

North Caviatta Fire Rehabilitation Plan M969  
Environmental Assessment  
EA No. OR-030-99-025

I. PURPOSE AND NEED

A. Background

A lightning storm ignited the North Caviatta Fire (M969) in the vicinity of Caviatta Ridge on August 4, 1999 (map 1). The fire burned a total of 413 public land acres in the Dry Creek Native pasture (65,249 acres) of the Jackies Butte allotment (#1101 @ 240,244 acres), Jordan Resource Area, Vale District.

Periodic wildfire in this area has eliminated shrub species from a large block of public land that historically has been critical big game winter habitat and sage grouse habitat. The burned area is in an early seral stage dominated by annual species (cheatgrass, pepperweed, tumble mustard and Russian thistle). No sagebrush existed in the burned area as a result of the 1985 fire (M822) which burned 32,497 acres within the same geographic area. Erosive soils and the need for rehabilitation of annual rangeland to obtain a stable plant community that will protect the burned area from erosion, increase rangeland health and prevent the invasion by annual grass and noxious weeds are identified as the key factors requiring rehabilitation.

The North Caviatta fire rate of spread was high resulting from erratic winds, low relative humidity and dry fine fuel conditions. Because of a relatively low fireline intensity, much of the cheatgrass seed duff layer remains in-tact. Within the fire perimeter, only 0-5% of the vegetation remains unscorched. Fire suppression activities were minimal, consisting of 3 engines and a support vehicle.

B. Purpose and Need

The area is in need of rehabilitation to establish a structurally diverse vegetal community, minimize soil loss, increase on-site productivity, reduce the recovery of undesirable flammable annual plants and reduce the potential for noxious weed invasion. These objectives can be met by establishing a perennial plant cover. This action as well as a no action alternative will be analyzed in this EA.

II. CONSISTENCY WITH LAND USE PLANS

The proposed rehabilitation needed as a result of the North Caviatta Fire is subject to the preferred Land Use Alternative for the Southern Malheur Management Framework Plan (MFP) (1983) and the Southern Malheur Rangeland Program Summary (RPS) (1984). These plans have been reviewed to determine if the proposed actions conform with the terms and conditions of these planning documents as required by 43 CFR 1610.5.

III. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

Objectives for the North Caviatta Fire Rehabilitation Plan are as follows:

1. Reduce future fire hazards and provide for establishment of perennial grasses and shrubs by significantly reducing the re-establishment of annual grasses and weeds, through seeding adapted non-native species and protect the rehabilitation effort through excluding grazing.
2. Establish a deep rooted shrub component in the plant community to reduce soil erosion, restore perennial cover, restore vegetative structure for wildlife, increase effective precipitation by capturing and holding snow during the winter months

The proposed action is to seed 413 acres using rangeland drills. The 413 acres of the area drilled would be aerial broadcasted with Wyoming big sagebrush, given seed availability, at a rate of one pound per acre (8-10% Pure Live Seed) with three pounds of nitrogen fertilizer or filler during aerial broadcasting. A non-native worksheet assessing the seed mix is attached as Appendix 1. The proposed seed mix is listed below:

<u>Species</u>	<u>Pounds per acre</u>	<u>Total</u>	<u>Appx. cost pounds</u>	<u>Total per pound cost</u>
<i><b>Non-Native Mix - 500 acres</b></i>				
Crested wheatgrass	6	2,478	1.50	3,717
Magnar, Basin wildrye	1	413	8.00	3,304
Apar, Lewis Flax	1/2	207	8.50	1,760
White Yarrow	1/2	207	9.00	1,863
Wyoming big sagebrush	1	413	5.00	2,065
Fertilizer or inert material	3	1,239	0.50	<u>620</u>
<b>TOTAL</b>				13,329

Livestock grazing would be excluded for at least two growing seasons on the seeded area. Livestock would be excluded by constructing 5.0 miles of temporary electric fence. Construction of the fence would exclude livestock from approximately 600 acres (< 1% of the pasture). The temporary fence would be a 3-stranded electric cable fence facing away from the burned area. The bottom cable would be set at 18 inches above the ground. The other two cables would be equally spaced with the top cable set at 40 inches. Steel post would be set at 22 foot intervals with rock jacks set at ½ mile intervals and at each corner. Two electric gates would be constructed on opposing end corners. Vehicles such as 4-wheel drive ATVs or trucks would be used to construct the fence.

