

**EA NUMBER:** OR-014-06-01

**PROJECT TITLE/TYPE:** Klamath Hills Fire Emergency Stabilization and Rehabilitation

**PROJECT LOCATION:** T. 40 S. R. 9 E. Sections 21-23 and 27-28 (see Map 1).

**BLM OFFICE:** Klamath Falls Resource Area, Lakeview District

**LEASE/SERIAL/CASE FILE #:** N/A

**APPLICANT:** N/A

**CONFORMANCE WITH APPLICABLE LAND USE PLAN:** This proposed action is subject to one or more of the following land use plans.

- Klamath Falls Resource Area Resource Management Plan and ROD (1995)
- Vegetation Treatment on BLM Lands in Thirteen Western States FEIS and ROD (1991)
- Integrated Noxious Weed Control Program EA #OR-013-93-03 (1994)
- Rangeland Reform '94 FEIS and ROD (1995)
- Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington (1997)

**Remarks:** None

**PURPOSE AND NEED FOR ACTION:**

On September 21, 2005 the Klamath Hills Fire (B65A) was started by an adjacent land owner burning a debris pile. The fire was contained on September 22, 2005; burning 564 acres of BLM administered lands and 30 acres of private lands. Suppression activities used were direct and indirect attack with dozers, hand crews, and engines. On the BLM administered lands, 1.4 miles of allotment boundary fence was burned, one wildlife guzzler/drinker was damaged, and 564 acres of sagebrush steppe vegetation were burned.

Previous botanical inventories completed in 1991 and 1994 show the dominant vegetation within the fire boundary was western juniper, mountain big sagebrush, rabbit brush, spineless horsebrush, basin wildrye, cheatgrass, bottlebrush squirreltail, and tall tumbled mustard. This is the second wildfire to occur in portions of the burned area in the last eight years influencing a trend towards loss of native grasses, forbs, and shrubs and movement towards being dominated by non-native annuals.

Adjacent private lands to the south of the burned area (see ownership Map 2) are potentially at risk to erosion because they are below drainages that were burned by the Klamath Hills Fire.

Interagency guidance and BLM policy, as stated in the Interagency Emergency Stabilization and Rehabilitation (ES&R) Handbook and draft Emergency Stabilization and Burned Area Rehabilitation Handbook (July 1, 2005 – H-17421), provide for emergency stabilization and rehabilitation where fire has an adverse impact on vegetation, soils, and watersheds and also to minimize other adverse changes to the extent practicable.

The objective of the BLM's ES&R program is to minimize threats to life or property and stabilize and prevent unacceptable degradation to natural and cultural resources resulting from the effects of fire, in a cost-effective and expeditious manner. The purpose is either to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans, or if that is infeasible, then to establish a healthy, stable ecosystem in which native species are well represented.

Emergency Stabilization is defined as "Planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life and property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Emergency Stabilization actions must be taken within one year following containment of a wildland fire." (620 DM 3)

Rehabilitation is defined as "Efforts undertaken within three years of containment of a wildland fire to repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by fire." (620 DM 3)

The area burned by Klamath Hills Fire is in need of immediate stabilization/rehabilitation to minimize soil movement, preserve on-site productivity, reduce the invasion and increased dominance of undesirable flammable annual plants, and/or to reduce the potential spread of noxious weeds. Direct and indirect effects of livestock grazing (herbivory, trampling, etc.) limit recovery and establishment of desired vegetation resources following the fire. The area burned by the Klamath Hills Fire is in need of short term protection from livestock grazing to facilitate stabilization/rehabilitation efforts and minimize potential long term effects identified above.

This environmental assessment analyzes the benefits and risks of implementing stabilization actions to protect native perennial vegetation as compared to a no action alternative. Decisions to be made as a result of information provided in this environmental assessment include which methods of revegetation and what practices for livestock exclusion would be implemented.

Internal scoping of issues relevant to the need for ESR actions and protection from livestock impacts identified the need to ensure that vegetation communities are managed to attain desired future conditions subsequent to the fire, including meeting riparian, upland vegetation, watershed, special status species, and cultural resource management objectives presented in the land use plan. The level of controversy of potential stabilization actions to be implemented is low. The Oregon Department of Fish and Wildlife is typically informed of proposed fire ES and R actions. No other federal, state or local government is involved in this NEPA analysis of the proposed action, beyond issue identification, review, and comment on content of the document.

### **DESCRIPTION OF PROPOSED ACTION:**

The Klamath Falls Resource Area (KFRA) proposes to conduct Emergency Stabilization and Rehabilitation activities on 564 acres of BLM administered land that was burned during the Klamath Hills Fire.

