

BIG STICK AND DOUBLE O EMERGENCY FIRE REHABILITATION
PLAN
AND
ENVIRONMENTAL ASSESSMENT
EA OR-025-01-042

Bureau of Land Management
Burns District Office
Three Rivers Resource Area
HC 74-12533 Hwy 20 West
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TABLE OF CONTENTS

Chapter I. Introduction: Purpose of and Need for Action	1
A. Introduction	1
B. Purpose and Need	2
C. Relationship to Planning/Conformance with Land Use Plans	2
Chapter II. Alternatives Including the Proposed Action	3
A. Proposed Action	3
B. Alternative 1: No Action	5
C. Alternative 2: No Seeding, Protection Fence Only	5
D. Alternative 3: Alternatives Considered but Eliminated from Detailed Analysis	6
Chapter III. Affected Environment	6
A. Critical Elements	6
1. Cultural Resources	6
2. Noxious Weeds	7
3. Special Status Species	7
B. Noncritical Elements	8
1. Soils	8
2. Vegetation	9
3. Watershed	10
4. Wildlife	10
5. Livestock Grazing Management	10
6. Recreation and Visual Resource Management	11
7. Wild Horses	12
Chapter IV. Environmental Consequences Including Cumulative Impacts	12
A. Proposed Action - Critical Elements	12
1. Cultural Resources	12
2. Noxious Weeds	13
3. Special Status Species	13

B.	Proposed Action - Noncritical Elements	14
1.	Soils	14
2.	Vegetation	14
3.	Watershed	15
4.	Wildlife	15
5.	Livestock Grazing Management	15
6.	Recreation and Visual Resource Management	16
7.	Wild Horses	16
C.	Alternative 1: No Action - Critical Elements	17
1.	Cultural Resources	17
2.	Noxious Weeds	17
3.	Special Status Species	18
D.	Alternative 1: No Action - Noncritical Elements	18
1.	Soils	18
2.	Vegetation	18
3.	Watershed	19
4.	Wildlife	19
5.	Livestock Grazing Management	20
6.	Recreation and Visual Resource Management	20
7.	Wild Horses	21
E.	Alternative 2: Fence Only - Critical Elements	21
1.	Cultural Resources	21
2.	Noxious Weeds	21
3.	Special Status Species	22
F.	Alternative 2: Fence Only - Noncritical Elements	22
1.	Soils	22
2.	Vegetation	22
3.	Watershed	22
4.	Wildlife	22
5.	Livestock Grazing Management	23
6.	Recreation and Visual Resource Management	23
7.	Wild Horses	23

Chapter V. Consultation and Coordination 24

Chapter VI. List of Preparers 24

 A. Participating BLM Staff 24

Chapter VIII. Appendices 24

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CHAPTER I. INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

A. Introduction

On July 9, 2001, the Big Stick Fire (M-332) and on July 11, 2001, the Double O Fire (M-352) were started by lightning strikes as numerous storm cells moved through the Burns District. The Big Stick Fire burned approximately 9,224 acres of public land and 376 acres of private land approximately 15 miles northeast of Wagontire, Oregon, in the Burns District of the Bureau of Land Management (BLM). The Double O Fire burned approximately 1,534 acres of public land, 226 acres of private land and 124 acres of Malheur National Wildlife Refuge 1-mile south of Harney Lake located approximately 35 miles east of Wagontire, Oregon, in the Burns District.

The elevation on the Big Stick Fire ranges from 4,220 feet to 4,550 feet. The topography is mainly gently sloping with approximately half the area having a northeast aspect and half with a southwest aspect, the two areas meeting in a flat area with playa lakebeds. The area receives less than 10 inches of precipitation, with most of the precipitation occurring in the winter in the form of snow. Some precipitation occurs during the summer and fall in the form of thunderstorms but this precipitation is ineffective for plant growth.

The elevation on the Double O Fire ranges from 4,100 feet to 4,540 feet. Slopes face northeast and range from 0 to 30 percent. The area receives approximately 10 inches of precipitation annually, with most of the affective precipitation occurring in the winter in the form of snow and early spring in the form of rain. Some precipitation occurs during the summer and fall in the form of thunderstorms but this precipitation is ineffective for plant growth.

The Big Stick Fire is within the West Warm Springs and Capehart Lake Allotments. This fire burned in Wyoming big sagebrush, Thurber needlegrass, Wyoming big sagebrush, and bluebunch wheatgrass vegetation communities. Portions of the bluebunch community have cheatgrass as a large part of

the grass component.

The Double O Fire is within the West Warm Springs and East Warm Springs Allotments. This fire burned in a Wyoming big sagebrush and perennial bunchgrass vegetation community which previously burned in 1985 and was primarily a cheatgrass community. A portion of this burned area also burned in 1999.

The burned areas are located within the Warm Springs Wild Horse Herd Management Area (HMA) which is used yearlong by the resident horse herd.

B. Purpose and Need

The purpose of this project is to rehabilitate the burned areas to restore vegetation to stabilize the site.

Fires which have previously burned in these areas quickly become dominated by cheatgrass, an invasive nonnative species, which necessitates rehabilitating the area to ensure long-term ecosystem integrity and productivity. Additionally, noxious weeds are increasing in this area and opportunities for weed establishment will be much greater without competitive vegetation.

If not treated, cheatgrass will dominate the plant community. The likelihood of the area burning again is greater with increased levels of cheatgrass. Adjacent areas of sagebrush are also at a greater risk of fire. Increased fire size also puts at risk privately-owned structures that are within a one-quarter mile from the perimeter of the Double O Fire.

C. Relationship to Planning/Conformance with Land Use Plans

The Three Rivers Resource Management Plan (RMP) completed in 1992 is the current land use plan for this area. The East Warm Springs Allotment Management Plan (AMP), the Capehart Lake AMP and the Warm Springs Wild Horse Herd Management Plan (HMP) are the site-specific management plans for the burned areas.

