Title: Pryor Farms Allotment Management Plan

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CHAPTER I. INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

A. Introduction

This Environmental Assessment (EA) has been prepared for the Central Oregon Field Office's proposed Pryor Farms Allotment Management Plan. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a "Finding of No Significant Impact" (FONSI). A FONSI is a document that briefly presents the reasons why implementation of the proposed actions will not result in "significant" environmental impacts (effects) beyond those already addressed in the Two Rivers Resource Management Plan, Record of Decision (RMP) (BLM, 1986). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. A decision record (DR) may be signed following public comment on the EA to document the decision.

B. Background

The Pryor Farms (#2607) grazing allotment is located in Townships 2 and 3 South, Range 20 East, approximately five to ten miles northwest of Condon Oregon. The current lessee has held the grazing preference for 640 acres of public lands since 1969. In 1972, a further 160 acres, which had been leased by the Warm Springs Indian Agency, was transferred into the current lease. In 1974, the authorized use on the allotment was reduced with the lessee's approval from 160 animal unit months (AUMs) to 50 AUMs based on evaluations of range surveys from comparable areas.

Resource conditions on the allotment were evaluated against BLM standards by an interdisciplinary team of resource specialists in 2005 (see Standards for Rangeland Health and Guidelines for Livestock Grazing Management, Evaluation and Determination of Public Lands in the Pryor Farms (#2607) Grazing Allotment (S&G Assessment) (BLM, 2005)). The evaluation identified that three standards were not being met: Standard 2 (Watershed Function - Riparian/Wetland Areas), Standard 4 (Water Quality), and Standard 5 (Habitat for Native, T&E and Locally Important Species). In each case, it was determined that existing grazing management practices or levels of grazing use are significant factors in failing to achieve the standard. Additionally, the evaluation determined that the guidelines for grazing management were not being met on the allotment.

C. Proposed Action

The proposed action is to follow the recommendations of the BLM interdisciplinary team that completed the S&G Assessment. A fence would be constructed along the west side of Hay Creek and the existing fence on the ridge separating Tenmile pasture from East pasture would be extended north to intersect with the fence built along Hay Creek. The existing fence separating East and Tenmile pastures from North pasture would be removed. A rotation grazing system would be implemented that confined use of riparian areas along Hay Creek to the month of April. Water gaps and / or pumps and troughs may be used to provide water to livestock grazing west of the fence.

D. Objectives for the Proposal

The objectives of the Proposed Action (as well as the Action Alternatives) described herein is to meet the following guidance from statutes and regulations:

- Conserve Threatened and Endangered Species and the ecosystems upon which they depend, and do not contribute to the need to list a species (Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended);
- Restore and maintain the chemical, physical, and biological integrity of the Nation's water (Clean Water Act, as amended, 33 U.S.C. 1251);
- Promote healthy sustainable rangeland ecosystems; accelerate restoration and improvement of public rangelands to properly functioning conditions; promote the orderly use, improvement and development of the public lands; establish efficient and effective administration of grazing on public rangelands; and provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands (43 CFR 4100).

The objectives of the Proposed Action (as well as the Action Alternatives) described herein is to meet the following guidance from land use plans:

- Modify grazing practices (e.g., accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives (RMOs) or likely to adversely affect listed anadromous fish. Suspend grazing if adjusting practices is not effective in meeting RMOs and avoiding adverse effects on listed anadromous fish (Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California, (FS and BLM, 1995));
- Maintain current livestock grazing levels and meet riparian and upland vegetation management objectives; manage all streams with fisheries or fisheries potential to achieve a good to excellent aquatic habitat condition (BLM, 1986, page 10);
- Changes in periods of use, or exclusion through construction of riparian protection fence, or a combination of both will occur where necessary to meet objectives; intensive management will encourage a change in ecological condition toward climax (BLM, 1986, page 14).

E. Issues

Special Status Species. Specific objectives are to insure that no action would impose an unacceptable risk to species or their habitat and those actions would not contribute to the need to list any of the special status species under the Endangered Species Act and provide for the life cycle requirements of native and desired plants and animals.

Water Quality. The specific objective is to maintain or improve water quality at all water sources.

Livestock Management. Specific objectives are to base the season, timing, frequency, duration, and intensity of livestock grazing use on the physical and biological characteristics of the site in order to: provide adequate cover to promote infiltration, conserve soil moisture and to maintain soil stability in upland areas; meet nutritional and herd health requirements of the livestock; integrate grazing management systems into the year-round management strategy and resources of the lessee; and provide periodic rest from grazing for rangeland vegetation during critical growth periods (for this area, approximately May 1 through June 15) to promote plant vigor, reproduction and productivity.

Riparian Areas. Specific objectives are to provide adequate riparian cover and plant community structure to promote stream bank stability, debris and sediment capture, and floodwater energy dissipation in riparian areas; restore diverse riparian plant populations and communities that fully occupy the potential rooting volume of the soil; promote riparian conditions that provide the opportunity for the establishment of desirable plants.

F. Decision Factors

In choosing the alternative that best meets the purpose and need, we will consider the extent to which the alternative would:

- provide habitats to support healthy, productive and diverse populations and communities of native plants and animals,
- restore ecosystem processes that are impaired and maintain those that are functioning satisfactorily,
- assure that riparian areas are making progress towards reaching properly functioning condition,
- promote cooperative and collaborative relationships with the public and other state, local, tribal governments,
- manage the public lands in ways which are consistent and compatible with the uses of nearby private lands, and
- be cost effective, keeping both construction and maintenance costs low.

G. Coordination, Consultation and Cooperation

Interagency meetings were held to discuss issues and solutions on December 16, 2005, February 24 and April 25, 2006. These meetings were attended by representatives of the

National Marine Fisheries Service, Natural Resource Conservation Service, Confederated Tribes of the Warm Springs, Soil and Water Conservation District, Watershed Council, Bureau of Indian Affairs, BLM, and the private land owner. These meetings produced the alternatives that are described and analyzed in this document.

CHAPTER II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Common to All Action Alternatives

1. Wilderness Characteristics Review. Public lands in this allotment were inventoried for wilderness characteristics. The lands were found to fail the 5000 acre minimum size criteria and were determined to be unsuitable for wilderness.

2. Cultural and Paleontological. All recorded cultural sites would be evaluated in accordance with Section 106 of the National Historic Preservation Act prior to any proposed actions and assignment to one or more of the Cultural Resource Use Categories would be recommended. Cooperative efforts with other entities to manage selected cultural and paleontological resources would be encouraged, if appropriate.

3. Wildlife Habitat. Oregon Department of Fish and Wildlife (ODFW) have a California Bighorn reintroduction program in the area. In order to prevent the spread of disease from domestic to wild sheep, domestic sheep grazing is prohibited on public land.

