BLM OREGON POST-FIRE RECOVERY PLAN

EMERGENCY STABILIZATION AND BURNED AREA REHABILITATION

PLAN TEMPLATE 2010

CARLTON COMPLEX FIRE (H8HC)

BLM SPOKANE DISTRICT OFFICE

OREGON STATE OFFICE

FIRE BACKGROUND INFORMATION

Fire Name	Carlton Complex
Fire Number	LFESH8HC0000 / LFBRH8HC0000
District/Field Office	SPOKANE DISTRICT OFFICE
Admin Number	LLORW00000
State	OREGON
County(s)	OKANOGAN
Ignition Date/Cause	07/14/2014 Lightning
Date Contained	08/28/2014
Jurisdiction	*Acres*
State	69877
BIA	590
USFS	80089
Private	98884
BLM	6291
Total Acres	255731
Total Costs	$976,000
Costs to LF2200000 (2822)	$88,000
Costs to LF3200000 (2881)	$888,000

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 Carlton Complex started on July 14th from four lightning caused fires (Stokes, Gold Hikes, French Creek and Cougar Flat) burning National Forest System lands on the Okanogan-Wenatchee National Forest, Bureau of Land Management lands, Washington State, Colville Tribal and private lands. Hot weather and windy conditions pushed the fire over the ridge tops and into the town of Pateros resulting in a large number of evacuations. The fire made significant runs towards the cities of Brewster, Pateros and Mallot between July 17th and 18th, consuming approximately 300 homes in its path and destroying critical infrastructure. These fires grew into one larger fire on July 20th. The burned area is located in Okanogan County, Washington, near the communities of Pateros, Brewster, Mallot, Methow, Carlton, Twisp and Winthrop, Washington. The fire burned approximately 255,729 acres, consisting of approximately 6,291 acres of BLM-administered land, 80,089 acres of National Forest land, 69,877 acres of Washington State Department of Natural Resources (WDNR) and Washington State Department of Fish and Wildlife (WDFW)-administered lands, 590 acres of Tribal land, and 98,884 acres of private property. The burned area includes 15 active BLM-administered grazing allotments, and 4 inactive allotments, in addition to State and USFS grazing areas. BLM-administered grazing allotments total approximately 5,456 acres and support 545 animal unit months (AUMs) that will be unavailable due to the fire. Details for each alltoment are inlcuded in the attached burn alltoment spreadsheet.

Given the size and severity of the Carlton Complex fire on Washington State and private lands, the Okanogan Conservation District asked Governor Inslee to request for a Multi-jurisdiction Assessment Team for the Washington State and private lands. After President Obama signed the Disaster Declaration on August 11th, the Federal Emergency Management Agency (FEMA) began coordinating with the Okanogan Conservation District and the Forest Service to staff this team to complete an assessment on Washington State and private lands. This Multi-jurisdiction Assessment Team has worked in close coordination with Forest Service Burned Area Emergency Response (BAER) teams on the Carlton Complex Fire to create a seamless evaluation of all lands burned in the Carlton Complex Fire. Natural Resource Conservation Service (NRCS) enacted their Emergency Watershed Program (EWP) to fund protection measures for private structures and properties, with Okanogan County acting as a sponsor and providing 25% funding match. BLM will use Wyden Amendment authority to support work on adjoining lands (State and/or private) where treatments would benefit BLM land and support efforts to address issues across ownership boundaries.

The burned area ranges in elevation from approximately 800-4,400 feet, and includes various habitat types, including shrub-steppe, forested and riparian areas. Precipitation zones range from 6-9 inches per year at lower elevations to greater than 15 inches per year at higher elevations. Dominant soils within the burn area are well drained and have a xeric (dry) soil moisture regime and mesic (warm) and frigid soil temperature regimes. Mesic

soils are present at lower elevations, and support shrub/steppe plant communities; where forested they occupy south and some west aspects and support Ponderosa pine/grass and shrub vegetation. Frigid, forested soils are on north and east aspects and support mixed conifer (Douglas fir and Ponderosa pine) and forb/shrub understory vegetation. Important plant communities documented on BLM lands include bitterbrush/bluebunch wheatgrass and smooth sumac/bluebunch wheatgrass. Other important plant communities in the burned area include three-tip sagebrush/Idaho fescue, Wyoming big sagebrush/needle-and-thread, bitterbrush/Idaho fescue, ponderosa pine/bitterbrush, ponderosa pine/pine grass and ponderosa pine/Douglas-fir/bluebunch wheatgrass. The only sensitive plant species documented within the burned area is *Carex hystericina*, but is not known to occur on BLM lands.

The burned area includes portions of 5 watersheds at the 5th field HUC: Loup-Loup Creek-Okanogan River, Lower Chewuch, Lower Methow, Middle Methow and Swamp Creek-Columbia River, and affected three ESA-listed fish stocks in the Methow and Okanogan subbasins as well as several non-listed game fish, non-game fish and forage fish species. The Methow River supports runs of Upper Columbia River (UCR) spring Chinook salmon (endangered), Upper Columbia River summer Steelhead (threatened) and Columbia River Bull Trout (threatened) and their designated "Critical Habitat." Other species of interest include Coho salmon, summer Chinook, cutthroat, red band/rainbow, and Pacific lamprey. The Okanogan River supports populations of UCR steelhead (threatened) and their critical habitat as well as sockeye salmon, and summer Chinook salmon. Based on field observations completed during BAER assessments, many of the high and moderate severity burns have a high potential for surface erosion from overland flow that may enter headwater channels causing sediment bulking that can be transported during subsequent high flow events. Potential post-fire effects include: increased water temperature, peak flows and channel scour, surface erosion and fine sediment delivery, and landslides and debris flows. Fire effects to fish and habitat are expected to be the greatest in the next few years and to diminish to pre-fire levels within 7 to 10 years. Some of the effects such as increased large wood inputs, fresh bedload and gravel could positively affect aquatic habitat. Burned Area Emergency Response treatments that reduce fine sediment delivery, restore natural drainage patterns and allow for large wood movement and or accumulation in fish bearing streams and the mainstem Methow are expected to benefit ESA listed spring Chinook, steelhead and bull trout.