Approximately 400 acres of the burned area would be reseeded with native grasses, forbs, and shrubs.

Approximately 200 acres on the southern portion of the burned area would be accomplished by all terrain vehicle (ATV) broadcast seeding and incorporation of the seed into the soil with an ATV and harrow/drag (see treatment Map 3). The remaining 200 acres would be hand broadcast seeded. Native shrub seedlings would be planted, tubed, and staked throughout the burned area with a portion of the seedlings being caged or protected with small wire exclosures in out years. The portion of existing allotment boundary fence that was burned (1.4 miles) would be replaced and one wildlife guzzler/drinker damaged by the fire would be repaired (see fire damaged structures Map 8). Erosion control structures consisting of straw wattles would be placed in drainages that are susceptible to sediment transport and that would have the potential to degrade

riparian function and negatively impact adjacent private lands. Erosion control structures would be placed in accordance with general guidance from the United States Department of Interior, Emergency Stabilization Burned Area Rehabilitation world wide web document on straw wattle dam implementation (“Straw Wattle Dams”). Livestock grazing would be excluded for one to three growing seasons following containment of the fire. Grazing exclusion would be done by temporarily closing affected allotments and/or temporarily fencing out the proposed ESR area from the allotments where feasible. Monitoring of reseeding treatments, seedling treatments, and invasive weeds would be conducted.

## **ALTERNATIVES:**

### **#1) NO ACTION -**

No emergency stabilization or rehabilitation activities would be completed. Re-vegetation of the burned area would be allowed to occur from seed and plant materials which remain on site and viable following the fire. Livestock would not be excluded from allotments affected by the Klamath Hills Fire for one to three growing seasons following containment of the fire. No monitoring of the burned area would be completed beyond that scheduled prior to the fire.

### **#2) ALTERNATIVE 1 (PREFERRED ALTERNATIVE) -**

Emergency stabilization and rehabilitation activities would be completed on 564 acres of BLM administered lands within the Klamath Hills fire perimeter. Re-vegetation of the burned area would be completed by ATV and hand broadcast seeding, and planting of shrub seedlings. Erosion control structures would be installed in drainages that have the potential to transport sediment. Burned structures including a wildlife guzzler and allotment boundary fence would be replaced/repared. Livestock would be excluded from the treated area for one to three growing seasons following containment of the fire. Monitoring of re-vegetation treatments and invasive weeds will be completed.

## **AFFECTED ENVIRONMENT:**

This section presents relevant resource components of the existing environment; that is the baseline environment.

### **Vegetation, Soils and Watershed**

The burn area and adjacent areas contain species typically found in sagebrush steppe with the addition of several invasive annuals. Botanical inventories were completed in the fire area in 1991 and 1994, see Table 1 for a list of dominant species found. A full list of species identified in the 1994 inventory can be found in report RP-014-03-94. Since the last inventory cheatgrass (*Bromus tectorum* L.) and medusahead (*Taeniatherum caput-medusae* (L.) Nevski ) have become more prominent and even dominate in some sites.

**Table 1: Dominant species found in around the burn area in the 1991 and 1994 botanical inventories**

Scientific Name	Common Name
<i>Juniperus occidentalis</i> Hook.	western juniper
<i>Artemisia tridentata</i> Nutt.	big sagebrush
<i>Ericameria nauseosa</i> (formerly <i>Chrysothamnus nauseosus</i> )	rubber rabbitbrush
<i>Tetradymia canescens</i> DC.	spineless horsebrush
<i>Leymus cinereus</i> (Scribn. & Merr.) A. Löve	basin wildrye
<i>Bromus tectorum</i> L.	cheatgrass
<i>Elymus elymoides</i> (Raf.) Swezey ssp. <i>elymoides</i>	squirreltail
<i>Sisymbrium altissimum</i> L.	tall tumbled mustard

The Klamath Hills burn area burned within the Lake Ewauna and Klamath Strait 6<sup>th</sup> field hydrologic units, burning less than 1% and 1% respectively (See Table 3). There are no perennial streams within the burn

area. See Table 2 for miles of ephemeral and seasonal streams within the burn area. Map 6 also shows hydrologic features within and adjacent to the burn area.

**Table 2: Miles of Stream within the Klamath Hills Fire Perimeter**

Hydrologic Flow	Miles of Stream in Klamath Hills Fire
Ephemeral	1.78
Seasonal	0.32

**Table 3: Acres of 6<sup>th</sup> Field Hydrologic Units within the Klamath Hills Fire Perimeter**

6 <sup>th</sup> Field Hydrologic Units	Hydrologic Unit Acres	Acres of Klamath Hills Fire in Hydrologic Unit	Percentage of Hydrologic Unit Affected
Lake Ewauna	53,066	24	< 1%
Klamath Strait Drain	51,495	571	< 1%

Soils within the burn area are all well drained loams with different depths and textures with the exception of the few rock outcrops. See table 4 for a list of soil map units present within the fire perimeter. Soil map unit proportions and juxtaposition can be seen on Map 5.

