the ES&BAR plan. This will allow newly seeded species to become established. Closure on the seeded area would be implemented by the Range program to ensure that the area meets objectives (see monitoring section) for the resumption of livestock grazing. All allotments are fenced and burned fences will be restored to their original working structure to keep livestock out of burned areas.

CAVE CANYON FIRE		# of affected permitties = 3			
Allotment name	Acres	acres burned	% acres burned	AUMS burned	% Aums burned
<b>Dry Creek</b>	<b>7,752</b>	<b>7,401</b>	<b>95%</b>	<b>729</b>	<b>100</b>
<b>Cold Spring</b>	<b>9,541</b>	<b>9,541</b>	<b>100%</b>	<b>419</b>	<b>100</b>
<b>Buckhorn-Churchill</b>	<b>9,102</b>	<b>8,491</b>	<b>93%</b>	<b>499</b>	<b>100</b>
<b>Simon Baker West</b>	<b>217</b>	<b>217</b>	<b>100%</b>	<b>99</b>	<b>100</b>
<b>Total</b>	<b>26,612</b>	<b>25,650</b>		<b>1746</b>	

Treatment/Activity: S12 Closures (Livestock)

A. Treatment/Activity Description. *The burned portions of the allotments affected by the Cave Canyon Fire would be rested from livestock grazing until monitoring shows that ES treatment objectives have been met or it is determined to be a failure.*

B. How does the treatment relate to damages or changes caused by the fire? *The fire burned most of the existing vegetation within the burn perimeter so the remnant vegetation and soil surface are highly susceptible to further damage if livestock were allowed to continue grazing within the burn area. The purpose of this treatment is to rest the burn area from livestock grazing to provide the opportunity for existing vegetation resources and seeding efforts to stabilize the burn*

*area. Establishment of a perennial plant community would reduce or inhibit the expansion of annual vegetation and stabilize soil resources.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *No cost under ES is associated with closures. It is a reasonable method for attaining vegetation objectives, as compared to implementation of other aspects of the ES plan.*

#### Temporary Fence

Approximately seven miles of temporary fence will need to be constructed to ensure livestock are kept out of the burned area. This will ensure that objectives are being met and allow livestock to graze the portions of the pastures that were not burned. The Churchill-Poulton, Marion Group, Churchill-Mullen and Goose Creek-Mullen will have temporary fence built across the allotments. All temporary fences will be marked to minimize or eliminated potential collision risk to sage-grouse.

#### Treatment/Activity: S7 Fence/Gate

A. Treatment/Activity Description. *Approximately seven mile of temporary fence would be constructed on the burn to help protect seeded portions of the burn and areas left for natural to recovery without grazing disturbance. Where ever possible, temporary fence would be built using existing materials removed from areas burned in 2010 and 2011. This will also allow grazing on the unburned portion. The fence would be constructed to BLM fence standards. Temporary fence will be in the Churchill-Poulton, Marion Group, Churchill-Mullen and Goose Creek-Mullen allotments. All fences will be tied into existing BLM interior fence.*

B. How does the treatment relate to damages or changes caused by the fire? *The temporary fence associated with the livestock management of the affected allotments. Construction of seven miles of temporary fence would maintain the future integrity of the existing livestock grazing systems.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Most of the burned area is protected by existing fences. When possible, temporary fence would be constructed from existing materials removed from 2010 and 2011 fires. Construction of seven miles of temporary fence would allow livestock grazing to occur in the remaining unburned portions of the pastures during the closure period.*

**ES Issue 3 - Habitat for Federal/State Listed, Proposed, or Candidate Species.** Seeding or planting to prevent permanent impairment of designated Critical Habitat for Federal and State listed, proposed or candidate threatened and endangered species.

#### Wildlife Habitat

##### **Threatened, Endangered, and/or Candidate species:**

There are no federally listed threatened and/ or endangered terrestrial fauna within Twin Falls or Cassia Counties (FWS, 2011). The Greater sage-grouse, yellow-billed cuckoo, and Columbia

spotted frog are classified as Candidate species. Greater sage-grouse are known to inhabit the area. There are no documented occurrences of the yellow-billed cuckoo within the area. However, yellow-billed cuckoos have been documented in the region and Dry Creek is considered potential habitat. Columbia spotted frogs have not been observed west of Salmon Falls Creek and are not expected to occur within the Cave Canyon Fire area.

#### *Greater Sage-grouse*

The Cave Canyon Fire negatively impacted Greater sage-grouse habitat. The landscape within the burned area was known to provide breeding, brood-rearing, and winter habitat for sage-grouse. The burned area contains 27 known sage-grouse leks, 18 occupied and 9 undetermined. Nine of the known leks occur on BLM administered land, 6 occupied and 3 undetermined (IDFG, 2011).

A total of 73,919 acres of preliminary priority sage-grouse habitat burned in the Cave Canyon Fire, refer to **Table 1**. Of the acres burned the most adverse negative impacts to Greater sage-grouse would be the loss of the approximately 40,000 acres of intact sagebrush habitat.

Approximately 33,000 acres of juniper encroached habitat was burned in the fire. Greater sage-grouse are known to avoid areas of juniper encroachment. The removal of juniper could foster the succession of sagebrush upon successful restoration. The removal of juniper would improve sage-grouse habitat in the long-term, contingent upon successful restoration. Juniper encroached areas would not be expected to recover naturally. Areas of juniper encroachment would be susceptible to proliferation of invasive and noxious weeds, particularly at lower elevations and south aspects. An additional 14,123 acres of preliminary general habitat also burned in the Cave Canyon Fire, including 1,342 acres of BLM administered land.

The Cave Canyon Fire negatively impacted sage-grouse habitat of “greater relative importance” for sage-grouse in management zone IV, as represented in the Landscape Importance Model (Major, 2011). Successful restoration of preliminary priority sage-grouse habitat, particularly those areas of greater relative importance, would be fundamental to the persistence of sage-grouse in the region.

#### *Yellow-billed cuckoo*

Although unconfirmed, it is expected that Dry Creek within the Cave Canyon Fire would provide habitat for the yellow-billed cuckoo. The majority of Dry Creek was burned, resulting in the loss of old growth cottonwoods. Cottonwoods are expected to re-sprout and a total loss of mature cottonwoods is not expected.