The burned area supports a large variety of wildlife species, including many senstive species such as raptors and owls, woodpeckers, bats, reptiles and ampibians, Columbian sharp-tailed grouse and western gray squirrel. Greater sage-grouse historically occurred in shrub-steppe habitats within the fire, but the burned area does not currently support sage-grouse populations and is not within WDFW Greater Sage-Grouse Recovery Plan (Stinson et al. 2004) designated recovery areas. ESA listed wildlife within the burned area include gray wolf, grizzly bear, and Canada lynx. The area is also important for many game species including white-tailed and mule deer, black bear, cougar, forest grouse and upland game birds.

Additional information about the burned area is provided in attached spatial reports and BAER assessment reports.

Safety and resource concerns within the burned area include landslides and flooding that has occurred following rain events in steep drainages upstream of private residences, maintenance of native perennial species for mule deer critical winter range, and expansion of existing weeds, especially cheatgrass, diffuse and spotted knapweed, various thistle species, Dalmatian toadflax and others. Proposed treatments on BLM lands include ground/aerial seeding, seedling planting (bitterbrush/sagebrush in uplands, hardwoods in riparian areas), Early Detection/Rapid Response monitoring with herbicide and/or mechanical weed treatments, hazard tree removal, grazing closures, fence repair and monitoring.

LAND USE PLAN CONSISTENCY

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.

S10 - Tree Hazard Removal ES Issue 1

Hazard tree removal is critical for human life and safety and will allow continued use of the State Highway that passes through the BLM lands. Hazard tree removal is consistent with the following RMP objective: “Keep public lands open for the exploration/development of mineral resources, rights-of-way, and other public purposes with consideration to mitigate designated resource concerns.”

S13 - Monitoring ES Issue 5

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.

R2 - Ground Seeding BAR Issue 1

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.” Ground seeding 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).” Ground seeding would help achieve this goal.

R3 - Aerial Seeding BAR Issue 1
The RMP states, “Soils will be managed to maintain productivity and to minimize erosion. Corrective actions will take place, where practical, to resolve erosive conditions.” Aerial seeding 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).” Aerial seeding would help achieve this goal.

R4 - Seedling Planting BAR Issue 1
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.

R5 - Noxious Weeds BAR Issue 2
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.

R7 - Fence/Gate/Cattleguard BAR Issue 4
Fence repair is in accordance with the RMP objectives to: maintain range productivity, manage habitat for wildlife and protect soil productivity and minimize erosion. Functioning fencing will aid in recovery of vegetation to meet these objectives.

R12 - Closures (area, OHV, livestock) BAR Issue 1
Closure of the burned area to livestock use is in accordance with the RMP objectives to: maintain range productivity, manage habitat for wildlife and protect soil productivity and minimize erosion. Closures will allow for recovery of the vegetation and soil resources to meet these objectives. The RMP also states: "Generally all areas where vegetative manipulations occur would be totally rested from grazing during at least two growing seasons following treatment." Additional guidance is provided by the ESR handbook that

relates grazing closure duration to recovery objectives, and this is consistent with the RMP language because the word "generally" acknowledges that there may be situations where this duration would be shorter or longer depending on recovery objectives..

R13 - Monitoring BAR Issue 1
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)		0		$0.00	$8,000.00	$4,000.00	$4,000.00	$16,000.00
S2										
S3										
S4	3	Seedling Planting	#	1,000	$10.00	$0.00	$10,000.00	$0.00	$0.00	$10,000.00
S5	5	Noxious Weeds	Acres	500	$108.00	$0.00	$54,000.00	$0.00	$0.00	$54,000.00
S6										
S7										
S8										
S9										
S10	1	Tree Hazard Removal	Acres	1	$4,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
S11										
S12										
S13	5	Monitoring	Acres	500	$8.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
S14										
		TOTAL COSTS (LF2200000)				**$0**	**$80,000**	**$4,000**	**$4,000**	**$88,000**
OTHER FUND CODE TOTALS:										
		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	1	Ground Seeding	Acres	500	$167.20	$0.00	$84,000.00	$0.00	$0.00	$84,000.00
R3	1	Aerial Seeding	Acres	1,500	$248.42	$0.00	$373,000.00	$0.00	$0.00	$373,000.00
R4	1	Seedling Planting	#	100,000	$1.78	$0.00	$176,000.00	$1,000.00	$1,000.00	$178,000.00
R5	2	Noxious Weeds	Acres	500	$166.00	$0.00	$25,000.00	$29,000.00	$29,000.00	$83,000.00
R6										
R7	4	Fence/Gate/Cattleguard	Miles	10	$2,635.00	$0.00	$26,000.00	$0.00	$0.00	$26,000.00
R8										
R9										
R10										
R11										
R12	1	Closures (area, OHV, livestock)	#	17	$941.18	$0.00	$16,000.00	$0.00	$0.00	$16,000.00
R13	1	Monitoring	Acres	6,300	$20.32	$0.00	$44,000.00	$42,000.00	$42,000.00	$128,000.00
R14										
		TOTAL COSTS (LF3200000)				**$0**	**$744,000**	**$72,000**	**$72,000**	**$888,000**
OTHER FUND CODE TOTALS:										
		TOTAL COSTS (???)								
		TOTAL COSTS (???)								
		TOTAL COSTS (???)								

PART 2 - POST-FIRE RECOVERY ISSUES

EMERGENCY STABILIZATION ISSUES

1 - Human Life and Safety

Threats to human life and safety have been identified and assessed by two US Forest Service (USFS) BAER teams, a State and Private lands BAER team, National Weather Service, Natural Resource Conservation Service (NRCS) Emergency Watershed Program (EWP), Federal Emergency Management Agency (FEMA), and U.S. Army Corps of Engineers (USACE) Erosion Threat Assessment/Reduction Team (ETART). Structure and infrastructure threats were prioritized and potential mitigation measures were proposed in summary reports created by these assessments.

Flooding events have already occurred on multiple occasions post-fire, resulting in damage to homes, properties, and infrastructure including Washington State Route 20 and 153. The results of these events were used to guide needed mitigation measures for these areas, and additional assessment of potential mitigation measures occurred for areas not already affected by flooding.

USFS will implement treatments on National Forest lands to address potential run-off and debris flow events such as culvert removal/replacement, road drainage structures, and channel debris removal, as well as area closures and hazard tree removal. In addition, NRCS is using EWP to provide similar treatments on private lands, with Okanogan County sponsoring the program and providing a 25% cost match.

