Vale District Bureau of Land Management
Lincoln Fire Rehabilitation Plan M948
Environmental Assessment
EA No. OR-030-99-021

I. PURPOSE AND NEED

A. Background

A lightening storm ignited Lincoln Fires (M948) in T.19S., R.46E., Section 32 during the evening of June 24, 1999 (map 1). The fire burned a total of 1415 acres of which 127 acres is private, 57 acres is under withdrawal to the Bureau of Reclamation, and 1231 acres is public in the Malheur Resource Area of the Vale District. A grader, a number of engines, and one helicopter were used during suppression activities. Approximately 1.5 miles of grader line and three miles of improved road were used for control lines. The lines and roads were reshaped and smoothed to the extent possible before equipment left the fire, but due to dry soil conditions, there is a need to finish repair and seed road shoulders and grader line when sufficient moisture is available during the fall of 1999.

Brush control and previous wildfire in the vicinity of Lincoln Fire has eliminated shrub species from a portion of low elevation public land which provides winter habitat for big game animals. Vegetation within the area burned is in a early seral ecological condition dominated by limited perennial bunchgrass species and annual/weedy species. Much of the area had a dominance prior to the burn of Wyoming big sagebrush (*Artemisia tridentata spp. Wyomingensis*) competing with annual species for available moisture and soil nutrients.

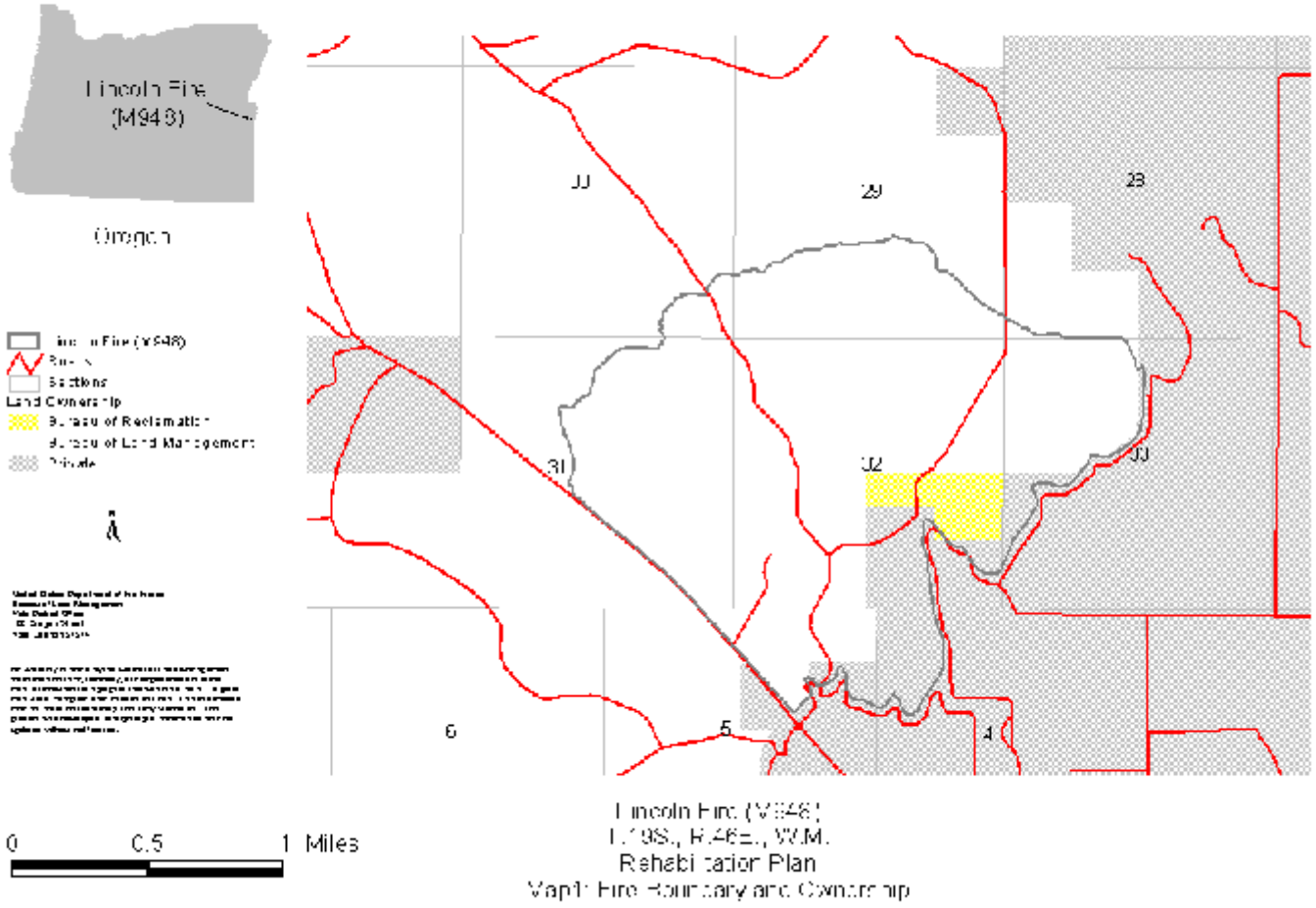
B. Purpose and Need

.

BLM manual 1742 provides for emergency fire rehabilitation where fire has an adverse impact on vegetation, soils, watershed, and 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 Lincoln Fire is in need of rehabilitation to minimize soil loss, preserve on-site productivity, reduce the reinvasion and increased dominance of undesirable flammable annual plants and reduce the potential for noxious weed invasion. These objectives can be met by establishing desirable perennial plant cover. The benefits and risks of implementing actions to establish native perennial vegetation cover as compared to establishment of desirable nonnative perennial species as well as a limited rehabilitation and a no action alternative will be analyzed in this EA.



Lincoln Fire (M948)
T.19S., R.46E., W.M.
Rehabilitation Plan
Map1: Fire Boundary and Ownership

II. CONSISTENCY WITH LAND USE PLANS

Emergency fire rehabilitation, seeding to rehabilitate annual rangeland, and construction of temporary protective fencing is fully consistent with decisions in the Northern Malheur Management Framework Plan dated March 14, 1983, the Malheur County Land Use Plan, and BLM policy on emergency fire rehabilitation.

III. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

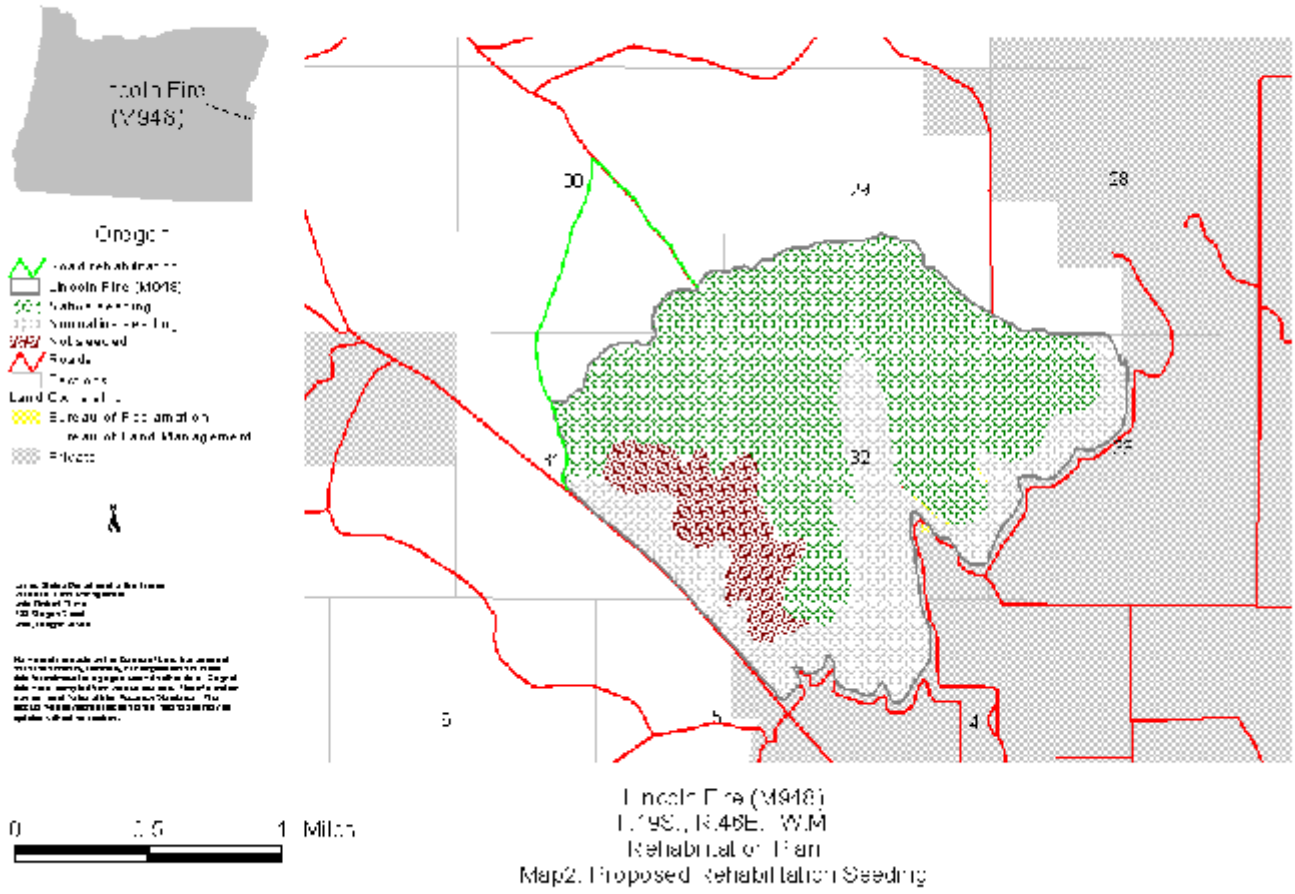
Table 1: Summarized treatments by alternative

Alternative / Action	Proposed	Nonnative Seeding	Limited Rehabilitation	No Action
Native seeding (acres)	824	0	0	0
Nonnative seeding: Public (acres)	267	1083	267	0
Private (acres)	127	127	0	0
Bitterbrush planting (acres)	400	0	0	0
Fourwing saltbush planting (acres)	400	0	0	0
Sagebrush seeding (acres)	1288	0	0	0
Road seeding (miles)	2.0	2.0	2.0	0
Fence reconstruction (miles)	0.5	0.5	0	0
Temporary fencing (miles)	4.0	4.0	4.0	0
OHV Limitation	Designated Roads	Designated Roads	Open	Open
Monitoring	Yes	Yes	Yes	No

A. Proposed Action

The proposed action would be to seed approximately 1091acres of public land and 127 acres of private land in the burn area using rangeland drills during the fall of 1999 or spring of 2000. An estimated 824 acres of public land previously dominated by Wyoming big sagebrush within the fire boundary would be seeded to a native perennial seed mixture. An additional 267 acres of public land and 127 acres of private land previously dominated by annual/weedy species and/or adjacent to the Owyhee Irrigation District Canal (the south boundary of the fire) and roads would be seeded to a non-native perennial seed mixture. An estimated three miles of road disturbed by the grader during suppression actions, including portions not used as a fire break, would be seeded to the nonnative perennial seed mixture. The remaining 197 acres of public land within the fire boundary would not be seeded due to steepness of slopes or its location within islands which did not burn (map2). The entire 1288 public land acres of the burn would be broadcast seeded, on completion of drilling, with local Wyoming big sagebrush at a rate of 0.1 pound pure live seed (pls) with three pounds of nitrogen fertilizer or suitable inert materials as filler per acre. Accessible portions of the sagebrush seeding would be cultipacted to better ensure seed contact with the soil during germination.

Private land within the fire and allotment boundaries which is proposed for seeding is susceptible to invasion by undesirable annual and weed species due to its proximity to canal water and heavier use by livestock. Coordination with private land owners would be pursued to obtain authorization to seed private lands to protect public land resource values in accordance with the Wyden Amendment of the Department of Interior and Related Agencies Appropriations Bill, FY99 (Public Law 105-277). Similarly, lands under



Reclamation Withdrawal would be seeded utilizing Emergency Fire Rehabilitation funds to preclude dominance by weedy and undesirable annual species.

Approximately 400 acres of the burned area would be planted with 1-0 seedlings of additional shrub species to provide nurse stock for future colonization of the site by bitterbrush an fourwing saltbush. Both species would be planted in the spring of 2001 at a rate of 50 seedlings per acre.