#### **Special Status Species:**

The Cave Canyon Fire negatively impacted a variety of special status species, particularly sagebrush obligate species. Special status species expected to inhabit BLM land within the burned area include the following: Golden eagle, ferruginous hawk, Brewer’s sparrow, loggerhead shrike, sage sparrow, and green tailed towhee. The aforementioned species would be

expected to inhabit the area for breeding and foraging. The loss of intact sagebrush would negatively impact these species due to a loss of breeding and foraging habitat.

*Raptors*

The Cave Canyon Fire encompasses 14 known golden eagle nests, three of which are on BLM administered land (BLM, 2012). The fire also encompasses three known ferruginous hawk nests on BLM administered land. Other unidentified raptor nests are expected to occur within the burned area as well. Golden eagles and ferruginous hawks are a migratory bird of conservation concern. Golden eagles are known to predominately forage in sagebrush habitats in the region. Reclamation efforts to re-establish shrub communities within the burned area would be crucial to provide suitable foraging habitat for golden eagles (I.e., resident birds and winter transients).

**Big Game:**

*Mule Deer*

Mule Deer are known to inhabit the Cave Canyon Fire area. The Cave Canyon Fire area provides all types of seasonal habitat, including fawning and critical winter range habitat. A total of 26,484 acres of mule deer winter range administered by BLM were negatively impacted by the Cave Canyon Fire. Winter range is a limiting factor for mule deer in the region. The loss of intact shrub communities (*Artemisia tridentata ssp. vaseyana*, *Artemisia arbuscula*, *Purshia tridentate*, and *Amelanchier ssp.*) will have negative long-term impacts to mule deer (IDFG, 2010). The successful restoration of seasonal habitats will be crucial for the viability of mule deer in the region.

**Table 1.** Approximate acreage of Preliminary Priority/General Habitat burned.

	CATEGORIES	TOTAL ACRES	BLM ADMINISTERED ACRES
<b>PRELIMINARY PRIORITY SAGE-GROUSE HABITAT</b>	Conifer encroachment	32, 911	11,597
	Perennial grassland	1, 350	1,337
	Sagebrush	39, 658	13,231
		<b>73, 919</b>	<b>26,165</b>
<b>PRELIMINARY GENERAL SAGE-GROUSE HABITAT</b>		<b>14,123</b>	<b>1,342</b>

Ecological Site(s):

*Shallow Claypan 12-16" Little sagebrush/Idaho fescue – 28% of burned area*

*Shallow Stony 12-20" Little sagebrush/ Bluebunch Wheatgrass – 16% of burned area*

*Calcareous Loam 7-10" Shadscale saltbrush/Indian ricegrass – 9% of burned area*

*Loamy 8-12" Wyoming big sagebrush/ Bluebunch Wheatgrass/Thurber's needlegrass – 9% of burned area*

*Shallow Stony 8-12" Wyoming big sagebrush/Bluebunch Wheatgrass – 7% of burned area*

*Loamy 12-16" Wyoming big sagebrush/Bluebunch Wheatgrass – 5% of burned area*

*Undefined - 40% of burned area*

The majority of the burned area is capable of deep rooted grass species with the exception of the rocky outcroppings. This is demonstrated by data and photos collected from past Stabilization and Rehabilitation projects north of the burned area on the same soil type. This data validates that the area is capable of sustaining the proposed grass seed species. Forbs were considered in the seed mix, but because of the cost of the fire it is expected that there is a viable seed source for natural recovery from the surrounding unburned area and in small islands of unburned vegetation within the fire perimeter. The Emergency Stabilization and Rehabilitation Seed Mixture Development Instruction Memorandum No. ID200-2008-003 was used in process of developing the proposed seed mix.

The following is a list of common pre-burn vegetation. The list was developed using field surveys of unburned islands of vegetation and range management trend monitoring plot data. This list is for vegetation determined to be in the burn areas not previously treated.

Common Pre-burn Vegetation:

Mountain big sagebrush, *Artemisia tridentata*  
Antelope bitterbrush, *Purshia tridentate*  
Serviceberry, *Amelanchier Medik*  
Idaho fescue, *Festuca idahoensis*  
Sandberg bluegrass, *Poa secunda*  
Bluebunch Wheatgrass, *Pseudoroegneria spicata*  
Utah Juniper, *Juniperus osteosperma*  
Cheatgrass, *Bromus tectorum*  
Wyoming big sagebrush, *Artemisia tridentata ssp. Wyomingensis*  
Quaking aspen, *Populus tremuloides*  
Crested wheatgrass, *Agropyron cristatum*

Treatment/Activity: S2 Ground Seeding/Chaining

A. Treatment/Activity Description. *Approximately 10,700 acres within the burned area were identified as ES to be seeded with Antelope bitterbrush shrub species. Because of the rough ground and inaccessibility for drills, the seed will be applied using a seed dribbler attached to a dozer. The seed will fall in front of the dozer track which will then get run over by the track to make a good seed to soil contact. In addition to the tracks assisting with a good seed to soil*

contact, the Ely chain will provide additional coverage to fully cover the seed. Past treats were a seed dribbler and chain have been used to plant Antelope bitterbrush, monitoring has shown good results.

Identified areas totaling approximately 14,600 acres will be chained following the aerial seeding to cover the seed in portions of the burn area. The areas that will be Ely chained are identified on the map as the Wyoming and Juniper seeding areas and the Greater Sage-grouse seeding areas. An Ely chain will be pulled by two tractor dozers. This will aid in a better soil to seed contact and help cover the seed for future growth. Also, the chaining will help remove the juniper skeletons which will benefit in the process of decomposition of the burned material. The majority of the burn area is not accessible by a rangeland drill due to the amount of dead standing juniper skeletons and steepness of the terrain. This is proposed to be accomplished in late FY12 or early FY13. Appropriate cultural resource inventories/surveys will be complete prior to implementing these specific projects.

