

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

**PLAN TEMPLATE 2010**

**R ROAD FIRE (H8N7)**

**BLM SPOKANE DISTRICT OFFICE**

**OREGON STATE OFFICE**

**FIRE BACKGROUND INFORMATION**

Fire Name	R Road
Fire Number	LFESH8N70000 / LFBRH8N70000
District/Field Office	SPOKANE DISTRICT OFFICE
Admin Number	LLORW00000
State	OREGON
County(s)	DOUGLAS
Ignition Date/Cause	07/16/2014 Lightning
Date Contained	07/18/2014
Jurisdiction	<i>Acres</i>
Private	3157
BLM	163
Total Acres	3320
Total Costs	\$98,000
Costs to LF2200000 (2822)	\$98,000
Costs to LF3200000 (2881)	\$0

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

	Initial Submission of Complete Plan
X	Updating or Revising the Initial Submission
	Amendment

## **PART 1 - PLAN SUMMARY**

### **BACKGROUND INFORMATION ON FIRE.**

The burned area is located in Douglas County, Washington, approximately 12 miles southwest of Electric City, Washington. The fire burned approximately 3,320 acres, consisting of 163 acres of BLM administered land and 3,157 acres of private property.

The burned area does not include any grazing allotments. The entire burned area (including 163 BLM-administered acres of Principle Priority Habitat (PPH)) is within the Priority Area for Conservation (PAC) for the Moses Coulee population of greater sage-grouse within the Columbia Basin Distinct Population Segment (DPS). This area has been identified as a critical area for habitat protection by both the Washington Department of Fish and Wildlife's (WDFW) Greater Sage-Grouse Recovery Plan (2004) and U.S. Fish and Wildlife Service's (USFWS) Greater Sage-Grouse Conservation Objectives Team Report (2013). The burned area is also considered occupied habitat for Columbian sharp-tailed grouse.

Resource concerns within the burned area include maintenance of native perennial species and expansion of existing invasive species, especially cheatgrass and other brome species. Proposed treatments herbicide application, ground seeding, sagebrush and perennial bunchgrass seedling planting, and monitoring.

### **LAND USE PLAN CONSISTENCY**

#### **S2 - Ground Seeding ES Issue 3**

The general management objectives of the Spokane RMP include the following: Protect or enhance water quality, maintain and/or improve range productivity and manage upland habitat for wildlife species. In addition, the RMP directs that methods of controlling noxious weeds will be proposed. All proposed treatments would be in conformance with current NEPA documents, as well as BLM Manual 9011-1, H-9011-1 and H-9015.

#### **S4 - Seedling Planting ES Issue 3**

The Spokane District RMP ROD (1987, Amended 1992) states, "Soils will be managed to maintain productivity and to minimize erosion. Corrective actions will take place, where practical, to resolve erosive conditions." Seedling planting as a land treatment is addressed in the RMP to achieve vegetation related objectives including increased vegetation cover to control soil erosion. In addition, the RMP states "sufficient forage and cover will be provided for wildlife on seasonal habitat to maintain existing or target population levels as established by WSDG (now WDFW)." Seedling planting would help achieve this goal.

#### **S5 - Noxious Weeds ES Issue 5**

The general management objectives of the Spokane RMP include the following: Protect or enhance water quality, Maintain and/or improve range productivity and Manage upland habitat for wildlife species. In addition, the RMP directs that methods of controlling noxious weeds will be proposed. All proposed treatments would be in conformance with current NEPA documents, as well as BLM Manual 9011-1, H-9011-1 and H-9015.

**S13 - Monitoring ES Issue 3**

Spokane District RMP ROD (1987, amended 1992) states: All unplanned ignitions (wildfires) will have a timely post burn review and evaluation in order to define appropriate rehabilitation and/or monitoring needs.