The proposal is in conformance with these plans. The RMP states in objective Vegetation 1: Maintain, restore or enhance the diversity of plant communities and plant

species in abundances and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the Resource Area (RA) (Page 2-51); objective Wildlife 7 states: Restore, maintain or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA (Page 2-74). This proposal is in conformance with the BLM Emergency Stabilization and Rehabilitation (ESR) Plan.

This proposal is in conformance with local land use planning.

CHAPTER II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Proposed Action

The Big Stick Fire burned 9,224 acres of public land and 376 acres of private land. The proposed action for the Big Stick Fire (M-332) (see Map 1) is to seed approximately 3,640 acres with a rangeland drill. Of these acres, approximately 2,090 acres would be seeded with a mixture of bottlebrush squirreltail, Thurber needlegrass, bluebunch wheatgrass, sand dropseed, and crested wheatgrass. Another 1,500 acres would be seeded with a mixture of bottlebrush squirreltail, Thurber needlegrass, and crested wheatgrass. A small basin of deep sandy soil would be seeded with a mixture of basin wildrye and Indian ricegrass (approximately 40 acres). Black Canyon would be seeded with basin wildrye and western wheatgrass to control erosion. The majority of the drill seeded areas (3,500 acres) would also be aerial seeded with Wyoming big sagebrush. Drill seeded areas would be rolled with a wheeled seedbed packer after the sagebrush has been seeded. An additional 3,690 acres would be aurally seeded with Wyoming big sagebrush only.

The different seed mixes are based on the condition of the vegetation prior to the fire and expected success of the seeded species. Drill seed mixes would include a variety of forb species. Possible species to be included would be annual sunflower, blue flax, yarrow, lupine, and globemallow depending on availability.

After establishment of perennials and not before the end of the second growing season, some high intensity, short duration early season grazing (2 to 3 weeks) may be allowed to lessen cheatgrass competition and allow release of perennial species, if necessary.

Snow fences would be temporarily installed in several locations across the aurally seeded areas to enhance moisture retention to improve sagebrush establishment by trapping snow. After 3 years, sagebrush would be established sufficiently that the fence would be removed.

The burned area would require 18.75 miles of 3-strand barbed wire fence (bottom strand smooth) to be built to provide five growing seasons of protection during

germination and establishment of seeded species. The fence would be on public land. The BLM would provide the materials and contract for the construction. Two cattleguards would be placed on a major road which passes through the burned area. These would prevent gates from being left open allowing livestock and wild horses into the rehabilitation area. Signs would be placed on the main access roads entering the fire rehabilitation area stating that Off-Highway Vehicles (OHVs) are to stay on existing roads to protect resource values.

District standard design specifications would be used for the fence which identify wire spacing measurements and the use of solid color green fenceposts. Fence would remain in place for 5 years and, if not needed for management purposes, would be removed.

Approximately 4.5 miles of existing fence were damaged by fire and would be replaced. The old wooden braces on an existing fence were burned and need to be replaced. See Appendix 1, Map 1 for proposed action.

The proposed action for the Double O Fire (M-352) (see Appendix 1, Map 2) is to seed approximately 1,090 acres with a rangeland drill. The seeding mixture will consist of a mixture of bottlebrush squirreltail, Thurber needlegrass, bluebunch wheatgrass, Sandberg bluegrass, crested wheatgrass, and rubber rabbitbrush. A variety of forb species would be included in the mix, such as annual sunflower, blue flax, yarrow, lupine, and globemallow. Wyoming big sagebrush would be seeded aurally on 1,534 acres.

Forty acres along the protective fence and across the middle of the project area would be seeded to crested wheatgrass for weed control and to create a barrier to impede future wildfires from returning to the project area. Fuels reduction funds would be used for this portion of the proposed action.

Snow fences would be temporarily installed in several locations across the aurally seeded areas to enhance moisture retention to improve sagebrush establishment. After 3 years, sagebrush would be established sufficiently that the fence would be removed.

To discourage introduction of noxious weed seed to the Big Stick and Double O Fire rehabilitation areas, equipment used for seeding such as rangeland drills, tractors, and vehicles to transport seed would be cleaned of vegetative material (seed, debris, etc.) before working on-site.

Because noxious weeds could be introduced at any time, areas of high susceptibility require repeat inventorying on a periodic basis. Initial surveys for noxious weeds beginning the second year after a wildfire event will provide for finding small infestations which typically are

too small to see during the first year post-fire. Treatments will typically occur in the third post-fire year, after the seeding establishment results have been analyzed, appropriate treatments would be developed. For these reasons, weed surveys should occur the second and third year after the fire (FY02 and 03). If noxious weeds are found, control treatments would occur primarily in FY03, depending on the size of the infestations and treatments necessary.

The burned area would require 7.25 miles of 3-strand barbed wire fence (bottom strand smooth wire) to be built to provide protection during germination and establishment of seeded species for five growing seasons following seeding. The fence would be located on public land and would be removed following seeding establishment. Bureau standards for a 3-strand barbed wire fence would be used.

Signs would be placed on the main access roads entering the fire rehabilitation area stating that OHVs are to stay on existing roads to protect resource values.

Wildland fire greatly enhances ground visibility and newly burned areas are an attractant to looters in search of historic and prehistoric artifacts. A cultural resource inventory of areas within the fire perimeter likely to contain significant archaeological properties will be completed in order to assess fire damage to prehistoric and historic sites and protect their contents from illegal looting. Protection measures, primarily in the form of surface collection of artifacts, will be taken.

Total acres inventoried for this assessment and protection project are 645 in Big Stick Fire and 170 in Double O Fire over those planned for clearance of the proposed rangeland drilling.

Appendix 2 contains the detailed Burned Area ESR Plan. Appendix 3 contains the Native/Nonnative Plant Worksheet.

A cost/risk analysis has been prepared comparing the proposed alternative, the no action alternative, and the fence only alternative. This analysis is contained in Appendix 4.

