Vale District Bureau of Land Management
Late Fire Emergency Stabilization and Rehabilitation Plan
Environmental Assessment
EA No. OR-030-02-035

Decision Record

This Decision Record documents my decision to select the proposed alternative for implementation of the Late Fire Emergency Stabilization and Rehabilitation Plan. This action was analyzed in the attached Environmental Assessment (EA OR-030-02-035). This proposed action is tiered to and is consistent with the Northern Malheur Management Framework Plan dated March 1983, the Southern Malheur Rangeland Program Summary dated January 1984, the Malheur County Land Use Plan, and BLM policy. Additionally, it is consistent with the proposed alternative of the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement dated April 2001.

My decision is to implement actions to aerially seed sagebrush to restore shrubs to areas burned during the July 2002 fire and to construct and maintain temporary fencing to protect burned and rehabilitated areas from livestock grazing.

/s/ Tom Dabbs
Tom Dabbs
Field Manager, Malheur Resource Area

11/18/2002
Date

Finding of No Significant Impact
EA OR-030-02-035

The Malheur Resource Area of the Bureau of Land Management, Vale District has analyzed a proposal to aerially seed basin and Wyoming big sagebrush to restore vegetation structure to areas burned during the July 2002 Late Fire and to construct and maintain temporary fencing to protect burned areas from livestock grazing impacts during a period necessary to allow recovery of residual native vegetation

Based on the following summary of consequences and as discussed in the environmental assessment, I have determined that the proposed action will best meet resource management objectives defined in the Northern Malheur Management Framework Plan and the Southern Malheur Rangeland Program Summary, both of which constitute the land use plan for Malheur Resource Area.

- Seeding native sagebrush to the entire burned area within the Late Fire would increase the dominance of desirable shrub species providing vegetation structural diversity and wildlife habitat values. Restoration of shrub species and natural reestablishment of perennial herbaceous species, would provide perennial ground cover and rooting to stabilize soils from wind and water transport. Additionally, restoration of desirable perennial species dominance, which includes shrub species, would more fully occupy the soil profile limiting the spread and invasion of weedy and noxious species. Thirdly, restoration of perennial herbaceous and shrub species would provide a more stable forage base within these arid rangelands to support authorized livestock use and provide wildlife habitat.
- Temporary exclusion of livestock grazing to allow recovery of desirable plant species which survived the fires and to allow establishment of seeded shrub species would improve opportunities to maximize the success of seeding treatments and to facilitate the recovery of surviving perennial species. Retention of unburned portions of Red Butte and Schaeffer pastures available for livestock grazing as authorized by permit would avoid unnecessary impacts to affected livestock operators and the local farming/ranching economy.
- Short-term negative impacts from the fire to desired perennial vegetation communities and thus watershed stability are diminished by the long-term benefits to these resource values and indirect benefits to wildlife habitat, support of local economic enterprises, and amenities.
- Impacts to critical elements of the human environment, including ten points of significance identified in 40 CFR 1508.27(b), are not determined to be in excess of limits requiring the development of an environmental impact statement.

Additionally, management direction provided in the selected proposed action alternative is more consistent with the resource management direction proposed in the soon to be completed Southeastern Oregon Resource Management Plan as compared to other alternatives analyzed.

Thus, on the basis of the information contained in this environmental assessment and all other information available, it is my determination that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment and that an environmental impact statement is not required.

Jon Freeman (acting) 10/18/2002

Tom Dabbs Date

Field Manager, Malheur Resource Area

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1 Purpose of and Need for Action

1.1 A lightning caused fire originating on public land in T.25S., R.42E., W.M. was detected on July 13, 2002 by the agency patrol aircraft at 2048. Due to late evening detection with poor documentation of its location and multiple lightning starts, the Late Fire (N251) was not located during ground searches that evening. Late Fire spread to include 1226 acres prior to rains during the night (figure 1). Fire crews located the natural out and identified containment and control at 1700 July 14, 2002. The fire occurred almost exclusively on public land administered by the Vale District Bureau of Land Management. Approximately 25 acres of private land burned during the fire is located at Palmer Spring on the north boundary of the fire.

The Late Fire occurred on the fenceline boundary between Schaeffer Pasture of Wallrock Allotment and Red Butte Winter Range Pasture of Quartz Mountain Allotment. The majority of the burned areas were dominated by native sagebrush/bunchgrass vegetation communities prior to the fire. Native communities contained dispersed Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*), rabbitbrush (*Chrysothamnus sp.*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberianum*), needle and thread grass (*Hesperostipa comata*), Indian ricegrass (*Achnatherum hymenodies*) and Sandberg bluegrass (*Poa secunda*). Sagebrush steppe vegetation communities provided year-long or winter habitat for a number of wildlife species including big game animals, upland game species, and sagebrush dependent species.

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Interagency guidance and BLM policy as stated in the Interagency Emergency Stabilization and Rehabilitation Handbook and draft Bureau of Land Management Supplemental ESR Guidance (May 20, 2002) provides 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, including the following:

- loss of vegetative cover for watershed protection;
- loss of soil and on-site productivity;
- loss of water control and deterioration of water quality;
- invasion of burned area by flammable annual species which increase the potential for repeated wildfire.

The area burned by Late Fire is in need of stabilization and rehabilitation to minimize soil movement, preserve on-site productivity, reduce the opportunity for invasion of undesirable flammable annual plants and reduce the potential for increased dominance of noxious weed as well as the invasion of new species. These objectives can be met by protecting residual native vegetation communities during a period necessary for recovery of health and vigor and establishing shrub species to the extent possible. This environmental assessment analyzes the benefits and risks of implementing rehabilitation actions to seed native grass and forb species and/or reestablish native shrub species, protect the burned area from livestock grazing, implement a limited rehabilitation alternative, or implement a no action alternative.

1.2 In addition to other National Environmental Policy Act requirements, this environmental assessment was completed to ensure that treatments identified in the Emergency Stabilization and Rehabilitation Plan are consistent with the applicable land use plan objectives and decisions. Seeding and planting shrub species as proposed in the preferred alternative is consistent with the following recommendations of the Northern Malheur Management Framework Plan dated March 14, 1983:

- SWA 3.2/4.1 Implement a vegetation manipulation program on approximately 80,000 acres of low-elevation (below 3,000 feet) lacustrine sediment material on the public land by reseeding an adapted perennial grass that will help protect these soils from wind and water actions and will also extend the wildfire resistance of the plant communities into the growing season.

- W/L 1.1 Seed or plant seedlings of suitable shrub and/or tree species on select sites within areas designated "C" on the Habitat Opportunity overlay. Species under consideration should include juniper, curl leaf mountain mahogany, aspen, cottonwood, willow, choke and bitter cherry. Livestock grazing of the treated areas should be prohibited for a minimum of two growing seasons and then allow spring season use there after.

