

Results of Assessment/Establishment of Cause

Achieving Standards For Rangeland Health Conforming with Guidelines for Livestock Grazing Management

Resource Area: DRA

Geographic Area of Assessment: North of Alfalfa Market Road and northwest of Alfalfa, within the Deschutes River Watershed.

Allotment Areas Assessed: Mayfield Pond Allotment # 5125

Period Assessment Conducted: November 13, 14 and 18, 2003

Assessment determination: Not Meeting Standards.

Assessment Benchmark: Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington. Approved August 12, 1997 by the Secretary of the Interior.

Assessment Objectives:

Per USDI/USDA Tech Reference 1734-6 of 2000: Provide preliminary assessment of soil/site stability, hydrologic function, biological integrity. Help land managers identify areas that are potentially at risk for degradation. Provide early warnings of potential problems and opportunities. Provide capability to communicate fundamental ecological concepts to a variety of audiences. Improve communications among interest groups. Provide capability to select monitoring sites for future monitoring programs. Help understand and communicate rangeland health issues.

Per BLM, Oregon State Office IB No. OR-98-315 of 7/24/98: Assess rangeland condition relative to Rangeland Health Standards; determine cause in those cases where standards are not being met; and take action that will result in progress toward standards attainment where these are not being met.

Assessment Preparers

JoAnne Armson, NRT

 _____ Date 9/29/04

Rick Demmer, NRS

 _____ Date 9/28/04

Brook Anderson, Rangeland Specialist

 _____ Date 9/28/04

Assessment Approval

Robert Towne, Field Manager

 _____ Date 9/30/04

Appendices:

- A Allotment Assessment Findings
- B Maps
- C Plant List
- D List of Lichens
- E Wildlife

Appendix A Allotment Assessment Findings

Notes:

1. This information applies only to BLM-administered lands within the allotment.
2. Where Allotment Monitoring Sites are referenced, information from these sites will include photographs, vegetation data, trend rating forms, cover worksheets, and/or Rangeland Health Evaluation Summary Worksheets (all located in the respective allotment's monitoring files).

Mayfield Pond Allotment

Public Land Upland Acres: 4,529
Public Land Riparian/Wetland Acres: 20
Public Land Stream Miles: 0

I. Standard 1 (Watershed Function - Uplands)

A. Determination

- Meeting the Standard
- Not Meeting the Standard; Making Significant Progress Toward
- Not Meeting the Standard; Not Making Significant Progress Toward Standard
- Standard Does Not Apply

B. Establishment of Cause:

- Past Livestock has significantly contributed to the failure to meet the standard
- Livestock are not significant contributors to the failure to meet the standard
- Failure to meet the standard is related to other uses or conditions: X on-site off-site

C. Rationale/Evidence

The soils and topography within Mayfield Pond Allotment vary from dry lake beds P4559, a year-round pond P4600, seasonal streams and wetlands P4577, lava blisters P4645 and sandy loam soils P4566. Vegetation is often sparse with ground cover ranging from 0 to 80 percent with the average being 30 percent. While no gullies were observed, there is evidence of soil movement caused by both water P4568, P4671 and wind erosion P4659, P4607. Lack of fire has also increased the cover by western juniper P4575, P4680. Although a vehicle closure is in effect for most of the Mayfield Pond Allotment, with a designated road system, OHV use continues to affect the vegetation within this allotment P4574, P4583. Soil compaction by vehicles and trailing is evident in numerous locations as well P4682, P4595.

The sandy soils, which are the primary soil type within the Mayfield Pond Allotment, are very susceptible to disturbance. Hoof action in the loose soils causes the loss of biological soil crusts, which in turn increases the chances of soil loss through wind erosion. Wind scour was evident in most areas within the allotment. Once these soils have been disturbed non-native plant species are likely to increase. Cheatgrass is the most common increaser.

An area southwest of Mayfield Pond received a range improvement treatment. The project called for the removal of the western juniper overstory in hopes of increasing the density of the perennial grasses. However, once the juniper was removed the microclimate changed and cheatgrass increased dramatically and is now the most prominent grass within the allotment.