B. Alternative 1: No Action

No public land would be seeded on either fire. Natural vegetation reestablishment without seeding would be allowed to occur. There would be no protective fence constructed for the burned areas.

C. Alternative 2: No Seeding, Protection Fence Only

This alternative would be the minimum necessary to protect both of the burned areas while vegetation naturally becomes reestablished. There would be 26 miles of temporary protection fence constructed. Vegetation would be allowed to reestablish naturally within the burned areas.

D. Alternative 3: Alternatives Considered but Eliminated from Detailed Analysis

Drill Seed with Crested Wheatgrass Only, Install Protection Fence

This alternative was not analyzed because Bureau policy directs the utilization of native species to the extent possible and to seed in mixtures, regardless of the species being used.

CHAPTER III. AFFECTED ENVIRONMENT

A. Critical Elements

The following critical elements would not be affected by the proposed action or alternatives: air quality, Areas of Critical Environmental Concern, prime or unique farmlands, floodplains, American Indian religious concerns, hazardous or solid wastes, environmental justice, water quality, wetlands or riparian zones, Wild and Scenic Rivers, and wilderness. No paleontological or American Indian traditional use areas are known to occur in the fire perimeter. Migratory birds are discussed in the wildlife section. Those resources which are not affected will not be discussed further in this document. The following critical elements would be affected by the proposed action or alternatives.

1. Cultural Resources

Big Stick

Cultural resource inventory in the project area has been limited to small projects such as cattleguard installations and geothermal drilling. One linear feature historic cultural property, Meeks Wagon Train Trail, transects the northern portion of the project area. It is possible that other properties exist near the project area. An obsidian tool recently found was made from material from the Big Stick Obsidian Source. The tool dates from the early prehistoric record. The presence of this obsidian source suggests a high potential for sites in the project area and it also indicates the potential for the presence of sites of early prehistoric

occupation. Overall there is a high potential for sites within the fire perimeter.

Double O

In the Double O Fire perimeter, four known cultural properties exist. Less than 5 percent of the project area has been surveyed for cultural properties. Based on this small sampling yielding four sites, there is a high potential for additional cultural sites within the project area.

2. Noxious Weeds

The Big Stick/Double O Fires are in remote locations with no obvious weed infestations. There are few known noxious weed infestations within the areas of either fire. There have not been thorough inventories of the areas so weeds may have been present but not documented. There are known weed infestations in close proximity to the Double O Fire. The Double O Fire occurred in an area that had previously burned and in which a large percentage of the vegetation is currently a cheatgrass-dominated system, susceptibility to invasion by noxious weeds is very high.

3. Special Status Species

There is high likelihood that a population of desert combleaf, *Polyctenium fremontii* var. *confertum*, was burned in the Big Stick Fire. The site is on the northwest side of Lake-on-the-Trail in the big sagebrush around the damp lake margin. This species is on the Oregon Natural Heritage Program (ONHP) List 1 as a species which is threatened or endangered throughout its range. It is a Bureau sensitive species and a Federal Species of Concern. There are known sites of Raven's biscuitroot, *Lomatium ravenii*, within one-quarter mile of the fire perimeter on the north side. There have been no inventories in the Big Stick Fire area but the soils and vegetation type are similar to the known site so it is likely that biscuitroot occurs in the fire area. The ONHP considers this species threatened or endangered in

Oregon and has put it on the ONHP List 2.

Special Status or sensitive wildlife species that occur in the vicinity of the Big Stick Fire burned area based on recent records, regional data, or site specific documentation include greater sage-grouse (*Centrocercus urophasianus*), burrowing owl (*Athene cunicularia*), Brewer's sparrow (*Spizella breweri*), sage sparrow (*Amphispiza nevadensis*), and prairie falcon (*Falco mexicanus*).

There are no Special Status wildlife or plant species known to occur in the vicinity of the Double O Fire.

B. Noncritical Elements

1. Soils

The dominant soils associated with the Big Stick Fire comprise approximately 60 percent of the burned area. These soils are Raz-Brace Soils. Raz is 50 percent and Brace is 35 percent of the complex.

Raz soils are shallow to a duripan, well-drained and have moderately slow permeability. Typically, the upper 2 inches are pale brown (when dry), very cobbly loam. The subsoil is light gray and ranges from a clay loam to a gravelly clay loam. The lower 11 inches to a depth of 23 inches are indurated duripan with opal coatings over basalt.

Brace soils are moderately deep to a duripan, have slow to medium runoff, and have moderately slow permeability. Typically, the upper 10 inches are light grayish brown (when dry), loam to gravelly clay loam. The subsoil is pale brown gravelly to cobbly clay loam. The lower 3 inches to a depth of 26 inches are indurated duripan over fractured welded rhyolitic tuff.

The other dominant soils, making up approximately 30 percent of the burned area, are Actem Cobbly Loam soils.

Actem soils are shallow to in indurated duripan, well-drained and have a slow permeability rate. Typically, the upper 2 inches are light gray (when dry), cobbly loam. The subsoil is brown to yellowish brown, clay to clay loam. The lower 5 inches to a depth of 20 inches are very pale brown, platy indurated duripan over basalt.

The effective rooting depth in these soils is less than 20 inches in shallow soils, and 20 to 40 inches in moderately deep soils. Duripans are strongly cemented soils that do not allow root penetration. Water holding capacity is estimated to be low to moderate (2.5 to 7.5 inches in a 60-inch profile or to a limiting layer).

As runoff is slow to moderate in these soils and the water erosion hazard can reach the moderate range, revegetation of the burned area is critical. The wind erosion hazard is slight.

The dominant soils associated with the Double O Fire comprise approximately 70 percent of the burned area. The soils are Seharney cobbly silt loams. The soils that cover the next largest land area (approximately 20 percent) are Leathers silt loams.

Seharney soils are shallow to a duripan, well-drained and have moderate permeability. Typically, the upper 11 inches are pale brown (when dry), silt loam. The subsoils are very pale brown, very cobbly silt loam. The lower 7 inches are strongly cemented duripan to a depth of 24 inches, over fractured basalt.