**COST SUMMARY TABLES**

**Emergency Stabilization (LF2200000)**

Action/ Spec #	ES Issue #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2014	FY 2015	FY 2016	FY 2017	Totals by Spec.
S1		Planning (Project Management)	WM'S	1	\$32,000.00	\$0.00	\$8,000.00	\$4,000.00	\$4,000.00	\$16,000.00
S2	3	Ground Seeding	Acres	40	\$360.29	\$0.00	\$14,000.00	\$0.00	\$0.00	\$14,000.00
S3										
S4	3	Seedling Planting	#	27,000	\$1.26	\$0.00	\$32,000.00	\$1,000.00	\$1,000.00	\$34,000.00
S5	5	Noxious Weeds	Acres	10	\$1,100.00	\$0.00	\$5,000.00	\$3,000.00	\$3,000.00	\$11,000.00
S6										
S7										
S8										
S9										
S10										
S11										
S12										
S13	3	Monitoring	Acres	500	\$46.00	\$0.00	\$9,000.00	\$7,000.00	\$7,000.00	\$23,000.00
S14										
<b>TOTAL COSTS (LF2200000)</b>						<b>\$0</b>	<b>\$68,000</b>	<b>\$15,000</b>	<b>\$15,000</b>	<b>\$98,000</b>
<b>OTHER FUND CODE TOTALS:</b>										
TOTAL COSTS (???)										
TOTAL COSTS (???)										
TOTAL COSTS (???)										

**Burned Area Rehabilitation (LF3200000)**

Action/ Spec #	BAR Issue #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2014	FY 2015	FY 2016	FY 2017	Totals by Spec.
R1										
R2										
R3										
R4										
R5										
R6										
R7										
R8										
R9										
R10										
R11										
R12										
R13										
R14										
		<b>TOTAL COSTS (LF3200000)</b>				<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>OTHER FUND CODE TOTALS:</b>										
		TOTAL COSTS (???)								
		TOTAL COSTS (???)								
		TOTAL COSTS (???)								

## **PART 2 - POST-FIRE RECOVERY ISSUES**

### **EMERGENCY STABILIZATION ISSUES**

#### **1 - Human Life and Safety**

N/A

#### **2 - Soil/Water Stabilization**

N/A

#### **3 - Habitat for Federal/State Listed, Proposed, or Candidate Species**

The entire burned area, including the 163 acres of BLM-administered lands are within the Moses Coulee Priority Area for Conservation (PAC), equivalent to Principal Priority Habitat (PPH).. The BLM-administered parcel in the burned area consists of Argabak-Timentwa-Rock outcrop complex soil map unit. This occurs on warm, 0 to 15 percent slopes with the Argabak making up 45% of the unit, Timentwa 25% and Rock outcrops 15%. The Argabak has a very shallow soil Ecological Site Description (ESD), in a 10-16 inch precipitation zone. This is contrasted by the loamy bottom description for the Timentwa component within the map unit. This component make the deep loamy inclusions (mounds) that provide shrub and understory cover values suitable for sage-grouse nesting, and surrounding shallow soil areas that provide brood-rearing opportunities near deeper soil areas with cover. Cheatgrass and mustard species were present in low densities within the burned area before the fire, typically more common on disturbed mound areas. Average soil burn severity was low-medium, with some areas of unburned or light intensity, but also high intensity on mounds with heavy shrub cover. Resprouting of native bunchgrasses and forbs is expected to be variable based on micro-site burn severity, because not all mounds burned hot. Proposed treatment includes broadcast seeding, seedling planting and weed control. Treatments will focus on loamy mounded areas with high burn severity and where invasive plants occurred pre-burn. Invasive species will be hand pulled and/or spot sprayed with herbicide as necessary depending on infestation levels, potential competition with seeded or planated species and conservation or mitigation measures.

#### **4 - Critical Heritage Resources**

N/A

#### **5 - Invasive Plants and Weeds**

The burned area had varying levels of cheatgrass, square and Japanese brome, tumble mustard, knapweed and other noxious or invasive species before the fire. Cheatgrass and other bromes, as well as various mustard species are the most prevelant invasive species--infested areas typically occurred on deep soil mounds that had previous disturbance. Some mounds might have intact native species, while others next to them are lacking sagebrush and have higher cover of brome and/or mustard species. The seeding treatment is expected to compete with invasives, but there may be some need for spot

treatments across the larger area. Areas detected by monitoring will be treated as needed to prevent expansion beyond pre-fire conditions. Estimated total treatment area is approximately 10 acres (~6% of the total burned area). Mechanical methods may be considered, including hand treatment, weed trimmers or mowing. If determined necessary, ground based spot application of herbicides