Evidence: Photos and lists of vascular vegetation, lichens and mosses.

II. Standard 2 (Watershed Function - Riparian/Wetland Areas)

A. Determination

- Meeting the Standard
- Not Meeting the Standard; Making Significant Progress Toward
- Not Meeting the Standard; Not Making Significant Progress Toward
- Standard Does Not Apply

B. Establishment of Cause:

- Livestock are significantly contributing to the failure to meet the standard
- Livestock are not significant contributors to the failure to meet the standard
- Failure to meet the standard is related to other uses or conditions: X on-site; off-site
- Standard Does Not Apply

C. Rationale/Evidence

There are no natural lakes, streams or wetlands in the Mayfield Pond Allotment. All riparian sites came about through anthropomorphic actions. Within those artificial conditions the wetland areas are functioning. Mayfield Pond itself, holds water year-round. The wetlands are seasonally fed, and maintained by overflow from irrigation canals. These wetlands do support many riparian species of plants and animals.

Evidence: Photos and lists of vascular vegetation, lichens and mosses.

III. Standard 3 (Ecological Processes)

A. Determination

- Meeting the Standard
- Not Meeting the Standard; Making Significant Progress Toward
- Not Meeting the Standard; Not Making Significant Progress Toward
- Standard Does Not Apply

B. Establishment of Cause:

- Livestock are significantly contributing to the failure to meet the standard
- Livestock are not significant contributors to the failure to meet the standard
- Failure to meet the standard is related to other uses or conditions: X on-site; off-site

Rationale/Evidence:

Ecological processes have been altered by past grazing practices, range improvement projects, off road driving and irrigation in the Mayfield Pond Allotment. Current grazing appears to be somewhat lighter than in the past, however, recreational use continues to be abusive P4581, P4547, P4557. Cutting of juniper for range improvement resulted in the increase of cheatgrass and other invasive plant species P4553 instead of improving the range. No large fires have occurred in the allotment recently and this has resulted in the increased density of juniper over large areas. Biotic crusts are evident only in areas protected by rock or tree/shrub cover P4634, P4638. The introduction of seasonal water flows, i.e. irrigation canals and overflow, has further altered the habitat P4585. The resulting change in habitat helps to increase biological diversity, energy flow and nutrient cycling but it also changes the original habitat increasing weeds such as knapweeds which can reverse the beneficial effect of increased water availability. Overall the changes made by past livestock grazing, range improvement and continuing abuse by offroad drivers has reduced biological diversity, and resulted in less energy flow and nutrient cycling. The irrigation of historically dry habitat has altered that habitat but has probably increased ecological processes.

IV. Standard 4 (Water Quality)

A. Determination

- Meeting the Standard
- Not Meeting the Standard; Making Significant Progress Toward Standard
- Not Meeting the Standard; Not Making Significant Progress Toward Standard
- Standard Does Not Apply

B. Establishment of Cause (if applicable)

- Livestock are significantly contributing to the failure to meet the standard
- Livestock are not significant contributors to the failure to meet the standard
- Failure to meet the standard is related to other uses or conditions: ___ on-site; ___ off-site
- Not Applicable

Rationale/Evidence:

V. Standard 5 (Habitat for Native, T&E and Locally Important Species)

A. Determination

- Meeting the Standard
- Not Meeting the Standard; Making Significant Progress Toward
- Not Meeting the Standard; Not Making Significant Progress Toward
- Standard Does Not Apply

B. Establishment of Cause:

- Livestock are significantly contributing to the failure to meet the standard
- Livestock are not significant contributors to the failure to meet the standard
- Failure to meet the standard is related to other uses or conditions: ___ on-site; ___ off-site

C. Rationale/Evidence

No special status plants or animals are known in the Mayfield Pond Allotment. A locally important herd of antelope are known to occupy this area.