Leathers soils are very deep, well-drained soils that have slow runoff and moderately slow permeability. Also, these soils are sodic throughout. Typically, the upper 9 inches of the soil are light brownish gray (when dry), silt loam. The subsoil is pale brown loam with a discontinuity at 13 inches where the soils become sandy loam and begin to pick up both calcic properties and strong cementation to a depth of 52 inches. The lower 9 inches of soil are very pale brown sands that are loose.

The effective rooting depth is less than 20 inches for the Seharney soils, while the Leathers (sodic) soils have a depth of between 20 and 40 inches. Water holding capacity is estimated to be low to moderate (between 2.5 and 7.5 inches in a 60-inch profile or to a limiting layer).

As runoff is slow in these soils and the water erosion hazard is slight, revegetation of the burned area is recommended. The wind erosion hazard is slight. Species that are adaptable to sodic conditions should be planted on the area with Leathers soils.

2. Vegetation

The major vegetation type burned on BLM-administered

land is a Wyoming big sagebrush and perennial bunchgrass community. These sites are Wyoming big sagebrush/perennial bunchgrass sites that are in fair condition. Sandberg's bluegrass, bottlebrush squirreltail, and annual cheatgrass are now the dominant grass species. Grass species that should be present in abundance are Indian ricegrass, bluebunch wheatgrass, and Thurber needlegrass. The Big Stick Fire area is presently supporting a perennial bunchgrass community in fair condition. The Double O Fire area has burned previously and is dominated by invasive nonnative annuals such as cheatgrass and tumble mustard.

Rehabilitation efforts in this area in the past have met with mixed results.

In some cases the seeded species have established abundantly and in other cases the seeded species have established slowly, at a low level, or not at all. These differences can be attributed to the availability of spring moisture. When winter and spring precipitation is at or above average levels, establishment is generally good. In drought years or when precipitation comes early in the fall or late in the spring, establishment is spotty or poor.

3. Watershed

Both the Double O burn site and the Big Stick burn site, although in a lowered seral state, were stable without accelerated erosion. The deeper rooting systems of Wyoming big sagebrush have been removed by the fire.

4. Wildlife

Species observed at the Big Stick burn area are Western meadowlark (*Sturnella neglecta*), Great Basin gopher snake (*Pituophis catenifer deserticola*), redtail hawk (*Buteo jamaicensis*), mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), mallard (*Anas platyrhynchos*), horned lark (*Eremophila alpestris*), and Western kingbird (*Tyrannus tyrannus*).

Species observed at the Double O burn area are the horned lark (*Eremophila alpestris*) and mule deer (*Odocoileus hemionus*).

5. Livestock Grazing Management

The Big Stick Fire is in the West Warm Springs and Capehart Lake Allotments. The West Warm Springs Allotment contains 297,449 acres of public land and 6,009 acres of private land. The West Warm Springs Allotment is a community allotment with several permittees. The permitted grazing use for this allotment is for 11,167 AUMs. This fire was in the area used by the Ketscher Cattle Co. which has a grazing permit of 5,242 AUMs. The area inside the proposed fenced area is approximately 4.2 percent of

the West Warm Springs Allotment. The Capehart Lake Allotment contains 35,612 acres of public land and 1,231 acres of private land. It is used by Mike Peila who has permitted use of 1,500 AUMs. The area inside the fenced area is approximately 2.5 percent of the Capehart Lake Allotment.

The Double O Fire is in the West Warm Springs and East Warm Springs Allotments. The West Warm Springs Allotment contains 297,449 acres of public land and 6,009 acres of private land. The West Warm Springs Allotment is a community allotment with several permittees. The permitted grazing use for this allotment is for 11,167 AUMs. This fire was in the area used by the Moon Ranch which has permitted use of 2,378 AUMs. The area inside the fenced area is approximately 1-percent of the West Warm Springs Allotment. The East Warm Springs Allotment contains approximately 179,150 acres of public land, 320 acres of State land, 2,710 acres of other Federal land, and 4,976 acres of private land. The East Warm Springs Allotment is a community allotment with several permittees. The permitted grazing use within the allotment is for 8,225 AUMs. The fire was in the area used by the VE Ranch. The area inside the proposed fenced area is approximately .5-percent of the East Warm Springs Allotment.

Estimated livestock forage production in the Big Stick Fire prior to the burn is in the West Warm Springs Allotment, 462 AUMs, and in the Capehart Lake Allotment, 44 AUMs. In the Double O Fire, forage production in the burned portion of the West Warm Springs Allotment is 88 AUMs and in the East Warm Springs Allotment, 7 AUMs.

The season of use in the burned areas of the West Warm Springs Allotment is from April 1 to September 15. The season of use in the burned area of the East Warm Springs Allotment is June 1 to August 31. The season of use in the Capehart Lake Allotment alternates between use between April 1 to July 15 and rest.

6. Recreation and Visual Resource Management

Recreation values include some hunting for deer and antelope. Visual Resource Management (VRM) for both areas is Class IV management where the landscape characteristics can be changed to meet management objectives.

Big Stick receives very little recreation use. The

most frequent public use is for hunting in the fall and some hiking and camping. Recreational use in the Double O area includes big game hunting with some opportunities for upland game bird hunting as well as hiking and camping opportunities.

7. Wild Horses

The two fires and the proposed rehabilitation project are in the 475,468-acre Warm Springs HMA. A fence divides the HMA into two large units known as West Warm Springs and East Warm Springs. The West Warm Springs area has 295,549 acres and East Warm Springs area has 179,919 acres. The Appropriate Management Level for the HMA is 111 to 202 wild horses and burros. The current population is estimated to be 486 horses and 15 burros.

The Big Stick Fire burned in the West Warm Springs unit and all but approximately 200 acres of the Double O Fire occurred in this area also. Two hundred acres of the Double O Fire burned in the East Warm Springs unit.