<b>Cave Canyon Ground Seed Mix</b>	
<b>10,700 Acres</b>	
<b>Species and Variety</b>	<b>Seed Rate Lbs/Acres</b>
<b>Shrub Mix</b>	
1. Antelope bitterbrush	0.5

B. How does the treatment relate to damages or changes caused by the fire? *This treatment will aid in the establishment of a desirable perennial shrub community. This area is identified as mule deer winter range and Key sage-grouse habitat. Mule deer are identified as one of Idaho's species of management concerns and the greater sage-grouse are identified by the US Fish and Wildlife Service as a candidate species. Antelope bitterbrush along with other shrub species provides vital habitat components for sage-grouse (Connelly et al. 2004). Sage-grouse nests are typically located under sagebrush shrubs, but can also be under other common steppe shrubs such as antelope bitterbrush. The high intensity wildfire removed the majority of existing shrub cover and likely killed the majority of the remnant seed bank making the burn area less likely to support the mule deer and sage-grouse due to lack of cover and forage.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *This treatment and activity is reasonable for the type of issues found on the site. Past monitoring and field observations have shown a success rate with the seeding of perennial shrubs and aid in the recovery of a shrub species. The cost of this treatment is relatively less expensive than drill seeding because the use of a dozer in conjunction with the chaining treatment. These treatments will occur simultaneously while reducing the cost of a new and separate method.*

Treatment/Activity: S3 Aerial Seeding

A. Treatment/Activity Description. *The majority of the burned BLM land was identified to be aerial seeded with a mixture of native and native like perennial grass and native shrub species. This is proposed to be accomplished in late FY12 or early FY13. Appropriate cultural resource inventories/surveys will be complete prior to implementing these specific projects.*

Cave Canyon Aerial Seed Mix Wyoming and Juniper sites 9,200 Acres	
Species and Variety	Seed Rate Lbs/Acres
<b>Grass/Shrub Mix</b>	
1. Vavilov II Siberian Wheatgrass	4.00
2. Anatone Bluebunch Wheatgrass	4.00
3. Secar Snake River Wheatgrass	2.00
4. Sandberg Bluegrass	0.30
5. Wyoming big sagebrush	0.50
6. Fourwing saltbush	1.0

Cave Canyon Aerial Seed Mix Steep Slopes & Drainages 13,300 Acres	
Species and Variety	Seed Rate Lbs/Acres
<b>Grass/Shrub Mix</b>	
1. Vavilov II Siberian Wheatgrass	4.00
2. "Trailhead" Basin wildrye	0.50
3. Secar Snake River Wheatgrass	2.00
4. Wyoming big sagebrush	0.50
5. Fourwing saltbush	1.0

Cave Canyon Aerial Seed Mix Greater Sage-Grouse Areas 5,400 Acres	
Species and Variety	Seed Rate Lbs/Acres
<b>Grass/Shrub Mix</b>	
1. Idaho Fescue	3.00
2. Anatone Bluebunch Wheatgrass	4.00
3. Sandberg Bluegrass	0.30
4. Mountain big sagebrush	0.25
5. Low sagebrush	0.25

B. How does the treatment relate to damages or changes caused by the fire? *This treatment will aid in the establishment of a desirable perennial grass community that more closely matches the structural, species composition, and diversity of the native plant community to help achieve a healthy functioning rangeland. Accelerating the rate of re-establishment of native grasses is important to maintaining the value of the area as sage-grouse and mule deer winter habitat.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *The treatment and*

*activities are reasonable for the type of issues found on the site. Contracting costs for aerial application are typical for the Burley Field Office area. The cost of seed can vary from year to year dependent on availability.*

**ES Issue 4 - Critical Heritage Resources.** The scope of this issue includes: Stabilizing critical heritage resources, patrolling, camouflaging, burying significant heritage sites to prevent looting.

#### Island Cemetery

The Cave Canyon Fire burned over an existing cemetery located on BLM administered land. The fire removed the existing vegetation which has exposes the graves and headstones. Because of the fires removal of the existing vegetation, the site is now susceptible to soil erosion by water and wind. Re-vegetation of the site and construction of an exclosure fence will help in the process to stabilize and prevent any further damage.

#### Treatment/Activity: S9 Cultural Protection

A. Treatment/Activity Description. *The fire burned over the Island Cemetery and exposed the existing graves and headstone. The cultural area will be aerial seeded and fence.*

B. How does the treatment relate to damage or changes caused by the fire? *The fire removed the natural camouflage of the existing vegetation. The site is now vulnerable to wind and water erosion. With the aerial seeding treatment and the proposal to fence off the site, this will aid in maintaining the integrity of the cultural site.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *The area of the cultural site is included in the areas to be aerial seeded. The cemetery is a small area and will not require much material to fence the site.*

**ES Issue 5 - Invasive Plants and Weeds.** Seeding to prevent establishment of invasive plants, and direct treatment of invasive plants. Such actions will be specified in the emergency stabilization plan only when immediate action is required and when standard treatments are used that have been validated by monitoring data from previous projects, or when there is documented research establishing the effectiveness of such actions. Using integrated pest management techniques to minimize the establishment of non-native invasive species within the burned area. When there is an existing approved management plan that addresses non-native invasive species, emergency stabilization treatments may be used to treat the invasive species.

#### Noxious Weeds

Black henbane, Canada thistle and Russian knapweed are the primary weeds of concern with high potential to increase within the burned area and surrounding rangeland. These weeds were documented during the fire reconnaissance and in field visits prior to the fire. Spotted knapweed and tamarisk were also noted within the fire perimeter. The current state of the infestation is treatable if done within the next three growing seasons. Without a noxious weed control effort, Russian knapweed and spotted knapweed will significantly increase negatively affecting key sage-grouse habitat, critical mule deer winter range and livestock forage capabilities. If an

emergency treatment is not implemented the economic impact to natural resources and the local economy will be significant. All 27,948 acres of the burned public land will be inventoried and treated as needed for noxious weeds in FY13. The objective of this treatment is to identify and control the expected noxious weed increase using spot herbicide spraying and biological control. This would be proposed under the rehabilitation to suppress the expansion of these weeds. Weed control would be conducted the first year under ES.

Treatment Activity: S5 Noxious Weeds

A. Treatment/Activity Description. *Over ten species of noxious weeds have been identified and recorded within the burned area. The primary weeds of concern are Russian knapweed, Canada thistle and Black henbane. Noxious weed inventory and control within the burned area would be done in the first year following the fire to directly treat the expected weeds. Areas where weeds have been treated in the past will be inventoried first. The weeds will be treated with the BLM approved chemicals.*

B. How does the treatment relate to damage or changes caused by the fire? *The objective of this treatment is to identify and control the expected noxious weed increase using spot herbicide application of the burn area. It is expected that noxious weeds will increase due to the removal of existing plant cover by the wildfire which has opened up bare ground for the weeds to invade. Treatments would be conducted for the first year under ES.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Weed treatments in the Burley Field Office typically run about \$0.72 per acre. Field work would be combined with other weed treatments in the area for cost efficiency.*

## **BURNED AREA REHABILITATION ISSUES AND TREATMENTS**

Burned Area Rehabilitation Objectives. 1). To evaluate actual and potential long-term post-fire impacts to critical cultural and natural resources and identify those areas unlikely to recover naturally from severe wildland fire damage; 2). To develop and implement cost-effective plans to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans, or if that is infeasible, then to restore or establish a healthy, stable ecosystem in which native species are well represented; and 3) To repair or replace minor facilities damaged by wildland fire. 620DM3.4

Burned Area Rehabilitation Priorities. 1). To repair or improve lands damaged directly by a wildland fire; and 2). To rehabilitate or establish healthy, stable ecosystems in the burned area. 620DM3.8

**BAR Issue 1 - Lands Unlikely to Recover Naturally.** N/A

**BAR Issue 2 - Weed Treatments.** Chemical, manual, and mechanical removal of invasive species, and planting of native and non-native species, restore or establish a healthy, stable ecosystem even if this ecosystem cannot fully emulate historical or pre-fire conditions.