The information provided by the BAER and EWP assessments was used to identify and prioritize treatments on BLM lands, to compliment treatment efforts by other agencies and landowners. Treatments to address threats to human life and safety on BLM land include hazard tree removal, seeding and seedling planting. Seeding on BLM-administered lands would use native species and would be designed to reduce threats over a longer period of time than true stabilization seeding using sterile wheat, and is therefore discussed under BAR Issue 1 Lands Unlikely to Recovery Naturally. Seedling planting will help reduce threats to life and safety over the long term by providing increased infiltration rate/depth and decreased run-off, and will also help stabilize soil/water, but ultimately is prescribed to benefit listed fish species and their habitat, and is therefore discussed under ES Issue 3 Habitat for Listed Species.

2 - Soil/Water Stabilization

BAER assessments estimated 72,768 acres of moderate and 37,230 acres of high soil erosion hazard within the entire burned area. Erosion hazard specific to BLM lands has yet been quantified, but in general, most BLM lands experienced low soil burn severity, with some moderate and very little high. Flooding events following the fire have caused large soil and water run-off events. Potential treatments such as seeding and mulching to reduce sediment release and increase infiltration are recommended. Large scale stabilization treatments, however, have not been recommended, instead point-protection measures have

been prescribed to protect values-at-risk. BLM-administered lands have been assessed for need for soil/water stabilization and no feasible treatments have been identified to specifically address soil/water stabilization. Therefore, treatments such as seeding and seedling planting that will provide some soil/water stabilization value are discussed under BAR Issue 1 and ES Issue 3.

3 - Habitat for Federal/State Listed, Proposed, or Candidate Species
The Carlton Complex Fire affected three ESA-listed fish stocks in the Methow and Okanogan subbasins. The Methow River supports runs of Upper Columbia River (UCR) spring Chinook salmon (endangered), Upper Columbia River summer Steelhead (threatened) and Columbia River Bull Trout (threatened) and their designated "Critical Habitat." Other species of interest include Coho salmon, summer Chinook, cutthroat, red band/rainbow, and Pacific lamprey. The Okanogan River supports populations of UCR steelhead (threatened) and their critical habitat as well as sockeye salmon, and summer Chinook salmon. Treatments that reduce fine sediment delivery, restore natural drainage patterns and allow for large wood movement and or accumulation in fish bearing streams and the mainstem Methow are expected to benefit ESA listed spring Chinook, steelhead and bull trout.

Federally listed terrestrial species include gray wolf, grizzly bear, Canada lynx and wolverine. State listed species include Columbian sharp-tailed grouse and Western gray squirrel. No listed plants are known to occur within the burned area. The only BLM sensitive plant within the burned area is *Carex hystericina*, but it has not been documented on BLM lands. Treatments that support recovery of native habitat and limit expansion of invasive plants are recommended to support wildlife, including listed and other sensitive species.

Seedling planting of riparian species would provide benefit to listed fish, as well as riparian species and is included in this issue. Seeding, seedling planting and invasive plant control in upland areas would also benefit listed and sensitive species, but because these treatments are designed more to provide long-term recovery of land health and directly address invasive plants, these treatments are included under ES Issue 5 Invasive Plants and Weeds, and BAR Issues 1 and 2, Lands Unlikely to Recover Naturally and Weed Treatments.

4 - Critical Heritage Resources
N/A

5 - Invasive Plants and Weeds
Invasive species including State listed noxious weeds known to occur in the burned area include cheatgrass, square brome, mustard spp., Russian thistle, common mullien, prickly lettuce, diffuse, spotted and Russian knapweed, musk, Canada and Scotch thistle, leafy spurge, Dalmatian and yellow toadflax, and houndstongue. Expansion of weed populations is expected to be a major issue within the burned area due to large size of fire, wide-spread distribution of populations, and high potential for spread due to suppression activities, roads, waterways, increased water and wind-caused soil movement, agricultural practices and livestock movements. Some areas of BLM-lands have had limited surveys for invasive plants

and some locations have been recorded. Emergency Stabilization treatments will focus on treating known locations of noxious weeds in the first year following the fire. Treatment of other invasive plants such as cheatgrass, as well as surveillance monitoring, treatment of newly identified areas and retreatment of known locations would occur under BAR Issue 2 Weed Treatments.

BURNED AREA RECOVERY ISSUES

1 - Lands Unlikely to Recover Naturally

Areas of the fire with moderate and high burn severity, as well as areas with previous disturbance that causes decreased resiliency of the plant communities to invasive species and other losses of productivity (regardless of burn severity) are susceptible to weed invasion and departure of functional/structural vegetation groups. This leads to departures to the attributes of land health, including soil stability, hydrologic function and biotic integrity. Incremental departures with each fire event sets the stage for further departure each time the area burns again. The proposed treatments are expected to decrease the rate of departure for the attributes of land health by providing seed source for native species. These native species may provide compitetion to invasive plants, and decrease soil and vegetation disturbance and reduce weed spread caused by livestock.

2 - Weed Treatments

Invasive species including State listed noxious weeds known to occur in the burned area include cheatgrass, square brome, mustard spp., Russian thistle, common mullien, prickly lettuce, diffuse, spotted and Russian knapweed, musk, Canada and Scotch thistle, leafy spurge, Dalmatian and yellow toadflax, and houndstounge. Expansion of weed populations is expected to be a major issue within the burned area due to large size of fire, wide-spread distribution of populations, and high potential for spread due to suppression activities, roads, waterways, increased water and wind-caused soil movement, agricultural practices and livestock movements. Some areas of BLM-lands have had limited surveys for invasive plants and some locations have been recorded. Emergency Stabilization treatments will focus on treating known locations of noxious weeds in the first year following the fire. Treatment of other invasive plants such as cheatgrass, as well as surveillance monitoring, treatment of newly identified areas and retreatment of known locations would occur under BAR Issue 2 Weed Treatments.

3 - Tree Planting

N/A

4 - Repair/Replace Fire Damage to Minor Facilities

The fire burned hundreds of miles of livestock fencing across multiple jurisdictions, causing major issues for many livestock producers and livestock managing agencies. Fences on BLM lands that occur in small scattered parcels are not well documented, and additional repair needs may be identified as issues continue to be identified. Rangeland fences typically cross multiple jurisdictions, and coordination with lessees and adjoining land owners/managers will be needed to successfully address fencing issues. Some areas in need of fence repair have been identified, totaling approximately 10 miles. The need for temporary fencing has not yet been identified, but may become necessary as additional needs are

recognized. If needed, a request for additional funds will be submitted in the end of year report/request for next year's funding.