Occasional, but limited, movement of wild horses occurs between the west and east units of the HMA because fence gates are normally closed. On June 25, 2001, a helicopter census was conducted in the Warm Springs HMA and 220 wild horses in the West Warm Springs unit and 266 in the East Warm Springs unit were counted. About 15 burros exist in West Warm Springs, but they were not observed.

A wild horse gathering is scheduled in the Warm Springs HMA for August 2001 with a removal goal of 375. After capture 111 animals will remain in the HMA, 56 in the West Warm Springs unit and 55 in the East Warm Springs unit.

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES INCLUDING CUMULATIVE IMPACTS

A. Proposed Action - Critical Elements

1. Cultural Resources

Rangeland drilling can cause minor shallow surface disturbance to prehistoric archaeological sites and cause impacts to prehistoric and historic sites with features. It can result in impacts to archaeological sites in areas with fragile sediments such as dunes. In the case of surface archaeological sites in nonfragile sediments, rangeland drilling (if

successful) would have a net positive affect because it would stabilize the sediment surface and diminish or halt site damage through erosion.

Sites within stable sediment surfaces would not be removed from the rangeland seeding areas. Sites with surface features or those within unstable soils will be removed from the rangeland drilling and either hand seeded or seeded via ATV and drag chains with the same mixture of grass seed used in adjacent areas.

Fence construction can have negative impact to cultural resources particularly by livestock trailing after construction is complete. Surface collection of artifacts within the fence corridor would be mitigation for impacts to significant sites.

Aerial seeding have positive affect on cultural resources as it would aid in erosion control.

In order to mitigate potential negative impacts caused by rangeland seeding and fencing operations, significant cultural properties would be avoided.

Cumulative Impacts - There would be no cumulative impacts from this action.

2. Noxious Weeds

A large percentage of the soil types in the burned areas are clay dominated. These soils are particularly susceptible to medusahead invasion. Medusahead is currently dominating many acres in the Burns District and many new sites are establishing from the main epicenters. Current control options are extremely inadequate and prevention is the number 1 strategy for medusahead. Establishing a competitive plant community is the first step to preventing establishment of any new weeds.

Cumulative Impacts - The cumulative impacts of the proposed action would be to help prevent invasion into the burned area as well as surrounding areas.

3. Special Status Species

Reestablishment of native vegetation in the burned area would recreate the habitat that occurred prior to the fire. Preventing the increase of noxious

weeds would maintain existing habitat in the area as well as improving the habitat in the Double O Fire area which was in a deteriorated condition due to previous fires.

Cumulative Impacts - The cumulative impacts of the proposed action would be to maintain existing Special Status species habitat and prevent increased loss of habitat from future fires.

B. Proposed Action - Noncritical Elements

1. Soils

Immediate revegetation after fire promotes site potential by generating cover which increases interception of water and wind energy, reduces the time before litter begins to accumulate which increases water holding capacity, and reduces the effects of water and wind kinetic energy prior to soil contact. Cover also reduces the generation of sediments from upland areas.

These soils would have potential for producing a more diverse, perennial vegetative community as a result of seeding the burned area. Any areas not seeded would revert to annual cheatgrass and other associated annuals with a high susceptibility to repeated wildfires.

The proposed seeding mixes would be expected to establish a diverse perennial vegetation cover with a well-developed rooting system. These plant communities would be able to hold the soil in place and protect it from raindrop impact, and would also reduce overland flows and other potential erosion hazards.

Cumulative Impacts - There would be no cumulative impacts from this action.

2. Vegetation

Seeding the project areas would ensure the establishment of a perennial vegetation cover with varied species of shrubs, grasses, and forbs

providing structural diversity. Annual cheatgrass, other annuals, and possibly noxious weeds would compete strongly during the first 3 years following seeding of the areas. The plant species mix, using native species, was selected for drought tolerance and germination characteristics with the potential to outcompete annual cheatgrass, other introduced annuals, and noxious weeds.

The predominantly native seeded mix would provide a perennial vegetative cover for soil protection, varied plant community structure, and palatability for wildlife and livestock. Included in the seeding mix are fire-tolerant species which would lessen the influence of future wildfires on this landscape and promote historical fire return intervals.

Cumulative Impacts - Establishing perennial species in these burned areas will lessen the fire return intervals in these areas. Longer fire return intervals will allow improved ecosystem function and stability.

3. Watershed

The mix of species proposed for seeding would provide for the capture and release of precipitation and snowmelt which would help in preventing future soil erosion. These perennial species would provide developed rooting systems and community structure lacking in an annual cheatgrass-dominated plant community. Once perennial species are established, overall watershed health would be improved.

Cumulative Impacts - There would be no cumulative impacts from this action.

4. Wildlife

Seeding with a mixture of native grasses and shrub species with limited amounts of crested wheatgrass would be consistent with wildlife values. Rehabilitation of native plant populations and communities would likely provide the structure and forage needed by wildlife. Rehabilitation which attempts to move toward the potential natural plant populations and communities should provide habitat needed for a diversity of wildlife species.

Cumulative Impacts - The proposed action would increase the diversity of habitat types for wildlife and maintain existing habitats by reducing the amount of cheatgrass-dominated area.

5. Livestock Grazing Management

The loss of AUMs during five growing seasons of rest for germination and establishment would be approximately 601 AUMs each year.

The rehabilitated areas on public land would be rested for five growing seasons following the seeding to allow for plant germination and establishment. Following the rest period for germination and establishment, protective fences would be removed and the existing East Warm Springs and Capehart Lake AMPs would again be fully implemented and operational.

Cumulative Impacts - There would be no cumulative impacts from this action.

6. Recreation and Visual Resource Management

Restoring a more diverse plant community and lessening the impacts of the expected establishment of annual cheatgrass would improve visual resources. Recreation potential would be improved by lessening the fire hazard and providing improved wildlife habitat. The proposed protection fence would be visible to the recreationist when in close proximity to the fence. There would be adequate gates constructed to ensure access in and out of the project areas. Also, the fence design would allow easy crossing by humans.