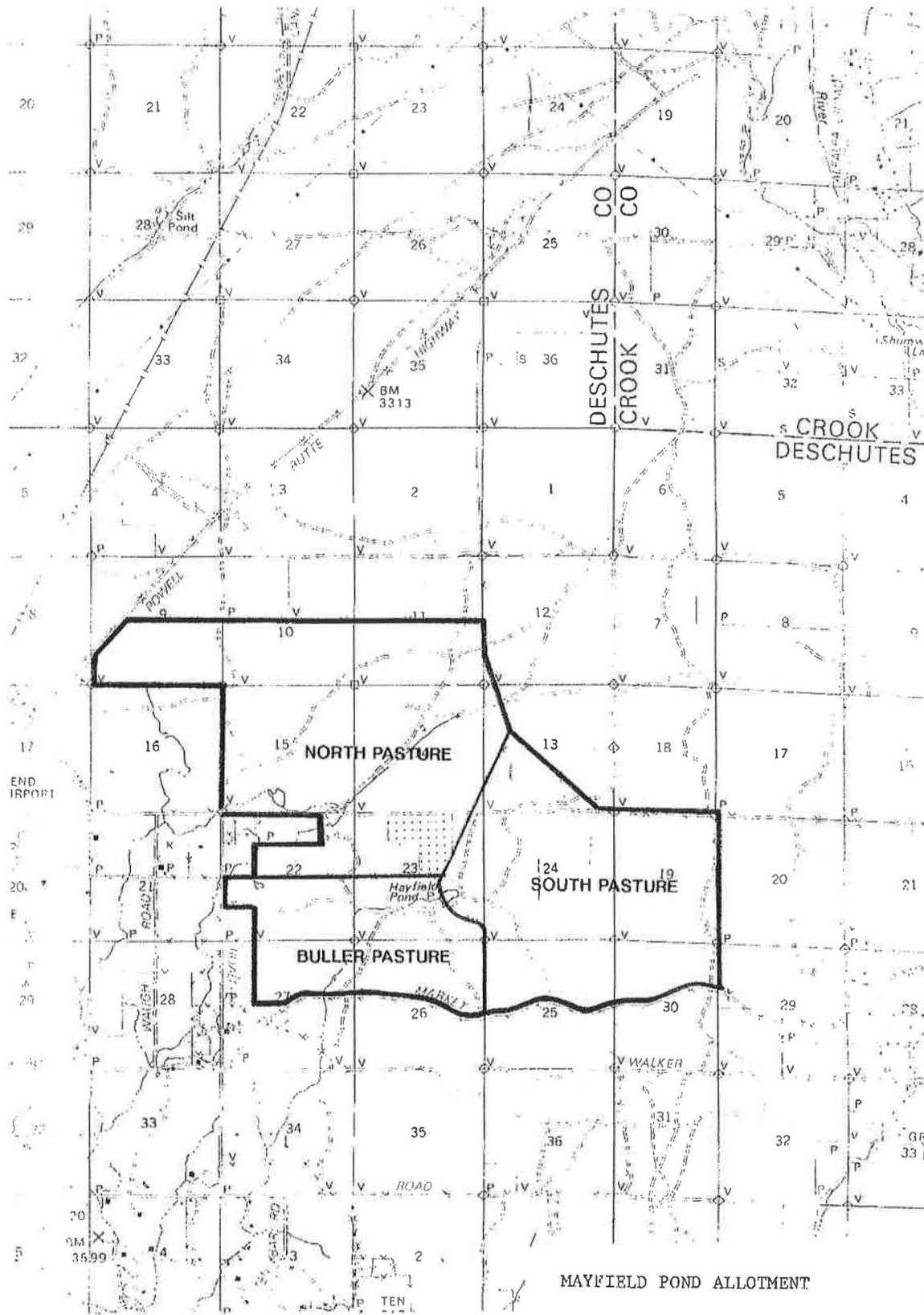
VI. Guidelines for Livestock Grazing Management:

- Conforms with Guidelines for Livestock Grazing Management
- Does Not conform with Guidelines for Livestock Grazing Management, Guideline Numbers: 1 a, c, d, e, f, g, h, j; 2; 6.