PART 3 - DESCRIPTION OF TREATMENTS

Issue 1 - Human Life and Safety

S10 Tree Hazard Removal

A. Treatment/Activity Description

The proposed treatment is to remove burned trees along portions of Highway 153. Initial removal of hazard trees was performed by Washington Department of Transportation (WDOT) along the right-of-way for the highway. This included an area 40 feet from the center line of the highway, but the height of remaining trees beyond the highway right-of-way still poses a risk of trees falling on the highway. Trees average approximately 50 feet tall, so 1.5 tree lengths would be approximately 75 feet, but because they are uplsope of the highway, safe clearance distance is estimated to be approximately 100 feet from the highway. This results in approximately 60 additional feet of clearing from the 40 foot DOT right-of-way. Removal of trees would be performed by qualified BLM employees in coordination with WDOT to ensure safety of workers and motorists while working along the highway. The treatment area consists of approximately 0.3 miles in two BLM parcels, totaling approximately 2.2 acres.

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

Moderate and high burn intensity in this area resulted in tree mortality and created fire weakened snags that are likely to fall on the highway as they decay and during strong wind events. Trees in this area are mostly less than 16 inches diameter at breat height and mortality was 100%, resulting in trees that are likely to fall within the next 2-5 years.

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

The risk of unfelled trees outside of the DOT right-of-way falling on the highway is high, and removal of hazard trees would ensure that safety issues are alleviated. Trees would only be removed to a distance that would provide safe clearance for falling trees. Treatment area is relatively small and labor by BLM employees would be approximately 2-3 days. This would be more cost effective than contracting work.

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

S4 Seedling Planting

A. Treatment/Activity Description

The proposed treatment is to plant riparian shrub and tree seedlings in riparian areas of high and moderate burn intensity. Treatment areas would be identified where re-sprouting has not yet occurred due to burn intensity or channel disturbance. Density of planting will depend on site conditions based on re-sprouting rates and size of treatment area. Species would include willow spp., maple spp., alder and waterbirch, depending on site specific needs. Approximately 1,000 seedlings would be planted to provide shortened recovery time of bank stabilization, increased sediment retention and shading of streams providing habitat for listed fish species. These benefits may take several growing seasons to reach full effect,

but are expected to decrease this time period compared to no treatment. Seedlings would be sought from existing commercial stock or cut from local sites if possible, and planted in fall of 2014 or spring of 2015, depending on optimal planting conditions. 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 high vegetation mortality, and streambanks are exposed and have been scoured by recent flooding events. Sediment delivery and water quality for listed fish bearing streams has been identified as an issue of concern by BAER assessments, and treatments to reduce sediment delivery, stabilize channels, reduce invasive plants, and provide large woody debris recruitment and stream shading have been recommended. These include seeding, riparian planting and weed treatments.

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

The proposed treatment is a common practice for enhancement of listed fish habitat and is supported by BAER assessment recommendations. Seedlings are commercially available at reasonable prices, and where possible, using nearby sites for cuttings for species such as willow can be an effective method with very low costs.

Issue 5 - Invasive Plants and Weeds

S5 Noxious Weeds

A. Treatment/Activity Description

The proposed treatment is to spot treat dalmatian toadflax, knapweed species, thistle species and other noxious or invasive species as needed based on known locations and needs identified by surveys. Known infestation areas (estimated at approximately 1,000 acres total) and other areas detected by surveys will be treated as needed to prevent expansion beyond pre-fire conditions. Biological and mechanical methods will also be considered, including hand treatment, weed trimmers or mowing. Ground based spot application of herbicides such as glyposate, chlorsulfuron, and picloram would be used at rates depending on species and infestation level.

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 treatments are expected to reduce this opportunity; surveillance monitoring is necessary to identify the need for additional spot treatments if seeding fails to adequately control invasive species.

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

Surveying and conducting spot treatments for invasive plants is reasonable because it will provide cost savings if weed treatments are not necessary. This will allow for timely treatments if additional measures are determined necessary through monitoring. Treatment at low levels of establishment are less costly than waiting until a large area is covered with weeds.

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 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.

S13 Monitoring

A. Treatment/Activity Description

Monitoring will consist of implementation monitoring for hazard tree removal, seedling planting, and weed treatments. Surveillance monitoring for weeds, implementation monitoring for other treatments, and effectiveness and natural recovery monitoring will occur under BAR monitoring.

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

The monitoring is needed to ensure treatments to address fire effects are implemented in a timely manner.

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

Implementation monitoring is a required component of plans and will provide assurance of treatment implementation. Use of interns through Chicago Botanical Gardens to conduct implementation monitoring will increase cost-effectiveness compared to use of higher graded full time employees.

Issue 1 - Lands Unlikely to Recover Naturally

R2 Ground Seeding

A. Treatment/Activity Description

Drill seeding of previously restored areas in the Wells and Chiliwist Wildlife Area. Approximately 500 acres of moderate and high severity areas would be seeded with a mix of native grasses to help re-establish the native stand to provide habitat values for wildlife, provide cover and soil stability, and provide competition for invasive plants. Seeding rate would be approximately 6 bulk pounds per acre. Seed mix and rate recommendations were provided by BFI native seeds in consultation with BAER teams. Seed would be provided by BLM and WDFW would provide the equipment and labor for seeding in the fall of 2014.

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

Areas of moderate and high burn intensity experienced high levels of vegetation mortality, and even low severity areas experienced enough perennial vegetation mortality to allow expansion of existing invasive plants. Some areas have erosion problems that have already been exacerbated by the fire and post-fire storms and flooding. Changes caused by the fire have reduced habitat value for Columbian sharp-tailed grouse and have made the area susceptible to non-native species invasion, increased sediment in run-off and has resulted in unstable soils in some areas. The purpose of the treatment is to quickly re-establish native vegetation to provide habitat value and prevent the spread of invasive species and to stabilize soils and reduce sediment run-off.

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

BLM's sensitive species policy states "The BLM should provide technical assistance to, and coordinate with, appropriate state agencies and other agencies, organizations, or private landowners developing and implementing conservation plans." WDFW's Columbian sharp-tailed grouse recovery plan states Recovery Task #3.3.1: "As opportunities occur, assist BLM, WDNR, TNC, and land trusts in the restoration of healthy grasslands and riparian deciduous shrubs to improve sharp-tailed grouse habitat values in the recovery area."