Noxious Weeds

Black henbane, Canada thistle and Russian knapweed are the primary weeds of concern with high potential to increase within the burned area and surrounding rangeland. These weeds were documented in field visits prior to the fire. Spotted knapweed and tamarisk were also noted within the fire perimeter. The current state of the infestation is treatable if done within the next three growing seasons. Without a noxious weed control effort, Russian knapweed and spotted knapweed will significantly increase negatively affecting key sage-grouse habitat, mule deer winter range and livestock forage capabilities. If an emergency treatment is not implemented the economic impact to natural resources and the local economy will be significant. All 27,948 acres of the burned public land will be inventoried and treated as needed for noxious weeds in FY14 -15. The objective of this treatment is to identify and control the expected noxious weed increase using spot herbicide spraying and biological control. This would be proposed under the rehabilitation to suppress the expansion of these weeds. Weed control would be conducted the second and third years under BAR.

Treatment Activity: R5 Noxious Weeds

A. Treatment/Activity Description. *Over ten species of noxious weeds have been identified and recorded within the burned area. The primary weeds of concern are Russian knapweed, Canada thistle and Black henbane. Noxious weed inventory and control within the burned area would be done in the second and third year following the fire to directly treat the expected weeds. Areas where weeds have been treated in the past will be inventoried first. The weeds will be treated with the BLM approved chemicals.*

B. How does the treatment relate to damage or changes caused by the fire? *The objective of this treatment is to identify and control the expected noxious weed increase using spot herbicide application of the burn area. In addition, biological control agents for knapweed would be utilized in areas not easily accessible to spraying equipment (rocky outcrops). It is expected that noxious weeds will increase due to the removal of existing plant cover by the wildfire which has opened up bare ground for the weeds to invade. Treatments would be conducted for the second and third year under BAR.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Weed treatments in the Burley Field Office typically run about \$0.72 per acre. Inventory and treatment of new noxious weed populations is more cost-effective than waiting until the population has had opportunity to establish and spread. Field work would be combined with other weed treatments in the area for cost efficiency.*

**BAR Issue 3 - Tree Planting. N/A**

**BAR Issue 4 - Repair/Replace Fire Damage to Minor Facilities.**

Livestock Management Fences

Approximately 42 miles of interior pasture fence were damaged or destroyed by the fire. Damaged wire, corners, and braces would be repaired or replaced by steel posts. The repairs would be needed to maintain the integrity of the grazing system and keep adjacent livestock grazing from entering the burn area during the rest period. Where possible, materials will be used

from previous fences that were salvaged or material that was left over from previous projects.

Treatment/Activity: R7 Fence/Gate

A. Treatment/Activity Description. *The objective of this treatment is to repair and/or replace approximately 42 miles of interior livestock management fence damaged by the fire. Damaged wood corners and braces would be replaced with galvanized steel posts. Damaged wire would also be repaired. The management fences would be constructed to BLM fence standards.*

B. How does the treatment relate to damage or changes caused by the fire? *The wildfire damaged fences associated with the livestock management of the affected allotments. Reconstruction and repair of management fences damaged by the fire would maintain the future integrity of the existing livestock grazing systems. Repair of damaged management fences would also help to manage vegetation recovery.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Fence repair contracts typically run \$5,000 per mile. This cost is typically lower than new fence construction. This treatment is reasonable and cost effective because it would utilize fences and gates to the greatest extent possible, while allowing unburned areas to be available to grazing. Damaged wood stretch points and corners would be replaced with galvanized steel pipe thus increasing the longevity of the structures and resistance of future wildfire damages.*

Facilities

The Mud Springs trough, BLM project #4421 and Mike's Cabin Spring Extension Pipeline, BLM project #4147 were impacted by the Cave Canyon Fire.

Treatment/Activity: R11 Facilities

A. Treatment/Activity Description. *The wildfire damaged wildlife guzzlers, one trough and five miles of PVC water pipeline associated with the livestock management of the affected allotments. Reconstruction and repair of the damaged facilities would maintain the future integrity of the existing livestock grazing systems. Repair of damaged enclosure would also help to manage vegetation recovery.*

B. How does the treatment relate to damage or changes caused by the fire? *The wildfire damaged wildlife guzzlers off of Mike's Cabin Spring Extension (Project #4147). The wildfire damaged the guzzler which provides water to wildlife during the summer months. Reconstruction of the guzzler would re-establish water critical to wildlife during the summer months.*

C. Why is the treatment/activity reasonable, within policy, and cost effective? *Materials utilized in reconstruction of the wildlife guzzlers, enclosure fence, water pipeline and troughs would be fire resistant (metal structures and buried pipe) thus more resistant to future wildfire damages.*