Livestock Grazing Management Guidelines

- 1: The season, timing, frequency, duration and intensity of livestock grazing use should be based on the physical and biological characteristics of the site and the management in order to:
 - a. provide adequate cover to promote infiltration, conserve soil moisture and to maintain soil stability in upland areas
 - b. provide adequate cover and plant community structure to promote streambank stability, debris and sediment capture and floodwater energy dissipation in riparian areas.
 - c. promote soil surface conditions that support infiltration
 - d. avoid sub-surface soil compaction that retards the movement of water in the soil profile.
 - e. help prevent the increase and spread of noxious weeds
 - f. maintain or rest for diverse plant populations and communities that fully occupy the potential rooting volume of the soil
 - g. maintain or restore plant communities to promote photosynthesis throughout the potential growing season
 - h. promote soil and site conditions that provide the opportunity for the establishment of desirable plants
 - i. protect or restore water quality
 - j. provide for the life cycle requirements and maintain or restore the habitat elements of native and desired plants and animals
- 2: Grazing mgmt plans should be tailored to site specific conditions and plan objectives. Livestock grazing should be coordinated with the timing of precipitation, plant growth and plant form. Soil moisture, plant growth stage and timing of peak stream flows are key factors in determining when to graze. Response to different grazing strategies varies with differing ecological sites.
- 3: Grazing mgmt systems should consider nutritional and herd health requirements of the livestock
- 4: Integrate grazing mgmt systems into the year-round mgmt strategy and resources of the permittee(s) or lessee(s). Consider the use of collaborative approaches in this integration.
- 5: Consider competition for forage and browse among livestock, big game animals and wild horses in designing and implementing a grazing plan.
- 6: Provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction and productivity.
- 7: Range improvement practices should be prioritized to promote rehabilitation and resolve grazing concerns on transitory grazing land.
- 8: Consider the potential for conflict between grazing use on public land and adjoining land uses in the design and implementation of a grazing mgmt plan.

Appendix B
Maps



MAYFIELD POND ALLOTMENT

Appendix C Plant List

Mayfield Pond Allotment # 5125
Field Dates: November 13, 14 & 18, 2003

<i>Achillea millefolium</i>	<i>Eriogonum strictum</i>
<i>Agropyron cristatum</i>	<i>Eriophyllum lanatum</i>
<i>Agropyron dasystachyum</i>	<i>Erodium cicutarium</i>
<i>Agrostis alba</i>	<i>Festuca idahoensis</i>
<i>Agrostis intermedia</i>	<i>Galium aparine</i>
<i>Alyssum alyssoides</i>	<i>Gayophytum</i> sp.
<i>Antennaria dimorpha</i>	<i>Juncus balticus</i>
<i>Antennaria microphylla</i>	<i>Juncus</i> sp.
<i>Antennaria</i> sp.	<i>Juniperus occidentalis</i>
<i>Arabis</i> sp.	<i>Koeleria cristata</i>
<i>Artemisia tridentata</i>	<i>Lactuca</i> sp.
<i>Aster</i> sp.	<i>Lepidium perfoliatum</i>
<i>Astragalus curvicaarpus</i>	<i>Leptodactylon pungens</i>
<i>Astragalus filipes</i>	<i>Linaria dalmatica</i>
<i>Astragalus purshii</i>	<i>Linum perenne</i>
<i>Bromus tectorum</i>	<i>Mimulus guttatus</i>
<i>Carex aquatilis</i>	<i>Mimulus nanus</i>
<i>Carex douglasii</i>	<i>Muhlenbergia</i> sp.
<i>Carex lenticularis</i>	<i>Oryzopsis hymenoides</i>
<i>Carex rossii</i>	<i>Phleum pratense</i>
<i>Carex</i> sp.	<i>Pinus ponderosa</i>
<i>Centaurea maculosa</i>	<i>Plantago lanceolata</i>
<i>Chaenactis douglasii</i>	<i>Plectritis macrocera</i>
<i>Chenopodium</i> sp.	<i>Poa pratensis</i>
<i>Chrysothamnus nauseosus</i>	<i>Poa secunda</i>
<i>Chrysothamnus viscidiflorus</i>	<i>Polemonium micranthum</i>
<i>Cicuta douglasii</i>	<i>Pseudoroegneria spicata</i> (AGSP)
<i>Cinquefoil</i> sp.	<i>Purshia tridentata</i>
<i>Cirsium vulgare</i>	<i>Rumex crispus</i>
<i>Cryptantha</i> sp.	<i>Salix lasiandra</i>
<i>Dactylis glomerata</i>	<i>Salix</i> sp.
<i>Deschamsia cespitosa</i>	<i>Salsola kali</i>
<i>Descurainia</i> sp.	<i>Scirpus acutus</i>
<i>Eleocharis palustris</i>	<i>Senecio</i> sp.
<i>Eleocharis</i> sp.	<i>Stipa comata</i>
<i>Elymus cinereus</i>	<i>Stipa thurberiana</i>
<i>Elymus elymoides</i>	<i>Taraxacum officinale</i>
<i>Epilobium</i> sp.	<i>Tragopogon dubius</i>
<i>Eriastrum sparsiflorum</i>	<i>Typha latifolia</i>
<i>Erigeron</i> sp.	<i>Verbascum thapsus</i>
<i>Eriogonum microthecum</i>	<i>Vulpia octoflora</i>
<i>Eriogonum ovalifolium</i>	<i>Zigadenus venenosus</i>
<i>Eriogonum sphaerocephalum</i>	