Wyden Amendment authority allows use of BAR funds for non-federal lands if treatments provide a benefit to public lands. BLM and WDFW lands are intermingled in the wildlife areas, and BLM treatments will be more effective and have greater benefit if concurrent treatments occur on WDFW lands within the wildlife area. Partnering with WDFW's aerial seeding efforts provides more cost effectiveness than separately contracting the work.

R3 Aerial Seeding

A. Treatment/Activity Description

The proposed treatment is to aerially seed approximately 500 acres of BLM-administered lands and 1,000 acres of Wells, Chiliwist and Methow Wildlife Area (including WDNR) lands in potential high weed invasion areas too steep or otherwise inaccessible for tractors to ground seed. Some areas may be accessible to harrow for seed incorporation, but much of the area is inaccessible. A mix of native grasses will be used to help re-establish the native stand to provide habitat values for wildlife, provide cover and soil stability, and provide competition for noxious weeds and invasive plants. Seeding rate would be approximately 6 bulk pounds per acre. Seed mix and rate recommendations were provided by BFI native seeds in consultation with BAER teams. Seed would be provided by BLM and application would be coordinated by WDFW in fall of 2014 to take advantage of fall precipitation.

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

Areas of moderate and high burn severity experienced high levels of vegetation mortality, and even low severity areas experienced enough perennial vegetation mortality to allow expansion of existing invasive plants. Some areas have erosion problems that have already

been exacerbated by the fire and post-fire storms and flooding. Changes caused by the fire have reduced habitat value for Columbian sharp-tailed grouse and have made the area susceptible to non-native species invasion, increased sedimentation in run-off and has resulted in unstable soils in some areas. The purpose of the treatment is to quickly re-establish native vegetation to provide habitat value and prevent the spread of invasive species and to stabilize soils and reduce sediment run-off.

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

BLM's sensitive species policy states "The BLM should provide technical assistance to, and coordinate with, appropriate state agencies and other agencies, organizations, or private landowners developing and implementing conservation plans."

WDFW's Columbian sharp-tailed grouse recovery plan states Recovery Task #3.3.1: "As opportunities occur, assist BLM, WDNR, TNC, and land trusts in the restoration of healthy grasslands and riparian deciduous shrubs to improve sharp-tailed grouse habitat values in the recovery area."

Wyden Amendment authority allows use of BAR funds for non-federal lands if treatments provide a benefit to public lands. BLM and WDFW lands are intermingled in the wildlife areas, and BLM treatments will be more effective and have greater benefit if concurrent treatments occur on WDFW lands within the wildlife area. Partnering with WDFW's aerial seeding efforts provides more cost effectiveness than separately contracting the work.

R4 Seedling Planting

A. Treatment/Activity Description

The proposed treatment is to plant Basin big sagebrush and bitterbrush in areas of moderate and high burn intensity. Approximately 20,000 sagebrush seedlings and 80,000 bitterbrush seedlings would be planted on BLM and WDFW lands, to provide shortened recovery time of native species and competition with invasive species. Planting density would be approximately 100 sagebrush seedling/acre and 200 bitterbrush seedlings per acre. Additional seedlings and/or shrub seeding may be funded by WDFW and/or WDNR depending on availability of funding. 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. 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 high levels of shrub mortality. This removed important cover and forage for mule deer and other species, and will create an opportunity for invasive species to increase and expand. Recovery time for both of these species can be long, especially when large areas are removed and few seed sources remain, as in this case. Planting of shrub species will speed recovery time and provide benefits to wildlife species, soils and hydrologic function, and competition with invasive plants.

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

Seedling planting for shrubs has been shown to be a cost effective method of establishing these species, and is generally faster and more reliable than seeding of these species.

R12 Closures (area, OHV, livestock)

A. Treatment/Activity Description

Allotments within the burned area (see burned allotment attachment) will be rested from livestock grazing for a minimum of two years, or until monitoring data indicate vegetation objectives in the burn area have been met. Permittees would be responsible for keeping their livestock off the recovering and rehabilitated areas in compliance with either grazing decisions or range agreements issued by the Wenatchee Field Office.

Grazing closure agreements between BLM, WDFW, WDNR and the lessees are in progress. Due to the large number of lessees and inter-agency coordination within allotments, a considerable amount of labor is expected from range staff to facilitate agreements and/or decisions and conduct compliance checks.

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

Burned areas will be susceptible to damage from livestock grazing and weed infestation. The purpose of the treatment is to protect exposed soils and re-establishing vegetation, and minimize the spread of invasive species within the burned area during recovery.

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

The treatment is necessary to protect recovering vegetation and soils exposed by the fire from grazing and trampling. The ESR handbook describes assessment of grazing closure needs and consultation with interested parties, issuing decisions pursuant to 43 CFR 4110.3-3(b), and monitoring for compliance as acceptable uses of ESR funds. The treatment is cost effective because the cost is low (approximately $10/acre including fencing), compared to not preventing degradation that could lead to the need for costly active restoration ($150-$1,000./acre).

R13 Monitoring

A. Treatment/Activity Description

Monitoring will consist of implementation monitoring for seeding, seedling planting, weeds, fence repair and grazing closures, as well as vegetation recovery monitoring. For vegetation recovery monitoring, the burned area will be stratified based on allotment, 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 L14AC00355 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, which would generally be two growing seasons, but may be shorted or lengthened depending on recovery and 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 2 - Weed Treatments

R5 Noxious Weeds

A. Treatment/Activity Description

The proposed treatment is to spot treat cheatgrass, square and Japanese brome, tumble mustard, dalmatian toadflax, knapweed species, thistle species 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. Seeded areas are expected to compete with invasives, and weed treatments will benefit establishment of seeded species. Known infestations and areas detected by monitoring will be treated as needed to prevent expansion beyond pre-fire conditions. Estimated total treatment area is approximately 1,000 acres. Biological and mechanical methods may be considered, including hand treatment, weed trimmers or mowing. If determined necessary, ground based spot and broadcast 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 treatment of known infestations and 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. This will 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.

Issue 4 - Repair/Replace Fire Damage to Minor Facilities

R7 Fence/Gate/Cattleguard

A. Treatment/Activity Description

Approximately 10 miles of existing pasture fence would be repaired. Work will be accomplished through use of staff labor or an existing blanket purchase agreement in the spring of 2015.