- W/L 10.1 Within areas marked "F" on overlay, increase the survival of palatable browse species reproduction by 20% from the existing 5% (estimated) by 1990 through the initiation of livestock grazing systems utilizing "prescription" grazing toward a vegetative objective. Coordinated AMP/HMP planning will be required.

- W/L 10/2 Future seedings should include a variety of grasses, forbs, and browse (shrub) species in the seeding mixture. A mixture of approximately ½ grasses, ¼ forbs, and ¼ browse - each being represented by from 4 to 6 species - is considered ideal.

- W/L 10.4 Wild fire should be aggressively suppressed in critical browse and/or cover habitats.

- W/L 11.4 Attain and/or maintain a vegetative composition of 55% grasses, 25% forbs, and 20% shrubs.

Additionally, implementation of seeding practices to attain desired perennial vegetation cover and to protect recovering vegetation resources following fire are consistent with objectives and proposed management actions identified in the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement (USDI-BLM 2001), analysis leading to a replacement land use plan for Malheur and Jordan Resource Areas of Vale District BLM.

The Southern Malheur Rangeland Program Summary (USDI-BLM 1984), the Wallrock Allotment Management Plans implemented in 1989, and the Quartz Mountain allotment guidance provided by the most recent allotment evaluation do not provide specific management direction for seeding and establishment of shrub species, although do identify management objectives to improve or maintain upland ecological conditions within native pastures.

Temporary fencing to ensure short-term exclusion of livestock from burned areas pending establishment of seed species and recovery of residual vegetation is also consistent with the Northern Malheur Management Framework Plan and affected activity plans.

1.3 Decisions to be made as a result of information provided in this environmental assessment include whether to seed portions of the Late Fire and if so, what species mixes would be planted to best meet resource management objectives. Additionally, this environmental assessment will provide information used to decide what practices would be implemented, if any, to exclude physical impacts of livestock, herbivory, and other impacts which limit recovery and establishment of desired vegetation resources following the fires and implemented seeding actions. No other federal, state or local government is involved in the NEPA analysis of the proposed actions, beyond issue identification, review, and comment on content of the draft document.

1.4 Internal scoping of issues relevant to the need for rehabilitation actions and protection from livestock impacts identified the need to ensure vegetation communities be 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 rehabilitation actions implemented is moderate with two regional environmental organizations requesting to be informed of proposed actions in Quartz Mountain and/or Wallrock grazing allotments. Additionally, the Oregon Department of Fish and Wildlife is typically informed of proposed fire rehabilitation actions as is the Malheur County Court. Memoranda of Understanding between BLM and a number of Tribes (The Burns Paiute Tribe, The Confederated Tribes of the Umatilla Reservation) are in place to define coordination.

1.5 Proposed protection of vegetation resources and seeding would be implemented as annual workload for BLM staff and/or through contract with private entrepreneurs. Any temporary fence constructed would be maintained by livestock operators benefitting from retaining the remainder of Schaeffer and Red Butte pastures available for grazing.

2 Alternatives Including the Proposed Action

2.1 Alternatives considered and analyzed include a native grass, forb, and shrub seeding alternative; the proposed action, sagebrush seeding and temporary fence construction; a limited rehabilitation alternative, and a no action alternative. The use of locally collected seed which may be more specifically adapted to 4000 foot elevation shrub/steppe rangelands in Central

Malheur County was not considered due to the limited availability of adequate seed. A summary of treatments analyzed by alternative is presented in Table 1.

Table 1: Summarized treatments by alternative

Action \ Alternative	Native Seeding	Proposed Action	Limited Rehab	No Action
Native grass and forb seeding (acres)	500	0	0	0
Aerial sagebrush seeding (acres)	1226	1226	0	0
Temporary fencing (miles)	6.25	6.25	6.25	0
Temporary livestock exclusion (acres)	1,475	1,475	1,475	65,818
Monitoring	Yes	Yes	Yes	No

Seeding of nonnative species was considered, although not analyzed since many of the vegetation communities within the area burned by Late Fire were in relative healthy condition supporting a diverse native bunchgrass, forb, and shrub composition.

2.2 Alternatives Analyzed

2.2.1 **Native Grass, Forb, and Shrub Seeding Alternative:** Approximately 500 acres of public land within the Late Fire boundaries would be seeded using rangeland drills during the fall of 2002 or spring of 2003 to a native mixture to further strengthen residual native perennial vegetation and provide competition to annual and weedy species establishment. The remaining 726 acres of public land within the fire boundary would not be seeded due to steepness of slopes. The locations of proposed treatments are presented in Figure 2.

Areas seeded to the native mix would include flat and moderately sloped topography. The native mixture would include cultivars of bluebunch wheatgrass, basin wildrye (*Leymus cinereus*),western wheatgrass (*Pascopyrum smithii*), dry-land alfalfa (*Medicago sp.*), small burnet (*Sanguisorba minor*), Lewis flax (*Linum perenne var. lewisii*), hawksbeard (*Crepis sp.*), bitterbrush (*Purshia tridentata*), and/or fourwing saltbush (*Atriplex canescens*) at a drilling rate of approximately 9 pounds per acre (35 seeds per square foot) (Table 2). All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival.

Table 2: Native grass, forb, and shrub seeding alternative seed mixes for the Late Fire Emergency Stabilization and Rehabilitation Plan

Species	Pounds Per Acre	Seeds per ft^2	Total Pounds
Native seeding* ***500 acres Late Fire***			
Anetone Bluebunch Wheatgrass	2.5	8.0	1,250

Goldar Bluebunch Wheatgrass	3	9.6	1,500
Magnar Basin Wildrye	2	6.0	100
Arriba Western Wheatgrass	0.5	1.3	250
Ladak Alfalfa	0.4	1.9	200
Small Burnet	0.25	0.3	125
Apar Lewis Flax	0.25	1.7	125
Hawksbeard	0.1	1.1	50
Totals	9	29.9	3,600
Shrub Species ** ***1226 acres Late Fire***			
Wyoming Big Sagebrush	1 lb bulk (0.1 lbs pls)		1226 lbs bulk

* Other varieties of native grass species listed or other forbs may be substituted based on seed availability or cost. Bitterbrush and/or fourwing saltbush may be added to drilled mixtures.
** Sagebrush seed may include up to 25 percent basin big sagebrush seed, dependent of seed availability and cost.

All public land acres of the burned area would be broadcast seeded, on completion of drilling, with local Wyoming and/or basin big sagebrush at a rate of 0.1 pounds pure live seed (pls) per acre (approximately 1 pound per acre bulk).

Due to the location of the fire on the boundary between two pastures, approximately 6.26 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by the fire. The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established.