Appendix D List of Lichens

Mayfield Pond Allotment # 5125

Field Dates: November 13, 14 and 18, 2003

LICHENS

Crustose	COMMON NAME	SUBSTRATE
<i>Acoraspora schleicheri</i>	Rimmed Cobblestone Lichen	Soil and cow-pie lichen
<i>Amandinea punctata</i>	Tiny button lichen	Soil, litter, bark and wood
<i>Aspicilia contorta</i>	Chisled sunken disk lichen	Rock
<i>Buellia alboatra</i>	Button Lichen	Juniper wood
<i>Caloplaca cinnamomea</i>	Firedot lichen	Moss over rock
<i>Caloplaca epithellina</i>	Parasitic firedot lichen	Rock
<i>Caloplaca tirolensis</i>	Firedot lichen	Moss
<i>Caloplaca tominii</i>	Firedot lichen	Soil
<i>Candelariella terrigena</i>	Tundra goldspeck lichen	Soil
<i>Candelariella vitellina</i>	Common goldspeck lichen	Rock
<i>Diploschistes muscorum</i>	Cow-Pie Lichen	Soil and dead vegetation
<i>Lecanora hagenii</i>	Hagen's rim-lichen	Tree and shrub twigs
<i>Lecanora sp</i>	Rim lichen	
<i>lecidella tessellata</i>	Tile lichen	Rock
<i>Leprocaulon subalbicans</i>	Cottonhead lichen	Soil and moss
<i>Lepraria sp</i>	Dust lichen	Moss, bark and litter
<i>Rhizocarpon bolanderi</i>	Map lichen	Rock
<i>Rhizocarpon disporum</i>	Single-spored map lichen	Rock
<i>Rhizocarpon geographicum</i>	Yellow map lichen	Rock
Squamulose		
<i>Arthonia glebosa</i>	Comma Lichen	Soil
<i>Phaeorhiza sareptana</i>	Brown-fuzz lichen	Soil
<i>Placidium squamulosum</i>	Stipplescale lichen	Soil
<i>Psora cerebriformis</i>	Brain scale	Soil
<i>Psora tuckermanii</i>	Brown-eyed Scale	Rock
Gelatinous		
<i>Collema tenax</i>	Soil jelly lichen	Soil, moss, litter
<i>Leptochidium albociliatum</i>	Whiskered Jelly Lichen	Moss
<i>Leptogium lichenoides</i>	Tattered Jellyskin	Soil, moss and litter
Foliose		
<i>Candelaria concolor</i>	Candleflame lichen	Bark and wood
<i>Lecanora muralis</i>	Stonewall rim-lichen	Moss over rock
<i>Melanelia exasperatula</i>	Lustrous camouflage lichen	Tree and shrub bark
<i>Neofuscelia subhosseanna</i>	Erupted camouflage lichen	Rock
<i>Parmelia sulcata</i>	Hammered shield lichen	Moss
<i>Peltigera rufescens</i>	Field Dog-Lichen	Soil and moss
<i>Physcia adscendens</i>	Hooded rosette lichen	Juniper bark
<i>Physcia dubia</i>	Powder-tipped rosette lichen	Rock, bone and wood
<i>Physconia enteroxantha</i>		
<i>Rhizoplaca chrysoleuca</i>	Orange rock-posy	Rock
<i>Rhizoplaca melanophthalma</i>	Green rock-posy	Rock
<i>Umbilicaria hyperborea</i>	Blistered Rock Tripe	Rock
<i>Umbilicaria phaea</i>	Emery rock tripe	Rock
<i>Xanthoparmelia plittii</i>	Plitt's rock shield	Rock
<i>Xanthoria elegans</i>	Elegant sunburst lichen	Rock