**PART 3 – DETAILED TREATMENT COST TABLE**

<b>Emergency Stabilization</b>		Units	FY12	FY13	FY14	FY15	Total Costs
<b>S1</b>	<b>Planning (Plan Prep/Project Mangt)</b>						
	National Office ESR Support	WM's		5,000	5,000	5,000	15,000
	Project Management Field Office	WM's		10,000	5,000	5,000	20,000
	Project Management State Office	WM's		10,000	10,000	10,000	30,000
	<b>Total</b>		0	25,000	20,000	20,000	65,000
<b>S2</b>	<b>Ground Seeding/Chaining</b>						
	Labor	WM's		128,000			128,000
	Travel/Vehicles	Total		8,000			8,000
	Equipment Rental	Total		100,000			100,000
	Equipment Mobilization	Total		8,000			8,000
	Supplies/Materials	Total		6,000			6,000
	Contract Administration	WM's		8,000			8,000
	Seed	Total	80,000				80,000
	Clearances	Total	292,000				292,000
	<b>Total</b>		372,000	258,000	0	0	630,000
<b>S3</b>	<b>Aerial Seeding</b>						
	Contract	Total	335,000	183,000			518,000
	Contract Administration	WM's		4,000			4,000
	Travel/Vehicles	Total		1,000			1,000
	Seed	Total	2,110,000				2,110,000
	Seed Mixing	WM's		25,000			25,000
	Seed Testing	Total		6,000			6,000
	Seed Storage	Total		5,000			5,000
	<b>Total</b>		2,445,000	224,000	0	0	2,669,000
<b>S5</b>	<b>Noxious Weeds</b>						
	Labor	Acres		15,000			15,000
	Travel/Vehicles	Total		2,000			2,000
	Supplies/Materials	Total		3,000			3,000
	<b>Total</b>		0	20,000	0	0	20,000
<b>S6</b>	<b>Soil Stabilization (other than seeding/planting)</b>						
	Labor	WM's		30,000			30,000
	Travel/Vehicles	Total		25,000			25,000
	Clearances	Total		4,000			4,000
	Supplies/Materials	Total		160,000			160,000
	Contract	Total		80,000			80,000
	Contract Administration	WM's		10,000			10,000
	<b>Total</b>		0	309,000	0	0	309,000
<b>S7</b>	<b>Protective Fence/Cattleguard</b>						
	Fence Removal	Total				10,000	10,000
	Fence Material	Total		21,000			21,000
	Labor	WM's					0
	Travel/Vehicles	Total		3,000			3,000
	Clearances	Mile		2,000			2,000
	Contract	Total		21,000			21,000
	<b>Total</b>		0	47,000	0	10,000	57,000
<b>S9</b>	<b>Cultural Protection</b>						

	<b>(Stabilization/Patrol)</b>							
	Travel/Vehicles	Total		1,000			1,000	
	Supplies/Materials	Total		3,000			3,000	
	<b>Total</b>		0	4,000	0	0	4,000	
<b>S13</b>	<b>Monitoring</b>							
	Labor	WM's		20,000	20,000	20,000	60,000	
	Travel/Vehicles	Total		4,000	4,000	4,000	12,000	
	Supplies/Materials	Total		3,000	3,000	3,000	9,000	
	<b>Total</b>		0	27,000	27,000	27,000	81,000	
	<b>EMERGENCY STABILIZATION TOTALS</b>			\$2,817,000	\$914,000	\$47,000	\$57,000	\$3,835,000

Rehabilitation		Units	FY13	FY14	FY15	Total Costs
<b>R1</b>	<b>Planning (Plan Prep/Project Mangt)</b>					
	Project Management Field Office	WM's	5,000	2,000	2,000	9,000
	<b>Total</b>		5,000	2,000	2,000	9,000
<b>R5</b>	<b>Noxious Weeds</b>					
	Labor	WM's		15,000	15,000	30,000
	Travel/Vehicles	Total		2,000	2,000	4,000
	Supplies/Materials	Total		3,000	3,000	6,000
	<b>Total</b>		0	20,000	20,000	40,000
<b>R7</b>	<b>Fence/Gate/Cattle Guard</b>					
	Fence Material	Total	84,000			84,000
	Travel/Vehicles	Total	5,000			5,000
	Contract	Total	168,000			168,000
	Contract Administration	WM's	10,000			10,000
	<b>Total</b>		267,000	0	0	267,000
<b>R11</b>	<b>Facilities/Improvements</b>					
	Labor	WM's	15,000			15,000
	Travel/Vehicles	Total	4,000			4,000
	Supplies/Materials	Total	77,000			77,000
	<b>Total</b>		96,000	0	0	96,000
	<b>BURNED AREA REHABILITATION TOTALS</b>		\$368,000	\$22,000	\$22,000	\$412,000

**PART 4 – SEED LISTS**

**GROUND SEED**

Species	% PLS	Seeds/lb. (bulk)	Total Seeds/Acre (bulk)	PLS Seeds/ac.	PLS Seeds/sq. ft.	Ground Seeding (acres)	Lbs/Acre	Total Pounds	Cost per lb	Total Costs
Antelope Bitterbrush	85%	15,000	7,500	6,375	0.15	10,700	0.5	5,350	15.00	80,250.00

<b>TOTALS</b>					<b>0.15</b>		<b>0.50</b>	<b>5,350</b>		<b>80,250.00</b>
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**AERIAL SEED**

<b>Wyoming &amp; Juniper sites</b>	<b>% PLS</b>	<b>Seeds/lb. (bulk)</b>	<b>Total Seeds/Acre (bulk)</b>	<b>PLS Seeds/ac.</b>	<b>PLS Seeds/sq. ft.</b>	<b>Aerial Seeding (acres)</b>	<b>Lbs/Acre</b>	<b>Total Pounds</b>	<b>Cost per lb</b>	<b>Total Costs</b>
<b>Species</b>										
Vavilov II Siberian WG	80%	220,000	880,000	704,000	16.16	9,200	4.0	36,800	5.00	184,000.00
Anatone Bluebunch WG	76%	140,000	560,000	425,600	9.77	9,200	4.0	36,800	10.00	368,000.00
Secar SnakeRiver WG	76%	170,000	340,000	258,400	5.93	9,200	2.0	18,400	10.00	184,000.00
Sandberg Bluegrass	72%	950,000	285,000	205,200	4.71	9,200	0.3	2,750	7.00	19,250.00
Wyoming big sagebrush	12%	2,500,000	1,250,000	150,000	3.44	9,200	0.5	4,600	15.00	69,000.00
Fourwing Saltbush	31%	55,000	55,000	17,050	0.39	9,200	1.0	9,200	9.00	82,800.00
<b>TOTALS</b>					<b>40.41</b>		<b>11.8</b>	<b>108,550</b>		<b>907,050.00</b>