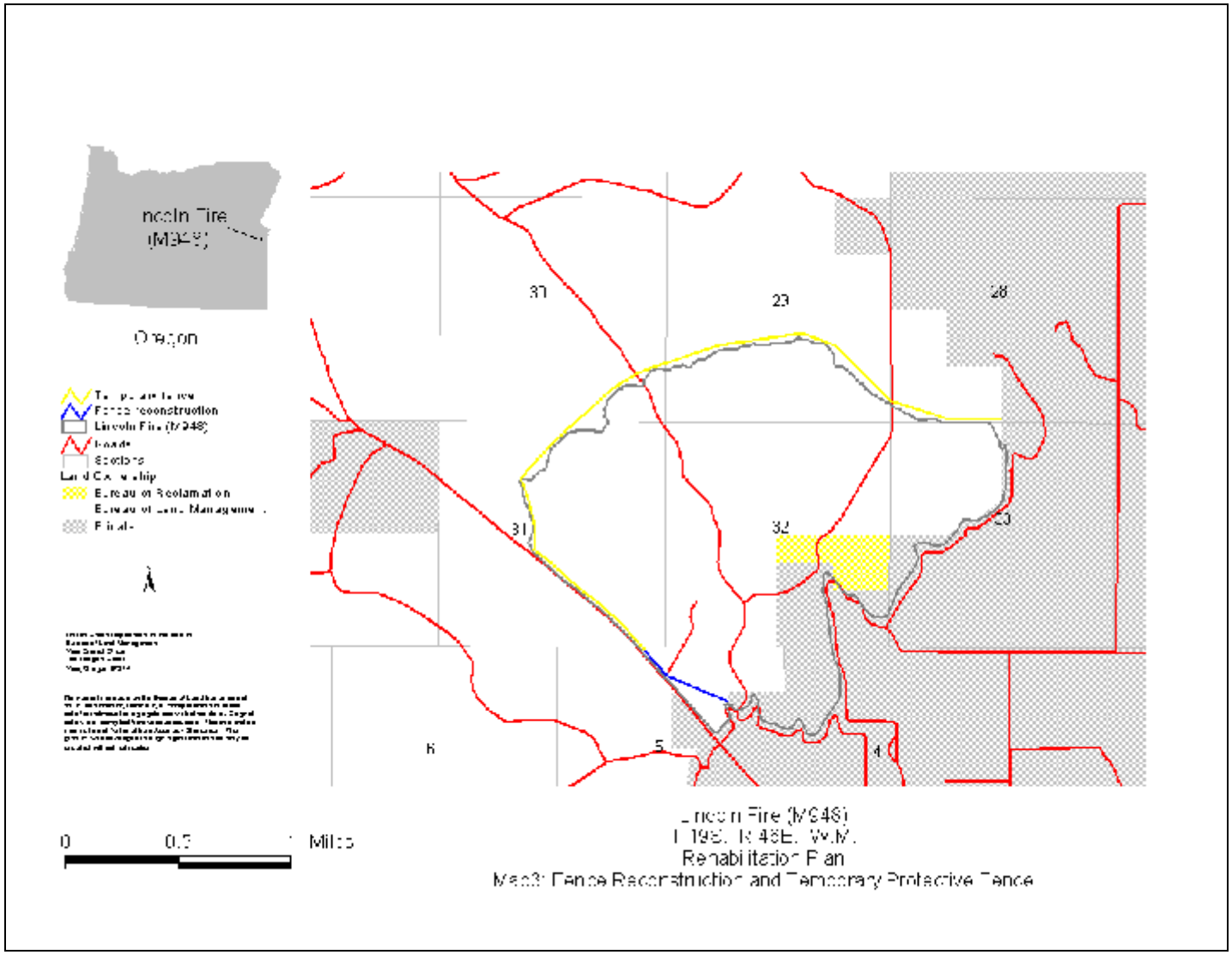
A native/non-native worksheet assessing the seed mixes is attached as Appendix 1. The proposed seed mixes are listed below:

Species	Pounds Per Acre	Total Pounds	Approx Cost Per Pound	Total Cost
Native Mix - 824 acres				
Secar Bluebunch Wheatgrass	3.0	2,500	$8.00	$20,000.
Goldar Bluebunch Wheatgrass	3.0	2,500	$9.00	$22,500.
Magnar Basin Wildrye	1.0	850	$8.00	$6,800.
Nomad or Ladak Alfalfa	1.0	850	$2.00	$1,700.
Apar Lewis Flax	0.5	400	$8.50	$3,400.
Yarrow	0.5	400	$9.00	$3,600.
Total	9.0			
			Subtotal	**$58,000.**
Nonnative Mix - 394 acres				
Crested Wheatgrass	5.0	2000	$1.50	$3,000.
Magnar Basin Wildrye	2.0	800	$8.00	$6,400.
Nomad or Ladak Alfalfa	1.0	400	$2.00	$800.
Apar Lewis Flax	0.5	200	$8.50	$1,700.
Yarrow	0.5	200	$9.00	$1,800.
Total	9.0			
			Subtotal	**$13,700.**
Shrub Species				
Wyoming Big Sagebrush (1288 acres)	1 lb bulk (0.1 lbs pls)	1300 bulk	$8.50	$11,050.
Fertilizer or Inert Material		3900	$0.50	$1,950.
Fourwing Saltbush		100	$8.50	$850.
			Subtotal	**$13,850.**
			Total	**$85,550.**

Livestock grazing would be excluded from the burned and the seeded areas at least two growing seasons and until seeded species have become established. Livestock would be excluded by construction of 4 miles of temporary electric fence (map 3). Construction of the fence would exclude livestock from an estimated 1500 acres within the southern portion of Lincoln Bench Pasture of North Harper Allotment.

Approximately ½ mile of allotment boundary fence near the southwest boundary of the fire was damaged by the fire and will be reconstructed using 8100 funds (map 3).

An emergency off highway vehicle use limitation to designated roads would be implemented for two years within the boundaries of the burn area, once seeding is completed. Designated roads are identified in map 4.

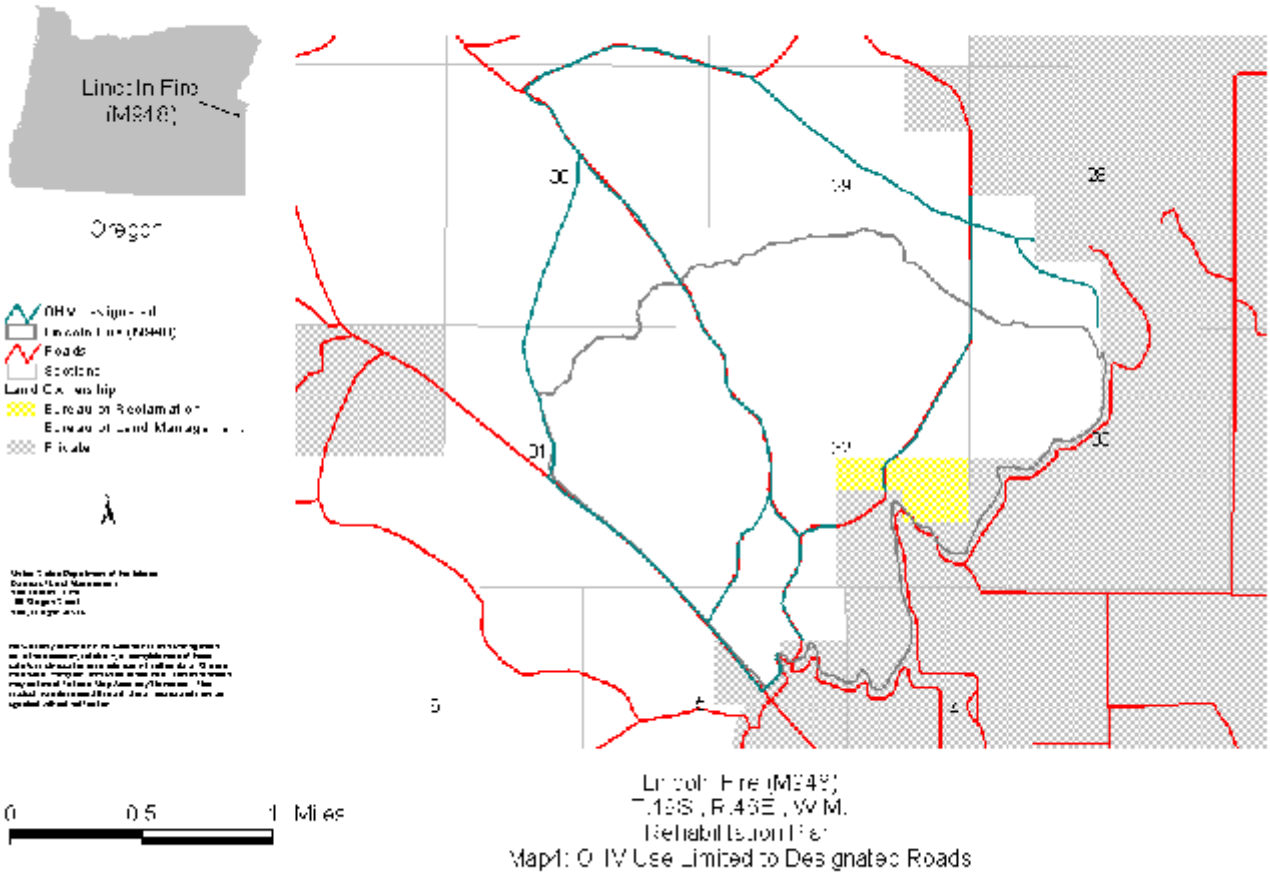


Roads and grader line rehabilitation and seeding of soils disturbed during suppression actions that was not completed immediately following control of the fire due to lack of soil moisture, will be completed while equipment is on site to do the seedings. This work will be done using 2821 funds.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring (For additional detail, refer to Section VII). Detected weeds would be controlled utilizing herbicide and mechanical methods.