## **BURNED AREA RECOVERY ISSUES**

### **1 - Lands Unlikely to Recover Naturally**

N/A

### **2 - Weed Treatments**

N/A

### **3 - Tree Planting**

N/A

### **4 - Repair/Replace Fire Damage to Minor Facilities**

N/A

## **PART 3 - DESCRIPTION OF TREATMENTS**

### **Issue 3 - Habitat for Federal/State Listed, Proposed, or Candidate Species**

#### ***S2 Ground Seeding***

##### **A. Treatment/Activity Description**

Total proposed seeding areas is approximately 40 acres, consisting of approximately 20 acres of larger loamy inclusions and approximately 20 total acres scattered deep soil inclusions. The larger areas of loamy soil would be broadcast seeded at a rate of approximately 10 lbs. per acre using bluebunch wheatgrass, Sandberg's bluegrass, Basin wildrye and some perennial forbs (sage-grouse preferred). Species chosen for planting are based on species compositions listed in ESD reference sheets provided by Natural Resource Conservation Service (NRCS). Mounds would be broadcast seeded with a similar mix, but with higher rates of Sandberg's blue grass and less bluebunch wheatgrass and Basin wildrye (these species will be planted as seedlings on mounds). Seed would be broadcasted by hand or ATV and incorporated with hand rakes or ATV harrow. Seeding is planned to begin in mid-November following Section 106 clearance. Seeding would occur on BLM-administered lands.

##### **B. How does the treatment relate to damage or changes caused by the fire?**

Areas of high burn severity resulted in sagebrush and perennial grass mortality, especially on deep soil mounds with sagebrush and Basin wildrye that had more fuel. Cheatgrass, square and Japanese bromes and mustard were present in low density and are likely to increase without treatment, but are expected to be controlled by seeding of native species, in combination with chemical or mechanical treatments as needed. Forbs will provide additional competition and help fill gaps, while also providing brooding habitat for sage-grouse.

Treatment objective is to “restore structure and function to fire damaged ecosystems.” Carbon sequestration is one of many ecological functions provided by healthy diverse plant communities. Left untreated, the burned area will trend toward domination by cheatgrass and other invasive annuals, which would also reduce habitat quality for sage-grouse. The minimal root systems of these annuals, accumulate little if any organic matter into the soil profile. Additionally, invasive annual grasses increase fire frequency, thereby moving carbon from the soil profile into the atmosphere.

Conversely, reestablishing perennial vegetation within the burned area will have a positive benefit to climate change by the ability of these plants to sequester carbon. Deep rooted grasses in particular contribute substantial organic material into the soil profile both from their extensive root systems and recycle approximately ½ of their root mass annually, thereby moving carbon from the atmosphere into the soil profile (providing long term carbon storage). Reestablishing resilient perennial vegetation would also reduce fire frequency, reducing carbon emissions that would result if the site was allowed to become converted to a highly flammable exotic annual community.

In summary, the proposed seeding treatments would be expected to have a long-term

indirect effect of decreased carbon emissions and increased soil carbon sequestration by potentially reducing high-intensity wildfires, slowing the rate of carbon turnover, and providing long-term below ground carbon storage.

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

The BLM's National Sage-Grouse Strategy (2004) directs the BLM within the State of Washington to defer to WDFW's greater sage-grouse recovery plan for management recommendations to assist in recovery of the species. Recovery Task #8 in WDFW's recovery plan states: "restore degraded and burned sage-grouse habitat within Sage-Grouse Management Units." Additionally, treatments comply with IMs 2012-043 and 2014-114 for sage grouse habitat direction.

Recent policy guidance from IM 2014-114 Sage-grouse habitat and wildland fire management directs the following: Apply Integrated Vegetation Management (IVM) practices in addressing invasive and non-native species, including cheatgrass treatments and sagebrush management; increase sagebrush, perennial grass and forb cover; protect soil from erosion following disturbance through planting and seeding efforts; strive to retain residual and functional post-fire plant species including early seral native perennial grasses; use locally adapted native seed where available and probability of success and funding allow; consider using minimum till drills and multiple seed boxes, where practical and available, to increase seeding success; coordinate funding and planning within fuels, ESR, and renewable resources programs to plan and implement treatments that meet landscape objectives. This may include side-by-side treatments, and utilizing partner funds to cover additions to ESR seed mixes that will conserve and restore sage-grouse habitat.

Additionally, IM #2012-043 Greater Sage-Grouse Interim Management Policies and Procedures states: "In Emergency Stabilization and Burned Area Rehabilitation plans, prioritize re-vegetation projects to (1) maintain and enhance unburned intact sagebrush habitat when at risk from adjacent threats; (2) stabilize soils; (3) reestablish hydrologic function; (4) maintain and enhance biological integrity; (5) promote plant resiliency; (6) limit expansion or dominance of invasive species; and (7) reestablish native species." IM #2012-043 also states: "Increase post-fire activities through the use of integrated funding opportunities with other resource programs and partners."