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

The fire damaged wood posts and portions of wire on existing fencing necessary to manage livestock grazing pastures.

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

Fencing is necessary to manage livestock within the grazing allotments. Repair of fencing damaged by the fire is an acceptable treatment described in H-1742-1 Burned Area Emergency Stabilization and Rehabilitation Handbook. Use of an existing purchase agreement will be more cost effective than issuing a new solicitation for the repair work.

PART 4 - DETAILED TREATMENT COST TABLE

Action / Spec #	Action Description	Unit Type	# Units	Unit Cost	FY14	FY15	FY16	FY17	Total Cost
S1	**Planning (Project Management)**								
1	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
	Total			**$8,000.00**	**$0.00**	**$8,000.00**	**$4,000.00**	**$4,000.00**	**$16,000.00**
S4	**Seedling Planting** ES Issue 3								
1	Contract Admin	WM'S	1	$4,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
2	Contract for riparian seedling purchase and planting	Number	1,000	$2.00	$0.00	$2,000.00	$0.00	$0.00	$2,000.00
3	Section 106 Cultural Survey Contract	Acres	100	$40.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
	Total			**$4,042.00**	**$0.00**	**$10,000.00**	**$0.00**	**$0.00**	**$10,000.00**
S5	**Noxious Weeds** ES Issue 5								
1	Treatment contract	Acres	1,000	$50.00	$0.00	$50,000.00	$0.00	$0.00	$50,000.00
2	Contract admin	WM'S	1	$4,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
	Total			**$4,050.00**	**$0.00**	**$54,000.00**	**$0.00**	**$0.00**	**$54,000.00**
S10	**Tree Hazard Removal** ES Issue 1								
1	Hazard Tree Removal	WM'S	1	$4,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
	Total			**$4,000.00**	**$0.00**	**$4,000.00**	**$0.00**	**$0.00**	**$4,000.00**
S13	**Monitoring** ES Issue 5								
1	Implementation Monitoring	WM'S	1	$4,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00
	Total			**$4,000.00**	**$0.00**	**$4,000.00**	**$0.00**	**$0.00**	**$4,000.00**
ES	**Grand Total**			**$24,092.00**	**$0.00**	**$80,000.00**	**$4,000.00**	**$4,000.00**	**$88,000.00**
Action / Spec #	**Action Description**	**Unit Type**	**# Units**	**Unit Cost**	**FY14**	**FY15**	**FY16**	**FY17**	**Total Cost**
R2	**Ground Seeding** BAR Issue 1								
1	Seed Purchase	LBS (Pounds)	5,000	$12.87	$0.00	$64,350.00	$0.00	$0.00	$64,350.00
2	Section 106 cultural clearance	Acres	250	$40.00	$0.00	$10,000.00	$0.00	$0.00	$10,000.00
3	Section 106 Contract Admin	WM'S	1	$8,000.00	$0.00	$8,000.00	$0.00	$0.00	$8,000.00
4	Seed warehouse surcharge	LBS (Pounds)	5,000	$0.25	$0.00	$1,250.00	$0.00	$0.00	$1,250.00
	Total			**$8,053.12**	**$0.00**	**$84,000.00**	**$0.00**	**$0.00**	**$84,000.00**
R3	**Aerial Seeding** BAR Issue 1								
1	Seed Purchase	LBS (Pounds)	25,530	$12.72	$0.00	$324,741.60	$0.00	$0.00	$324,741.60
2	Aerial Seeding Contract	Acres	1,500	$25.00	$0.00	$37,500.00	$0.00	$0.00	$37,500.00
3	Adminster Contract	WM'S	1	$8,000.00	$0.00	$4,000.00	$0.00	$0.00	$4,000.00

4	Seed warehouse sucharge	LBS (Pounds)	25,530	$0.25	$0.00	$6,382.50	$0.00	$0.00	$6,382.50
	Total			**$8,037.97**	**$0.00**	**$373,000.00**	**$0.00**	**$0.00**	**$373,000.00**
R4	**Seedling Planting** BAR Issue 1								
1	Contract Admin	WM'S	1	$4,000.00	$0.00	$2,000.00	$1,000.00	$1,000.00	$4,000.00
2	Contract for shrub seedling growout and planting	Number	100,000	$1.50	$0.00	$150,000.00	$0.00	$0.00	$150,000.00
3	Section 106 Surveys	Acres	600	$40.00	$0.00	$24,000.00	$0.00	$0.00	$24,000.00
	Total			**$4,041.50**	**$0.00**	**$176,000.00**	**$1,000.00**	**$1,000.00**	**$178,000.00**
R5	**Noxious Weeds** BAR Issue 2								
1	Treatments as needed	Acres	1,500	$50.00	$0.00	$25,000.00	$25,000.00	$25,000.00	$75,000.00
2	Contract admin	WM'S	2	$4,000.00	$0.00	$0.00	$4,000.00	$4,000.00	$8,000.00
	Total			**$4,050.00**	**$0.00**	**$25,000.00**	**$29,000.00**	**$29,000.00**	**$83,000.00**
R7	**Fence/Gate/Cattleguard** BAR Issue 4								
1	Fence Repair Contract	Miles	10	$2,000.00	$0.00	$20,000.00	$0.00	$0.00	$20,000.00
2	Purchase Fence Materials	Miles	3	$2,000.00	$0.00	$6,000.00	$0.00	$0.00	$6,000.00
3	Section 106 clearance	Acres	10	$35.00	$0.00	$350.00	$0.00	$0.00	$350.00
	Total			**$4,035.00**	**$0.00**	**$26,000.00**	**$0.00**	**$0.00**	**$26,000.00**
R12	**Closures (area, OHV, livestock)** BAR Issue 1								
1	Issue grazing closure agreement	WM'S	2	$8,000.00	$0.00	$16,000.00	$0.00	$0.00	$16,000.00
	Total			**$8,000.00**	**$0.00**	**$16,000.00**	**$0.00**	**$0.00**	**$16,000.00**
R13	**Monitoring** BAR Issue 1								
1	Administer Agreement	WM'S	1	$8,000.00	$0.00	$4,000.00	$2,000.00	$2,000.00	$8,000.00
2	Assistance Agreement for monitoring	Each	3	$40,000.00	$0.00	$40,000.00	$40,000.00	$40,000.00	$120,000.00
	Total			**$48,000.00**	**$0.00**	**$44,000.00**	**$42,000.00**	**$42,000.00**	**$128,000.00**
BAR									**$888,000.00**
Project									**$976,000.00**