B. Nonnative Seeding Alternative

Rehabilitation actions under this alternative would be similar to those identified in the proposed action though the entire 1091 acres of public land and 127 acres of private land proposed for drilling, including roads which were graded though not used as fire breaks, would be seeded to the nonnative mixture identified above. No Wyoming big sagebrush would be seeded, nor would bitterbrush or fourwing saltbush seedlings be planted.



Map1: OHV Use Limited to Designated Roads

Livestock would be excluded from the burned area utilizing temporary fencing as described in the proposed action for two growing seasons and until seeded species are established. Off highway vehicle use limitations would be implemented as in the proposed action.

Monitoring of the burn area would consist of livestock use supervision, weed monitoring and vegetation monitoring (For additional detail, refer to Section VII).

C. Limited Rehabilitation Alternative

Under this alternative, 267 acres of public land identified for seeding the nonnative mixture in the proposed action would be seeded, primarily those areas previously dominated by annual/weedy species and/or adjacent to the Owyhee Irrigation District Canal. No seeding of native herbaceous species or shrub species would be completed.

Livestock grazing would be excluded from the burned portion of Lincoln Bench Pasture for at least two growing seasons and until seeded species are established. The burned

area would remain open to off highway vehicle use.

Monitoring of the burn area would consist of livestock use supervision, weed monitoring and vegetation monitoring (For additional detail, refer to Section VII).

D. No Action Alternative

No emergency rehabilitation would be completed. Revegetation of the burned area would be allowed to occur from seed and plant material which remains in the soil. Livestock would be excluded from Lincoln Bench pasture for two growing seasons. The burned area would remain open to off highway vehicle use.

No monitoring of the burn area would be completed beyond that scheduled prior to the fire.

IV. AFFECTED ENVIRONMENT

A. Vegetation

Vegetation in the burned area consists of two primary types. Annual rangeland with a combination of cheatgrass (*Bromus tectorum*), medusa-head (*Teaniatherum caput-medusae),* tumblemustard (*Sisymbrium altissimum*), Russian thistle (*Salsola kali*), and/or Scotch thistle (*Onopordum acanthium)* is present on level depositional soils adjacent to Lytle Boulevard and the Owyhee Irrigation District Canal. Annual species also dominate in areas where sagebrush was removed by past fire or other practices. The second vegetation type which covered the majority of the burned area was dominated by Wyoming big sagebrush with an understory of limited perennial grass species, primarily Sandberg bluegrass (*Poa sandbergii*), and sparse cheatgrass. Potential vegetation within the area burned is sagebrush steppe vegetation dominated by native perennial grasses, primarily bluebunch wheatgrass (*Pesudotrogneria spicata*), Thurbers needlegrass (*Stipa thurberiana)* and basin wildrye (*Elymus cinereus*).

Approximately 9000 acres of depleted rangeland within North Harper Allotment was seeded to crested wheatgrass with varying levels of reinvasion by Wyoming big sagebrush as a result of the Vale Project between 1962 and 1973.

The 1700 acre Lincoln Bench Brush Control located immediately north of the Lincoln Fire within Lincoln Bench Pasture was sprayed in 1967 to control sagebrush and release perennial herbaceous species.

B. Noxious Weeds

Scotch thistle, an aggressive biennial, dominates a small acreage at a number of locations within the fire boundary and is present as a minor component throughout. Rush skeletonweed (*Chondrilla juncea*), an invasive, perennial noxious weed is not known to be present within the boundary of the fire though is present on similar soils within five mile to the west and a similar distance to the north. Whitetop or hoary cress (*Cardaria*

spp.), another perennial noxious weed is also present adjacent to the burned area. Medusa-head, an aggressive annual grass, is present on ridges devoid of sagebrush immediately north of the burned area

C. Livestock Grazing

The burn area is entirely within the Lincoln Bench Pasture of North Harper Allotment (00402). Eight permittees are authorized to graze livestock in the community allotment, though only three currently use Lincoln Bench Pasture in their grazing rotation. Active AUMs within the 31,500 acre allotment are listed below:

Permittees who currently use Lincoln Bench Pasture

Stringer Family Trust	400 AUMs
Harry Smith	566 AUMs
Gary Boor	143 AUMs

Permittees who currently do not use Lincoln Bench Pasture

Steve and Becky Hawkins	809 AUMs
Raymond Findley Estate	1668 AUMs
Van Schulthies	84 AUMs
Ray Schulthies Estate	135 AUMs
Darrell Standage	100 AUMs

D. Soils/Watershed

Soils in the area are derived from lacustrine sediments, loess deposits, and alluvium. Textures range from silty clay loams to sandy loams depending on the parent material. These soils have the potential to be highly erosive without vegetative cover and on steep slopes. Soils in the burned area include Xeric Haplocambids (Warden and Royal series) , Xeric Haplodurids (Taunton and Gravden series), and Xeric Torriorthents (Kennewick and Wahluke series).

Portions of the burned area more distant from areas of livestock concentration supported organic crusts composed primarily of lichens prior to the fire. These crusts provide an estimated 50 percent cover of the soil surface in some micro sites.

No perennial water sources lie within the proposed treatment area, though an Owyhee Irrigation Districts canal forms the south boundary of the fire. The southwest portion of the fire drains south into East Cow Hollow while the northwest portion drains east into Locket Gulch, both minor tributaries of Owhyee River. Two culverts have been installed to divert surface flow from ephemeral washes in the south portion of Lincoln Bench Pasture under the canal.

E. Wildlife

The proposed treatment area is within winter range for both mule deer and pronghorn antelope. Brush control and previous fires on Lincoln Bench eliminated shrub dominance

from a number of areas within the pasture, leading to a dominance by annual and weedy species and the loss of winter cover and browse. Limited recovery of shrub species has occurred. Wildlife depredation on adjacent private land continues to be a problem. Other wildlife species found in the area include long-billed curlews and burrowing owls (both BLM sensitive species). Both species nest in the annual vegetation habitat type typical of the low elevation bottoms in the treatment area. Sage grouse are not known to be present in the immediate area.

There are no wildlife species listed as threatened or endangered under the Endangered Species Act of 1973 in the proposed treatment area.