## ***S4 Seedling Planting***

### A. Treatment/Activity Description

The proposed treatment is to plant Basin big sagebrush, native grass (bluebunch wheatgrass and Basin wildrye) and forb seedlings in loamy soil areas on BLM-administered lands in areas of high burn intensity. Approximately 7,000 sagebrush seedlings (350/acre), 10,000 grass seedlings (5,000 each of bluebunch wheatgrass and Basin wildrye, 500/acre) and 2000 forb seedlings (100/acre) would be planted on mounds totalling approximately 20 acres total area, to provide shortened recovery time of native species and competition with invasive species. Seedlings would be grown and planted under contract, started in the spring

of 2015 and planted in either fall of 2015 or spring of 2016, depending on optimal moisture conditions. Recovery time of sagebrush will be compared to areas with no seedling planting to provide cost-effectiveness information. Section 106 cultural clearance will occur prior to seedling planting.

B. How does the treatment relate to damage or changes caused by the fire?

Moderate and high intensity burn areas experienced nearly complete sagebrush mortality and high levels of perennial grass mortality. This will create an opportunity for invasive species to increase and expand. While observed recovery of sagebrush in northern parts of Douglas county have been relatively fast, this area is has less contiguous sagebrush cover due to deep soil mounds separated by shallow soil lithosol, and less opportunity for a large sagebrush seed bank. Some mounds in the burned area were already lacking sagebrush cover from previous disturbances, thus demonstrating a need to supplement the recovery. Native grass seedling planting have shown excellent success and quick establishment/seed-set in previous treatments, and are a good choice for treatment areas consisting of small patches. Sagebrush and understory grass cover are key elements of meeting recommendations for suitable sage-grouse habitat.

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

The BLM's National Sage-Grouse Strategy (2004) directs the BLM within the State of Washington to defer to WDFW's greater sage-grouse recovery plan for management recommendations to assist in recovery of the species. Recovery Task #8 in WDFW's recovery plan states: "restore degraded and burned sage-grouse habitat within Sage-Grouse Management Units." Additional guidance is provided in recent IMs described under S2 Ground seeding treatments.

### ***S13 Monitoring***

A. Treatment/Activity Description

Monitoring will consist of implementation monitoring for seeding, seedling planting, invasive plants, fence repair and grazing closures, as well as vegetation recovery monitoring. For vegetation recovery monitoring, the burned area will be stratified based on ecological type, slope and aspect. Random sample points will be generated within strata of interest to provide statistically viable sample sizes. Data will be collected following the Monitoring Post-Fire Vegetation Rehabilitation Projects: A Common Approach for Non-Forested Ecosystems (Wirth and Pyke 2006) standardized ESR monitoring protocol and will be entered into Database for Inventory, Monitoring, and Assessment (DIMA) for analysis. Work will be accomplished through an assistance agreement that is currently being established for Spokane District Assessment, Inventory and Monitoring (AIM) strategy development and implementation.

B. How does the treatment relate to damage or changes caused by the fire?

The monitoring is designed to document the effects of the fire and the effectiveness of treatments as well as natural recovery.

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

Monitoring provides important information regarding the effectiveness of treatments and the post-fire condition of the burned area. Monitoring will be used to determine the duration of grazing closures based on attainment of objectives. This information will be used to inform future decisions regarding the need or lack of need for weed or additional seeding treatments and will help optimize treatments based on project specific conditions. Investment in monitoring is expected to provide long-term cost benefit by allowing better post-fire prescriptions in future projects. Monitoring is required in H-1742-1 Burned Area Emergency Stabilization and Rehabilitation Handbook. Using a contract or assistance agreement for monitoring results in increased cost effectiveness compared to using seasonal workers because contract crews are familiar with methods and plants and seasonal crews require new training each season and have been problematic for data consistency in the past.

## **Issue 5 - Invasive Plants and Weeds**

### ***S5 Noxious Weeds***

#### A. Treatment/Activity Description

The proposed treatment is to spot treat cheatgrass, square and Japanese brome, tumble mustard, knapweed and other noxious or invasive species as needed based on future monitoring. Cheatgrass and other bromes, as well as various mustard species were present in variable densities prior to the fire--infested areas typically occurred on deep soil mounds that had previous disturbance. Some mounds might have intact native species, while others next to them are lacking sagebrush and have higher cover of brome and/or mustard species. The seeding treatment is expected to compete with invasives, but there may be some need for spot treatments across the larger area. Areas detected by monitoring will be treated as needed to prevent expansion beyond pre-fire conditions. Estimated total treatment area is approximately 10 acres (~6% of the total burned area). Mechanical methods may be considered, including hand treatment, weed trimmers or mowing. If determined necessary, ground based spot application of herbicides would be used.