<b>Steep Slopes &amp; Drainages</b>	<b>% PLS</b>	<b>Seeds/lb. (bulk)</b>	<b>Total Seeds/Acre (bulk)</b>	<b>PLS Seeds/ac.</b>	<b>PLS Seeds/sq. ft.</b>	<b>Aerial Seeding (acres)</b>	<b>Lbs/Acre</b>	<b>Total Pounds</b>	<b>Cost per lb</b>	<b>Total Costs</b>
<b>Species</b>										
Vavilov II Siberian WG	80%	220,000	880,000	704,000	16.16	13,300	4.0	53,200	5.00	266,000.00
Trailhead Basin Wildrye	76%	130,000	65,000	49,400	1.13	13,300	0.5	6,650	7.00	46,550.00
Secar SnakeRiver WG	76%	170,000	340,000	258,400	5.93	13,300	2.0	26,600	10.00	266,000.00

Wyoming big sagebrush	12%	2,500,000	1,250,000	150,000	3.44	13,300	0.5	6,640	15.00	99,600.00
Fourwing Saltbush	31%	55,000	55,000	17,050	0.39	13,300	1.0	13,300	9.00	119,700.00
<b>TOTALS</b>					<b>27.06</b>		<b>8.0</b>	<b>106,390</b>		<b>797,850.00</b>

<b>Greater Sage-Grouse Species</b>	<b>% PLS</b>	<b>Seeds/lb. (bulk)</b>	<b>Total Seeds/Acre (bulk)</b>	<b>PLS Seeds/ac.</b>	<b>PLS Seeds/sq. ft.</b>	<b>Aerial Seeding (acres)</b>	<b>Lbs/Acre</b>	<b>Total Pounds</b>	<b>Cost per lb</b>	<b>Total Costs</b>
Idaho Fescue	76%	450,000	1,350,000	1,026,000	23.55	5,400	3.0	16,200	8.00	129,600.00
Anatone Bluebunch WG	76%	140,000	560,000	425,600	9.77	5,400	4.0	21,600	10.00	216,000.00
Sandberg Bluegrass	72%	950,000	285,000	205,200	4.71	5,400	0.3	1,600	7.00	11,200.00
Mountain big sage	12%	2,250,000	562,500	67,500	1.55	5,400	0.25	1,360	15.00	20,400.00
Low sagebrush	12%	980,000	245,000	29,400	0.67	5,400	0.25	1,360	20.00	27,200.00
<b>TOTALS</b>					<b>40.26</b>		<b>7.8</b>	<b>42,120</b>		<b>404,400.00</b>

## **PART 5 - NATIVE/NON-NATIVE PLANT WORKSHEET**

### **A. Proposed Native Plants in Seed Mixtures (Both ES & BAR Treatments)**

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?

Yes  No  Rationale: *The proposed native species are adapted to the ecological sites within the proposed treatment areas. These species have been extensively utilized in similar ecological sites within the Burley Field Office.*

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?

Yes  No  Rationale: *The native seed proposed for the estimated 1990 acres in the treatment area is generally available in the required quantities. Aerial seeding would not occur until the winter and spring of FY13 which should allow seed quantities to be more available.*

3. Is the cost and/or quality of the native seed reasonable given the project size and approved field unit management and Plan objectives?

Yes  No  Rationale: *The native seed proposed for use has been increasingly utilized in recent years for stabilization, rehabilitation and restoration. The demand has resulted in increased production and decreased price.*

4. Will the native plants establish and survive given the environmental conditions and the current or future competition from other species in the seed mix or from exotic plants?

Yes  No  Rationale: *The native taxa proposed for seeding have exhibited the ability to establish and persist in similar ecological sites within the Burley Field Office.*

5. Will the existing or proposed land management practices (e.g. wildlife populations, recreation use, livestock, etc.) maintain the seeded native plants in the seed mixture when the burned area is re-opened?

Yes  No  Rationale: *The areas will be rested from livestock grazing until resource objectives listed in this ES and BAR plan are met. This will help the new herbaceous seeding treatments become established. Prior to the resumption of livestock grazing the treatment areas will have to meet minimum criteria (see monitoring plan) before livestock grazing may resume.*

### **B. Proposed Non-native Plants in Seed Mixture (Both ES & BAR Treatments)**

**General Note:** The likelihood of introducing a non-native plant species into a plant community without altering the present competitive interaction among remnant native and non-native species is remote. The inclusion of non-native species is to enhance the probability of re-establishment of a perennial plant community in an environment where normal plant successional processes have been altered by invasion of exotic annual grasses and forbs, along

with noxious weeds, and difficult site conditions (i.e. clay soils). Establishing a stable, diverse, multi-layered perennial plant community utilizing both native and non-native cultivars is expected to restore resource values that might not recover naturally, considering the pre-fire plant community and site conditions.

1. Is the use of non-native plants necessary to meet objectives, e.g., consistent with applicable approved field unit management plans?

Yes  No  Rationale: *The use of the proposed non-native plant species is in conformance with the goals and objectives outlined in the 2005 Shoshone and Burley Field Office Normal Fire Rehabilitation Plan. The proposed use of non-native plants is not located within a Wilderness Study Area.*

2. Will non-native plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?

Yes  No  Rationale: *The proposed treatment area supported a sagebrush community with an herbaceous understory of native grasses and forbs. The natural successional processes and interspecific competition which normally occur within a native plant community have been altered by the encroachment and establishment of Juniper. The proposed non-native plants can effectively compete with cheatgrass which is expected to dominate the site following the fire. Establishing a competitive perennial plant species with a mixture of native and non-native species will promote a greater degree of resiliency within the plant community and restore more natural successional processes.*

3. Will non-native plants stay on the site where they are seeded and not significantly displace or interbreed with native plants?

Yes  No  Rationale: *The proposed introduced plant species have been used in seedings in the Burley Field Office area for over 40 years. The seedings have occurred in range sites similar to those which were burned. Incidental establishment of the proposed species may occur outside of the treatment area by the seasonal movement of various animals, but this occurrence is not common nor has it been observed to result in the long-term displacement and dominance of native plant species or communities.*

***A "no" response requires additional analysis in the environmental assessment or selection of an alternate species in the seed mixture.***

**C. Proposed Seed Species – Natives & Non-Natives (Both ES & BAR Treatments)**

Native Plants	Non-native Plants
‘Secar’ Bluebunch Wheatgrass <i>Elymus wawawaiensis</i>	‘Vavilov ’ II Siberian Wheatgrass <i>Agropyron fragile</i>
‘Anatone’ Bluebunch Wheatgrass <i>Psuedoroegneria spicata</i>	
Sandberg Bluegrass <i>Poa sandbergii</i>	
Basin wildrye <i>Leymus cinereus</i>	
Idaho fescue <i>Fesuca idahoensis</i>	
Mountain big sagebrush <i>Artemisia tridentata ssp. vaseyana</i>	
Antelope bitterbrush <i>Purshia tridentata</i>	
Fourwing saltbush <i>Atriplex canescens</i>	
Wyoming big sagebrush <i>Artemisia tridentata ssp. wyomingensis</i>	
Low sagebrush <i>Artemisia tridentata ssp.arbuscula</i>	