F. Recreation and Visual Resources

Dispersed outdoor recreation in 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 burn is within a visual resource management Class III area. The objective of Class III is to primarily retain the existing character of the landscape with a moderate level of change acceptable. Changes should conform to the basic elements of the predominant natural features of the characteristic landscape.

G. Cultural Resources

The route of the Oregon Trail parallels Lytle Boulevard on the southwest boundary of the fire. A corridor adjacent to a portion of the trail beginning approximately one mile northwest of the northwest corner of the fire and extending approximately four miles north toward the town of Vale is identified as a property of national significance with designation as the Oregon National Historic Trail. An area, 3,179 acres, adjacent to that National designation, though outside the boundaries of the fire, is proposed as an Area of Critical Environmental Concern in the Draft Southeastern Oregon Resource Management Plan dated October 1998.

The Oregon Trail Historic District (Lytle Pass Area) is located approximately 1 mile north of the northwest corner of the fire. The Oregon Trail Historic District (Lytle Pass Area) was entered into the National Register of Historic Places (NRHP) on October 29, 1975. The description of the District from the NRHP nomination form (Brown 1973:2) reads as follows: The historic district includes a segment of the Oregon Trail approximately 4 miles long. Portion of the trail is unaltered. Portion is overlaid by the Lytle Boulevard, a paved county road, while some of the trail area has been seeded to range grass. Portion of the trail segment ascending Cow Hollow has been reseeded to range grasses, however the area is quite stable. The portion of the trail descending Lytle Pass westward is over open range land covered with sagebrush and native grasses. This portion is also stable. Lytle Boulevard cuts across the trail segment at Lytle Pass, exposing deep ruts. The panoramic views from the summit of the pass would have changed little from the original view. The area within the rectangle shown on the map proposed for nomination includes a corridor 660 feet on each side of the centerline of the Oregon Trail as traced on the map. No private lands within the rectangle are to be included.

In the spring of 1975, the Malheur Country Historical Society initiated a campaign to change the name of the Pass from Lytle to Keeney. They presented a formal request to the Oregon Board of Geographic Names, which approved the name of Keeney Pass on June 14, 1975. The Oregon board forwarded the request to the United States Board on Geographic Names which also approved it. The National Board's decision is on record in their quarterly publication: Decisions on Geographic Names in the United States (October through December 1975, Decision List No. 7504, page 20). In the fall of 1975, concrete monuments were erected along the Oregon Trail both north and south of Vale.

Several Class III Cultural Resource surveys have been conducted in this Township for other projects but no prehistoric or historic sites were located.

H. Threatened and Endangered (T&E) 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. No special status plant species are known or suspected within the immediate area. Malheur forget-me-not (*Hackelia cronquistii*) has been located approximately two miles north of the burn on north facing slopes and Mulford's milkvetch (*Astragalus mulfordiae*) has been located on sandy soils approximately three miles west of the burn. Both are BLM sensitive species. A portion of the burned area was surveyed for both species as part of a routine clearance associated with another project during spring 1999.

I. Climate/Topography

Lincoln Fire occurred in rolling hills where the elevation above sea level ranges from 2600 feet to 2700 feet. Semi desert shrub steep vegetation communities result from cold winters and hot dry summers. The long term average annual precipitation measured at Vale, Oregon (10 miles northwest of the fire) is nine inches (National Oceanic and Atmospheric Administration Climatological Data Annual Summary; Oregon 1997). Precipitation occurs primarily as snow fall during the winter with occasional mid summer thunder storms.

B. Other Mandatory Elements

The following mandatory elements are either not present or would not be affected by the proposed action or alternatives:

1. Air Quality
2. Wild and Scenic Rivers
3. Native American Religious Concerns
4. Hazardous wastes
5. Prime or unique farmlands
6. Wilderness Study Areas
7. Areas of Critical Environmental Concern
8. Wild Horse/Burro Management
9. Wetlands/Riparian, Flood Plains

V. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action

1. Vegetation

Seeding would provide an opportunity and seed source for a more stable perennial vegetative cover. With successful establishment of seedings, perennials would replace more flammable annuals, reducing the frequency of wildfire. The area of nonnative seedings in North Harper Allotment would increase to approximately 9300 acres, 29 percent of North Harper Allotment, a low elevation allotment which is nearly totally surrounded by crop land. Establishment of sagebrush, fourwing saltbush and bitterbrush would provide vegetative community diversity and retain structure to the vegetative community that has been lost to the cumulative effect of brush control in 1967 and periodic wildfire in this area. Risk of poor establishment of native species, especially in the event of limited spring moisture in the spring of 2000, would be greater than the similar risk of planting 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 establishment of native species as compared to nonnative species resulting from rehabilitation actions.

Exclusion of livestock from the burned area and areas seeded and/or planted would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

Limiting OHV use to designated roads would protect recovering and planted perennial plants from direct impact from vehicle tires and protect recovering rates of infiltration by precipitation. Seed transport of undesirable species by vehicles would be limited to designated roads.

2. Noxious weeds

Establishment of perennial species would help prevent the spread and takeover of the site by noxious weeds, particularly medusa-head, Scotch thistle, rush skeletonweed and whitetop. Seeding of private lands to a nonnative mixture would provide competition for undesirable annual and weed species on degraded lands adjacent to public lands, thus protecting public land resource values by limiting seed production and transport. 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. Establishment 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 and adjacent to roads

impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads and the canal would limit transport of seed to new sites within the burn area and offsite.

Limiting off highway vehicle use to designated roads would reduce the spread of noxious and weedy species seed as well as limit the creation of new seed beds for these undesirable species within the burned area.

3. Livestock Grazing

Livestock would be excluded from the treated area for at least two years and until seeded species are established. Measured utilization levels following spring and fall use in the four native pastures of North Harper Allotment in recent years has averaged 20-30 percent of native bunchgrasses and slightly higher levels on cheatgrass, the primary component of livestock diets during spring use. Established maximum allowable use of native bunchgrasses was set at 50 percent in the land use plan. Exclusion of livestock use from 27 percent of Lincoln Bench Pasture would require adjustment in scheduled pasture use by some or all of the eight livestock operators authorized to graze within North Harper Allotment, though not require reductions in annual authorized use, given average precipitation levels. Livestock permittees would be required to maintain the temporary electric fences when livestock are in areas adjacent to those fences, increasing operational costs to those permittees. In the long term, positive benefits would accrue to livestock operators due to the establishment of perennial vegetation. An increased and more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover from the fire. Soil erosion rates would decrease as the perennial species gain dominance of the site in years subsequent to seeding. The annual species which previously vegetated the area provide much less protection of the soil surface than would perennial species. With implementation of this alternative, erosion rates would decrease further than under the no action alternative due to establishment of perennial species. Perennial vegetation would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface and by reducing the frequency of wildfire.

Establishment of perennial species in the watershed containing culverts under the Owyhee Irrigation District Canal would limit plugging of those culverts with sediment and protect the canal during runoff periods in the spring and during summer storm activity.

Limiting off highway vehicle use to designated roads would reduce limit additional

soil disturbance within the area burned.