Eight permanent fence brace points burned during the fire would be reconstructed with rock cribs to restore the integrity of this barrier to livestock movement between Schaeffer and Red Butte pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring, and weed monitoring. Stabilization and rehabilitation objectives would include: 1) prevent accelerated soil erosion, restore canopy cover and ground cover; 2) establish seeded species at desired densities and covers; 3) prevent the expansion or introduction of noxious weed species within and adjacent to sites of restoration actions. Monitoring will be conducted for at least three years following the fire to determine whether objectives have been met. Monitoring methods would include sampling sites established at existing key areas throughout the burned area and adjacent unburned and/or untreated areas of similar geologic, soil and vegetation types. Sampling techniques would include measured, estimated, and/or professional judgement

of seeded and recovering grass, forb, and shrub species density, frequency, and/or cover. In addition to identify successful practices, these data would be used to determine when livestock grazing can be resumed on the affected allotments after the two growing season rest period. If the preponderance of evidence indicates that addition rest is needed on the burn, the livestock closure period will be extended.

Noxious weed control would consist of surveying to detect the presence and invasion of noxious weeds, to be followed with treatment, subsequent monitoring, and re-treatment if necessary. Detected sites of targeted noxious weeds would be mapped and treated during FY2003 utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994 as ammended in 2002). In FY2004and subsequent years, sites would be monitored and retreated where necessary.

2.2.2 **Proposed Action (Sagebrush Seeding/Temporary Fencing):** All public land acres of the burned area would be broadcast seeded with local Wyoming and/or basin big sagebrush at a rate of 0.1 pounds pure live seed (pls) per acre (approximately 1 pound per acre bulk).

Due to the location of the fire on the boundary between two pastures, approximately 6.26 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by the fire. The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function.

Eight permanent fence brace structures burned during the fire would be reconstructed with rock cribs to restore the integrity of this barrier to livestock movement between Schaeffer and Red Butte pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring, and weed monitoring as identified in the native grass, forb, and shrub seeding alternative.

2.2.3 **Limited Rehabilitation Alternative:** No seeding of perennial grass, forb or shrub species would be considered. Desirable perennial species which survived the recent fire would be protected with the construction and maintenance of approximately 6.26 miles of temporary fencing proposed to exclude livestock grazing from areas burned by Late Fire. The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring, and weed monitoring as identified in the native grass, forb, and shrub seeding alternative.

2.2.4 **No Action Alternative:** No emergency stabilization and rehabilitation would be completed. Revegetation of the burned areas would be allowed to occur from seed and plant materials

which remain on site. Livestock would be excluded from Red Butte and Schaeffer pastures for two growing seasons. No monitoring of the burned area would be completed beyond that scheduled prior to the fire.

3 Affected Environment

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

3.2 **Vegetation, Soils and Watershed:** Native shrub steppe vegetation communities contained Wyoming big sagebrush, rabbitbrush, bluebunch wheatgrass, Thurber's needlegrass, and Sandberg bluegrass prior to the 2002 fire with most of the burned area in late seral condition (Vale District Data). Areas adjacent to livestock water sources, Palmer Spring and Eads Spring, inside or adjacent to the fire boundary and other areas of previous disturbance were dominated by earlier seral herbaceous species including cheatgrass (*Brumus tectorum*), tumble mustard (*Sisymbrium altissimum*), Russian thistle (*Salsola kali*), and Scotch thistle (*Onopordum acanthium*). Microbiotic crusts composed of cyanobacteria, green algae, lichens, mosses, microfungi, and/or other bacteria occupy many open spaces between vascular plants. Areas more accessible to livestock and adjacent to Owyhee Reservoir 3.5 miles west of the burned area are more heavily dominated by early seral and weedy species.

The soils found in the area of the Late fire were surveyed and described in Oregon's Long Range Requirements for Water 1969, Appendix I-11, Owyhee Drainage Basin. Unit 60, Unit 75, Unit 96 and Unit 98 occur on 20 to 60 percent slopes. Unit 76 occurs on 12 to 20 percent slopes. Microbiotic crusts have not been inventoried, but are known to exist throughout the burned area.

Unit 98 is a miscellaneous land unit that makes up approximately 40% of the burned area. It consists of highly eroded and dissected raw old lacustrine sediments occurring as "badlands" often on slopes steeper than 60 percent. These soils are not suited for rangeland seeding as native vegetative cover is very sparse in this soil. Mixed within this land unit are Unit 60 soils. These soils are moderately fine textured, well drained soils underlain by old lacustrine sediments. They occur on gently sloping to hilly uplands mainly in conjunction with Unit 98 soils. Native vegetation consists mostly of big sagebrush, rabbitbrush, bluebunch wheatgrass, and Sandberg bluegrass. This soil has a high potential for range seeding. This soil makes up approximately 20% of the burned area.

Unit 75 soils are loamy, shallow, very stony, well drained soils over basalt, rhyolite, or welded tuff. They occur on gently undulating to rolling lava plateaus and some very steep faulted and dissected terrain. Native vegetation consists mostly of big sagebrush, low sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. Stones limit the potential of this soil for rangeland seeding. This soil makes up approximately 18% of the burned area. This unit occurs in conjunction with Unit 96 soils. Unit 96 is a miscellaneous land unit consisting of rough, steeply sloping areas that are predominantly shallow, very stony soils interspersed with rock

outcroppings. Steep rock land occurs mainly as canyons and escarpments along margins and dissected portions of lava plateaus. Soils of this unit are unsuited for rangeland seeding. This unit occurs in approximately 7% of the burned area.

Unit 76 soils are shallow, clayey, very stony, well drained soils over basalt, rhyolite, or welded tuff. These soils occur on gently undulating to rolling lava plateaus and some very steep faulted and dissected terrain. Native vegetation consists mostly of big sagebrush, low sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. Stones limit the potential of this soil for rangeland seeding. This soil makes up approximately 15% of the burned area.

Drainage is to the east into Owyhee Reservoir.

3.3 **Noxious Weeds:** Noxious weeds detected and treated adjacent to the burned area include Russian knapweed (*Acroptilon repens*) at Ferguson Spring, 4.5 miles northeast of the fire's northern boundary; Whitetop and perennial pepperweed at the Page Place, 3.5 miles northwest of the fire boundary; whitetop at Quartz Mountain Reservoir, 3.5 miles north of the fire boundary; and on the road that is situated 0.5 to 1.0 miles west of the fire boundary. Most sites are small. Scotch thistle, an aggressive biennial, is present at a number of locations adjacent to Owyhee Reservoir. Similarly, salt cedar (*Tamarisk parviflora*) is an invasive small tree species of saline drainages within much of the Owyhee River/Reservoir system.

3.4 **Livestock Grazing:** The majority of Late Fire is located within the 48,102 acre Red Butte Winter Range Pasture of Quartz Mountain Allotment (88 percent public domain). A minor acreage of the fire is also within the 17,716 acre Schaeffer Pasture of Wallrock Allotment (99 percent public domain). One permittee is authorized to graze livestock upon the 95,424 acre of public within Quartz Mountain Allotment during a twelve month grazing season for a total active use of 7,472 animal unit months (AUMs). Similarly, one permittee is authorized to graze livestock upon the 87,194 acre of public within Wallrock Allotment during a ten month grazing season for a total active use of 6,656 AUMs.