**Table 4: Soil Map Units that occur within the Klamath Hills Fire Perimeter**

Map Unit Symbol	Soil Map Units
7C	Calimus loam
9C	Capona loam
15E	Dehlinger very stony loam - north slopes
16E	Dehlinger very stony loam - south slopes
23B	Harriman loam
50E	Lorella very stony loam - south slopes
66F	Rock outcrop - Dehlinger complex

### Noxious Weeds

A patch less than one acre of Myrtle spurge (*Euphorbia myrsinites* L.) has encroached from adjacent private land on the south side of the burn area. No other targeted noxious weeds are known to be present within or directly adjacent to the burn area.

### Livestock Grazing

Within the area of the proposed action there are two BLM livestock grazing allotments. A portion of the OK Allotment (#00846) is included in Sections 21, 22, and 23 (see grazing allotment Map 9). The complete allotment has approximately 1,260 public land acres with a grazing preference of 105 AUMs and a season-of-use from May 1 to June 15. Approximately 532 acres of the OK Allotment was burned. The Dupont Allotment (#00819) is in the W½, W½ of Section 27 and has approximately 78 acres of public land, 32 acres of the allotment were burned by the Klamath Hills fire. The northern portion of this allotment is included in the proposed action. This allotment has a grazing preference of 6 AUMs with a season-of-use from April 15 to June 1.

### Wildlife

No species listed or proposed for listing under the Endangered Species Act of 1973 or BLM special status species are known to be present within the proposed Emergency Stabilization and Rehabilitation area.

## **Recreation and Visual Resources**

Dispersed outdoor recreation in and adjacent to the burn area consists primarily of hunting of upland birds and big game animals. Some dispersed general sightseeing occurs. The burned area is within a visual resource management (VRM) Class III area. VRM class III areas are to be managed for moderate levels of change to the characteristic landscape. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements of form, line color, texture, and scale found in the predominant natural features of the characteristic landscape. The Klamath Hills area including the Emergency Stabilization and Rehabilitation area is closed to public Off-highway vehicle (OHV) use.

## **Areas of Critical Environmental Concern**

There are no Areas of Critical Environmental Concern (ACEC) within or adjacent to the proposed Emergency Stabilization and Rehabilitation area.

## **Cultural Resources and Paleontology**

Native American use of the area spans many millennia. The project area was used by the Klamath tribes though the Modoc were probably also present in the area. Permanent occupation sites, such as villages, were established at lower elevations and higher elevation areas were used for hunting and gathering activities. In 1864, the area fell within the territory ceded to the United States by the Klamath Tribes. The Klamath Tribes consist of the Klamath, Modoc, and Yahooskin people. Although treaty rights are no longer federally recognized in the project area, the Klamath Tribes remain concerned about potential disturbance to cultural sites in their traditional homeland.

Historically (post-1846), after the establishment of the Applegate Trail, the project area was used for cattle ranching and agriculture. Euroamericans began homesteading the region in the 1860s - 70s. With the completion of the Klamath Irrigation Project and the draining of marshland associated with Lower Klamath Lake in the early 1900s, agricultural activities could be pursued. Today agriculture and ranching continue to be significant in the area.

A review of existing inventory files revealed that approximately 95% of the project area had been previously surveyed prior to the Klamath Hills fire. No cultural resources were discovered during these surveys. The remaining 5% of the burned area was inspected after the fire by Klamath Falls Resource Area archaeologists. No cultural resources were encountered within the area affected by the fire, though one site was documented in the vicinity.

## **Special Status Plants**

Botanical resources inventories were conducted in 1991 and 1994 in the burn area. No plant species listed or proposed for listing under the Endangered Species Act of 1973 or BLM special status species are known to be present within the proposed Emergency Stabilization and Rehabilitation area.

## **Climate/Topography**

The fire occurred on the south aspect of an area referred to as the Klamath Hills which lies in the southern part of the Klamath basin. The burned area ranges in elevation from 4177 to 5132 feet above sea level with slopes ranging from 0 to 100 % slope. Over half of the area burned by the fire is on slopes greater than 20 % (see table 5 for acres by slope class within the fire perimeter or Map 10 which is a map showing the slope classes). Climatically the fire area is typical of cold desert sagebrush steppe climates with precipitation ranging from 10 – 15 inches annually. Approximately 44% of the annual precipitation occurs in winter, 22% in the spring, 8 % in the summer and 26% in the fall with 30% of the winter precipitation coming in the form of snow (Cahoon 1985). Average temperatures for the Klamath Basin range from 21° F to 84° F.