**PART 6. – COST-RISK ANALYSIS**

**A. Probability of Treatments Successfully Meeting Objectives**

Action/ Spec. #	Planned ES Action (LF22000000)	Unit (acres, WMs, number)	# Units	Total Cost	% Probability of Success
S2	Ground Seeding/Chaining	Acres	14,600	\$630,000	80
S3	Aerial Seeding	Acres	27,948	\$2,669,000	100
S5	Noxious Weeds	Acres	27,948	\$20,000	90
S6	Soil Stabilization	Acres	118	\$309,000	80
S7	Temporary Fence	Miles	7	\$57,000	100
S9	Cultural Protection	Acres	1	\$4,000	100
S12	Closures	No.	1	\$0	100
S13	Monitoring	Acres	27,948	\$81,000	100
<b>TOTAL COSTS:</b>				\$3,770,000	

Action/ Spec. #	Planned BAR Action (LF3200000)	Unit (acres, WMs, number)	# Units	Total Cost	% Probability of Success
R5	Noxious Weeds	Acres	27,948	\$40,000	90
R7	Fence/Gates	Miles	42	\$267,000	100
R11	Facilities	# & Miles	5 & 5	\$96,000	100
<b>TOTAL COSTS:</b>				\$403,000	

## B. Cost Risk Summary

1. Are the risks to natural resources and private property **acceptable** as a result of the fire if the following actions are taken?

**Proposed Action** Yes  No  Rationale for answer: *The aerial seeding of perennial grass and shrubs will help with the establishment and recruitment of future grass and shrub cover. The noxious weed treatments will help protect adjacent private and BLM lands against further expansion of noxious weeds. The temporary fence will ensure no disturbance to the newly seeded area.*

**No Action** Yes  No  Rationale for answer: *Wildlife habitat on adjacent unburned land would be compromised with the expansion of noxious weeds. The burned area will have a high chance of invasion of cheatgrass and noxious weeds due to the bare soil.*

**Alternative(s)** Yes  No  Rationale for answer: *N/A*

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

**Proposed Action** Yes  No  Rationale for answer: *Monitoring and observation of recent weed control efforts in similar soils and precipitation zones indicate that success would be high. Normal climatic conditions and the exclusion of livestock grazing for the period of seeding establishment and/or on-site vegetation recovery would increase the probability of success.*

**No Action** Yes  No  Rationale for answer: *The burned area has a high potential for expansion of noxious weeds. There is high potential for adjacent unburned areas becoming dominated by noxious weeds.*

**Alternative(s)** Yes  No  Rationale for answer: *N/A*

3. Which approach will most cost-effectively and successfully attain the objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

**Proposed Action**   
**Alternative(s)**   
**No Action**

Comments: *None*

**C. Risk of Resource Value Loss or Damage**

**No Action - Treatments Not Implemented (check one)**

<b>Resource Value</b>	<b>N/A</b>	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
Unacceptable Loss of Topsoil					X
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity					X
Unacceptable Loss of Vegetation Structure					X
Unacceptable Disruption of Ecological Processes					X
Off-site Sediment Damage to Private Property				X	
Off-site Threats to Human Life		X			
Other-loss of Access Road Due to Plugged Culverts			X		

**Proposed Action - Treatments Successfully Implemented (check one)**

<b>Resource Value</b>	<b>N/A</b>	<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
Unacceptable Loss of Topsoil			X		
Weed Invasion			X		
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property		X			
Off-site Threats to Human Life		X			
Other-loss of Access Road Due to Plugged Culverts		X			

**PART 7 – MONITORING PLAN**

Monitoring and evaluation of ES and BAR treatments would be implemented to ensure that treatments are properly implemented, effective, and maintained. Monitoring methods may be qualitative or quantitative, and would be commensurate with the level of treatment complexity and extent. Monitoring and evaluation information would provide adaptive management feedback to improve ES and BAR treatment performance. Monitoring would be the responsibility of the BLM interdisciplinary team. An annual monitoring summary report would be submitted documenting treatment effectiveness.

Treatment/Activity: *S2/S3 Ground and Aerial Seeding*

1) Treatment Objectives: *The objective of the seeding treatments is to establish a perennial dominated plant community within three years. The results are based on site potential.*

*The aerial seed treatment would be considered successful if:*

*The seeded grass species reach densities of:*

- 1) *Three plants per square meter for grasses.*

*The aerial seed treatment would be considered successful if:*

- 1) *Sagebrush and fourwing saltbush seedlings average 0.10 seedlings per square meter across all density plots; or*
- 2) *In qualitative surveys they are found to be common.*

*The ground seed treatment of bitterbrush would be considered effective if:*

- 1) *Bitterbrush seedlings average 0.1 seedlings per square meter across all density plots; or*
- 2) *In qualitative surveys they are found to be common.*

2) Describe how implementation will be monitored: *Implementation is monitored through contract administration. Any changes from the planned implementation would be noted in the project file "as built" discussion.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period: *The methods used to monitor the treated area would include field observations, photo plots, and cover transects utilizing the line-point intercept and density plot methods. Plots would be randomly established through the treated area. Effectiveness monitoring of the ground and aerial seeding will be done for a period of three growing seasons.*

#### **Treatment/Activity: *S5/R5 Noxious Weeds Treatments***

1) Treatment Objectives: *Over ten species of noxious weeds have been identified and recorded within the burned area. It is expected that these weeds will expand their range as a result of the fire. Since these weed species are not uniformly distributed across the burn area, a quantifiable objective cannot be determined until the first year inventory occurs.*

*The objective for the first growing season is to conduct an inventory of the burn area. Any noxious weeds detected during the inventory would be treated.*

*The objective for the second and third years is to decrease the acreage of noxious weeds needing treatment as compared to the first year.*

2) Describe how implementation will be monitored: *During the first growing season treatment, locations of noxious weed populations (by species), treatment type, and the amount of herbicide used would be documented using GPS and GIS. The second and third year objective would be measured by the number and size of locations sprayed and the amount of herbicide utilized.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period. *Size and location of noxious weed populations and needed treatments would be compared between years one, two and three to determine treatment effectiveness. If noxious weed populations remain in the burned area beyond the third year, responsibility would be*