4. Visual Resource Management. All new land altering activities would follow Visual Resource Management classification standards. The existing human modifications would be brought into compliance with the management class standards where they are located. This would be done at the time each modification is reconstructed.

5. Livestock Grazing. The amount of grazing, on public land, is based on an Animal Unit Month (AUM). An AUM is defined as the amount of forage necessary to sustain one cow (with or without an unweaned calf) or its equivalent, for a period of one month. All fences and spring developments proposed for construction or reconstruction, would follow the standards described in Appendices A and B, respectively.

6. Special Status Plants. Survey for special status plants would occur as needed prior to project implementation with projects modified if necessary. Special status plant sites, if present, would be monitored as needed to determine any effects of livestock grazing.

7. Monitoring. Listed in Appendix C are the studies which have been established and will continue to be used for monitoring and evaluation procedures. Also listed in Appendix C are additional studies which are planned for the allotment and will be implemented depending on the level of funding and manpower which are available. Regular visits to the allotment will be made in order to verify that the proposed

changes are having the desired affects. The visits can include any one or a combination of specialists from the Prineville District. A written evaluation will be completed by an interdisciplinary team ten years from the date of implementation of proposed management changes.

B. Alternative A: No Action

1. Projects
No new projects would be implemented on public lands. Maintenance and reconstruction of existing range improvements would be pursued.

2. Pasture description
The pasture sizes, public and private land holdings are summarized in Table 1. Pasture boundaries are shown on Map 1.

Table 1. Land ownership in pastures of the Pryor Farms allotment under Alternatives A and B.

Pasture	Pasture Size (acres/AUMs)				% Federal	% Tribal
Name	Tribal	Public	Private	Total	Forage	Forage
North	720/98	680/88	640/89	2040/275	32	36
Tenmile	431/66	0/0	1522/198	1953/264	0	25
East	289/42	120/21	918/124	1327/187	11	22
Total	1440/206	800/109	3080/411	5320/726	15	28

3. Grazing system
Kind of Livestock: Cattle.
Season of Use: April 1 through November 4.
Grazing System: All pastures containing public land in the allotment would be managed by the BLM as 'custodial' pastures. Stocking rates and the movement of cattle would be left to the discretion of the rancher.
Grazing Stipulations:
- As a result of bighorn sheep reintroduction in 1989, domestic sheep use will not be authorized for this allotment.
- Salting of livestock within one quarter mile of water is prohibited.
- Actual use reports shall be submitted to the Prineville District office within 15 days of the close of the scheduled grazing season.

4. Flexibility
The flexibility of this grazing system is limited only by the environmental conditions and the rancher's imagination.

C. Alternative B: Menske Double Rotation

Grazing use levels follow the results of range surveys of the allotment. The grazing system would utilize most of the existing fences and pasture boundaries.

1. Projects
   No new projects would be implemented on public lands. Maintenance and reconstruction of existing range improvements would be pursued.

2. Pasture description
   The pasture sizes, public and private land holdings are summarized in Table 1. Proposed pasture boundaries are shown on Map 1.

3. Grazing system

   Table 2. Menske Double Rotation grazing schedule.

Pasture	AUs	Every year	AUMs
North	141	6/1 - 6/15	69
	141	7/16 - 8/15	139
Tenmile	141	6/16 - 7/1	74
	141	8/16 - 9/15	144
East	141	7/2 - 7/15	65
	141	9/16 - 10/15	139

   Kind of Livestock: Cattle.
   Season of Use: 1 March to 28 February.
   Grazing System: Rotation grazing schedule with tentative dates shown in Table 2.
   Grazing Stipulations:
   - As a result of bighorn sheep reintroduction in 1989, domestic sheep use will not be authorized for this allotment.
   - Salting of livestock within one quarter mile of water is prohibited.
   - Supplemental protein blocks will not be used in a pasture with riparian sites identified as sensitive by an interdisciplinary team.
   - Actual use reports shall be submitted to the Prineville District office within 15 days of the close of your scheduled grazing season.

4. Flexibility
   Dates would be able to shift throughout the calendar year, but use of a pasture would not normally exceed 60 days.

D. Alternative C: Coordinated Resource Enhancement Program (CREP)

The emphasis of this alternative is riparian area non-use by livestock. In this case non-use would be achieved by fencing both sides of the Hay Creek.

1. Projects
   A fence would be constructed along both sides of Hay Creek. Existing topographic barriers would be utilized where feasible to decrease costs of construction and maintenance. Water gaps and / or pumps and troughs would provide water to livestock. Maintenance and reconstruction of existing range improvements would be

pursued. Riparian vegetation plantings would be designed to meet the requirements of the Coordinated Resource Enhancement Program specifications.

2. Pasture description
   The pasture sizes, public and private land holdings are summarized in Table 3. Proposed pasture boundaries are shown on Map 2.

Table 3. Land ownership in pastures of the Pryor Farms allotment under CREP.

Pasture		Pasture Size (acres/AUMs)			% Federal	% Tribal
Name	Tribal	Public	Private	Total	Forage	Forage
North	197/25	513/58	259/32	969/115	50	22
Exclosure	28/4	31/4	62/8	121/16	25	25
Middle	500/71	136/26	354/53	990/150	17	47
Tenmile	431/66	0/0	1522/198	1953/264	0	25
East	284/41	120/21	883/121	1287/183	11	22
Total	1440/207	800/109	3080/412	5320/728	15	28

3. Grazing system

Table 4. CREP rotation grazing schedule.

Pasture	AUs	Year 1	Year 2	Year 3	AUMs
North	141	6/1 - 6/25	6/1 - 6/25	6/1 - 6/25	116
Exclosure	0	non use	non use	non use	0
Middle	141	6/26 - 7/27	9/30 - 10/31	8/4 - 9/4	148
Tenmile	141	7/28 - 9/22	6/26 - 8/21	9/5 -10/31	264
East	141	9/23 - 10/31	8/22 - 9/29	6/26 - 8/3	181

Kind of Livestock: Cattle.
Season of Use: 1 March to 28 February.
Grazing System: Rotation grazing schedule with tentative dates shown in Table 4.
Grazing Stipulations:

- As a result of bighorn sheep reintroduction in 1989, domestic sheep use will not be authorized for this allotment.
- Salting of livestock within one quarter mile of water is prohibited.
- Supplemental protein blocks will not be used in a pasture with riparian sites identified as sensitive by an interdisciplinary team.
- Actual use reports shall be submitted to the Prineville District office within 15 days of the close of your scheduled grazing season.

4. Flexibility
   Dates would be able to shift throughout the calendar year, but use of a pasture would not normally exceed 60 days.