5. Wildlife

The proposed action would result in the reestablishment and maintenance of winter forage, browse and cover for mule deer and pronghorn antelope within the project area. Quality and quantity of spring forage should also increase for wildlife species. The project area is too small to eliminate depredation on private farmlands, however, the proposed action should decrease the amount of depredation.

Structural habitat for sagebrush dependent species would be restored in the long term with reestablishment of desirable shrub species. Foraging and habitat values provided by perennial herbaceous species would be improved.

Loss of long-billed curlew and burrowing owl habitat would be minimal with establishment of perennial grasses and forbs and restorations of appropriate shrub composition to vegetation communities. The proposed project area is a small percentage of the potential nesting habitat for these species available in the vicinity and significant acreage of suitable nesting habitat remains in North Harper Allotment. Therefore, impacts on curlew and burrowing owl populations should be minimal.

Limiting off highway vehicle use to designated roads would reduce disturbance to wildlife species.

6. 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 development of desirable perennial plant species and vegetation structure. Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class III. Long term visual evidence of drilled seeding would remain evident long term, especially in non-native seedings.

7. Cultural Resources

A Class III cultural resources survey would be conducted prior to surface disturbing activities. Sites will be flagged, recorded and avoided as appropriate. Temporary fences are considered casual use and will not require a specific inventory though their location proximate to seeded areas will result in the completion of inventories.

The route of the Oregon Trail will not be impacted by fire rehabilitation activities.

8. T&E Plants

Special Status plant species would not be affected.

B. Nonnative Seeding Alternative

1. Vegetation

Positive and negative impacts to vegetation resources would be similar to those identified in analysis of the proposed alternative, though risk associated with establishment of crested wheatgrass within 1083 acres of the burned boundary as compared to risk of establishment of native species would be reduced. Vegetative community diversity and structure resulting from implementation of this alternative would be less than the proposed alternative due to the lack of reintroduction of sagebrush and other shrub species to the burned area. The area of nonnative seedings in North Harper Allotment would increase to approximately 10,000 acres (32 percent of the allotment) within this low elevation allotment surrounded by crop land.

Exclusion of livestock from the burned area and areas seeded and/or planted would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing..

Limiting OHV use to designated roads would protect recovering and planted perennial plants from direct impact from vehicle tires and protect recovering rates of infiltration by precipitation. Seed transport of undesirable species by vehicles would be limited to designated roads.

2. Noxious weeds

Benefits of establishing competitive perennial herbaceous vegetation within the burn area and adjacent to roads would be similar to those identified in the proposed alternative. Competition with undesirable weed species for late season deep soil moisture would not be provided in the absence of sagebrush and other shrub reintroduction to the site.

3. Livestock Grazing

Impacts to authorized livestock grazing and associated commodity production would be similar to those identified in the proposed alternative. Benefits of increased forage production from the establishment of nonnative species which are more tolerant of grazing impacts and limited establishment of shrub species would be greater than with implementation of the proposed action.

.

4. Soils/Watershed

Impacts to watershed values would be similar to those identified in the proposed alternative. Limited shrub establishment would result in less effective binding of deep soils in the absence of deeper rooted speices.

5. Wildlife

Habitat values provided by nonnative seedings and limited shrub reintroduction would be diminished for mule deer, pronghorn antelope and sagebrush dependent species. Timing, season and intensity of big game depredation on private crop lands adjacent to the burned area would be expected to change as animals chose forage sources as well as thermal and hiding cover.

Impacts to special status animal species would be similar to those in the proposed action.

6. Recreation and Visual Resources

Impacts to recreation and visual resources would be similar to those identified in the propose action, though visual lines between the nonnative seeding and adjacent vegetation communities would be less consistent with natural topographic features and aspect changes. A long term lack of sagebrush and other shrub species in the burned area would also be visually obvious.

7. Cultural Resources

Impacts to cultural resources would be similar to those identified in the proposed alternative. The route of the Oregon Trail will not be impacted by fire rehabilitation activities.

8. T & E Plant Species

Special status plants would not be affected.

C. Limited Rehabilitation Alternative

1. Vegetation

The partial seeding would provide for a more stable perennial vegetative cover on that area seeded. Potential for repeated wildfire would remain high, although the partial seeding would help to break up annual fuel types which may help to reduce fire size. The cumulative effects of past nonnative seeding, brush control and fire has caused a loss of vegetative diversity and structure which would continue to decline under this alternative.

Exclusion of livestock from the burned area and areas seeded and/or planted would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

2. Noxious Weeds

Establishment of perennial species would prevent the spread of some weedy species, though failing to seed a significant portion of public land within the fire boundary and failing to seed private land adjacent to a livestock water source at the canal would provide sites for the establishment of weedy and noxious plant species. Seed production of weeds and transport would be significant, limiting success of rehabilitation efforts. The area previously dominated by sagebrush and not seeded would be susceptible to further invasion by noxious and weedy species. These areas would decline in seral condition and lose the remaining native parental vegetation. Lack of shrubs would leave the area susceptible to invasion by rush skeleton weed and other weedy species which utilize mid summer and fall deep soil moisture.

3. Livestock Grazing

Livestock would not be allowed to graze the burn area for two growing seasons as required by BLM policy. Livestock would have to be removed from the entire Lincoln Bench Pasture for at least two growing seasons as there would be no temporary fencing to keep cattle off of the burn area. As a result, an estimated 13 percent reduction (545 AUMs: early spring, mid summer, and fall) in authorized grazing would be implemented for two years to maintain livestock numbers in balance with rangeland carrying capacity within North Harper Allotment. Some long term increase in available forage would occur due to the partial seeding which may provide for a more stable forage base.

4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover. Erosion rates would decrease as the annual species revegetate the site over a period of a year or two. Soil erosion rates would remain higher than under the proposed action due to the limited reestablishment of perennial vegetative cover.

5. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect big game and sagebrush dependant species. Depredation of adjacent farm land would increase and be redirected as travel corridors of animals change.

6. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Reestablishment and increased dominance by undesirable annual and weed species would hinder efforts to improve game species habitat in the burn area.

Preferred perennial vegetation would not be restored in the short term. There would be a significant delay in returning the area to an acceptable visual setting of some type of vegetative cover with structure similar to the natural setting.

7. Cultural Resources

A class III cultural resources survey would be conducted prior to the implementation of this alternative. If cultural resources are located they would be flagged, recorded and avoided as appropriate. The route of the Oregon Trail will not be impacted by fire rehabilitation activities.

8. T & E Plant Species

No T & E species would be directly affected. However, as the area may be invaded by increasing numbers of noxious weeds, a much larger source of seed long term would be available for invasion into the nearby T & E plant species habitat. Similarly, an increased dominance by annual species would increase fine fuel loading and the risk of larger future fires affecting nearby special status plant habitat.

D. No Action

1. Vegetation

Annual species and noxious weed species would dominate. The potential for invasion of noxious weeds would remain high. Potential for repeated wildfire would be high. The cumulative effects of past brush control and wildfire has caused a loss of vegetative diversity and structure which would continue to decline with no action.

Exclusion of livestock from Lincoln Bench Pasture would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

2. Noxious weeds

The site would be susceptible to domination by noxious weeds found in and adjacent to the site. Medusa-head is a competitive annual species with little forage value and the ability to further limit potential for successful seeding of desirable species once established. Both Scotch thistle and rush skeleton weed are aggressive and highly invasive species from wind-born seed. With little competition from perennial grasses and shrubs, these weeds will dominate the burn area in the short term.