*transferred to the Twin Falls District Noxious Weed Program for ongoing inventory, treatment and monitoring using funding sources other than ES&BAR.*

**Treatment/Activity: S6 Soil Stabilization**

1) Treatment Objectives: *The treatment objective is to establish soil erosion structures in shallow trench forming a continuous barrier along the contour (across the slope) to intercept water running down slope.*

2) Describe how implementation will be monitored: *Various soil stabilization structures sites will be visited annually to assess integrity and effectiveness. Photos will be taken of structures immediately after installation and then prior to runoff occurring events. An “as built” will document any changes from the plan and describe implementation particulars.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period. *Soil erosion structures will be monitored through contract administration. Effectiveness will be gauged through amount of soil movement. Measurement of success will be captured using photo points. Implementation and completion will be documented in a project file “as built” and filed in the project file. Construction of the soil erosion structures will be completed within the first year of the fire. Maintenance or repairs will be completed within the second or third years.*

**Treatment/Activity: S7/R7 Fence/Gate/Cattle Guard**

1) Treatment Objectives: *The objective of this treatment is to repair or replace approximately 42 miles of existing interior livestock management fence and to build approximately seven miles of temporary fence. This will help to ensure natural recovery of the burned area with no disturbances and help maintain grazing allotment integrity. The fences would be constructed to BLM fence standards.*

2) Describe how implementation will be monitored: *Implementation is monitored through contract administration. Any changes from the planned implementation would be noted in the project file “as built” discussion.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period. *Repair and replacement of damaged fences and the temporary fence will be monitored through contract administration. Repairs and completion will be documented in a project file “as built” and filed in the project file. Construction of temporary fence will be completed within the first year of the fire. Repairs will be completed within the second or third year of the fire.*

**Treatment/Activity: S9 Cultural Protection**

1) Treatment Objectives: *The objective of this treatment is to stabilize the critical heritage resources as well as camouflage and protect the site from damage.*

2) Describe how implementation will be monitored: *Implementation will be monitored through contract administration. Any changes from the planned implementation would be noted in the project file “as built” discussion.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period: *Construction of the protective fence will be monitored through contract administration. Labor will be documented in a project file “as built” and filed in the project file. Work will be completed within the first year of the fire.*

Treatment/Activity: ***R11Facilities***

1) Treatment Objectives: *The objective of this treatment is to repair or replace identified facilities damaged by the wildfire and replace necessary materials to restore the integrity of the facilities to working order. All repairs would meet BLM standards.*

2) Describe how implementation will be monitored: *Implementation is monitored through contract administration. Any changes from the planned implementation would be noted in the project file “as built” discussion.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period: *Repair and replacement of damaged facilities will be monitored through contract administration. Repairs will be documented in a project file “as built” and filed in the project file. Repairs will be completed within the first year of the fire.*

Treatment/Activity: ***S12 Closures (Livestock grazing)***

1) Treatment Objectives: *Exclusion of livestock is critical for the recovery of burned vegetation or establishment and protection of new seeding. The seed treatment area would be closed to livestock grazing for a minimum period of two growing seasons to promote recovery of burned vegetation and to facilitate the establishment of seeded species as specified in the 2005 Shoshone and Burley Normal Fire Rehabilitation Plan (#ID-077-2004-008).*

2) Describe how implementation will be monitored: *Resumption of livestock grazing would ultimately depend on monitoring and meeting of ES&BAR plan seeding and natural recovery objectives. Recovery of the treated area would be monitored for availability to grazing on a yearly basis. The monitoring for grazing availability and recommendations for opening the burned area to livestock would be the responsibility of an interdisciplinary team. Implementation is monitored through rangeland management administration.*

3) Describe how effectiveness will be monitored, how it will be measured, and within what time period: *The seed treatment area would be considered recovered and available for grazing when:*

- *Recommended monitoring would include both qualitative and quantitative methods (e.g. line-point intercept or step point cover methods, density quadrates, photos points).*
- *The amount of bare mineral soil (lacking cover of plants, litter, or biological soil crust) is within 10% of what would be expected for the site.*
- *Desirable herbaceous perennial plants are producing seed.*

- *Desirable perennial vegetation have developed extensive root and shoot systems to provide for soil stabilization and are sustainable under livestock grazing.*

## **PART 8 - MAPS**

1. Fire Perimeter
2. Colored Land Status Map
3. Burned Management Fences/Other Structures (guzzlers, signs, etc.)
4. Seeding Treatment Areas
5. Protective Fences and the Adjoining Pasture Fences That They Tie Into
6. Burn Severity
7. Vegetation Communities
8. Threatened and Endangered Species Areas
9. Invasive Species
10. Water Erosion Risk Map

**PART 9 – REVIEW, APPROVALS, and PREPARERS**

**TEAM MEMBERS**

<b>Position</b>	<b>Team Member (Agency/Office)</b>	<b>Initial and Date</b>
Team Leader	Dustin Smith (BLM, Burley)	DS 8/24/2012
Operations	Scott Uhrig (BLM, Shoshone)	SU 8/21/2012
Hydrologist	Steve Davis (BLM, Burley)	SRD 8/23/2012
Cultural Resources/Archaeologist	Suzann Henrikson (BLM, Burley)	LSH 8/24/2012
Rangeland Mgt. Specialist	Jason Theodozio (BLM, Burley)	JT 8/23/2012
Wildlife Biologist	Jesse Rawson (BLM, Burley)	JR 8/23/2012
GIS Specialist	Denise Tolness (BLM, Burley)	DT 8/21/2012
Resource Advisor(s) on Fire	Rawhide Clark (BLM, Burley)	RC 8/24/2012

**PLAN APPROVAL**

/s/ Michael C Courtney

8/23/2012

Michael Courtney  
FIELD MANAGER

DATE

**FUNDING APPROVAL**

*The funding of ES treatments is approved through the appropriate administrative approval level in coordination with the National Office Budget Shop. As funding is available, ES funding requested within a plan that totals below \$100,000 may be approved by the State Director, while ES funding of \$100,000 and above must be approved by the WO. If the ES funding cap is reached, all ES funding will be approved through the National Office in coordination with State ES&R Coordinators to determine highest priority projects. Funding of all BAR treatments is accomplished through a scoring process and is dependent on accurate entries into NFPORS. All funding is approved and allocated on a year-by-year basis.*

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