E. Alternative D: Proposed Action - Fence One Side of Hay Creek

Management would follow the recommendations of a BLM interdisciplinary team.

1. Projects
   A fence would be constructed along the west side of Hay Creek. Existing topographic barriers would be utilized where feasible to decrease costs of construction and maintenance. Water gaps and / or pumps and troughs may be used to provide water to livestock grazing west of the fence. The existing fence separating North Pasture from Tenmile and East pasture would be removed. The existing fence on the ridge separating Tenmile pasture from East pasture would be extended north to intersect with the fence built along Hay Creek. Maintenance and reconstruction of other existing range improvements would be pursued.

2. Pasture descriptions
   Pasture sizes, public and private land holdings are summarized in Table 5. Proposed pasture boundaries are shown on Map 3.

Table 5. Land ownership in pastures of the Pryor Farms allotment under the Proposed Action.

Pasture		Pasture Size (acres/AUMs)			% Federal	% Tribal
Name	Tribal	Public	Private	Total	Land	Land
Hay Creek	225/29	544/62	321/40	1090/131	47	22
Tenmile	931/135	116/22	1826/241	2873/398	6	34
East	284/41	140/25	933/132	1357/198	13	21
Total	1440/205	800/109	3080/413	5320/727	15	28

3. Grazing system

Table 6. Proposed Action grazing schedule.

Pasture	AUs	Year 1	Year 2	AUMs
Hay Creek	141	4/4 - 5/1	4/4 - 5/1	130
Tenmile	141	5/2 - 7/26	6/14 - 9/7	399
East	141	7/27 - 9/7	5/2 - 6/13	199

Kind of Livestock: Cattle.
Season of Use: 1 March to 28 February.
Grazing System: Rotation grazing schedule with tentative dates shown in Table 2.
Grazing Stipulations:

- As a result of bighorn sheep reintroduction in 1989, domestic sheep use will not be authorized for this allotment.
- Salting of livestock within one quarter mile of water is prohibited.
- Supplemental protein blocks will not be used in a pasture with riparian sites identified as sensitive by an interdisciplinary team.

- Actual use reports shall be submitted to the Prineville District office within 15 days of the close of your scheduled grazing season.

4. Flexibility
   Dates would be able to shift throughout the calendar year, but use of a pasture would not normally exceed 60 days.

F. Alternative E: No Grazing

Due to the interspersed nature of the public, tribal, and private lands in the area, a no grazing alternative would look different on-the-ground depending on the cooperation received from the other land owners. Neither the CTWS nor the lessee has expressed a desire to eliminate grazing on their lands. The no grazing alternative therefore focuses on eliminating grazing on the most sensitive public lands within the allotment with the least financial input and assumes that cooperation would be obtained.

The pasture that contains the most public land (that is, the North Pasture, see Map 1) would be taken out of production entirely. Forage produced on those public lands would be suspended from the lease. Pastures that contain scattered tracts of public land would be left in livestock production. Grazing in the East pasture would normally be authorized for no more than 60 days per year between the dates of June 15 and November 4.

1. Projects
   No new projects would be implemented on public lands. Maintenance and reconstruction of existing range improvements would be pursued.

2. Pasture description
   The pasture sizes, public and private land holdings are summarized in Table 1. Pasture boundaries are shown on Map 1.

3. Grazing system
   Kind of Livestock: Cattle.
   Season of Use: April 1 through November 4.
   Grazing System: The North Pasture would be placed in non-use and the forage produced on those public lands would be suspended from the lease. Grazing in the East pasture would normally be authorized for no more than 60 days per year between the dates of June 15 and November 4.
   Grazing Stipulations:
   - As a result of bighorn sheep reintroduction in 1989, domestic sheep use will not be authorized for this allotment.
   - Salting of livestock within one quarter mile of water is prohibited.
   - Actual use reports shall be submitted to the Prineville District office within 15 days of the close of the scheduled grazing season.

4. Flexibility
   The flexibility of this grazing system is limited only by the conditions outlined above.

CHAPTER III. AFFECTED ENVIRONMENT

A. Resources

1. Climate
   Climate is characterized by long, cool, moist winters and short, warm, and dry summers. The average rainfall of between 8 and 12 inches per year occurs mainly during the winter and early spring. Thunderstorms often occur in the late spring and summer months and can be very intense, but localized, in nature.

2. Vegetation
   The majority of public lands on the allotment (approximately 616 acres or 78%) are steep slopes. The steep slopes (>20%) are generally in mid to late seral ecological status. The Shallow South 10 – 14" precipitation zone (pz) (008XY210OR) ecological sites are typically dominated by sagebrush, bluebunch wheatgrass, and Sandberg's bluegrass. The North 10 – 14" pz (008XY220OR) ecological sites are typically dominated by sagebrush, Idaho fescue, and bluebunch wheatgrass. Approximately 170 acres of public land on the allotment are gentler slopes (0 – 20%). These areas are dominated by sagebrush and low growing, shallowly rooted grasses, such as Sandberg's bluegrass, foxtail barley, and cheatgrass.

3. Noxious Weeds
   Several species of noxious weeds occur in the planning area, primarily in the drainage bottoms, low elevation uplands and historic agricultural fields. The total acres of each species is not known. Table 7 lists the noxious weed species which are known to occur in the planning area.

Table 7. Noxious weeds known to occur on public land within the Pryor Farms grazing allotment.

Common Name	*Scientific Name*
Diffuse knapweed	Centaurea *diffuse*
Russian knapweed	*Centaurea repens*
Dalmation toadflax	*Linaria dalmatica*
Bull thistle	*Cirsium vulgars*
Canada thistle	*Cirsium arvense*
Scotch thistle	*Onopordum acanthium*
Whitetop / Hoary cress	*Cardaria draba*
Medusahead rye	*Taeniatherum caput-medusae*
Western Water Hemlock	*Cicuta douglasii*
Poison Hemlock	*Conium maculatum*

4. Soils
   The soils within the Pryor Farms allotment are primarily moderately deep, well-drained silt loams (Wrentham - Rock Outcrop) with very stony loams (Lickskillet -

Rock Outcrop) common on the southern and western slopes. Very shallow, very cobbly loams (Bakeoven) tend to occupy the upper slopes and plateaus. For a large majority of the allotment runoff is rapid and the hazard of erosion is high (SCS, 1984).

Microbiotic Crusts. Over the past twenty years, researchers have gathered evidence that soil crusts may be ecologically important, at least in part because of their ability to stabilize the soil surface and reduce erosion (Johansen, 1993). Microbiotic soil crusts are formed by a variety of organisms as diverse as moss, algae and lichen. Because of the taxonomic complexity of the organisms in the total microbiotic community, comprehensive surveys are rare even in a research setting (West, 1990). The BLM has few specialists skilled in microbiotic crust identification. Independent surveys in the region indicate that microbiotic crust community composition varies widely according to soil type (Jean Ponzetti, personal communication) and may involve three or four times the species diversity of the associated vascular plant community (Roger Rosentretter, personal communication).