Informational signing stating OHV use within the fire rehabilitation areas would help protect vegetation while the area is recovering from the effects of the fire.

Cumulative Impacts - There would be no cumulative impacts from this action.

7. Wild Horses

The fenced project areas would temporarily remove and make approximately 3.5 percent of the West Warm Springs unit and less than .01 percent of the East Warm Springs unit unavailable to wild horses and burros. The removal of these forage areas would not affect the viability or survivability of the horses or burros.

Current and historical census and wild horse and burro observation records indicate that the herds do not frequent the Big Stick Fire area. The one area

that herds frequent in the Double O project area in the West Warm Springs unit, and the unavailability of this area would not affect forage availability to wild horses or burros to a significant level. Adequate forage is available to wild horses and burros in other areas that they frequent.

The long-term impact of the rehabilitation projects after the temporary fences are removed would increase forage productivity and forage quality and improve wild horse habitat.

Some hazard exists to wild horses and burros if animals get into the Double O rehabilitation area and cannot find their way out. No water is in this area and animals could perish if not discovered and removed. This is not an issue in the Big Stick project area because water exists inside the rehabilitation area.

The temporary fences would not be located in a manner that would restrict movement of wild horses in the HMA.

Cumulative impacts - Wild horse habitat and forage productivity and quality would be enhanced over the long term by the establishment of desirable forage species, and by the creation of native seed sources to potentially improve plant communities in the surrounding unburned areas.

C. Alternative 1: No Action - Critical Elements

1. Cultural Resources

Failure to inventory and protect newly-exposed significant sites from illegal collection and excavation would result in loss of significant archaeological data.

In general, not seeding by various means would have a negative affect on archaeological sites because wind and water erosion could result in partial or total destruction of buried cultural materials.

Cumulative Impacts - Fire frequency and size would increase under this alternative which would increase the number of archaeological sites exposed to erosion and illegal collection.

2. Noxious Weeds

Not seeding the fires would increase the potential

for noxious weed establishment due to lack of competitive vegetation and susceptibility to recurring fire.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. This would allow for increased areas available for weed establishment.

3. Special Status Species

Without seeding, nonnative invasive species would dominate the burned areas eliminating habitat for the known and suspected Special Status species in this area.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. This would allow for decrease available habitat for Special Status species.

D. Alternative 1: No Action - Noncritical Elements

1. Soils

The important aspects of post-fire soil protection are typically prevention of water and wind erosion. If immediate efforts to revegetate exposed soils are not made, the effects of wind and water energy, coupled with fine soils surface textures, slope and a lack of soil surface fragments can result in erosion. The resulting loss of soil, especially top soil, can result in a decrease in ecological site potential in the form of reduced soil fertility, reduced resistance to the erosive energy generated by slope, reduced moisture holding capacity, reduced moisture infiltration rates, increased moisture runoff, higher soil surface temperature, and a decrease in vegetative rooting depths. Other concerns can be effects to water and air quality, flooding potential, and invasion of weed species suited to early seral sites.

Under natural revegetation, annual cheatgrass and other annuals would reestablish with few to no

perennial species. The root systems of these annual species are not sufficient to hold the soil in place which would increase the probability of accelerated soil erosion.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. This would allow for increased areas susceptible to erosion.

2. Vegetation

The Double O Fire area had little or no brush species prior to the fire and few native perennials. The entire burned area would most likely revert to cheatgrass, mustards, and other exotic annuals with much of these sites available for noxious weed invasion.

In the Big Stick Fire area, some perennial native species such as bottlebrush squirreltail and Sandberg bluegrass would reestablish; however, these and other perennial grasses and forbs were limited on the site because of the high percentage of shrubs prior to the burn. The area would be susceptible to repeated wildfires, increasing the hazard to adjacent unburned sagebrush plant communities. The vegetation in the area after repeated burns would become dominated by annual cheatgrass, mustards, and associated annuals.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. Overall vegetation diversity would decline.

3. Watershed

The association of low seral stage perennial and annual grasses, which would occupy the site, would not provide sufficient vegetation cover or root mass to maintain stable soil conditions. Accelerated erosion and deteriorated watershed condition would be expected on this site. The size of this burn and location on the landscape would have a minimal impact on the entire watershed.

As described in the vegetation and soils section, the burned area would revegetate to annual cheatgrass, mustards, other exotic annuals, and the site would be susceptible to noxious weed invasion. These species provide poor vegetation cover and root structure providing little surface protection and soil holding capacity. These conditions would result in a deteriorated portion of the watersheds.

Cumulative Impacts - These areas would be vulnerable to repeat wildfires which would result in further deterioration of the watershed.

4. Wildlife

No seeding would increase the potential for establishment of invasive plants, such as cheatgrass and noxious weeds, with potential to have direct and indirect adverse impacts on wildlife habitats. Cheatgrass-dominated areas would cause a reduction in wildlife habitat diversity. Native vegetation reestablishment through recruitment/recolonization after wildfire in Wyoming sagebrush communities is limited due to the combination of low precipitation and the competitiveness of the nonnative species. Management should include provisions which meet the needs of plant communities and wildlife species.

Double O

No seeding would likely result in a vegetative community of invasive plants, such as cheatgrass and noxious weeds. The area had experienced a wildfire in the past which removed the sagebrush and increased the cheatgrass. The burned area would likely provide little wildlife habitat value to most species if it were not seeded with a mixture of grass and shrub species.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. Overall, wildlife habitat diversity would decline.

5. Livestock Grazing Management

Although standard policy for burn recovery and vegetation reestablishment on burned areas is two growing seasons of rest, the no action alternative would leave the burned area open to grazing during the germination and establishment period.

The new green growth on burned areas is attractive to grazing animals and they tend to forage on them until available vegetation is depleted.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. Forage quality and availability would decline.