Monitoring of the burn area would be conducted. This would include use supervision for livestock, weed monitoring and vegetation monitoring

B. Alternative 1

No Action

No emergency rehabilitation or protection would be done.

IV. AFFECTED ENVIRONMENT

A. Vegetation

Historically, the area supported a Wyoming big sagebrush overstory with a bluebunch wheatgrass/ Sandberg's bluegrass and bottlebrush squirreltail understory. Frequent fire occurrence and historic grazing practices have resulted in the removal of Wyoming big sagebrush, and perennial grass species such as bluebunch wheatgrass. This has resulted in the invasion of and site domination by cheatgrass, pepperweed and tumble mustard .

The burned area consisted predominantly of cheatgrass, pepperweed, tumble mustard and Russian thistle . Little bluebunch wheatgrass and Sandberg's bluegrass was found in the bottom of two small drainages (less than 2% of the burned area). No Wyoming big sagebrush existed within the burned area. The burned area was in an early-seral condition prior to burning. Therefore, an adequate seed source of native perennials does not exist on this site for natural recovery. Post-fire, much of the duff layer consisting predominantly of annual grass seed remains in-tact, so interspecific competition will be high for vegetation rehabilitation efforts.

Rehabilitation efforts of the Indian Fort Fire (N216) in 1996 resulted in drilling predominantly adapted non-native species with several test plots native species within 3 to 4 miles from the North Caviatta Fire. Results after three years indicate that the adapted non-native seeding responded well to the ecological site conditions while the native species seeding responded poorly. The North Caviatta and Indian Fort fire ecological site and burn conditions are very similar.

B. Noxious Weeds

Scotch thistle (Onopordum acanthium), an aggressive biennial exists in about 300 acres approximately 1/4 mile south of the burned area. The population has about 2,500 individual plants and is scheduled for chemical treatment during the spring of 2000.

C. Livestock Grazing

The burn area is within the Dry Creek Native pasture of the Jackies Butte Summer Allotment. The allotment has eight permittees. However, only four of the permittees with 68% of the total permitted use AUMs in the allotment are currently using this pasture in a

deferred rotation. The Dry Creek Native pasture is presently being grazed with about 3,500 AUMs (24% of the total permitted use) with a stocking rate at 18.6 acres per AUM.

Total permitted use AUMs are listed below:

M.A. Easterday	1,505
K. Easterday	1,574
R. Dowell	3,063
J. Matteri	<u>3,644</u>
TOTAL	9,786

D. Soils

Soils within the burned area consist of loamy, shallow, stoney (Unit 75) or very stoney (Unit S75) and are well drained over basalt, rhyolite or welded tuff. Typically, these soils occur in gently undulating to rolling lava plateaus and on some of the steeper faulted and dissected terrain (3-60% slopes). Erosion rating on the burned area is low to moderate. The effect rooting depth on these soils is 10-20 inches and is limited primarily by parent material.

E. Watershed

No perennial water sources lie within the proposed treatment area. The nearest perennial water is at Hardin Spring, approximately 15 miles north of the project area. Dry Creek, a major ephemeral drainage lies approximately 2.0 miles to the west of the burned area and drains into Blevins and Rockhouse Reservoirs, 15 miles north of the fire.

The burned area lies within the 10-12 inch precipitation zone yet could receive wide variations from drought to wet years ranging from as low as 3 to as high as 12 inches.