Quartz Mountain and Wallrock allotments are part of the Harper Basin Management Unit located south of Vale, Oregon. Boundaries of these two adjoining allotments are approximately defined by Dry Creek to the north, the Owyhee River and Reservoir to the east, Rhinehart Creek to the south, and Cedar Mountain/Butte Creek to the west.

Both allotments were classified as "I" (Improve) category allotments for management in the 1984 Southern Malheur Rangeland Program Summary Record of Decision as part of the larger 0400 Harper Basin. With subsequent allotment division, both allotments were classified as "M" (maintain) category allotments in the December 1986 Northern Malheur Rangeland Program Summary Update. The season of use authorized by permit within Quartz Mountain Allotment is between June 16 and April 15 annually with a deferred rotation system. The season of use authorized by the allotment management plan within Wallrock Allotment is year long with the exception of use of a Oregon State Block in the deferred rotation system.

3.5 **Wildlife:** The proposed treatment area is within year-long range for mule deer and pronghorn antelope. Other wildlife species found in the area include neotropical migratory song birds, small mammals and reptiles.

No known wildlife species listed as threatened or endangered under the Endangered Species Act of 1973 are present within or adjacent to Wallrock or Quartz Mountain allotments. The nearest sage grouse (BLM sensitive species) lek is approximately one and one half miles west of the fire boundary at Schaeffer well and reservoir with a second lek approximately six miles north on Wallrock Ridge. Thus, approximately 75 percent of the fire is within a two mile radius of a known sage grouse lek. BLM policy (Greater Sage-Grouse-Sagebrush-Steppe Ecosystem Management Guidelines, 2000) is to restore habitat, especially areas prone to invasion by noxious weeds or flammable annual grasses. A number of leks and presumed nesting and brood rearing habitats are located within adjoining pastures east of the Owyhee River.

The entire fire is located within California bighorn sheep habitat.

3.6 **Recreation and Visual Resources:** Dispersed outdoor recreation in and near the proposed fire rehabilitation area consists primarily of off highway vehicle usage and hunting of upland birds and big game animals. Some dispersed general sightseeing occurs. The burned area is within a visual resource management Class IV area (Management Framework Plan and Proposed Southeastern Oregon Resource Management Plan, 2001). The objective of Class IV is to provide for management activities that require major modification of the landscape. These management activities may dominate the view and become the focus of viewer attention. However, every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.

3.7 **Cultural Resources and Paleontology**

Native American Lifeways: Early prehistory in this area begins with the Clovis and Folsum cultures characterized by big game hunters representing the Paleo Indian period. The Archaic Period which ended at the time of contact with white European explorers represents the climax of cultural development with the lithic technology characterized by seven different projectile point styles and the development of the seasonal round to hunt and gather plant resources as they became available. The preferred lithic material for projectile points and lithic artifacts shifts from basalt to obsidian. The archaeological evidence suggests a rather stable cultural environment where changes reflect the relative intensity of certain activities. The final stage of northern Great Basin prehistory, beginning about 1000 A.D., was the occupation of this area by the Numic speaking Northern Paiute.

Settlements of the Northern Paiute were of two types: village and camps. Winter villages of up to fifty huts have been reported, but generally the winter villages consisted of small, unstable groups of about three families located near a major lake or river, while seasonal camps were

located wherever there was water and food. Living structures were typically a fence-like windbreak of sagebrush for a temporary or summer camp with a tree or brush sunshade or domed wickiup for both winter and summer use. The subsistence economy of the Northern Paiute was strongly oriented toward the utilization of more than 50 plant species because these provided a more abundant and dependable than fowl, fish or mammals. However, when mammals were available, almost all the parts were utilized. Mammals provided skins, furs, tools and many other by-products of aesthetic and practical value. Insects were often eaten, beetles, grasshoppers, locusts, crickets, ants and caterpillars were consumed, as well as most eggs and larva.

Historic Lifeways: Exploration into this area began with the expeditions of John Jacob Aster, after he heard the stories from the Lewis and Clark Expedition of 1804-1806. The first written observations of southeastern Oregon can be found in journals kept by men involved in the expansion of fir trapping territory. In 1811, Wilson Price Hunt's party crossed the Snake River in the area of the Weiser River. In 1812, Crooks and Robert Stuart were sent east, backtracking the route of their westward journey. They camped opposite the Weiser River on August 13, 1812. Journal excepts show that they had crossed the Malheur and the Owyhee Rivers. With the increase in the number of settlers and miners arriving, as well as traveling through the area, came an increased pressure on the Native American way of life. Conflicts over the available resources arose between miners and settlers and the Native Americans. It was up to the military to protect the settlers and miners. From 1864 to 1867, numerous military maps were made, roads were constructed and posts were established throughout eastern Oregon. It was during the 1880s, that settlers increasingly came to southeast Oregon, and small communities were established near reliable water sources. The coming of the railroad also brought a new method of moving livestock to the stockyards. Both cattle and sheep raising prospered during the 1890s. Sheep outfits tended to be small and numerous, while cattle operations were larger and fewer. The Taylor Grazing Act of 1934 along with the Great Depression led to an abrupt and permanent drop in the number of sheep, while fostering a long-term replacement by beef cattle, which has continued to the present.

Recent Cultural Resource Surveys: Cultural resource surveys for mining exploration at Quartz Mountain have recorded at least 12 sites within 4 miles of this fire location. The sites are prehistoric and represent aboriginal use of the area. Both obsidian and fine grained basalt are present in the area as quarry sources.

Paleontology: Fossil flora and faunal localities in the area are Miocene in age and are usually part of the Deer Butte, Grassy Mountain, or Quartz Basinb formations. During the Miocene, this area was inundated by Pluvial Lake Idaho which extended from Twin Falls, Idaho north to Baker along the Snake River and inundating the Owyhee, Malheur and Snake River drainages. Fossil flora and faunal localities have been identified within five miles of this fire. The Deer Butte formation in this area has yielded Miocene age vertebrates including a variety of shrews and moles, kangaroo rat, mice, beaver, carnivores and hoofed mammals including horse, rhino, antelope, and camel.

3.8 **Special Status Plants:** No plant species listed or proposed for listing under the Endangered Species Act of 1973 are known to be present within the area burned. Cusick's false yarrow (*Chaenactis cusickii*), a species listed by the State of Oregon as endangered, has been located on a number of sites providing volcanic ash, four miles east of the fire boundary in Quartz Mountain Basin and five miles north at Eddy Spring. No ground disturbing actions are proposed within the habitats of this species. No other special status plant species are known or suspected within the immediate area of the proposed project site.

3.9 **Climate/Topography:** Late Fire occurred in rolling hills where the elevation above sea level ranges from 4000 feet to 4600 feet. Semi desert shrub steppe vegetation communities result from cold winters and hot dry summers. The long term average annual precipitation measured at Owyhee Dam, Oregon (25 miles northeast of the fire boundary) is 10.5 inches (National Oceanic and Atmospheric Administration Climatological Data Annual Summary; Oregon 2000). Precipitation occurs primarily as snow fall during the winter with occasional mid-summer thunder storms.