6. Recreation and Visual Resource Management

Establishment of annual vegetation would detract from the visual resources of the area. Recreation opportunities could be impacted by increased fire frequency and lessened vegetation diversity resulting in reduced habitat potential for wildlife and a less desirable area for hiking and camping. Wildfire hazards would increase as more of the landscape is dominated by cheatgrass and other annuals of high fire susceptibility.

By not providing informational signing for OHV use, there is potential for cross-country travel by vehicles occurring.

Cumulative Impacts - Fires would increase in frequency and size which would increase the amount of cheatgrass-dominated area. Recreational opportunities would decline and the quality of the recreational experience would deteriorate.

7. Wild Horses

Wild horses would graze the area during the germination and establishment period. Wild horse use in both fire areas could occur yearlong.

No action would result in a decrease of long-term productivity of the forage in the area and a slightly negatively affect on wild horse and burro habitat.

Habitat is compromised by soil erosion and decreased productivity of the burned areas due to a lack of perennial vegetation and establishment of cheatgrass communities in some areas.

Immediately after the fire, the flush of annual cheatgrass would be preferred spring foraging areas for wild horses in the Double O area. This would increase vulnerability of the soil to erosion and retard recovery and reestablishment of desirable perennial forage species.

Cumulative impacts - If the project area is not rehabilitated it would add acreage to old fire areas that were not protected from grazing and whose native plant communities were not restored and that degrades wild horse habitat and forage. The result is increasing acreage of cheatgrass communities that permits soil erosion, and degrades the productivity of the range sites involved. Cheatgrass is good spring forage for horses, but compromises forage for summer and winter wild horse grazing.

E. Alternative 2: Fence Only - Critical Elements

1. Cultural Resources

In order to mitigate potential negative impacts caused by rangeland fencing operations, significant cultural properties would be avoided.

Cumulative Impacts - Same as in Alternative 1.

2. Noxious Weeds

Weeds do not recognize fences as boundaries and without the competing vegetation, weeds would probably establish in the burned areas.

Cumulative Impacts - Same as in Alternative 1.

3. Special Status Species

Same as described under the proposed action.

Cumulative Impacts - Same as in Alternative 1.

F. Alternative 2: Fence Only - Noncritical Elements

1. Soils

Same as described under the proposed action.

Cumulative Impacts - Same as in Alternative 1.

2. Vegetation

Under the fence only alternative, there would be little reestablishment of native species. Most of the burned areas had a large component of cheatgrass which dominates after fire. Sagebrush does not reestablish in cheatgrass-dominated areas. Cheatgrass is highly flammable and would likely reburn within the next 5 to 10 years. This short return interval of fire would result in a community dominated by annual cheatgrass, mustard, and other associated annuals. These sites would be open for invasion by noxious weeds and highly susceptible to recurring wildfire as with the no action alternative.

Cumulative Impacts - Same as in Alternative 1.

3. Watershed

Same as the no action alternative.

Cumulative Impacts - Same as in Alternative 1.

4. Wildlife

No seeding would increase the potential for establishment of invasive plants, such as cheatgrass and noxious weeds, with potential to have adverse impacts on wildlife habitats. Cheatgrass-dominated areas would cause a reduction in wildlife habitat diversity. Native vegetation reestablishment through recruitment/recolonization after wildfire in Wyoming

sagebrush communities are limited due to the combination of low precipitation and the competitiveness of the nonnative species. Management should include provisions which meet the needs of plant communities upon which wildlife species are dependant.

Excluding livestock grazing for 5 years and not seeding could increase the potential to reestablish vegetation which wildlife utilize. Benefits are expected to be minor from the no action alternative as the majority of area would likely become dominated by cheatgrass which does not provide suitable habitat for a diversity of wildlife species.

Cumulative Impacts - Same as in Alternative 1.

5. Livestock Grazing Management

The management would be as described under the proposed action.

Cumulative Impacts - Same as in Alternative 1.

6. Recreation and Visual Resource Management

The visual resource changes due to vegetation would be as described under the proposed action. The fence would provide some additional impact to visual resources.

Informational signing impacts would be the same as under the proposed action.

Cumulative Impacts - Same as in Alternative 1.

7. Wild Horses

Fencing the area would pose a small risk to wild horses in that they could get into the area, not have water and be unable to get out.

Cumulative Impacts - Same as in Alternative 1.

CHAPTER V. CONSULTATION AND COORDINATION

Burns Paiute Tribe
Confederated Tribes of Warm Springs
Red Dunbar, permittee
Larry Dunn, permittee
Tom Ketscher, permittee
Geren Moon, permittee
Ross Opie, permittee
Oregon Department of Fish and Wildlife
Pacific Wild Horse Club
Bill Peila, permittee
Buck Taylor, permittee
U.S. Fish and Wildlife Service, Malheur National Wildlife
Refuge
VE Ranch, permittee
Louis Yriarte, permittee

CHAPTER VI. LIST OF PREPARERS

A. Participating BLM Staff

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Lead/Preparer
Bill Andersen, Rangeland Management Specialist
Dean Bolstad, Wild Horse Specialist
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Gary Foulkes, Planning and Environmental Coordinator
Kelly Hazen, Computer Mapping Specialist (GIS)
Rudy Hefter, Acting Three Rivers Resource Area Field
Manager
Jim King, Rangeland Management Specialist
Fred McDonald, Natural Resource Specialist (Recreation,
VRM)
George Orr, Archaeologist
Lesley Richman, Rangeland Management Specialist/Weed
Ecologist
Jeff Rose, Fire Ecologist
Steve Slavik, Soil Scientist
Willie Street, Rangeland Management Specialist
Scott Thomas, Archaeologist

CHAPTER VIII. APPENDICES

Appendix 1 - Maps
Appendix 2 - Emergency Stabilization and Rehabilitation Plan

Appendix 3 - Native-Nonnative Plant Worksheet

Appendix 4 - Cost/Risk Analysis

APPENDIX 3

NATIVE/NONNATIVE PLANT WORKSHEET

Proposed Native Plants in Seed Mixture

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

Yes No Rationale:

Species were selected based on plants present on the site previous to the fire or identified as potentially present by the Ecological Site Inventory.