F. Wildlife

The burned area is within winter range for mule deer and year-long range for pronghorn antelope. Also, the project area is in historical sage grouse habitat. Other species which inhabit the area include coyote, badger, ground squirrel, chipmunk, whiptail lizard, sagebrush lizard, gopher snake, and western rattlesnake. Common avian species in the area include horned larks, meadow larks, ravens, red-tailed hawks, rock wrens, and burrowing owls.

There are no Threatened or Endangered wildlife species in the proposed treatment area so there will be no requirement to consult with the U.S. Fish and Wildlife Service regarding Section 7 of The Endangered Species Act.

G. Recreation and Visual Resources

Dispersed outdoor recreation in the proposed fire rehabilitation area consists primarily of hunting of upland birds and big game animals. Some dispersed general sightseeing and day hiking potentially occurs. The burn is within a visual resource management class IV area, with low visual sensitivity and a low (class C) scenic quality rating.

H. Cultural Resources

No cultural resource inventories have been conducted in or near the North Caviatta fire. However, it appears to be an area of low potential for cultural resources, based on its location in the undifferentiated volcanic uplands. Where surveys have been conducted in similar areas to the north, sites have been limited to major water courses.

I. Threatened and Endangered (T&E) Plant Species

No known or suspected threatened and endangered or special status plant species are known to occupy the burned area.

J. Wild Horse Management Area

The burned area lies within the Jackies Butte herd Management Area (HMA). As of August 1999, 125 wild horses is estimated to be in the HMA on a year-long basis. Monitoring has shown that the horses are attracted to the Jackies Butte and are observed in the proximity of the burned area on a regular basis.

K. 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. Wetlands/Riparian, Flood Planes

V. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action

1. Vegetation

Seeding would provide an opportunity and seed source for a more stable perennial vegetal cover consisting of crested wheatgrass, basin wildrye, a diversity of forbs, and Wyoming big sagebrush. Perennial grasses would replace

more flammable annuals, reducing the frequency of wildfire. Establishment of sagebrush would provide vegetative diversity and structure to the community that has been lost to the cumulative effect of periodic wildfire and historical grazing practices. Additionally, sagebrush would establish a deep, rooted shrub component in the vegetal community and increase effective precipitation by capturing/holding snow during the winter months.

More over, establishing an adapted perennial vegetal community, including non-native grasses would mimic the structure of the native bunchgrass community and restore ecological stability and resiliency thereby rehabilitating rangeland processes.

2. Noxious weeds

Establishment of perennial species would help prevent the spread and takeover of the site by noxious weeds, particularly Scotch thistle. Establishment of a shrub component would occupy the niche (deep rooted shrubs) in the plant community that perennial grasses alone cannot fill. This would help prevent or minimize the invasion of noxious weed species which will readily invade and fill this niche.

3. Livestock Grazing

Livestock would be excluded from the treated area for at least two growing seasons. Livestock use would, probably not, have to be reduced in the Dry Creek Native pasture although use will be monitored to ensure utilization limits are not exceeded. Livestock permittees would be required to maintain the temporary electric fence when livestock are in this pasture, increasing operational costs to those permittees. In the long term, positive benefits would accrue to livestock operators due to the establishment of perennial vegetation, since a more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

4. Watershed

Soil erosion could increase in the short term as a result of loss of vegetative cover from the fire although overall erosion hazard is low due to slopes and low annual precipitation. Soil erosion rates would decrease as perennial species establish on the site over a two year period. The annual species which currently inhabit the area provide much less protection of the soil surface than would perennial species. Under 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.

5. Wildlife

The proposed action would result in more winter browse and cover for mule deer and pronghorn antelope. Quality and quantity of spring forage should also increase for other wildlife species. Of great importance, establishment of Wyoming big sagebrush would provide habitat for sage grouse and other sagebrush obligate species. More generally, establishment of sagebrush in this area would provide a corridor linking two larger, fragmented populations of sagebrush which lie to the north and south of the burned area.

6. Recreation and Visual Resources

Impacts to dispersed recreation activities would be insignificant. Should rehabilitation activities occur during game hunting seasons, any wildlife close to the activities would be temporarily disturbed.

Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource class IV. Long term visual evidence of drilled seedings would remain evident.

7. Cultural Resources

Because the burned area is to be drilled and seeded, and no surveys have been conducted, limited inventory along the draws is recommended. There are no high points because the area is a colluvial slope off the north side of Caviatta Ridge. Sites, if any, will be staked so that equipment operators will know not to turn on them.

8. T&E Plant Species

Special Status plant species are not present in the burned area thus would not be affected.

B. No Action

1. Vegetation

Annual species would dominate the site thus enhancing the chance of noxious weed invasion. The potential for invasion of noxious weeds would remain high. Potential for repeated wildfire would be high. The cumulative effects of repeated wildfire has caused a loss of vegetative diversity and structure. This trend would continue.

2. Noxious weeds

The site would be susceptible to domination by noxious weeds found adjacent to the site. Scotch thistle is an aggressive and highly invasive species. With little competition from perennial grasses and shrubs, this weed would dominate the burn area and provide ecological conditions conducive for other noxious weeds to

invade.

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 Dry Creek Native pasture for at least two growing seasons as there would be no temporary fencing to keep cattle off of the burn area and would require approximately a 24% percent reduction of permitted use (approximately 3,500 AUMs) in the short term. 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 and fire-return intervals increase.

4. Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover. Erosion rates would slightly decrease as the annual species re-establish dominance on the site. Soil erosion rates would remain higher than under the proposed action due to the lack of perennial vegetal cover. Fire frequencies would remain high and short term exposure to erosion would occur with each future fire event.

5. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect big game and sagebrush dependant species, such as sage grouse.

6. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Site domination by undesirable weed species would hinder efforts to improve game species habitat in the burn area. There would be an insignificant delay in returning the area to a preferred visual setting of some type of vegetative cover.

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

Special Status plant species would not be affected.

VI CONSULTATION AND COORDINATION

Oregon Department of Fish and Wildlife  
Jackies Butte Summer Allotment permittees

## VII. MONITORING

### A. Noxious weeds

Intensive monitoring of the burned area for two years would be required to locate and control noxious weeds. Intensive ground surveys would be conducted monthly from May through October.

### B. Vegetation

The burned area would be monitored to determine degree and extent of establishment of seeded species. Monitoring will be done in representative areas during 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 vegetation on the burned area.

## VIII. SUMMARY

The North Caviatta fire burned an area that is dominated with highly flammable annual vegetation. The history of repeated wildfire has greatly reduced the quality of critical winter habitat for big game and year-long habitat for sage grouse. 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:

<u>Description</u>	<u>Item</u>	<u>Cost by Activity</u>		
		<u>2821</u>	<u>2822</u>	<u>8100</u>
<u>FY 99</u>				
Plan, EA preparation, Surveys	1 WMs		4,000.00	
Seed purchase			13,329.00	
Seed mixing/storage			1,100.00	
<u>FY 2000</u>				
Plan, EA preparation, Surveys	1 WMs		4,000.00	
Electric Fence Removal	labor		3,400.00	
Electric Fence construction	labor		3,400.00	
	material		100.00	
Rangeland Drilling	Equipment		12,745.00	
	Labor		4,148.00	
Broadcast Seeding	End product Contract		5,600.00	
Rehab. Monitoring	.25 Wms		1,000.00	
Noxious Weed Monitoring	.5 Wms		1,500.00	
Noxious Weed Treatment	materials		250.00	
<u>FY 2001</u>				
Rehab. Monitoring	.25 Wms		1,000.00	
Noxious Weed Monitoring	.5 Wms		1,500.00	
Noxious Weed Treatment	materials		250.00	
Fence Removal	labor		3,400.00	
		<u>2821</u>	<u>2822</u>	<u>8100</u>
Totals		0.00	60,722.00	0.00