Xanthoria fallax
Xanthoria fulva

Hooded sunburst lichen
Bare-bottomed sunburst lichen

Bone
Tree and shrub bark

Fruiticose

Aspicilia filiformis
Bryoria fremontii
Cladonia chlorophaea
Cladonia fimbriata
Letharia columbiana
Letharia vulpina

Tree-hair lichen
Mealy pixie-cup
Trumpet Lichen
Brown-eyed wolf lichen
Wolf lichen

Soil
Juniper branches
Soil, moss
Soil, moss and litter
Bark and wood
Bark and wood

Appendix E Wildlife

Mayfield Pond Allotment # 5125
Field Dates: November 13, 14 and 18, 2003

This is only a partial list of species that would be expected in the Allotment.

Mammals

Antelope
Badger
Coyote
Elk
Mule deer
Northern pocket gopher
Mountain cottontail rabbit
Mountain lion
Porcupine
Bushy-tailed woodrat
Ord's kangaroo rat
Golden mantle ground squirrel
Chipmunk

Bird species seen in the vicinity around the time of the evaluation (not necessarily breeding in the area)

Red-tailed hawk
Northern harrier
Northern flicker
Clark's Nutcracker
Pinyon jay
Black-billed magpie
Common raven
European Starling
Bushtit
Red-breasted nuthatch
Mountain chickadee
Mountain bluebird
Western bluebird
American robin
Townsend's Solitaire
Yellow-rumped warbler
American goldfinch
Dark-eyed junco

Oregon Breeding Bird Atlas Species List of known breeding the kind of habitat found in the Bend /Redmond area. To see more information control/click on the hyperlink, Click on a hexagon in Deschutes county and find your way to the map hexagon 26203 [Oregon Breeding Bird Atlas](#).

Reptiles

Common garter snake
Gopher snake
Racer
Fence lizard

Amphibians

Pacific tree frog
Bullfrog

Rangeland Health Evaluation Summary Worksheet

Part 1. Area of Interest Documentation (Bold items require completion, other information is optional)

State Oregon Office Prineville Management Unit Wing Point

Pasture/Watershed Laurel ID# 5125 Major Land Resource Area 606

Location (description) _____

Legal T _____, R _____, Sec _____, _____ 1/4, _____ 1/4 or Lat _____, Long _____ or UTM Coord _____

Size of Evaluation Area 7019 Photo(s) Taken Yes No _____

Observer(s) R. Hemmer Date November 15, 1993

Ecological Site _____ Soil Map Unit Name _____

Soil/Site Verification

Rangeland Ecological Site Description and/or Soil Survey _____ Area of Interest Determination _____

Surface Texture _____ Surface Texture _____

Depth: Very Shallow Shallow Moderate Deep Depth: Very Shallow Shallow Moderate Deep
 (<10") (10"-20") (20"-40") (>40") (<10") (10"-20") (20"-40") (>40")