Picloram: Maximum rate = 1.0 lb. a.e./ac./year; Typical rate = 0.35 lb. a.e./ac./year

Glyphosate: Maximum rate = 7.0 lb. a.e./ac./year; Typical rate = 2.0 lb. a.e./ac./year

Chlorsulfuron: Maximum rate = 0.047 lb. a.e./ac./year; Typical rate = 0.141 lb. a.e./ac./year

#### B. How does the treatment relate to damage or changes caused by the fire?

The fire caused mortality to native vegetation and this disturbance provides an opportunity for invasive plants to increase in previously invaded areas and become established in new areas. Seeding and seedling planting treatments are expected to minimize this opportunity, but surveillance monitoring is necessary to identify the need for additional treatments if seeding and/or planting fails to adequately control invasive plants.

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

Early detection and spot treatments for invasive plants is reasonable because it will provide

cost savings if weed treatments are not necessary, but it will still allow for timely treatment if additional measures are determined to be necessary through monitoring. Monitoring for and treating weeds is an appropriate use of funding identified in the Burned Area Emergency Stabilization and Rehabilitation handbook H-1742-1. Any treatments proposed based on need identified through monitoring would conform to all regulatory laws, policies and guidance as described below. This approach is expected to increase cost-effectiveness by identifying only necessary treatments before prescribing treatment. Prevention is the most cost effective, followed by early detection and control of infestations before they can become established. Containment of established infestations is the next most cost effective. Since some invasive plants are already established in the burned area, it is recommended that those be controlled to prevent their spread into the burned area where they were previously unknown. Also, ES&R can fund invasive plant treatments because seeding and planting success decreases when invasive plants compete with seedlings.

## **PART 4 - DETAILED TREATMENT COST TABLE**

Action / Spec #	Action Description	Unit Type	# Units	Unit Cost	FY14	FY15	FY16	FY17	Total Cost
<b>S1</b>	<b>Planning (Project Management)</b>								
1	Implementation Monitoring	WM'S	0	\$8,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	Plan Development, NEPA, Implementation Monitoring, Reporting	WM'S	2	\$8,000.00	\$0.00	\$8,000.00	\$4,000.00	\$4,000.00	\$16,000.00
	<b>Total</b>			<b>\$16,000.00</b>	<b>\$0.00</b>	<b>\$8,000.00</b>	<b>\$4,000.00</b>	<b>\$4,000.00</b>	<b>\$16,000.00</b>
<b>S2</b>	<b>Ground Seeding ES Issue 3</b>								
1	Section 106 contract admin	WM'S	1	\$4,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00	\$4,000.00
2	Section 106 Task Order	Acres	163	\$35.00	\$0.00	\$5,705.00	\$0.00	\$0.00	\$5,705.00
3	Seeding	WM'S	1	\$2,000.00	\$0.00	\$2,000.00	\$0.00	\$0.00	\$2,000.00
4	Purchase Seed for Broadcast Mix	LBS (Pounds)	124	\$13.32	\$0.00	\$1,651.68	\$0.00	\$0.00	\$1,651.68
5	Purchase seed for Mound Mix	LBS (Pounds)	23	\$12.25	\$0.00	\$281.75	\$0.00	\$0.00	\$281.75
6	Seed warehouse surcharge	LBS (Pounds)	1,933	\$0.25	\$0.00	\$483.25	\$0.00	\$0.00	\$483.25
7	Seed mixing surcharge	LBS (Pounds)	1,933	\$0.15	\$0.00	\$289.95	\$0.00	\$0.00	\$289.95
	<b>Total</b>			<b>\$6,060.97</b>	<b>\$0.00</b>	<b>\$14,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$14,000.00</b>
<b>S4</b>	<b>Seedling Planting ES Issue 3</b>								
1	Contract for native grass plugs	Number	10,000	\$2.00	\$0.00	\$20,000.00	\$0.00	\$0.00	\$20,000.00
2	Contract Admin	WM'S	1	\$4,000.00	\$0.00	\$2,000.00	\$1,000.00	\$1,000.00	\$4,000.00
3	Contract for big sagebrush seedling growout and planting	Number	5,000	\$2.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$10,000.00
	<b>Total</b>			<b>\$4,004.00</b>	<b>\$0.00</b>	<b>\$32,000.00</b>	<b>\$1,000.00</b>	<b>\$1,000.00</b>	<b>\$34,000.00</b>
<b>S5</b>	<b>Noxious Weeds ES Issue 5</b>								
1	Treatments as needed	Acres	10	\$50.00	\$0.00	\$1,000.00	\$1,000.00	\$1,000.00	\$3,000.00
2	Surveillance Monitoring	WM'S	1	\$8,000.00	\$0.00	\$4,000.00	\$2,000.00	\$2,000.00	\$8,000.00
	<b>Total</b>			<b>\$8,050.00</b>	<b>\$0.00</b>	<b>\$5,000.00</b>	<b>\$3,000.00</b>	<b>\$3,000.00</b>	<b>\$11,000.00</b>
<b>S13</b>	<b>Monitoring ES Issue 3</b>								
1	Agreement for monitoring	Each	3	\$5,000.00	\$0.00	\$5,000.00	\$5,000.00	\$5,000.00	\$15,000.00
2	Administer Agreement	WM'S	1	\$8,000.00	\$0.00	\$4,000.00	\$2,000.00	\$2,000.00	\$8,000.00
	<b>Total</b>			<b>\$13,000.00</b>	<b>\$0.00</b>	<b>\$9,000.00</b>	<b>\$7,000.00</b>	<b>\$7,000.00</b>	<b>\$23,000.00</b>
<b>ES</b>	<b>Grand Total</b>			<b>\$47,114.97</b>	<b>\$0.00</b>	<b>\$68,000.00</b>	<b>\$15,000.00</b>	<b>\$15,000.00</b>	<b>\$98,000.00</b>
<b>Project</b>	<b>Grand Total</b>			<b>\$47,114.97</b>	<b>\$0.00</b>	<b>\$68,000.00</b>	<b>\$15,000.00</b>	<b>\$15,000.00</b>	<b>\$98,000.00</b>