Neither the proposed actions nor any of the alternatives will impact climate or topography.

3.10 **Other Mandatory Elements:** The following mandatory elements are either not present or would not be affected by the proposed action or alternatives:

- Air Quality
- Wild Horse/Burro Management
- Native American Religious Concerns
- Hazardous Wastes
- Prime or Unique Farmlands
- Wetlands/Riparian/Flood Plains
- Wild and Scenic Rivers
- Wilderness or Wilderness Study Areas
- Areas of Critical Environmental Concern; Research Natural Areas
- Environmental Justice
- Actions to Expedite Energy-Related Projects (Executive Order No. 13212 of May 18, 2001)

4 Environmental Consequences

4.1 This chapter is organized by alternatives to illustrate the differences between the proposed action and other alternatives including the no action alternative.

4.2 **Native Grass, Forb, and Shrub Seeding Alternative:** Consequences of implementing the native drill seeding of approximately 500 acres, aerial sagebrush seeding, and temporary fencing to exclude livestock grazing, would result as summarized in the following sections.

4.2.1 **Vegetation, Soils and Watershed:** Drilling of native seed on approximately 500 acres of public land which supported relatively healthy native sagebrush/bunchgrass vegetation

communities would provide an opportunity and seed source for a slightly more stable perennial vegetative cover over much of the burned area, especially within localized areas adjacent to two water sources dominated by annual species. Seeded grasses and forbs would have opportunity to compete for only those resources made available by the reduction in shrub dominance, since burned herbaceous species would reestablish from existing roots and crowns. Establishment of sagebrush, fourwing saltbush and/or bitterbrush would provide vegetative community diversity and restore structure to the vegetative community that has been lost to the Late Fire. Risk of poor establishment of native species in areas previously dominated by annual species, especially in the event of limited soil moisture in the spring of 2003, would be greater than the similar risk of planting more competitive nonnative species such as crested wheatgrass which is adapted to drier conditions and is tolerant of greater grazing impacts. Wildlife habitat values and species diversity would be greater with reestablishment of shrub species.

Temporary exclusion of livestock from the portions of Schaeffer and Red Butte pastures, including the burned area and areas seeded and/or planted, would allow recovery of residual desirable species, including microbiotic crust, and establishment of seeded species without impacts from sheep and cattle grazing.

Soil erosion would increase in the short term as a result of loss of vegetative cover from the fires. Soil erosion rates would decrease as perennial species, including grasses, forbs, and shrubs which in combination fill much of the soil profile with roots, gain dominance of the site in years subsequent to seeding. The limited annual species which previously vegetated small portions of the area, especially near Palmer and Eads springs, provide much less protection of the soil surface and profile than would desirable perennial species. With implementation of this alternative and successful establishment of desired species, erosion rates would decrease further than under the no action alternative due primarily to reestablishment shrub species. Perennial vegetation, including shrubs, would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface. Reestablishment of perennial vegetation would also be beneficial to recovery and reestablishment of microbiotic crusts since dominance by exotic annual vegetation exclude these species.

4.2.2 **Noxious weeds:** Although drill seeding includes the potential of introducing noxious weeds in seed mixes, establishment of perennial species would help prevent the potential for the introduction of noxious weeds, particularly knapweeds, Scotch thistle, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile with roots of desirable perennial species as compared to shallow rooted perennial grasses and forbs alone. Full occupation of the soil profile with roots of desirable species would provide additional competition to reduce dominance by deep rooted weedy species. Reestablishment of diverse perennial vegetation communities including grasses, forbs, and shrubs would help prevent or minimize the proliferation and invasion of noxious weed species within the burned area in addition to limiting the dominance of cheatgrass and medusahead rye. Increased inventory for noxious weeds and appropriate treatment will preclude their spread and establishment into niches opened by the fire.

4.2.3 **Livestock Grazing:** Livestock would be excluded from burned portions of affected pastures and adjoining areas through at least two growing seasons and until seeded species are established. These areas comprise approximately 1,290 acres (2.7 percent) of Red Butte Pasture and 185 acres (1.0 percent) of Schaeffer.

Scheduled grazing within Red Butte Pasture identifies an estimated average annual use of 3,412 AUM's by cattle between October 20 and April 15. With much of the topography of burned area in Late Fire being steep, distant from water , and adjacent to pasture boundary fencing, the burned area has the potential to produce less than 92 AUMs. Similarly, scheduled grazing within Schaeffer Pasture identifies an estimated average annual use of 1,162 AUM's by cattle during the summer grazing season under a deferred rotation system. Thus, the area of Schaeffer which burned represents production potential for approximately 12 AUM's.

Livestock grazing schedules would be adjusted short term within the flexibility of existing schedules to continue current levels of authorization of livestock grazing in Quartz Mountain and Wallrock allotments while maintaining progress toward meeting management objectives.

In the long term, slight positive benefits may accrue to livestock operators due to the additional establishment of perennial herbaceous vegetation. A somewhat increased and more stable forage base may be established, allowing for increased livestock gains and more stable livestock operations over the long term.

4.2.4 **Wildlife:** The native grass, forb, and shrub seeding alternative would result in the reestablishment and maintenance of quality of year-long forage, browse, and especially cover for mule deer and pronghorn antelope within the project area with the reestablishment of desirable herbaceous and shrub species. Structural habitat for sagebrush dependent species, including potential sage grouse habitat over 75 percent of the fire which is within two miles of a known lek, would be restored in the long term with reestablishment of desirable shrub species. Foraging and habitat values provided by perennial herbaceous species would be maintained, especially for mule deer, pronghorn and California bighorn sheep.

4.2.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. In the event that rehabilitation activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be enhanced with redevelopment of desirable perennial plant species and vegetation structure. Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class IV. Visual evidence of drilled seeding would remain evident long term, though would be obscured with development of sagebrush cover over time.

4.2.6 **Cultural Resources:** A Class III cultural resources survey would be conducted prior to surface disturbing activities. Recorded sites will be avoided as appropriate. A survey for paleo resources would also be conducted prior to surface disturbing activities. Paleo resources

located, depending on the nature and extent of the fossil locality, would either be flagged and avoided during rehabilitation activities or the fossils would be recovered prior to rehabilitation activities.

4.2.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during rehabilitation actions, mitigation actions would be implemented to avoid impacts which would contribute for the need for listing. Use of native species adjacent to Cusick's false yarrow habitats would better limit weed establishment and invasion of special status plant sites.

4.3 **Proposed Action:** Consequences of implementing aerial seeding of sagebrush on 1226 acres and temporary fencing to exclude livestock grazing, would result as summarized in the following sections.

4.3.1 **Vegetation, Soils and Watershed:** Establishment of sagebrush with seeding would provide vegetative community diversity and restore structure to the vegetative community that has been lost to the Late Fire in a timely manner (less than 20 years) as compared to depending on natural regeneration of shrub species.