3. Livestock Grazing

Livestock would not be allowed to graze the burn area for two growing seasons as required by BLM policy. Livestock would have to be removed from the entire Lincoln Bench Pasture for at least two growing seasons as there would be no temporary fencing to keep cattle off of the burn area. As a result, an estimated 13 percent reduction (545 AUMs; early spring, mid summer, and fall) in authorized grazing would be implemented to maintain livestock numbers in balance with rangeland carrying capacity within North Harper Allotment. No long term benefits would occur as there would be no improvement to forage production or vegetative conditions. Livestock production may be further negatively impacted in the long term if noxious weed species increase in the burn area, further reducing forage production.

.

4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover. Erosion rates would decrease as the annual species revegetate the site over a period of a year or two. Soil erosion rates would remain higher than under the proposed action due to the lack of perennial vegetative cover. Culverts which pass surface water under the canal during periods of runoff would silt in more rapidly than with implementation of any of the other alternatives.

5. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect big game and sagebrush dependant species. Depredation of adjacent farm land would increase and be redirected.

6. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Reinfestation by undesirable annual and weed species would hinder efforts to improve game species habitat in the burn area.

Preferred perennial vegetation would not be restored in the short nor long term. There would be a significant delay in returning the area to an acceptable visual setting of some type of vegetative cover with structure similar to the natural setting.

7. Cultural Resources

There would be no effect to cultural resources from mechanized equipment as a result of the no action alternative. However, surface disturbance may be greater from livestock trampling and erosional factors without vegetation to provide

surface stability.

8. T & E Plant Species

No T & E species would be directly affected. However, as the area may be invaded by increasing numbers of noxious weeds, a much larger source of undesirable seed would be available for invasion into the nearby T & E plant species habitat. Similarly, an increased dominance by annual species would increase fine fuel loading and the risk of larger future fires affecting nearby special status plant habitat.

VI. CONSULTATION AND COORDINATION

Oregon Department of Fish and Wildlife
Owyhee Irrigation District
North Harper Allotment permittees
Adjacent private land owners

VII. MONITORING

A. Noxious weeds

Monitoring of the burned area for two years would be required to locate and control noxious weeds. Periodic ground surveys would be conducted monthly from May through October. Herbicide and mechanical treatment would be implemented as appropriate and consistent with existing coordinated weed control methods to control detected noxious and weedy species and to ensure success of rehabilitation actions.

B. Vegetation

The burned area would be monitored for desirable perennial species, including ocular inspection, to determine degree and extent of establishment within seeded areas as well as vegetative recovery of non-seeded areas. Monitoring will be done in representative areas of seeding treatments and the untreated burned area in at least the first three years of the project. Monitoring will include photo plots and techniques to determine species occurrence, composition and vigor.

C. Livestock

Periodic use supervision will be conducted on the project area to ensure livestock are excluded during establishment and recovery of desirable vegetation on the burned area. Following two years of livestock exclusion, a determination will be made based on monitoring information when livestock grazing can be returned to the burned area and seedings.

VIII. SUMMARY

The Lincoln Fire burned an area of moderately erosive soils that is dominated with highly flammable annual vegetation. The history of brush control and wildfire has reduced winter wildlife habitat and increased wildlife depredation on private lands. In the absence of the establishment of desirable perennial species within the burned area, there is potential for increased erosion, invasion of noxious weeds, loss of soil and repeated wildfire. The proposed action would provide an opportunity to establish perennial vegetative cover that would protect the soil resource; reduce erosion; prevent noxious weed invasion; reduce sedimentation; enhance wildlife habitat and reduce the threat of repeated wildfire.

IX. ANNUAL WORK PLAN SECTION

A cost/risk assessment is attached as Appendix 2. Listed below by fiscal year is a summary of funding needs for the proposed action:

		Cost by Activity		
Description	**Item**	**2821**	**2822**	**8100**
FY 1999				
Plan, EA Preparation	2 WMs		$8,000.	
Seed purchase			$85,550.	
	Subtotal		**$93,550.**	
FY 2000				
Section Corner Location	1 WM		$3,000.	
Cultural Survey	1 WM		$4,000.	
Rangeland Drilling	Equipment/Misc.		$18,000.	
	Labor		$12,000.	
Broadcast Seeding	Equipment		$10,000.	
	Labor (3.5 WM)		$7,000.	
Monitoring	Labor (2 WM)		$6,000.	
Weed Treatment	Equipment/Labor		$2,500.	
Road & Line Repair	Equipment/Labor	$2,000.		
Fence Reconstruction	Material			$1,300.
	Labor (0.5 WM)			$1,500.
Temporary Fence Construction	Labor (3 WM)		$9,000.	
	Material		$6,000.	
	Subtotals	**$2,000.**	**$77,500.**	**$2,800**
FY 2001				
Shrub Planting	Seedling Purchase		$6,000.	
	Labor		$24,000.	
Monitoring	2 WM		$6,000.	
Weed Treatment	Material/Labor		$2,500.	
Temporary Fence Removal	Labor (1 WM)		$3,000.	
	Subtotal		**$41,500.**	
	Totals	**$2,000.**	**$212,550.**	**$2,800.**

X. EFR PROJECT SUMMARY

COLUMN	DATA
Fire Name: Lincoln Fire	
Fire Number: M948	
Fire Control Date: 2230; 06/25/1999	
Acres BLM Burned: 1231	
Start of Rehabilitation Project (Mo./Yr):09/1999	
Completion of Rehabilitation Project (Mo./Yr): 09/2001	
Miles of Temporary Fence: 4.0	
Miles of Permanent Fence Rebuilt: 0.5	
No. of Soil/Watershed Structures: 0	
Acres Reforestation: 0	
Acres of Revegetation[1]: 1091 acres public land and 127 acres private land	
Acres of Burned Area Protected for Natural Regeneration[2]: 197	
Total Acres Rehabilitated[3]: 1415	
Estimated EFR Funding Current Year (FY1999): $93,550.	
Estimated EFR Funding Second Year (FY2000): $77,500.	
Estimated EFR Funding Third Year (FY2001): $41,500.	
Total Cost Rehabilitation Project: $222,550.	

[1]**Acres of Regeneration** refers to the acres of the burn that is drilled, arial seeded, seedlings transplanted, etc. Acreage drilled and aerially seeded is not double counted.

[2]**Acres of Burned Area Protected for Natural Regeneration** refers to burned areas that will recover to satisfactory vegetation with exclusion of grazing and/or human uses.

[3]**Total Acres Rehabilitated** equals the acres of revegetation plus acres of burned area protected for natural regeneration.