**PART 5 - SEED LISTS**

**DRILL SEED**

**R Road Mound Mix**

												<b>Total Cost</b>
Sandberg bluegrass, Duffy Creek	Poa secunda	0.7200	20	871,200	1,046,960	1,210,000	20.0	0.8	16.6	23.0	\$ 12.25	\$ 281.75
TOTALS:			20	871,200	1,046,960	1,210,000		0.8	16.6	23.0	\$ 12.25	\$ 281.75

**R Road Broadcast Mix**

												<b>Total Cost</b>
Bluebunch wheatgrass, Duffy Creek	Pseudoroegneria spicata	0.7650	11.05	481,338	125,680	629,200	20.0	3.8	76.6	100.0	\$ 13.50	\$1,350.00
Prairie Junegrass	Koeleria macrantha	0.7200	6.43	280,091	2,000,000	389,015	20.0	0.1	2.8	4.0	\$ 14.82	\$ 59.28
Idaho fescue, Duffy Creek	Festuca idahoensis	0.7650	3.93	171,191	450,000	223,779	20.0	0.4	7.6	10.0	\$ 12.00	\$ 120.00
Sandberg bluegrass, Duffy Creek	Poa secunda	0.7200	8.65	376,794	1,046,960	523,325	20.0	0.4	7.2	10.0	\$ 12.25	\$ 122.50
TOTALS:			30.06	1,309,414	3,622,640	1,765,319		4.7	94.2	124.0	\$ 52.57	\$1,651.78

**AERIAL SEED**

**SEEDLINGS**

						<b>Total Cost</b>
Basin Big Sagebrush, Basin	Artemisia tridentata tridentata		20.0	350	7,000	\$ 2.00
						\$14,000.00

Bluebunch wheatgrass, Duffy Creek	<i>Pseudoroegneria spicata</i>	20.0	250	5,000	\$ 2.00	\$10,000.00
Great Basin Wildrye, Toppenish	<i>Leymus cinereus</i>	20.0	250	5,000	\$ 2.00	\$10,000.00
Shaggy fleabane	<i>Erigeron pumilus</i>	20.0	100	2,000	\$ 2.00	\$4,000.00
TOTALS:		80.0	950	19,000		\$38,000.00

## **PART 6 - 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:

Locally sourced seed that is adapted to the ecological sites in the burned area will be used.

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

Yes  No  Rationale:

Seed is available in local storage, funding will be used to replace what is used from storage.

**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 cost is established through an IDIQ contract, and quality has been shown to be excellent.

**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 proposed species are expected to perform very well based on other seeding in similar areas.

**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:

Monitoring will be used to ensure long-term success of treatments is not compromised by management activities.

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

**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:

Native species are expected to meet objectives.