Microbiotic crusts are particularly sensitive to fire, physical disturbance and air pollutants. Fire and trampling by livestock are the factors most likely to affect the crusts on the Pryor Farms grazing allotment. Fewer well developed crusts would be expected in areas preferred by cattle and / or on sites of recent burns (depending on the intensity of the fire). Well developed crust communities should be present on steep slopes which are some distance from water.

5. Fisheries

The fisheries resources directly related to the Pryor Farms allotment are Hay Creek and Tenmile Creek. Approximately 1.0 stream miles of Hay Creek are on public lands.

Three fish species which the BLM considers to be 'Species of Concern' are found in (or influenced by) Hay Creek and Tenmile Creek. Steelhead and populations are listed under the Endangered Species Act. The population status of redband trout is being investigated by the United States Fish and Wildlife Service. The Pacific lamprey is an important fish to native Americans. Present information indicates that the numbers of these fish are declining. Since these species may be listed for protection under the Endangered Species Act, the BLM considers these fish to be Species of Concern. This means that the BLM shall not carry out management actions which contribute to the need to list these species under the Endangered Species Act and shall conserve these species and their habitat consistent within the principles of multiple use and sustained yield.

The John Day River and tributaries provide habitat for summer steelhead. The lower subbasin (John Day River and tributaries downstream from Clarno, RM-109), produces approximately 2% of the John Day Basin summer steelhead population (Young, 1986). This portion of Hay Creek serves as summer steelhead spawning and rearing habitat.

6. Water

The allotment contains segments of Hay Creek and Tenmile Creek. There are approximately 1.0 public land stream miles on Hay Creek and none on Tenmile Creek.

Hay Creek is an interrupted stream in which the middle reaches go dry in the summer. It is characterized by a gravel bed and a high silt load during periods of high runoff. Hay Creek is subject to intense flood events.

Hay Creek has been identified as 'water quality limited' by the Oregon Department of Environmental Quality under section 303(d) of the Clean Water Act. The primary factor for this determination is summer stream temperatures relative to salmonid fish species rearing habitat.

7. Riparian

Hay Creek. One photopoint was established on Hay Creek upstream of Corral Hollow in December 2002. This photopoint has not been retaken. In 1995, an interdisciplinary team used the Properly Functioning Condition methodology (Technical Reference 1737-015) to assess the condition of riparian areas along Hay Creek. The team rated Hay Creek as Functioning at Risk with no trend apparent. In 2005, another team re-assessed Hay Creek with the same rating. The riparian vegetation was sparse and consisted of mostly colonizing species such as water buttercup, brook grass, water cress, horsetail, sweet clover and scattered rush. A few browsed rose and willow were noted. One decadent cottonwood tree remains on an abandoned terrace just upstream of the confluence of Coral Canyon. The channel lacked sufficient numbers of woody species such as willow, alder, and cottonwood for recruitment and recovery.

8. Special Status Species

Fish. The steelhead / redband trout (*O. mykiss*) inhabit the Hay Creek sub basin during a portion of its life cycle. This species is listed as 'Threatened' under the Endangered Species Act.

Plants. Much of the allotment has been inventoried for the presence of special status plants, resulting in only one unconfirmed sighting of *Mimulus jungermannioides*. Along with this plant, the following plants would be suspected of occurring in the general area based on habitat and known locations nearby:

Species	Common Name	Status
Astragalus collinus var. *laurentii*	Lawrence's milkvetch	State Threatened
Camissonia pygmaea	dwarf evening-primrose	Bureau Sensitive
Carex hystericina	porcupine sedge	Bureau Assessment
Coryphantha vivipara var. *vivipara*	cushion coryphantha	Bureau Assessment
Lomatium watsonii	Watson's desert-parsley	Bureau Assessment
Mimulus evanescens	disappearing monkeyflower	Bureau Sensitive
Mimulus jungermannioides	hepatic monkeyflower	Bureau Sensitive
Rorippa columbiae	Columbia cress	Bureau Sensitive

Wildlife. No allotment specific information on special status animals has been documented. Information has been compiled, however, for species that may occur or are suspected to occur on the allotment based on recent records, regional data, and county specific documentation. In reference to this data the following special status species would be suspected of occurring on the allotment: Western toad (*Bufo boreas)*, burrowing owl (*Athene cunicularia)*, Ferruginous hawk (*Buteo regalis)*, Swainson's hawk (*Buteo swainsoni)*, bald eagle (*Haliaeetus leucocephalus)*, loggerhead shrike (*Lanius ludovicianus)*, bank swallow (*Riparia riparia)*, and Western bluebird (*Sialia mexicana)*.

Special status species that may occur or have the potential to occur based on compiled information include: spotted frog (*Rana pretiosa)*, tiger salamander (*Ambystoma tigrinum)*, long-billed curlew (*Numenius americanus),* grasshopper sparrow (*Ammodramus savannarum)*, tricolored blackbird (*Agelaius tricolor)*, white-tailed jackrabbit (*Lepus townsendii)*, Washington ground squirrel (*Spermophilus washingtoni)*, pallid bat (*Antrozous pallidus)*, and Townsend's big-eared bat (*Plecotus townsendii)*.

9. Wildlife Habitat

Wildlife habitat is divided into aquatic, riparian, upland and agricultural habitat types. Aquatic and riparian habitat conditions are described above. A complete list of wildlife species and habitat types with which they are normally associated is contained in the Two Rivers RMP (BLM, 1985a).

Upland habitats are dominated by a single structural type, the grass / shrub type. Overall, the integrity of the habitat has been preserved with a good mix of vegetative and structural diversity. The areas most limiting are lower elevation areas along water courses. They are limiting primarily due to the lack of an understory with herbaceous diversity and structure, with the limited forb component being most critical. While this is due in large part to soils and moisture, it is also a result of improper livestock use. Areas with a greater distance to water and steeper slopes show markedly improved herbaceous conditions.

10. Cultural / Historical

Prehistory. The lower John Day River canyon and its tributaries have been occupied by Native peoples probably as far back as 10,000 years ago. The Native inhabitants seem to have chosen to live in the rugged, protected canyons rather than on the exposed, flats of the upland prairies. The economy of these people depended on generalized hunting and gathering in the surrounding canyons and flats. Fishing occurred in the John Day and its tributaries, but doesn't appear to have been a major pursuit, at least early on. This pattern continued up to the present with slight shifts in the economy to focus on certain key resources, e.g., roots and, to a limited degree, fish. Archaeological data suggests that between 3000 and 1000 years ago, much of the lower John Day River was closely linked to the Middle Columbia culture area.