PART 5 - SEED LISTS

DRILL SEED

Carlton Drill Seeding

Species	Scientific Name	PLS	PLS Seeds / sq. ft.	PLS Seeds / ac.	Seeds / lb (bulk)	Total Seeds / Acre (Bulk)	Drill Seedings (Acre)	PLS Lbs / Acre	Total PLS Lbs	Total Bulk Lbs	Cost / Lb	Total Cost
Prairie Junegrass	Koeleria macrantha	0.7200	8.26	359,806	2,000,000	499,730	500.0	0.2	90.0	125.0	$ 14.82	$1,852.50
Sandberg bluegrass, Duffy Creek	Poa secunda	0.7200	25.96	1,130,818	1,046,960	1,570,580	500.0	1.1	540.0	750.0	$ 12.25	$9,187.50
Bottlebrush Squirreltail, Rattlesnake	Elymus elymoides ssp. elymoides	0.6750	1.5	65,340	192,000	96,800	500.0	0.3	170.0	250.0	$ 22.81	$5,702.50
Thickspike Wheatgrass, Schwendimar	Elymus lanceolatus ssp. lanceolatus	0.8075	1.23	53,579	66,000	66,351	500.0	0.8	405.0	500.0	$ 5.19	$2,595.00
Idaho fescue, Duffy Creek	Festuca idahoensis	0.7650	5.89	256,568	450,000	335,384	500.0	0.6	285.0	375.0	$ 12.00	$4,500.00
Bluebunch wheatgrass, Duffy Creek	Pseudoroegneria spicata	0.7650	13.24	576,734	125,680	753,901	500.0	4.6	2,295.0	3,000.0	$ 13.50	$40,500.00
TOTALS:			56.08	2,442,845	3,880,640	3,322,746		7.6	3,785.0	5,000.0	$ 80.57	$64,337.50

AERIAL SEED

Carlton Aerial Seeding

												Total Cost
Bottlebrush Squirreltail, Rattlesnake	Elymus elymoides ssp. elymoides	0.6750	2.25	98,010	192,000	145,200	1,500.0	0.5	765.0	1,140.0	$ 22.81	$26,003.40
Idaho fescue, Duffy Creek	Festuca idahoensis	0.7650	9.92	432,115	450,000	564,856	1,500.0	1.0	1,440.0	1,875.0	$ 12.00	$22,500.00
Prairie Junegrass	Koeleria macrantha	0.7200	24.79	1,079,852	2,000,000	1,499,795	1,500.0	0.5	810.0	1,125.0	$ 14.82	$16,672.50

Bluebunch wheatgrass, Duffy Creek	Pseudoroegneria spicata	0.7650	22.07	961,369	125,680	1,256,692	1,500.0	7.7	11,475.0	15,000.0	$ 13.50	$202,500.00
Sandberg bluegrass, Duffy Creek	Poa secunda	0.7200	38.94	1,696,226	1,046,960	2,355,870	1,500.0	1.6	2,430.0	3,375.0	$ 12.25	$41,343.75
Thickspike Wheatgrass, Schwendimar	Elymus lanceolatus ssp. lanceolatus	0.8075	2.45	106,722	66,000	132,163	1,500.0	1.6	2,430.0	3,015.0	$ 5.19	$15,647.85
TOTALS:			100.42	4,374,295	3,880,640	5,954,577		12.9	19,350.0	25,530.0	$ 80.57	$324,667.50

SEEDLINGS

						Total Cost
Antelope Bitterbrush	Purshia tridentata	400.0	200	80,000	$ 2.00	$160,000.00
Basin Big Sagebrush, Basin	Artemisia tridentata tridentata	200.0	100	20,000	$ 2.00	$40,000.00
TOTALS:		600.0	300	100,000		$200,000.00

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 [X] 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 [X] No [ ] Rationale:

Some seed is available in local storage, additional seed is commercially available.

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

Yes [X] 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 curren or future competition from other species in the seed mix or from exotic plants?

Yes [X] 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 [X] 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 [X] Rationale:

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 [X] Rationale:

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

Yes [ ] No [X] Rationale:

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

Non-native Plants	Native Plants
	Antelope Bitterbrush (Purshia tridentata)
	Basin Big Sagebrush, Basin (Artemisia tridentata tridentata)
	Bluebunch wheatgrass, Duffy Creek (Pseudoroegneria spicata)
	Bottlebrush Squirreltail, Rattlesnake (Elymus elymoides ssp. elymoides)
	Idaho fescue, Duffy Creek (Festuca idahoensis)
	Prairie Junegrass (Koeleria macrantha)
	Sandberg bluegrass, Duffy Creek (Poa secunda)
	Thickspike Wheatgrass, Schwendimar (Elymus lanceolatus ssp. lanceolatus)

PART 7 - COST-RISK ANALYSIS

A. Probability of Treatments Successfully Meeting Objectives

Action/ Spec #	ES Issue #	Planned ES Action (LF2200000)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
S4	3	Seedling Planting	#	1000	$10,000.00	90%
S5	5	Noxious Weeds	Acres	500	$54,000.00	85%
S10	1	Tree Hazard Removal	Acres	1	$4,000.00	100%
S13	5	Monitoring	Acres	500	$4,000.00	90%
					$72,000.00	

Action/ Spec #	BAR Issue #	Planned BAR Action (LF3200000)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
R2	1	Ground Seeding	Acres	500	$84,000.00	80%
R3	1	Aerial Seeding	Acres	1500	$373,000.00	75%
R4	1	Seedling Planting	#	100000	$178,000.00	90%
R5	2	Noxious Weeds	Acres	500	$83,000.00	80%
R7	4	Fence/Gate/Cattleguard	Miles	10	$26,000.00	95%
R12	1	Closures (area, OHV, livestock)	#	17	$16,000.00	80%
R13	1	Monitoring	Acres	6300	$128,000.00	90%
					$888,000.00	

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 |X| 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 |X| Rationale for Answer:

No action presents unacceptable risks to natural resources.