**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:

N/A

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

Yes  No  Rationale:

N/A

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

<b>Non-native Plants</b>	<b>Native Plants</b>
	Basin Big Sagebrush, Basin ( <i>Artemisia tridentata tridentata</i> )
	Bluebunch wheatgrass, Duffy Creek ( <i>Pseudoroegneria spicata</i> )
	Great Basin Wildrye, Toppenish ( <i>Leymus cinereus</i> )
	Idaho fescue, Duffy Creek ( <i>Festuca idahoensis</i> )
	Prairie Junegrass ( <i>Koeleria macrantha</i> )
	Sandberg bluegrass, Duffy Creek ( <i>Poa secunda</i> )
	Shaggy fleabane ( <i>Erigeron pumilus</i> )

**PART 7 - COST-RISK ANALYSIS**

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

<b>Action/ Spec #</b>	<b>ES Issue #</b>	<b>Planned ES Action (LF2200000)</b>	<b>Unit (acres, WMs, Number)</b>	<b># Units</b>	<b>Total Cost</b>	<b>% Probability of Success</b>
S2	3	Ground Seeding	Acres	40	\$14,000.00	80%
S4	3	Seedling Planting	#	27000	\$34,000.00	90%
S5	5	Noxious Weeds	Acres	10	\$11,000.00	90%
S13	3	Monitoring	Acres	500	\$23,000.00	95%
					<b>\$82,000.00</b>	
<b>Action/ Spec #</b>	<b>BAR Issue #</b>	<b>Planned BAR Action (LF3200000)</b>	<b>Unit (acres, WMs, Number)</b>	<b># Units</b>	<b>Total Cost</b>	<b>% Probability of Success</b>
					<b>\$ 0.00</b>	

## 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 proposed treatments are a reasonable attempt to mitigate the increase in risk caused by the fire.

No Action Yes  No  Rationale for Answer:

No action presents unacceptable risks to sage-grouse habitat.

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:

The proposed treatments are relatively low cost, and have a fairly high probability of success.

No Action Yes  No  Rationale for Answer:

The likelihood of additional treatment costs if needed at a later date is high, and potential economic impacts related to possible sage-grouse listing would contribute additional costs.

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:

The proposed action involves relatively low cost treatments, but could reduce the likelihood of more costly treatments in the future.

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

#### No Action - Treatments not Implemented

Resource Value	N/A	None	Low	Med	High
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

Resource Value	N/A	None	Low	Med	High
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 8 - MONITORING PLAN**

### **S2 - Ground Seeding - ES Issue 3**

#### **Identify the objective of the treatment:**

The objective of the treatment is to establish 2 seeded plants/sq. meter at the 3rd year after seeding. 1st year post-seeding success will be based on: Fully successful=7 or more seeded plants/sq. meter; Partially successful=1-6 seeded plants/sq. meter; Unsuccessful=Less than one seeded plant/sq. meter. 2nd year post-seeding success will be based on: Fully successful=4 or more surviving seeded plants/sq. meter; Partially successful=1-3 surviving seeded plants/sq. meter; Unsuccessful=Less than 1 surviving seeded plants/sq. meter. 3rd year post-seeding success will be based on: Fully successful=2 or more seeded plant/sq. meter; Partially successful=1-2 surviving seeded plants/sq. meter; Unsuccessful=Less than 1 surviving seeded plants/sq. meter.

#### **Describe how implementation will be monitored:**

Implementation will be monitored using an implementation scheduling spreadsheet in combination with monthly ESR team meeting to ensure implementation in a timely manner.

#### **Describe how effectiveness will be monitored, how it will be measured, and within what time period:**

Effectiveness will be monitored using methods described in Monitoring Post-Fire Vegetation Rehabilitation Projects: A Common Approach for Non-Forested Ecosystems (Wirth and Pyke 2006), including line-point intercept, gap intercept and density quadrats. Data will be entered in DIMA for analysis. Monitoring will occur in mid-summer of FY15, FY16 and FY17. Monitoring will occur through an assistance agreement to implement AIM Strategy on the Spokane District.

### **S4 - Seedling Planting - ES Issue 3**

#### **Identify the objective of the treatment:**

The objective of the sagebrush planting portion of the treatment is to establish 150 sagebrush plants per acre at the 3rd year after planting. The proposed planting rate would be approximately 350 plants/acre, and 150 surviving plants would equal approximately 42% survival. This is a reasonable survival rate based on USFWS shrub planting research (2012). 3rd year post-planting success will be based on: Fully successful=150 or more plants/acre; Partially successful=1-149 surviving plants/acre; Unsuccessful=Less than 1 surviving plant/acre.