After 1000 years ago, the influence of the Middle Columbia area appears to collapse or move down stream and as a consequence there was a general decline in the intensity of occupation in the river canyon of the John Day.

There have been few inventories in the Hay Creek/Ten Mile Creek drainage basin. Few sites have been reported. One rock shelter with pictographs has been reported but not verified or recorded from Hay Creek.

History. Early explorers (mostly fur traders) traveled through the John Day country between 1812 and 1833. Between 1840 and 1860 thousands of emigrants traveled west along the Oregon Trail which is located north of the project area. The first settlement of the Hay Creek area began in the early 1860s according to the survey notes of the General Land Office of 1867. Only one resident, a David Gunman, was reported in the township in that year. Mr. Gunman had homesteaded at the mouth of Hay Creek and had fields and ditches by the date of the survey. Ranching was the primary economic activity practiced in the study area up until the early 1880s when wheat farming started to take hold. Typically, the upland plateaus were used for farming wheat and other grains, while appropriate creek (river) bottoms were used for fruits and vegetable gardens. The adjoining canyons were grazed by sheep and cattle. Hay Creek was marginal to most activities in these early days, the major travel routes and homesteading located primarily north and east along Rock Creek. Lone Rock was one of the major local trading centers in the area, east of the project area. Around 1900, most of the land surrounding Hay Creek was settled by people practicing both farming and ranching. At the same time, small hamlets arose to serve travelers and local residents. Some of these hamlets include Clem, Croy (mouth of Hay Cr), Alville, and Trail Forks. Many of these were short lived.

A review of the Historic Index files indicates that there were few filings in the Hay Creek drainage proper, between the mouth and the confluence of Ten Mile Creek. In 1902 a Homestead claim was filed at the mouth of Ten Mile Creek but was relinquished in 1908. The same area went to Homestead patent in 1920. A United States Geological Survey 15' Condon, OR map dated 1916, indicates buildings at the above mentioned location as well as another just up stream. Most structures on the map occur on the flats above the Hay Creek drainage.

The area today is utilized similarly to historic times. Dry land farming and livestock grazing are the principle economic land uses practiced in the project area. No historic sites have been recorded within the project area and the expectation for such sites is low due to the narrow and rocky nature of the canyon.

11. Native American Religious Concerns
There is no known current use of the area by Native Americans for religious or traditional subsistence activities.

12. Native American Traditional Interests

Four tribal governments maintain traditional interests in the planning areas addressed in the Prineville District RMPs (Two Rivers, Brothers / La Pine, and John Day). Included are lands ceded to the U.S. Government by tribal governments of the Confederated Tribes of Warm Springs and the Confederated Tribes of Umatilla in ratified treaties. Also included are lands of traditional interest to the Burns Paiute for which no treaties were ratified. Treaty rights provide for off-reservation hunting, fishing, gathering, and grazing activities by the Warm Springs and Umatilla Tribes.

The heritage-related interests of contemporary Native Americans include the protection of Indian burials and archaeological sites, as well as the perpetuation of traditional practices. Federal legislation and Departmental policy recognize that federal land-managing agencies have a continuing trust responsibility to honor the terms of the treaties and to protect the rights of Indian Nations, as well as the resources that provide for those rights.

A Memorandum of Understanding has been developed between the BLM and the Confederated Tribes of Umatilla regarding the appropriate level and timing for consultation that may be required by the Archaeological Resources Protection Act (1979), NEPA (1969), and the National Historic Preservation Act (1966). That is, the BLM will consult with the appropriate tribal representatives in the earliest stages of project or activity planning that may affect tribal interests.

13. Recreation

There is no legal access to public lands on the Pryor Farms allotment. There are no recreational facilities and no developed trails.

B. Resource Activities and Land Uses

1. Access

Several roads and four-wheel drive trails exist in the area. Legal access to the public lands on the allotment is blocked, however, by private roads. Permission to use the roads must be obtained from the private land owner.

2. Livestock Grazing

Until recently, the involvement of the BLM in grazing management on the Pryor Farms allotment has been limited. Since a range survey for the area was not completed, in 1974 carrying capacity of the public land was lowered, at the land owner's request, from 160 to 50 AUMs. The carrying capacity of the private lands fenced in with public lands had not been established. Since the rancher could dictate use levels on the private land portion of a pasture, unilateral attempts by the BLM to reduce livestock numbers of mixed ownership pastures were frustrated.

The development of the range resources is severely limited by the topography and the remoteness of a large percentage of the grazing allotment. Some of the pasture (and

even allotment) boundaries are rock cliffs or steep slopes which cattle don't generally penetrate. However, the boundaries are not 100% effective. Other boundaries are fenced, but poorly maintained and subject to periodic fire and elk damage. As a result, cattle from the Pryor Farms allotment stray to other property. This area is classified as an "open range", meaning that the responsibility lies with the property owner (except in the case of publicly owned land) to exclude livestock which might stray on his land rather than lying with the livestock owner to restrict his cattle from trespassing.

C. Socio - Economic Conditions

Eastern Oregon has been occupied by humans for at least 10,000 years. Prior to European occupation, this area was used and occupied primarily by the Tenino tribe. Other tribes, including the Wasco and Umatilla, also used the area.

European exploration of eastern Oregon began in the 1820s as a consequence of fur trapping. Homesteads began to appear in eastern Oregon in the 1860s. Eventually the lands came under ownership of a few successful farmers or ranchers. Lands which were considered least desirable for homesteading came under federal management following the passage of the Taylor Grazing Act in 1934.

Ranching and farming practices have evolved in the area such that the land is clearly divided between broad wheat fields on the plateaus and arid rangelands on the slopes and canyon bottoms. Ranching in Gilliam County is most frequently a secondary economic activity to wheat farming.

During the 1980 census, Gilliam County had 2057 residents. Of approximately 910 jobs in the county, 45% were based on farming and ranching. The 1990 census showed Gilliam County with 1717 residents and only 785 total jobs. The 2000 census showed 1915 residents and 1098 total jobs, approximately 18% of which were agricultural based.

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES

A. Items of No Impact

The following Critical Elements were considered, but will not be addressed because they would either not be affected or would not effect other resources. Any future actions that may affect these resources and land use activities would be analyzed in separate environmental assessments.