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

Yes No Rationale:

The majority of the species selected are available in sufficient quantity in most years with the exception of Thurber needlegrass which is frequently available only in limited amounts.

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

Yes No Rationale:

Costs and quality of these native species has improved greatly in the past years to the point that native species prices compare favorably with nonnative species.

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

Yes No Rationale:

These native species will establish and survive in these environmental conditions given favorable germination conditions. However, establishment is slow and may take 3 to

5 years. Bottlebrush squirreltail is known to be very competitive with the invasive annuals expected to invade. Other species are competitive with weeds once established.

5. Will the current proposed land management (e.g., wildlife populations, recreation use, livestock, etc.) after the seeding establishment period maintain the seeded native plants in the seed mixture?

Yes No Rationale:

The allotment containing the majority of the burned area is currently being evaluated in preparation for developing an Allotment Management Plan. The new seeding will be managed so that it will be maintained.

Use of native species for rehabilitation projects is required if all the answers to this portion of the worksheet are yes (assuming that the native plant species are available).

Proposed Nonnative Plants in Seed Mixture

1. Is the use of nonnative plants necessary to meet objective, e.g., consistent with applicable approved field unit management plans?

Yes No Rationale:

The nonnative species is proposed for fast establishment to stabilize the burned area and prevent weed invasion while the native species are becoming establishment.

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

Yes No Rationale:

The nonnative species is being planted at a very low level so that it will accomplish the fast establishment and stabilization objectives but will become a component of the ecosystem rather than a dominant.

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

Yes No Rationale:

In this area, the nonnative species stay on site and do not

increase in density or abundance. They may persist, but do not interbreed with native plants.

A "no" response requires additional analysis in the Environmental Assessment of selection of an alternate species in the seed mixture.

PROPOSED SEED MIXTURE

Nonnative Plants

Native Plants

Big Stick Fire

Mix #1

1. Crested wheatgrass

1. Bluebunch wheatgrass
2. Bottlebrush squirreltail
3. Thurber needlegrass
4. Sand dropseed
5. Annual sunflower
6. Lewis flax
7. Yarrow
8. Silvery lupine
9. Globemallow
10. Wyoming big sagebrush

Mix #2

1. Crested wheatgrass

1. Bottlebrush squirreltail
2. Thurber needlegrass
3. Annual sunflower
4. Lewis flax
5. Yarrow
6. Wyoming big sagebrush

Mix #3

1. Basin wildrye
2. Indian ricegrass
3. Silvery lupine

Mix #4

1. Basin wildrye
2. Western wheatgrass
3. Silvery lupine

Double O Fire

1. Crested wheatgrass

1. Bottlebrush squirreltail
2. Sandberg bluegrass
3. Thurber needlegrass
4. Bluebunch wheatgrass
5. Annual sunflower
6. Lewis flax
7. Yarrow
8. Silvery lupine
9. Globemallow
10. Rubber rabbitbrush
11. Wyoming big sagebrush

APPENDIX 4

Cost/Risk Analysis

Part 1. Treatment Cost

Treatments	Cost
Revegetation	\$ 809,933
Protective Fencing	\$ 144,200
Weed Treatment	\$ 186,975
All Other Costs	\$ 122,750
Total Cost	\$1,263,858

Part 2. Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatments	Units	%
Revegetation (overall rating)	8,825 ac	80
Drill Seeding (acres)	4,730 ac	80
Aerial Seeding (acres)	8,725 ac	70
Protective Fence to Exclude Grazing (miles)	26 mi	95
Fence Repair to Exclude Grazing (miles)	4.5 mi	95
Weed Treatment (acres)	8,725 ac	75

Risk of Resource Value Loss or Damage

Identify the risk (high, medium, low, none or not applicable (NA)) of unacceptable impacts or loss of resources.

Alternative 1 - No Action- Treatments Not Implemented (check one)

Resource Value	None	Low	Mid	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
Offsite Sediment Damage to Private Property		X		
Offsite Threats to Human Life	X			
Other - none	X			

Alternative 2 - Fence Treatment Only (check one)

Resource Value	None	Low	Mid	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
Offsite Sediment Damage to Private Property		X		
Offsite Threats to Human Life	X			
Other - none	X			

Proposed Action - Treatments Successfully Implemented (check one)

Resource Value	None	Low	Mid	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		
Offsite Sediment Damage to Private Property		X		
Offsite Threats to Human Life	X			
Other - none	X			

Part 3. SUMMARY

The costs of the project and probability of success of the proposed treatments are compared with the risks to resource values if: 1) no action is taken, 2) the fence only alternative is taken, and 3) the proposed action is successfully implemented. Alternatives may be included in this analysis to assist in the selection of the treatments that will cost effectively achieve the EFR objectives. Answer the following questions to determine which proposed EFR treatments should be selected and implemented.

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 action of seeding and fencing will establish a perennial ground cover which would stabilize the soils and prevent loss of soil by wind and water erosion. The perennial ground cover would occupy the site and prevent the invasion of weeds. Species selected will help avoid repeated wildfire hazards.

No Action Yes No Rationale for answer: Without establishing perennial ground cover, the site would be left open to invasion by weeds which pose a threat of repeated fires of increasing size.

Alternative(s) Yes No Rationale for answer: Same rationale as the no action alternative.

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: Species selected for seeding are adapted to this ecosystem and are expected to establish. Past seedings in this area are successful given normal climatic conditions and exclusion of grazing for 5 years.

No Action Yes No Rationale for answer: Without seeding, fires of this intensity do not have adequate survival of native plants to prevent weed invasion. The site would become dominated by cheatgrass and be subject to repeated fires.

Alternative(s) Yes No Rationale for answer: Same as no action alternative.

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

Proposed Action , Alternative(s) , or No Action

Comments: The cost of the proposed action is modest given the extensive use of native species. The high probability of future wildfire and noxious weed invasion without treatment makes the proposed action imperative.