Temporary exclusion of livestock from the portions of Red Butte and Schaeffer pastures which burned would allow recovery of prefire desirable perennial species and establishment of seeded sagebrush without impacts from cattle grazing.

Soil erosion would increase in the short term as a result of loss of vegetation cover from the fire. Soil erosion rates would decrease as perennial grass regain dominance of the site similar to impacts noted in the first alternative, although without the limited additional grass and forb species expected to result from implementation of that alternative. Reestablishment of perennial vegetation would also be beneficial to recovery and reestablishment of microbiotic crusts, since dominance by exotic annual vegetation exclude these species.

4.3.2 **Noxious weeds:** Reestablishment of perennial species would help prevent the potential for the introduction noxious weeds, particularly knapweeds, Scotch thistle, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile and compete with weeds as noted in the first alternative.

4.3.3 **Livestock Grazing:** Impacts to livestock grazing would be as noted in the first alternative.

4.3.4 **Wildlife:** Impacts to wildlife habitat would be as noted in the first alternative although opportunities to restore desirable perennial herbaceous species to localized areas adjacent to Palmer and Eads springs would be foregone.

4.3.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities and visual resources would be as noted in the first alternative without disturbance of the recreation public or impacts of drill seeding rows on the landscape.

4.3.6 **Cultural Resources:** Aerial seeding would not require a Class III cultural resources survey or paleo survey since no ground disturbing activities would be implemented. Temporary fencelines would be surveyed as noted in the first alternative.

4.3.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during temporary fence construction, mitigation actions would be implemented to avoid impacts which would contribute for the need for listing.

4.4 **Limited Rehabilitation Alternative:** Consequences of implementing the limited rehabilitation alternative; temporary fencing to exclude livestock grazing would result as summarized in the following sections.

4.4.1 **Vegetation, Soils and Watershed:** Herbaceous vegetative structural and species diversity would recover throughout the majority of the burned area with protection from livestock grazing. Sagebrush and other shrub recovery would occur long-term (greater than 20 years) with natural seeding from adjacent vegetation communities containing these species.

Soil erosion would increase in the short term as a result of loss of vegetation cover from the fire. Soil erosion rates would decrease as perennial vegetation reestablishes ground cover of the site in years subsequent to the fires. Reestablishment of perennial vegetation would also be beneficial to recovery and reestablishment of microbiotic crusts.

4.4.2 **Noxious weeds:** Opportunities for the introduction of noxious weeds into the burned area would be similar to that noted in the proposed alternative, although the lack of sagebrush reestablishment in the short-term would provide establishment opportunity for deep-rooted weeds as noted in the proposed alternative, should a seed source be available.

4.4.3 **Livestock Grazing:** Impacts to livestock grazing would be as noted in the first alternative.

4.4.4 **Wildlife:** Habitat values for sage grouse, California bighorn sheep, mule deer, pronghorn antelope, and sagebrush dependent species would be decreased in the short-term as compared to prefire vegetation community which included healthy stands of desirable native perennials and shrubs. Habitat values would be restored naturally in the long-term as sagebrush and other desirable shrubs reestablish cover. Short-term actions to restore and maintain sagebrush-steppe habitats consistent with the Interim Sage Grouse Guidelines would be foregone.

4.4.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. In the event that fencing activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be changed from prefire conditions with shrub cover removed by fire. Evidence of this fire would persist long term with slow recover of sagebrush cover from natural regeneration.

4.4.6 **Cultural Resources:** A Class III cultural resources survey would be conducted prior to temporary fence construction. Recorded sites would be avoided as appropriate. A survey for paleo resources would also be conducted prior to surface disturbing activities. Paleo resources located, depending on the nature and extent of the fossil locality, would also be appropriately protected during fence construction.

4.4.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during temporary fence construction, mitigation actions would be implemented to avoid impacts which would contribute to the need for listing.

4.5 **No Action Alternative:** Consequences of implementing the no action alternative, exclusion of livestock from the 48,102 acre Red Butte Pasture and the 17,716 acre Schaeffer Pasture as required by policy, would result as summarized in the following sections.

4.5.1 **Vegetation, Soils and Watersheds:** Impacts to vegetation, soils and watershed resources, including microbiotic crusts, would be similar to those noted in the limited action alternative although livestock would be excluded from a much larger area surrounding the burned area.

4.5.2 **Noxious weeds:** Impacts from noxious weeds would be similar to those noted in the limited action alternative although livestock would be excluded from a much larger area surrounding the burned area, further limiting a vector of seed dispersal.

4.5.3 **Livestock Grazing:** Livestock would not be allowed to graze the burn area through two growing seasons as required by BLM policy. Short term exclusion of livestock from Red Butte Pastures to provide opportunities for recovery of fire impacted native perennial species would result in the loss of an estimated 3,412 AUM's for cattle use annually. Similarly, it would result in the loss of an estimated 1,162 AUM's for cattle use annually within Schaeffer Pasture. Upon recovery of perennial vegetation within two growing seasons, authorized levels of grazing would be restored.

4.5.4 **Wildlife:** Impacts to wildlife habitats would be as noted in the limited action alternative with sagebrush restoration occurring only in the long-term.

4.5.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. Visual resources within and adjacent to the proposed action would be changed from prefire conditions with shrub cover removed by fire. Evidence of this fire would persist long term with slow recover of sagebrush cover from natural regeneration.

4.5.6 **Cultural Resources:** Clearing of the vegetation cover by the fire would make cultural resources more visible and vulnerable to collection. Recovery of herbaceous cover in the short-term (less than two years) would restore prefire protection to these resources.

4.5.7 **Special Status Plants:** Special status species would be unaffected by the no action alternative except with the exclusion of livestock short-term from habits little disturbed by cattle in the past.

4.6 **Adverse Effects:** Unavoidable adverse effects from implementation of the native, grass, forb, and shrub seeding alternative, proposed action, limited rehabilitation or no action alternative are limited to those impacts to soil and vegetation function described in the text above.

4.7 **Short-term and Long-term Impacts:** Short-term impacts to soil and vegetation resources during seeding operations and construction and removal of approximately 6.25 miles of temporary fence would be offset by long-term benefits to upland vegetation community function consistent with standards for rangeland health and guidelines for livestock management. Some long-term control of the spread and introduction of noxious weed species would also occur with increased inventory and treatment.

4.8 **Irreversible or Irretrievable Commitment of Resources:** In the event of limited soil moisture for seeding establishment in the spring of 2003 or other causes of poor seeding establishment, no irreversible or irretrievable loss of resources would be committed since desirable native herbaceous species would return to provide vegetation cover to the site. Similarly, should the proposed fence not function as expected to protect recovering vegetation resources or should it have unforseen negative impacts, it could be removed or redesigned with no irreversible or irretrievable commitment of resources.