Air Quality
Areas of Critical Environmental Concern / Resource Natural Areas
Floodplains
Hazardous Wastes
Low Income / Minority Populations

Native American Religious Concerns
Native American Cultural Concerns
Noxious Weeds
Prime and Unique Farmlands
Wild & Scenic Rivers
Wilderness

B. Direct and Indirect Impacts to Resources

1. Impacts to Vegetation Resources

Alternative A: No Action

Though authorized to begin grazing in April, actual turn out has occurred between mid May and late June. Gathering has occurred between October and December. Livestock rotations between pastures have been ineffective, resulting in a portion of the herd grazing in each pasture during the entire grazing period. The relative palatability of upland forage decreases rapidly as the grasses cure in July, which has led livestock to congregate close to the palatable vegetation near water. Livestock dispersal to the uplands has occurred only when utilization of the riparian vegetation has reached heavy to severe levels.

Palatable vegetation in the vicinity of watering sites would continue to sustain heavy to severe grazing pressures. For upland sites near water this would mean continued suppression of perennial grasses and encouragement of annual grasses, particularly cheatgrass. For riparian areas this would mean continued suppression of bank stabilizing species (such as sedges, rushes, and willow) and encouragement of colonizing species (such as brook grass and spikerush). Large patches of the pastures which are further from water or in areas less accessible to livestock would continue to be grazed only slightly or not at all.

Though not current practice, grazing could begin April 1. If that were to happen, repeated and severe defoliation during the critical growing season (approximately May 1 - June 15) would place preferred species at a disadvantage to less desirable species in areas preferred by livestock. If defoliation of the individual plants were to occur every year during the critical growing season, the plants would lose vigor and eventually die. A steady shift in species composition would be expected, away from stands of grass which are in critical growing season during the time the pasture is being grazed (for example, Idaho fescue, bluebunch wheatgrass) and towards species which are not in critical growing season during the time the pasture is being grazed (for example, cheat grass, Sandberg's bluegrass, snakeweed) or towards species which are unpalatable (for example, noxious weeds, medusahead).

Alternative B: Double rotation

The amount of time per year that livestock spend in a pasture would be reduced from that shown in the no action alternative. The amount of forage harvested would

decrease approximately 15%. Livestock dispersal throughout the uplands would increase due to crowding and rapid consumption of forage in the preferred areas.

Grazing would begin June 1, towards the end of the critical growing season for native upland grass species. Because the initial rotation would be two weeks per pasture, forage utilization would be light to moderate in each pasture. The second rotation would begin July 16, during seed shatter, when upland soils are near their driest. The hot season dormancy following seed shatter is among the safest times to graze upland vegetation since most or all of the growth for the season is completed and carbohydrate reserves in the roots and crowns should be nearing their peak. However, because the upland grasses are curing and losing protein this is also the season during which riparian species are preferred.

During the second rotation, livestock would be removed from the North pasture by August 15, leaving approximately six weeks of the growing season for recovery for riparian species. Non-woody riparian vegetation next to the stream channel would have an opportunity to re-grow, producing enough stubble to begin trapping sediments during high flows the following winter and spring. However, livestock would be attracted to the area the following July 16 - August 15 and would graze those grasses back and trample the banks. Essentially, the riparian areas would be starting over from the same point every year. The annual grazing of Tenmile from August 16 - September 15 would not allow stubble to reach the height where trapping of sediments would be certain.

Palatable vegetation in the vicinity of watering sites would continue to sustain heavy to severe grazing pressures. For non riparian plant communities, this would mean continued suppression of perennial grasses and encouragement of annual grasses, particularly cheatgrass. For riparian plant communities, this would mean continued suppression of bank stabilizing species (such as sedges, rushes, and willow) and encouragement of colonizing species (such as brook grass and spikerush). Large patches of the pastures which are further from water or in areas less accessible to livestock would continue to be grazed only slightly or not at all.

Alternative C: CREP

The amount of time per year that livestock spend in a pasture would be reduced from that shown in the no action alternative. However, the amount of forage harvested would remain approximately the same. Livestock dispersal throughout the uplands would increase due to crowding and rapid consumption of forage in the preferred areas.

Grazing would begin in North pasture June 1, towards the end of the critical growing season for native upland grasses. The short duration (24 days) spent in the pasture is expected to greatly reduce the amount of area subjected to heavy grazing. The rotation system for the remaining three pastures focuses use during hot season dormancy. The hot season dormancy following seed shatter is among the safest times to graze upland vegetation since most or all of the growth for the season is completed

and carbohydrate reserves in the roots and crowns should be nearing their peak. However, because the upland grasses are curing and losing protein this is also the season during which riparian species are preferred.

Hay Creek would be excluded from livestock use, allowing riparian vegetation next to the stream channel to have an opportunity to produce enough stubble during summer to begin trapping debris and sediments during high flows the following winter and spring. Most of the gains in channel roughness and sediment from one year are expected to survive until the next series of high flow events such that a progression of bank building and stabilizing would occur. Riparian conditions would begin to favor bank stabilizing species over colonizing riparian species, leading to diverse riparian plant communities that fully occupy the potential rooting soil volume.

Riparian areas to which livestock would continue to have access, such as Tenmile Creek, would attract much of the livestock use during the hot season. While the rotation system would vary the timing of use from one year to the next, the regular hot season use would not allow the year upon year gains that would occur at Hay Creek. Vegetative response would be similar to Alternative B.

Alternative D: Proposed action

The amount of time per year that livestock spend in a pasture would be reduced from that shown in the no action alternative. However, the amount of forage harvested would remain approximately the same. Livestock dispersal throughout the uplands would increase due to crowding and rapid consumption of forage in the preferred areas.

Grazing in the North pasture would occur April 4 - May 1, prior to the start of the critical growing season for native upland grasses. Since defoliation would normally be followed by a period of adequate soil moisture, full recovery of carbohydrate reserves in roots and crowns of native perennials is expected. Use of the East pasture would alternate between critical growing season use and hot season dormancy. This prescription would allow perennial grasses to fully recover every other year and little deterioration would occur. Use of the Tenmile pasture would alternative between May 2 - July 26 and June 14 - September 7. The annual use during June 14 - July 26 corresponds to late critical growing season, particularly during years with cool springs when critical growing season is delayed. This prescription could reduce recovery of perennial grasses and could contribute to a loss of native grasses in areas of heavy to severe use.

Use of Hay Creek riparian area is likely to be light during April 4 - May 1. During most years herbaceous species are covered by high water at this time. Also, the cool air drainage and high relative palatability of upland grasses further encourages livestock to disperse to the uplands. Use is expected to be light to moderate on the lowest slopes and flood plains. Use is expected to be slight to none in the active channel. This would allow riparian vegetation next to the stream channel to have an opportunity to produce enough stubble during summer to begin trapping debris and

sediments during high flows the following winter and spring. Most of the gains in channel roughness and sediment from one year are expected to survive until the next series of high flow events such that a progression of bank building and stabilizing would occur. Riparian conditions would begin to favor bank stabilizing species over colonizing riparian species, leading to diverse riparian plant communities that fully occupy the potential rooting soil volume.