List diagnostic horizons in profile and depth
 1 _____ 3 _____ 1 _____ 3 _____
 2 _____ 4 _____ 2 _____ 4 _____

Parent Material _____ Slope _____ % Elevation _____ ft Topographic Position _____ Aspect _____

Avg Annual Precip _____ Recent Weather (last 2 years) Drought _____ Normal _____ Wet _____

Describe wildlife and livestock use and recent disturbances _____

Describe offsite influences on area of interest _____

Part 2. Indicator Rating

Attribute	Indicators	Departure from Ecological Site Description/ Ecological Reference Area(s)				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S,H	1. Rills			X		
Comments:						
S,H	2. Water Flow Patterns			X		
Comments:						
S,H	3. Pedestals and/or Terraces		X			
Comments:						
S,H	4. Bare Ground	X				
Comments:						
S,H	5. Gullies					X
Comments:						
S	5. Wind-Scoured, Blowouts, and/or Deposition Areas	X				
Comments:						

Part 2. Indicator Rating (continued)

Attribute	Indicators	Departure from Ecological Site Description/ Ecological Reference Area(s)				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
H	7. Litter Movement				X	
Comments:						
S,H,B	8. Soil Surface Resistance to Erosion		/			
Comments:						
S,H,B	9. Soil Surface Loss or Degradation		/			
Comments:						
H	10. Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments: <i>Sandy soil and 11m high sand dunes</i>						
S,H,B	11. Compaction Layer			X		
Comments: <i>Expansive sand system</i>						
B	12. Functional/Structural Groups	X				
Comments:						
B	13. Plant Mortality/Decadence		X			
Comments:						
H,B	14. Litter Amount		X			
Comments: <i>Considerably reduced</i>						
B	15. Annual Production		X			
Comments:						
B	16. Invasive Plants			X		
Comments:						
B	17. Reproductive Capability of Perennial Plants			X		
Comments:						

Part 3. Summary

A. Indicator Summary

Departure from Ecological Site Description/
Ecological Reference Area(s)

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	#
S	Soil/Site Stability (Indicators 1-6, 8, 9 & 11)	2	3	3		1	9
H	Hydrologic Function (Indicators 1-5, 7-11 & 14)	1	4	4	1	1	11
B	Biotic Integrity (Indicators 3-9 & 11-17)	1	4	3			9

B. Attribute Summary - Check the category that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the preceding Indicator Summary table.

Attribute	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability Rationale:		X			
Hydrologic Function Rationale:			X		
Biotic Integrity Rationale:		X			

Part 2. Indicator Rating (continued)

		Departure from Ecological Site Description/ Ecological Reference Area(s)				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
H	7. Litter Movement				X	
Comments:						
S,H,B	8. Soil Surface Resistance to Erosion		X			
Comments:						
S,H,B	9. Soil Surface Loss or Degradation		X			
Comments:						
H	10. Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments: <i>Sandy soil infiltration doesn't change much</i>						
S,H,B	11. Compaction Layer			X		
Comments: <i>Extensive road system</i>						
B	12. Functional/Structural Groups	X				
Comments:						
B	13. Plant Mortality/Decadence		X			
Comments:						
H,B	14. Litter Amount		X			
Comments: <i>Greatly reduced</i>						
B	15. Annual Production		X			
Comments:						
B	16. Invasive Plants			X		
Comments:						
B	17. Reproductive Capability of Perennial Plants			X		
Comments:						

Part 3. Summary

A. Indicator Summary

Departure from Ecological Site Description/
Ecological Reference Area(s)

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
S	Soil/Site Stability (Indicators 1-6, 8, 9 & 11)	2	3	3		1	9
H	Hydrologic Function (Indicators 1-5, 7-11 & 14)	1	4	4	1	1	11
B	Biotic Integrity (Indicators 8-9 & 11-17)	1	4	3			9

B. Attribute Summary - Check the category that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the preceding Indicator Summary table.

Attribute	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability Rationale:			X		
Hydrologic Function Rationale:			X		
Biotic Integrity Rationale:		X			