The objective of the perennial grass planting portion of the treatment is to establish 1 plant/square meter. The proposed planting rate would be approximately 2 plants/square meter, and full success at 1 plant/square meter would equal approximately 50% survival. This is a reasonable expected survival rate based on recent similar treatments. 3rd year post-planting success will be based on: Fully successful=1 or more plants/sq. meter; Partially successful=0-1 surviving plants/sq. meter; Unsuccessful=0 surviving plant/sq. meter.

**Describe how implementation will be monitored:**

Implementation will be monitored using an implementation scheduling spreadsheet in combination with monthly ESR team meeting to ensure implementation in a timely manner.

**Describe how effectiveness will be monitored, how it will be measured, and within what time period:**

Effectiveness will be monitored using methods described in Monitoring Post-Fire Vegetation Rehabilitation Projects: A Common Approach for Non-Forested Ecosystems (Wirth and Pyke 2006), including line-point intercept, gap intercept and density quadrats. Data will be entered in DIMA for analysis. Monitoring will occur in mid-summer of FY15, FY16 and FY17. Monitoring will occur through an assistance agreement to implement AIM Strategy on the Spokane District.

**S5 - Noxious Weeds - ES Issue 5**

**Identify the objective of the treatment:**

The goal of the treatment to inventory for all invasive plants in the burned area, control them early before they go to seed and before they provide unacceptable competition to native species. The objective of potential chemical or mechanical treatments is to maintain perennial weeds at established invasion sites at a density of less than 1 plant/sq. meter, and to maintain cheatgrass at less than or equal to pre-burn site conditions, estimated to be 5-15% cover.

**Describe how implementation will be monitored:**

Implementation will be monitored using an implementation scheduling spreadsheet in combination with monthly ESR team meeting to ensure implementation in a timely manner.

**Describe how effectiveness will be monitored, how it will be measured, and within what time period:**

Effectiveness will be monitored through a combination of visual inspection and quantitative sampling as described under S-13 Monitoring below. Surveillance monitoring will occur in the fall of 2014, and spring and fall of 2015, 2016 and 2017, quantitative monitoring will occur in the summer of 2015, 2016 and 2017.

### **S13 - Monitoring - ES Issue 3**

#### **Identify the objective of the treatment:**

The objective of treatment implementation monitoring is to ensure the treatments are implemented in a timely manner. The objective of vegetation monitoring is to use the Strategy for Monitoring Post-fire Rehabilitation Treatments (Wirth and Pyke) monitoring protocol to provide statistically viable sample sizes within priority strata to inform IDT decisions regarding resumption of grazing, effectiveness of potential prescribed grazing treatments, and overall effectiveness of treatments for determining future need or lack of need for treatments, resulting in increased cost-effectiveness.

#### **Describe how implementation will be monitored:**

Implementation of monitoring will be monitored using a monitoring scheduling spreadsheet and through the contract monitoring and inspection process for measured plots.

#### **Describe how effectiveness will be monitored, how it will be measured, and within what time period:**

Effectiveness of monitoring will be measured on a completed/not completed basis annually. In addition, effectiveness of vegetation monitoring will be judged by the following measures: Fully successful=statistically sound sample size to determine differences (if any) between burned treatment and control areas and unburned areas by aspect. Partially successful=samples obtained to address these questions, but not statistically powerful. Unsuccessful=monitoring not performed

## **PART 9 - MAPS**

1. - Fire perimeter, ownership, treatments areas
2. - Sage-grouse Priority Areas for Conservation

## **PART 10 - REVIEW, APPROVALS, and PREPARERS**

### **TEAM MEMBERS**

<b>Position</b>	<b>Team Member (Agency/Office)</b>	<b>Initial</b>	<b>Date</b>
Team Leader	Erik Ellis (BLM Wenatchee Field Office)	Initialed	08/08/2014
Botanist	Molly Boyter (BLM Wenatchee Field Office)	Initialed	08/08/2014
Cultural Resources/Archeologist	Francoise Sweeney (BLM Wenatchee Field Office)	Initialed	08/08/2014
Noxious & Invasive Species Specialist	Mark Williams (BLM Wenatchee Field Office)	Initialed	08/08/2014
Restoration Coordinator	Chris Sheridan (BLM Wenatchee Field Office)	Initialed	08/08/2014

### **PLAN APPROVAL**

The Agency Administrator is responsible for developing, implementing, and evaluating emergency stabilizations and rehabilitation plans, treatments and activities. 620 DM 3.5C

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FIELD OFFICE 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.