5 **List of Preparers/Reviewers:**

Steve Christensen	Rangeland Management Specialist
Ron Rembowski	Rangeland Management Specialist
Mitch Thomas	Rangeland Management Specialist
Tom Hilken	Rangeland Management Specialist; P&E Coordinator
Bob Alward	Outdoor Recreation Planner, Wilderness
Jean Findley	Botanist
Diane Pritchard	Archaeologist
Shaney Rockefeller	Hydrologist/Soil Scientist
Al Bammann	Wildlife Biologist
Cynthia Tait	Fisheries Biologist
Lynne Silva	Range Technician, Weeds
Jon Freeman	Realty Specialist
Tom Dabbs	Field Manager, Malheur Resource Area

6 **List of Agencies, Organizations, and Persons to Whom Copies of the EA are Sent:**

Richard Johnson (Livestock operator Quartz Mountain Allotment)
Jack Horton (Livestock operator Wallrock Allotment)
Hal Shepherd (Northwest Environmental Defense Center); Interested Public
Jon Marvel (Western Watersheds); Interested Public
Katie Fite (Committee for Idaho's High Desert); Interested Public
Walt Van Dyke, Oregon Department of Fish and Wildlife

Albert Teeman, Tribal Chairperson, Burns Paiute Tribe
Gary Burke, Chairman, Confederated Tribes of the Umatilla Reservation

A file search completed October 2,2002, identified no additional requests by members of the public to be considered an interested public for Quartz Mountain or Wallrock allotments.

7 Literature Cited:

USDI-BLM 1984. Southern Malheur Rangeland Program Summary (RPS). U.S. Bureau of Land Management, Vale District, Oregon. 24 p.

USDI-BLM 1986. Northern Malheur Rangeland Program Summary Update. U.S. Bureau of Land Management, Vale District, Oregon. 2 page brochure.

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USDI-BLM. 2000. Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement (April 2001). U.S. Bureau of Land Management, Vale District, Oregon. 3 v.

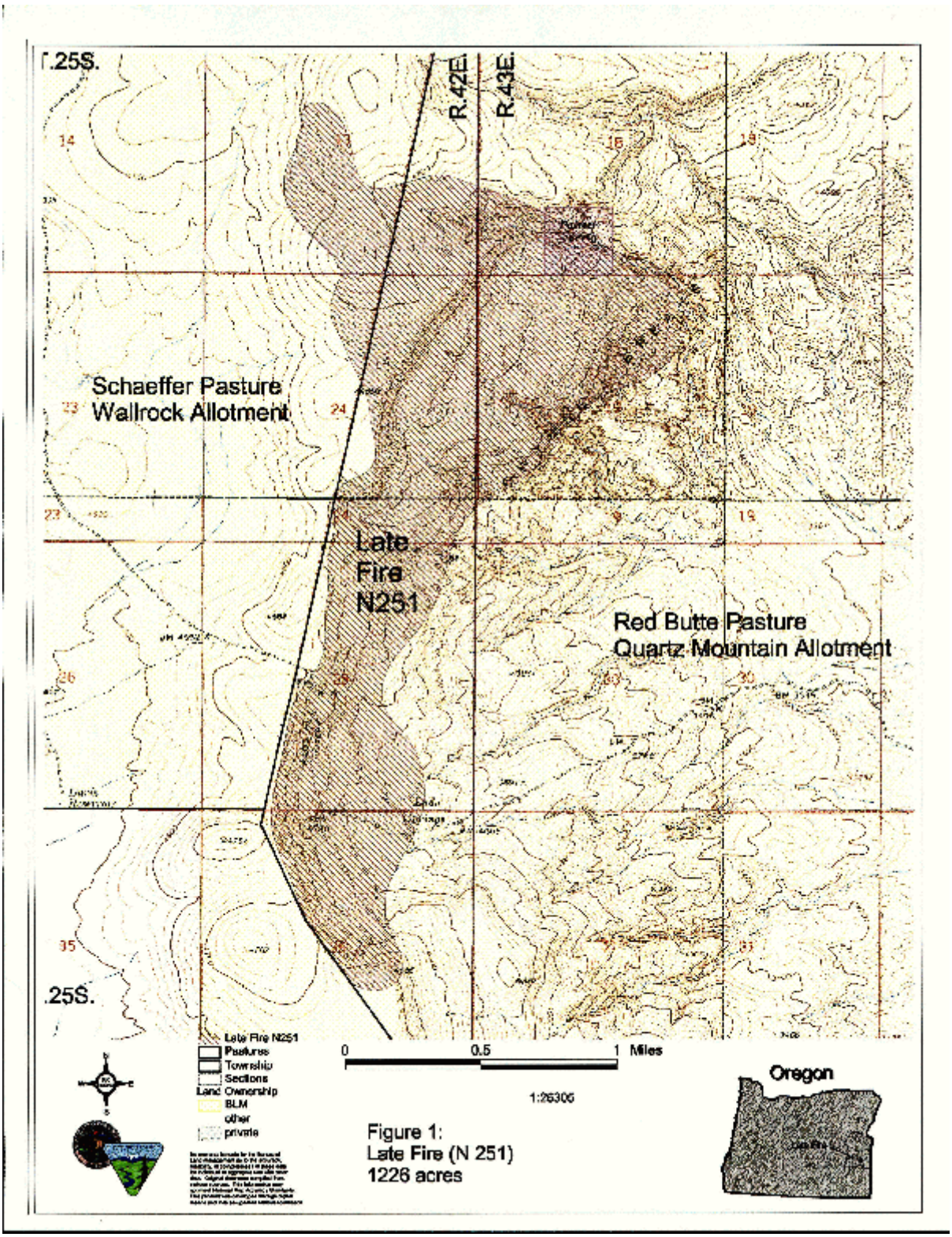
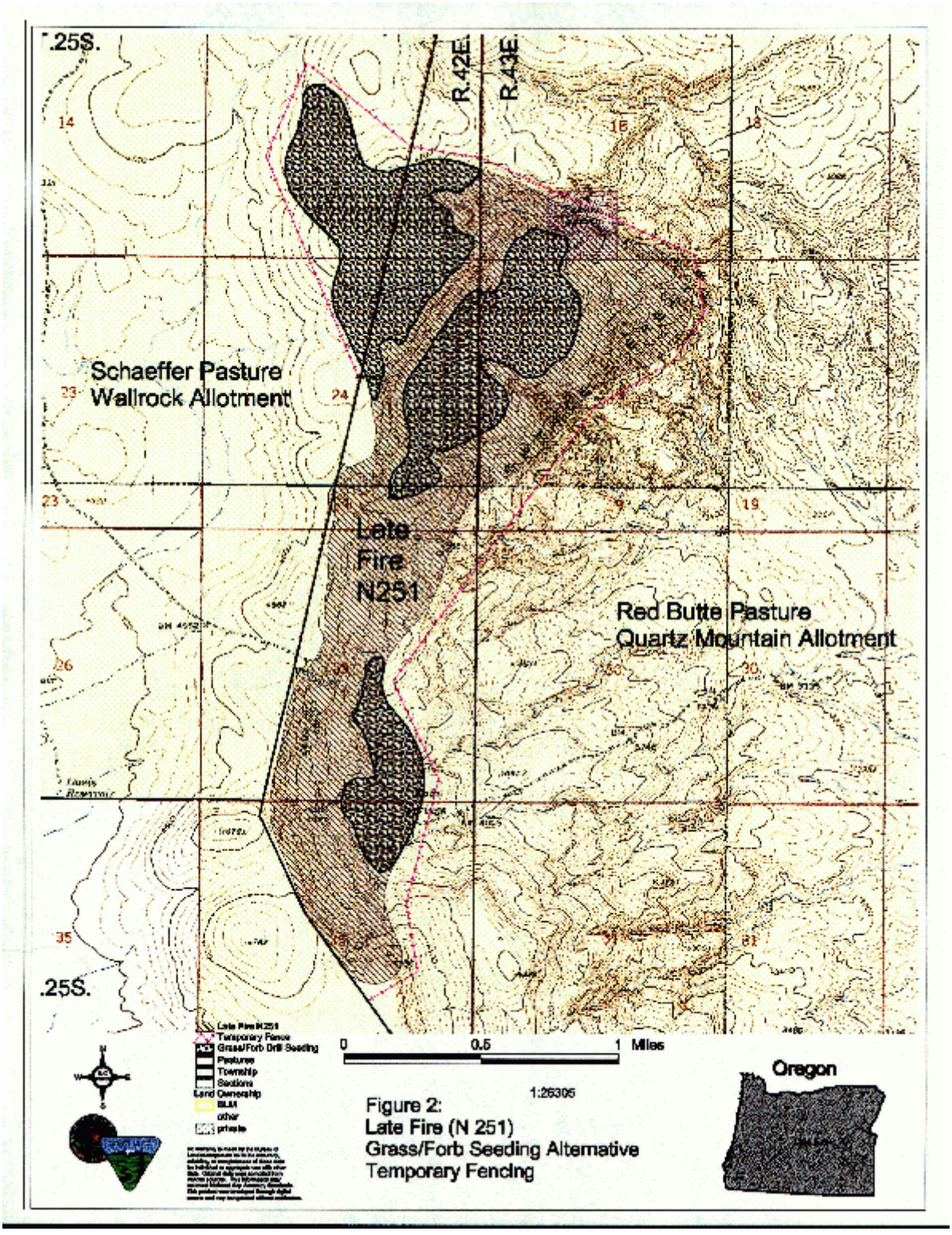