Riparian areas to which livestock would continue to have access during the hot season, such as Tenmile Creek, would attract much of the livestock use. While the rotation system would vary the timing of use from one year to the next, the regular hot season use would not allow the year upon year gains that would occur at Hay Creek. Vegetative response would be similar to Alternative B.

Alternative E: No Grazing

Forage use by livestock would be eliminated in the North pasture. In the East pasture grazing would occur only after critical growing season. In Tenmile pasture use would occur according to an agreement between the CTWS and livestock operator. The amount of forage harvested in East and Tenmile pastures would remain similar to that described in Alternative A. Livestock dispersal throughout the uplands is expected to increase due to crowding and rapid consumption of forage in preferred areas.

The lack of defoliation in North pasture would lead to full recovery of carbohydrate reserves in the roots and crowns of existing perennial grasses within one year. In the East pasture, grazing would begin just after the normal critical growing season and extend into hot season dormancy. The hot season dormancy following seed shatter is among the safest times to graze upland vegetation since most or all of the growth for the season is completed and carbohydrate reserves in the roots and crowns should be nearing their peak. However, because the upland grasses are curing and losing protein this is also the season during which riparian species are preferred. Palatable vegetation in the vicinity of watering sites would continue to sustain heavy to severe grazing pressures.

There would be no livestock use of Hay Creek riparian area. This would allow riparian vegetation next to the stream channel to have an opportunity to produce enough stubble during summer to begin trapping debris and sediments during high flows the following winter and spring. Most of the gains in channel roughness and sediment from one year are expected to survive until the next series of high flow events such that a progression of bank building and stabilizing would occur. Riparian conditions would begin to favor bank stabilizing species over colonizing riparian species, leading to diverse riparian plant communities that fully occupy the potential rooting soil volume. There are no sensitive riparian areas in the East pasture, and management of the Tenmile Creek riparian area would depend upon the agreement reached between the livestock operator and the CTWS.

2. Impacts to Soil Resources

Alternative A: No Action
Soil compaction would continue to occur around spring sites, watering troughs, and riparian areas due to a concentration of cattle. Infiltration rates would not be expected to recover in these areas and could even be reduced from the currently low levels. Maintenance of predominantly annual vegetation and snakeweed on the lower slopes adjacent to Hay and Tenmile Creeks would lead to a steady erosion of soils. In areas which are not favored by livestock, soil processes would continue unimpaired.

Alternative B: Double Rotation
The intensification of livestock management would create livestock distribution changes. However, because full access to riparian areas would be maintained, the change in distribution is expected to be undetectable with regards to the soil resource. The majority of use would occur during the season of least precipitation and highest temperatures. While subsequent compaction of upland soils is expected to be minimal under this grazing prescription, the disturbance of microbiotic soil crusts (such as mosses and lichens) is expected to be high in areas favored by livestock. As a result, infiltration and erosion rates are unlikely to change.

Alternative C: CREP
Some localized vegetation and soil disturbances would occur during fence construction. Soil compaction would continue in areas around livestock and wildlife watering sites. Soils in the Hay Creek exclosure would gradually recover water holding capacity as debris and sediment trapping and the amount and diversity of vegetation increased. Because greater dispersal of livestock is anticipated due to the restriction of livestock access to the Hay Creek riparian area, the disturbance of previously undisturbed microbiotic soil crusts is expected to increase.

Alternative D: Proposed action
Some localized vegetation and soil disturbances would occur during fence construction. Soil compaction would continue in areas around livestock and wildlife watering sites. Shifting the use period to early spring use in the North Pasture would encourage livestock to disperse away from Hay Creek. Soils near Hay Creek would gradually recover water holding capacity as debris and sediment trapping and the amount and diversity of vegetation increased. Because greater dispersal of livestock is anticipated due to the restriction of livestock access to the Hay Creek riparian area, the disturbance of previously undisturbed microbiotic soil crusts is expected to increase. Impacts to crusts on most public lands, however, would be mitigated by their greater ability to withstand disturbance when moist.

Alternative E: No Grazing
Trampling by livestock would be completely stopped in those pastures which received non-use. Soil compaction would continue in areas around wildlife watering sites. Soil processes in pastures with continued grazing would depend upon the intensity of management. In East pasture, the majority of use would occur during the season of least precipitation and highest temperatures. While subsequent compaction of upland soils is expected to be minimal under this grazing prescription, the

disturbance of microbiotic soil crusts is expected to be high in areas favored by livestock.

3. Impacts to Fish and Aquatic Habitat and Riparian Resources

Alternative A: No Action
Unrestricted grazing during late spring, summer, and fall would allow the livestock to continue to use the Hay and Tenmile Creek riparian zones for forage and water. The excessive use of riparian zones by large ungulates could cause high mortality of aquatic macroinvertebrates (Reed, 1995) and amphibians. Additionally, the riparian vegetation would continue to be suppressed by grazing and browsing, limiting the effectiveness of the riparian zone in trapping sediments and retaining ground water. This reduced capacity of the riparian zone to function properly would contribute to a further degradation of aquatic habitat, such as increases in width to depth ratios, decreases in shade, and increases in water temperature. An undetermined amount of sediment would be transported to the John Day River. Increased sediment loads in the main stem could hinder adult and smolt migration and reduce macroinvertebrate (food) availability.

Alternative B: Double Rotation
The regrowth and recovery of vigor in Hay Creek riparian vegetation during late August and September could lead to a seasonal increase in shade, sediment trapping capability, and aquatic macroinvertebrate habitat over that described for Alternative A. However, the recovery of riparian vegetation vigor is not expected to carry over from one year to the next because of the annual grazing during low water. As a result, species diversity, stand structure, and bank stability would likely remain effectively unchanged.

Alternative C: CREP
Cessation of grazing in the riparian zone during low flows would allow the recovery of vigor of riparian vegetation to carry over from one year to the next. The steady increase in the quantity of riparian vegetation and soils would increase the water retention properties of the riparian zone, increase stream shade through increased growth of woody and herbaceous vegetation, increase the buffering of water temperatures, and encourage stream bank formation. These improvements in aquatic habitat could lead to increased populations of aquatic macroinvertebrates, a primary food source for juvenile steelhead, possibly leading to greater steelhead survival rates. The stable and diverse riparian habitat would also increase amphibian populations.

Alternative D: Proposed action
The use of Hay Creek during April every year would limit use to periods of high stream flow. During this time upland vegetation has a greater relative palatability than riparian vegetation. Use is expected to be light on the lowest slopes and flood plains. Use is expected to be slight to none in the active channel. The steady increase in the quantity of riparian vegetation and soils would increase the water retention properties of the riparian zone, increase stream shade through increased growth of

woody and herbaceous vegetation, increase the buffering of water temperatures, and encourage stream bank formation. These improvements in aquatic habitat could lead to increased populations of aquatic macroinvertebrates, a primary food source for juvenile steelhead, possibly leading to greater steelhead survival rates. The stable and diverse riparian habitat would also increase amphibian populations.