XI. LIST OF PREPARERS/REVIEWERS

Steve Christensen	Range Management Specialist
Bob Alward	Outdoor Recreation Planner
Jean Findley	Botanist
Diane Pritchard	Archaeologist
Shaney Rockefeller	Hydrologist/Soil Scientist
Al Bammann	Wildlife Biologist
Richard Martinez	Engineering Technician
Jerry Bourasa	Range Technician
Jerry Erstrom	Weed Coordinator
Lynne Silva	Range Technician
Barb Masinton	Fire Ecologist
Dave Evans	Force Account Work Leader
Tom Dabbs	Multi Resources Staff Supervisor
Roy Masinton	Field Manager, Malheur Resource Area

XII. ENVIRONMENTAL ASSESSMENT DECISION REPORT

Finding of No Significant Impact / Decision Record

On the basis of the information contained in this Environmental Assessment and all other information available, it is my determination that the proposed action is in conformance with the land use plan for Malheur Resource Area and does not constitute a major federal action significantly affecting the quality of the human environment and that an EIS is not required. It is my decision to implement the proposed action described in this EA (OR-030-99-021).

S/Roy L. Masinton — *08/9/1999*
Authorized Official — Date

Appendix 1

NATIVE/NON-NATIVE PLANT WORKSHEET

Proposed Native Plants in Seed Mixture

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?
Yes [X] No [ ] Rationale: Proposed native seed mix species are present in and adjacent to the project area and adapted to the sites proposed for the native seed mix.

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?
Yes [X] No [ ] Rationale: Sufficient seed is being held in the Boise Seed Warehouse for the proposed drilling and broadcast seedings.

3. Is the cost and/or quality of the native seed reasonable given the project size and Land Use and Rehabilitation Plan objectives and the guidance in BLM Manual 1745?
Yes [X] No [ ] Rationale: Although the native seed is more costly than comparable introduced species its use is reasonable given the project size and direction in BLM Manual 1725 and 1745 on the use of native seed.

4. Will the native plants establish and survive given the environmental conditions and the current or future competition from other species in the seed mix or from exotic plants?
Yes [X] No [ ] Rationale: Native plants should have a reasonable chance for establishment and survival in those areas proposed for the native plant mix.

5. Will the current or proposed land management (livestock, recreation use, wildlife populations, etc.) after the seeding establishment period maintain the seeded native plants in the seed mixture?
Yes [X} No [ ] Rationale: Seeded plants should be able to be maintained on the project area under current uses and proposed uses. Grazing schedules have been established to limit growing season livestock use in Lincoln Bench Pasture.

Proposed Non-native Plants in Seed Mixture

1. Is the use of non-native plants necessary to meet objectives, e.g., consistent with applicable land use/activity plans ?
Yes [X] No [ ] Rationale: The area identified for the non-native seed mix is dominated with cheatgrass, medusa head and/or Scotch thistle. Nonnative perennials would have a significantly improved chance of successful establishment and maintenance in these areas, given the intense competition of established these introduced species.

2. Will non-native plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?
Yes [X] No [X] Rationale: The proposed seed mix would significantly improve vegetative diversity and ecological processes by establishing perennial vegetation in areas dominated by annual invasive and

noxious species. The probability for maintenance of desirable perennial species in areas adjacent to the canal, a watering source for livestock, increased incidence of weed seed dispersal and periodic soil disturbance will be improved by seeding more tolerant and competitive nonnative species as proposed.

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

Yes [X] No [ ] Rationale: The proposed mix of non-native plants are species that have not been shown to significantly displace or interbreed with native plants. Crested wheatgrass is present on adjacent rangeland without significant displacement or interbreeding with native plants.

Appendix 2

"Modified Cost - Risk Analysis"

Treatment	**Cost**
Revegetation	$162,550.
Protective Fence	$18,000.
Fence Maintenance	$ -0-
Soil/Watershed Structures	$ -0-
All Other Costs (administrative, clearances, etc.)	$32,000.
TOTAL	**$212,550.**

Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatments	Units	NA	%
Revegetation	1415 acres		80
Native Drill Seeding	824 acres		75
Nonnative Drill Seeding	394 acres		85
Aerial Seeding	1288 acres		75
Planting Seedlings	400 acres		75
Other			
Protective Fence to Exclude Grazing	4.0 miles		90
Fence Repair to Exclude Grazing	0.5 miles		95
Soil/Watershed Structures		x	
Retention dams/structures		x	
Ripping, contour furrows, etc.		x	
Matting, watersheds cover, etc.		x	
Other-Clean culverts		x	

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.

No Action - Treatments Not Implemented (check one)

Resource Value	NA	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	
Off-site Sediment Damage to Private Property				X	

Off-site Threats to Human Life		X			
Other - Loss of Access Road			X		

Proposed Action - Treatments Successfully Implemented (check one)

Resource Value	NA	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		
Off-site Sediment Damage to Private Property			X		
Off-site Threats to Human Life		X			
Other - Loss of Access Road			X		

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, and 2) 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 |_x| No |__| Rationale for answer: The threat of weed invasion will be greatly reduced with successful seeding and planting. Also, the potential for soil erosion will be reduced. The threat of repeated wildfire will be reduced with a more diverse perennial vegetation that will meet wildlife needs and rangeland health standards. Seeding and fencing costs are satisfactory considering seed mixtures and demand. Land use plan objectives will be best met.

Nonnative Seeding Alternative Yes |_x| No |__| Rationale for answer: The threat of weed invasion will be greatly reduced with a successful seeding. Also, the potential for soil erosion will be reduced. The threat of repeated wildfire will be reduced with perennial vegetation that will moderately meet wildlife needs and rangeland health standards. Seeding of nonnative species would limit success meeting land use plan objectives for wildlife habitat and vegetation diversity, when one considers the acreage of additional nonnative seeding in the vicinity of the burned area. Seeding and fencing costs are acceptable, considering seed mixtures and demand.

Limited Rehabilitation Alternative Yes |__| No |x_| Rationale for answer: The limited rehabilitation alternative would only partially reduce the threat of weed invasion, erosion and repeated wildfire. Wildlife habitat objectives and Rangeland Health Standards would not be met.

No Action Yes |__| No |x_| Rationale for answer: The threat of weed invasion, erosion and repeated wildfire will be increased without treatment. Wildlife habitat objectives and Rangeland Health Standards will not be met. Wildlife depredation on adjacent private lands will increase.

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

Proposed Action Yes |x_| No |__| Rationale for answer: Recent seedings on adjacent areas on similar soils have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons. Sites previously dominated by Wyoming sagebrush and limited annual species in the understory, have been successfully seeded to similar native species mixes, while those areas previously dominated by annual vegetation have been most successfully seeded to nonnative species.

Nonnative Seeding Alternative Yes |_x| No |__| Rationale for answer: Recent seedings of nonnative species mixes on adjacent areas on similar soils have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons.

Limited Rehabilitation Alternative Yes |__| No |_x| Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire or brush control have become monocultures of annual species that do not meet wildlife and Rangeland Health needs. Failing to seed significant portions of the burned area to adapted perennial species would result in similar unacceptable vegetation.

No Action Yes |__| No |x_| Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire or brush control have become monocultures of annual species that do not meet wildlife and Rangeland Health needs. Fuel loading with fine fuels would increase, resulting in the potential for more repid fire spread in the future. Failing to seed the burned area to adapted perennial species would result in similar unacceptable vegetation.

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 |x_|,
Nonnative Seeding Alternative |__|,
Limited Rehabilitation Alternative |__|,
No Action |__|

Comments: The proposed action best meets the need for reducing weed invasion and repeated wildfire while meeting land use plan objectives and providing for wildlife and rangeland health needs.