**Table 5: Acres by slope class within the Klamath Hills fire perimeter.**

Slope Class	Acres
0 – 10 %	24
10 – 20 %	140
20 – 30 %	223
> 30 %	209

## **ENVIRONMENTAL IMPACTS:**

The potential environmental impacts resulting from the alternatives relative to the following critical resource values were evaluated. The following is a summary of the results:

Critical Element/ Resource Value	Affected		Critical Element/ Resource Value	Affected	
	Yes	No		Yes	No
Air Quality		X	T & E Species		X
ACEC/RNAs		X	Wilderness		X
Cultural Resources		X	Wild & Scenic Rivers		X
Farmlands, Prime/Unique		X	Hazardous Wastes		X
Floodplains		X	Water Quality		X
Native American Cultural/ Religious Concerns		X	Wetlands/Riparian Zones		X
Low Income/ Minority Populations		X	Noxious Weeds		X

### **Noxious Weeds**

No Action - There is a small potential for native grasses, forbs, and shrubs to re-colonize the site without treatment. However given the large proportion of non-native annuals and the competitive advantage for noxious weeds and invasive annuals created by fire suppression activities, the natural recovery process would be slow with possible long term reduction in site potential.

Preferred Alternative - Noxious weed populations may have a competitive advantage under conditions resulting from the soil disturbance associated with fire suppression activities, and from alteration of the nutrient cycling regime of the site as a result of the application of chemical flame retardants. The vehicles and machinery that entered the burn area to suppress the wildfire increased the potential for the introduction of noxious weeds from sources outside the project area. The planting of native grass, forb, and shrub species would mitigate the potential competitive advantage and possible introduction of noxious, invasive, and exotic plants by occupying space and utilizing nutrients. Establishment of native species will enhance the recovery process and allow the site potential to be maintained in the long term.

### **Livestock Grazing**

No Action - The likely result of the No Action alternative would be an increase in weedy annual grasses and forbs. This would negatively impact the forage supply for livestock on the OK and Dupont grazing allotments.

Preferred Alternative - The proposed action would likely result in an increase in native perennial grasses and forbs compared to the no action alternative. This would positively impact the forage supply for livestock on the OK and Dupont grazing allotments compared to the no action alternative.

Excluding livestock from the allotments for 1-3 years following the proposed treatments would result in a short-term negative impact to the grazing allotment lessees. The lessees would need to find another source of forage for their livestock during these periods.

### **Cultural Resources and Paleontology**

Under either of the alternatives, cultural resources will not be affected. Since manual and light mechanical treatment methods would be employed during Emergency Stabilization and Rehabilitation work, limited surface disturbance is expected during the proposed alternative. Under both alternatives, the potential to encounter, or disturb, subsurface archaeological deposits appears limited based on survey results and the nature of disturbances anticipated.

## **DESCRIPTION OF MITIGATION MEASURES AND RESIDUAL IMPACTS:**

### **Mitigations**

- Vehicles and equipment will be washed before and after leaving the project area to reduce the risk of transporting noxious and invasive weeds.
- No mechanical soil disturbance will occur in areas where Myrtle spurge (*Euphorbia myrsinites* L.) is present to prevent movement of this weed to other areas within the burn area.
- Minimize vehicle/ATV impacts, visual and ecological, by not traversing the terrain in the same location (i.e. not using a trail more than 1 or 2 times) and utilize existing control structures when possible.

## **PERSONS/AGENCIES CONSULTED:**

Oregon Department of Fish and Wildlife  
Lloyd Ross – Adjacent land owner  
Sandra Cheyne – Adjacent land owner  
Janine Cheyne – Adjacent land owner  
Dale Flemming – Adjacent land owner and grazing allotment permittee  
David Chubb – Adjacent land owner and grazing allotment permittee

## **PREPARER(S):**

Karl Krauter, with review by KFRA Interdisciplinary Team

## **CITATIONS:**

Cahoon, J. 1985. Soil Survey of Klamath County, Oregon Southern Part. USDA, Natural Resource Conservation Service. 269 pp

“Straw Wattle Dams.” Emergency Stabilization Burned Area Rehabilitation. United States Department of Interior. 30 November 2005. < <http://fire.r9.fws.gov/ifcc/Esr/treatments/straw-wattle-damsi.htm>>

