Figure 1:
Late Fire (N 251)
1226 acres


.25S.
R.42E.
R.43E.
Schaeffer Pasture
Wallrock Allotment
Late
Fire
N251
Red Butte Pasture
Quartz Mountain Allotment
.25S.
Late Fire N251
Temporary Fence
Grass/Forb Drill Seeding
Pastures
Township
Sections
Land Ownership
BLM
other
private
0
0.5
1 Miles
1:25305
Oregon
Figure 2:
Late Fire (N 251)
Grass/Forb Seeding Alternative
Temporary Fencing

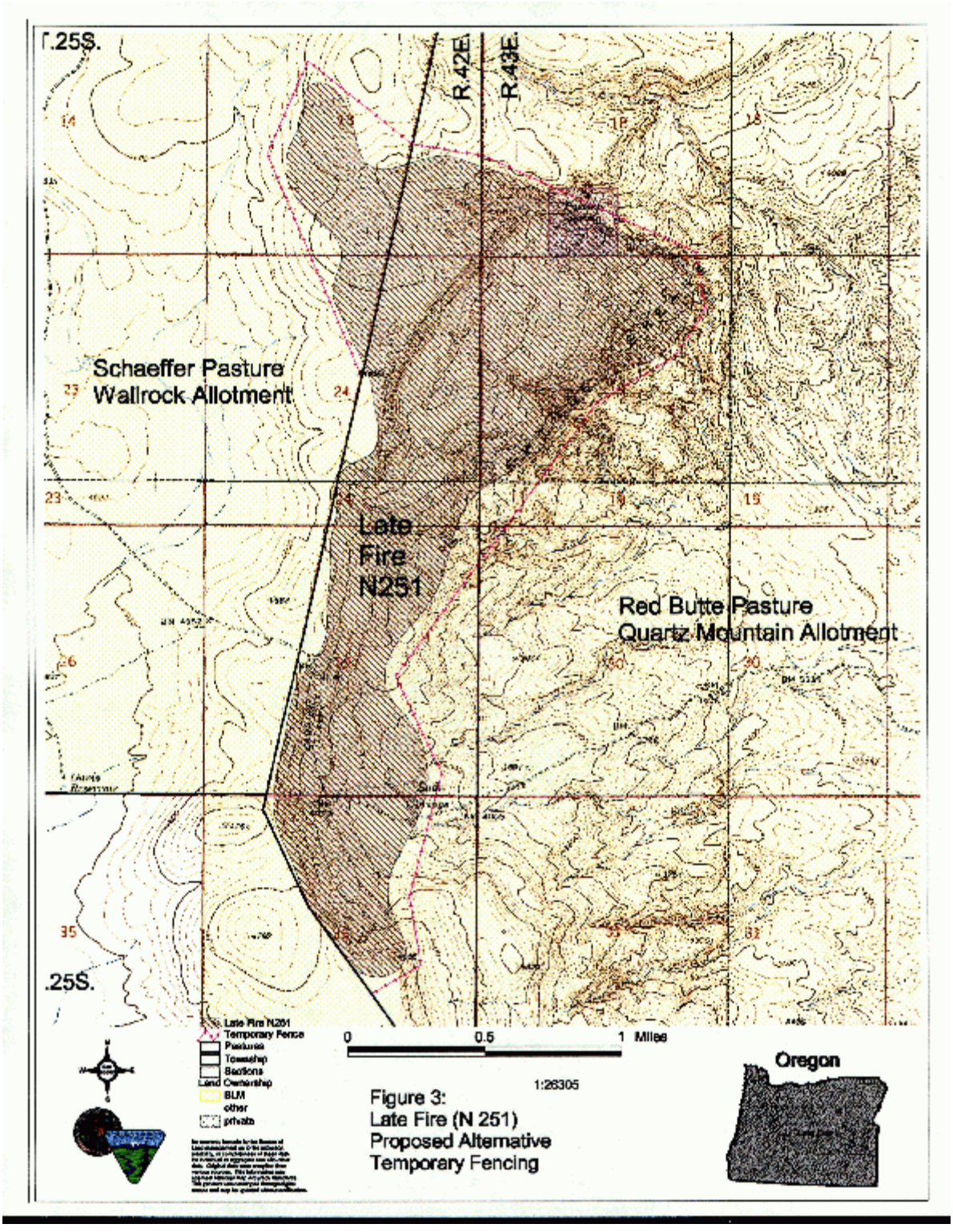


Figure 3:
Late Fire (N 251)
Proposed Alternative
Temporary Fencing