X. EFR PROJECT SUMMARY

Fire Name: North Caviatta Fire  
Fire Number: M969  
Fire Control Date: 08/05  
Acres BLM Burned: 413  
Start of Rehabilitation Project (Mo./Yr): 09/99  
Completion of Rehabilitation Project (Mo./Yr) : 09/2001  
Miles of Temporary Fence: 5.0  
Miles of Fence Rebuilt: none  
No. of Soil/Watershed Structures: none  
Acres Reforestation: none  
Acres of Revegetation<sup>1</sup>: 413  
Acres of Burned Area Protected for Natural Regeneration<sup>2</sup>: none  
Total Acres Rehabilitated<sup>3</sup>: 413  
Estimated Funding Current Year (FY99 ): 18,429  
Estimated Funding Second Year (FY2000): 36,143  
Estimated Funding Third Year (FY2001): 6,150  
Total Cost Rehabilitation Project: 60,722

XI. LIST OF PREPARERS/REVIEWERS

Tom Forre, Range Management Specialist  
David Wallace, Range Management Specialist  
Tom Christensen, Outdoor Recreation Planner  
Jean Findley, Botanist  
Jerry Taylor, Jordan Field Office Manager  
Alice Bronsdon, Archaeologist  
Shaney Rockefeller, Hydrologist/Soil Scientist  
Jon Sadowski, Wildlife Biologist  
Tom Hilken, Weed Coordinator  
Dave Evans, Force Account Work Leader

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 the 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-030-99-025).

S/Richard T. Watts  
Authorized Official

9/30/99  
Date

## Appendix 1

### NON-NATIVE PLANT WORKSHEET

#### **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  No  Rationale: The area identified for the non-native seed mix is dominated with cheatgrass. The cheatgrass seed dominated duff layer remains in-tact. Non-native perennials would have a significantly improved chance of successful establishment and maintenance in these areas relative to native species because of interspecific competition during ecesis.

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

Yes  No  Rationale: The proposed seed mix would significantly improve vegetative diversity and ecological processes by establishing perennial vegetation in areas dominated by annual invasive and potential noxious species.

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

Yes  No  Rationale: The proposed mix of non-native plants are species that have not been shown to significantly displace or interbreed with native plants.

## Appendix 2

### “Modified Cost - Risk Analysis”

<b>Treatment</b> .....	<b>Cost</b>
Revegetation .....	\$36,922
Protective Fence .....	\$10,300
Road Repair .....	\$-0-
Soil/Watershed Structures .....	\$-0-
All Other Costs (administrative, clearances, etc.) .....	<u>\$13,500</u>
TOTAL .....	<u>\$60,722</u>

### Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatments	Units	NA	%
Revegetation (overall rating)	413		100
Drill Seeding (acres)	413		100
Aerial Seeding (acres)	413		100
Other	0		
Protective Fence to Exclude Grazing (miles)	6.0		100
Fence Repair to Exclude Grazing (miles)	0		
Soil/Watershed Structures (overall rating)	0		
Retention dams/structures (number)	0		
Ripping, contour furrows, etc.	0		
Matting, watersheds cover, etc.	0		
Other-Clean culverts	0		

### 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 due to plugged culverts		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  No  Rationale for answer: The threat of weed invasion will be greatly reduced with a successful seeding. 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.

**No Action** Yes  No  Rationale for answer: The threat of weed invasion, erosion and repeated wildfire will be increased without treatment. Wildlife habitat and Rangeland health standards will not be met.

### 2. Is the probability of success of the proposed action and no action acceptable given their costs?

**Proposed Action** Yes  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. More over, Non-native seed is about one-half the cost of Native seed while Non-native seeding would have about 5-6 times the success at establishment, given recent site-specific seeding trials, pre-burn vegetative conditions, and North Caviatta burn conditions.

**No Action** Yes  No  Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire have become annual monocultures that do not meet wildlife and Rangeland Health needs.

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

Proposed Action , Alternative(s) , or No Action

Comments: The proposed action best meets the need for reducing weed invasion and repeated wildfire while providing forage/structure for wildlife as well as enhancing site conditions for meeting standards for Rangeland Health.