Alternative(s) Yes |_| No |X| 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 |X| No |_| Rationale for Answer:

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

No Action Yes |_| No |X| 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 |X| 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 |X|

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

S4 - Seedling Planting - ES Issue 3

Identify the objective of the treatment:

The objective of ES seedling planting is to establish riparian shrub and tree cover along riparian corridors.

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 is to treat existing weeds and monitor weed populations to identify level of additional needed treatments. 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. This varies by area, but averages less than 5% 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.

S10 - Tree Hazard Removal - ES Issue 1

Identify the objective of the treatment:

Remove burnt trees within 11/2 tree lengths (approximately 100 feet accounting for slope above road) of Highway 153 to prevent trees falling on road.

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.

S13 - Monitoring - ES Issue 5

Identify the objective of the treatment:

The objective of treatment implementation monitoring is to ensure the treatments are implemented in a timely manner.

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.

R2 - Ground Seeding - BAR Issue 1

Identify the objective of the treatment:

The objective of the treatment is to establish at least 5 seeded plants per square meter to provide ground cover, increase soil stability and provide competition to invasive species.

Describe how implementation will be monitored:

Implementation will be monitored through the use of an implementation scheduling

spreadsheet in combination with coordination with WDFW.

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

Effectiveness will be monitored using a 1 meter density quadrat spaced 5 meters apart along randomly located and replicated 50 meter transect lines. <1 plants/sq. m. will be considered unsuccessful, 1-4 plants/sq. m. will be considered partially successful, and >4 plants/sq. m. will be considered fully successful. Monitoring will occur annually in 2015, 2016 and 2017, success will be assessed each year.

R3 - Aerial Seeding - BAR Issue 1

Identify the objective of the treatment:

The objective of the treatment is to establish at least 2 seeded plants per square meter to provide ground cover, increase soil stability and provide competition to invasive species.

Describe how implementation will be monitored:

Implementation will be monitored through the use of an implementation scheduling spreadsheet in combination with coordination with WDFW.

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

Effectiveness will be monitored using a 1 meter density quadrat spaced 5 meters apart along randomly located and replicated

50 meter transect lines. <1 plants/sq. m. will be considered unsuccessful, 1 plants/sq. m. will be considered partially successful, and >1 plants/sq. m. will be considered fully successful. Monitoring will occur annually in 2015, 2016 and 2017, success will be assessed each year.

R4 - Seedling Planting - BAR Issue 1

Identify the objective of the treatment:

The objective of the sagebrush planting portion of the treatment is to establish 50 sagebrush plants per acre at the 3rd year after planting. The proposed planting rate would be approximately 100 plants/acre, and 50 surviving plants would equal approximately 50% 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=50 or more plants/acre; Partially successful=1-49 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 at randomly located and replicated transects. 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.

R5 - Noxious Weeds - BAR Issue 2

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.

R7 - Fence/Gate/Cattleguard - BAR Issue 4

Identify the objective of the treatment:

The objective of the treatment is to re-establish functioning fences.

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 of repairs will be monitored by inspecting the repair work upon completion. Repair work will be evaluated based on a completed/not completed basis. Temporary fencing will be inspected regularly, (by the lessee as well as during other allotment monitoring (ESR monitoring, use compliance monitoring) to ensure function.

R12 - Closures (area, OHV, livestock) - BAR Issue 1

Identify the objective of the treatment:

The objective of the treatment is to prevent livestock damage to ESR treatments or recovering vegetation and soil. A post-fire grazing assessment flowchart developed by the Wenatchee Field Office will be used to determine the timing and conditions for lifting the grazing closure. This assessment flowchart evaluates 1) the pre-fire grazing effects on the allotment, 2) potential for damage to ESR treatments (using criteria for measuring success of each ESR treatment described in the monitoring section of this plan) and naturally recovering vegetation and soil (using criteria described in Tech Reference 1734-6 Interpreting Indicators of Rangeland Health), and 3) potential prescribed grazing or adjustments to reduce risk to an acceptable level. Generally, closure would be expected to last 2 growing seasons, unless analysis shows that prescribed grazing would be beneficial or resuming grazing would not compromise objectives of ESR treatments or naturally recovering vegetation/rangeland health.

Describe how implementation will be monitored:

Implementation will be monitored using an implementation scheduling spreadsheet and through the contract monitoring and inspection process.

Describe how effectiveness will be monitored, how it will be measured, and within

what time period:

Effectiveness will be monitored by visual inspection of burned area and seeding treatments at time of monitoring for other treatments to ensure that livestock are not using the area. Treatment will be considered successful if no evidence of livestock use is found within the burned area.

R13 - Monitoring - BAR Issue 1

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 Monitoring Post-Fire Vegetation Rehabilitation Projects: A Common Approach for Non-Forested Ecosystems (Wirth and Pyke 2006) 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/treated, burned/untreated 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 and Ownership
2. - Carlton Complex Soil Burn Severity
3. - Riparian Planting Areas
4. - EWP Priority Areas
5. - BLM Grazing Allotments
6. - Hazard Tree Removal
7. - Seeding and Seedling Planting Areas

PART 10 - REVIEW, APPROVALS, and PREPARERS

TEAM MEMBERS

Position	Team Member (Agency/Office)	Initial	Date
Team Leader	John Chatel (USFS (US Forest Service) Okanogan-Wenatchee)		
Team Leader	Greg Kuyumjian (USFS (US Forest Service) Okanongan-Wenatchee)		
Botanist	Molly Boyter (BLM Wenatchee Field Office)	Initialed	09/18/2014
Cultural Resources/Archeologist	Francoise Sweeney (BLM Wenatchee Field Office)	Initialed	09/18/2014
Rangeland Mgt. Specialist	Pete Sargent (BLM Wenatchee Field Office)	Initialed	09/18/2014
Rangeland Mgt. Specialist	Angie Link (BLM Wenatchee Field Office)	Initialed	09/18/2014
Wildlife Biologist	Erik Ellis (BLM Wenatchee Field Office)	Initialed	09/18/2014
Forester	Mark Williams (BLM Wenatchee Field Office)	Initialed	09/18/2014
Noxious & Invasive Species Specialist	Sean MacDougall (BLM Border Field Office)	Initialed	09/18/2014
Wildlife Area Manager	Dan Peterson (State Wells Wildlife Area)		
Restoration Coordinator	Chris Sheridan (BLM Wenatchee Field Office)	Initialed	09/18/2014

PLAN APPROVAL

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

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.