Alternative E: No Grazing
The use of Hay Creek would be eliminated. The steady increase in the quantity of riparian vegetation and soils would increase the water retention properties of the riparian zone, increase stream shade through increased growth of woody and herbaceous vegetation, increase the buffering of water temperatures, and encourage stream bank formation. These improvements in aquatic habitat could lead to increased populations of aquatic macroinvertebrates, a primary food source for juvenile steelhead, possibly leading to greater steelhead survival rates. The stable and diverse riparian habitat would also increase amphibian populations.

4. Impacts to Special Status Plant Species

With the exception of a suspected site of hepatic monkeyflower, no special status plants are known from the allotment. For hepatic monkeyflower, since its habitat is moist rock cliffs and vertical walls, no impacts would be expected under any of the alternatives.

Should the above special status plants occur in the allotment, alternatives C, D and E, which would encourage improvement of wetlands, would be beneficial to porcupine sedge and Columbia cress. Likewise, improvement of upland vegetation, which would be expected under these alternatives as well, would likely be beneficial to Lawrence's milkvetch and disappearing monkeyflower. The no action alternative would likely be detrimental to these plants.

No effects to dwarf evening-primrose, cushion coryphantha or Watson's desert parsley would be expected under any of the alternatives. Dwarf evening-primrose habitat consists of highly disturbed, unstable gravels within ephemeral drainages and is not affected by grazing. Cushion coryphantha is found on rocky soils and as a cactus is not normally impacted by livestock grazing, except by trampling. Watson's desert parsley, as many tuberous-rooted biscuitroots are, is found primarily in rocky soils. Livestock grazing is not normally detrimental to this plant due to the plant's short stature, early flowering and tough root.

5. Impacts to Wildlife Resources

Alternatives A and B
Populations of large ungulates are closely associated with available water, hiding cover, and alfalfa fields, all of which should remain relatively similar to current conditions. Species diversity of animals more dependant on riparian habitat (such as

amphibians, birds, and small mammals) would remain suppressed and some localized extirpation could occur.

Alternatives C, D, and E
Habitat of large ungulates is expected to become more favorable due to the expected increase in riparian habitat. This improvement is likely to be tempered somewhat by the presence of fences near Hay Creek. The improvement in habitat may not be large enough to affect population levels. However, populations of the smaller species, such as amphibians and birds, are likely to be directly affected by the increase in riparian habitat. A more even distribution of grazing pressure would mean that some areas not currently receiving use may begin to sustain pressure. If these areas coincide with areas important to ground nesting species, some conflict would develop. The pasture rotations, however, are expected to greatly mitigate any such effect.

6. Impacts to Cultural and Historical Resources

Alternatives A and B
Impacts from livestock management have not been identified at this time.

Alternatives C, D, and E
The Resource Area Archeologist would be involved in the location process for range improvements.

7. Socio - Economic Impacts

Alternative A: No Action
The costs associated with the grazing management operation are confined to maintenance of existing fences, springs, and dams, and labor for turning animals out onto the range and gathering.

Alternative B: Double rotation
The costs associated with the grazing management operation would be confined to maintenance of existing fences, springs, and dams, and labor associated with five pasture moves in addition to the turn out and gathering.

Alternative C: CREP
Additional costs would include construction and maintenance of approximately six miles of fence along Hay Creek. Also, providing water to livestock in both the North and Middle pastures would require an undetermined amount of water gaps and / or pumps and troughs to install and maintain. There would be three pasture moves in addition to turn out and gathering.

Alternative D: Proposed action
Additional costs would include construction and maintenance of approximately three miles of fence along Hay Creek. Also, providing water to livestock grazing west of the fence would require installation and maintenance of an undetermined amount

(though less than in Alternative C) of water gaps and / or pumps and troughs. Approximately two miles of existing fence separating North Pasture from Tenmile and East pasture would be removed. Another mile of fence would be constructed that extends the existing fence on the ridge separating Tenmile pasture from East pasture north to intersect with the fence built along Hay Creek. There would be two pasture moves in addition to turn out and gathering.

Alternative E: No Grazing
The costs associated with the grazing management operation would be similar to the No Action alternative, since livestock on neighboring ranches would continue to seek access to the lands closed to grazing. Grazing harvest, as expressed in turns of AUMs, would fall by approximately 38%. There would be one pasture move in addition to turn out and gathering.

C. Cumulative Impacts

Cumulative impacts are impacts on specific resources which result from the incremental impact of agency action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. The proposed actions described in this document would have impacts only on the resources shown in Chapter IV, B (that is, vegetation, soils, fish, aquatic, riparian, special status species, and wildlife). Those resources, therefore, are the only resources upon which there may be an accumulation of impacts from actions not described in this document.

Scoping for this project did not reveal any need to exhaustively list individual past actions or analyze, compare, or describe the environmental effects of these actions. The current conditions on lands potentially affected by the Proposed Action and its alternatives result from a multitude of natural and human events that have taken place over many decades. A complete, detailed description and analysis of all events and their effects is not possible to compile, would be unduly costly to explore in detail, and would not provide any clearer picture of the existing environment. Key past events believed to have shaped current environmental conditions in the project area include weather cycles, increased human settlement, exploitative livestock grazing and fishing practices, construction of hydroelectric dams on the Columbia River, and general exclusion of unplanned fire.

There are no known present or reasonably foreseeable future actions within the grazing allotment that have not already been described and analyzed in this document. Because impacts from actions within the grazing allotment have already been described, the only resources for which there would be an additional impacts from actions not described in the document are those resources that leave the grazing allotment, specifically fish, water, and wildlife.

The present and foreseeable future actions outside the grazing allotment with the greatest accumulation of impacts are efforts within the Hay Creek basin (see Hay Creek / Scott Canyon Watershed Assessment) to increase the capture, storage, and beneficial release of

water. With the continuing success of activities on private lands in the basin, water arriving at this grazing allotment is expected to become lower in temperature and turbidity, higher in dissolved oxygen and populations of aquatic organisms, and flows are expected to increase during the dry season. Such changes are expected to increase the habitat elements that are conducive to steelhead spawning and rearing both in the grazing allotment as well as downstream. The wildlife populations are expected to respond to any concomitant increase in the amount and diversity of riparian vegetation, especially changes in structural diversity.

CHAPTER V. CONSULTATION AND COORDINATION

Internal:

Jeff Moss	Fisheries
John Zancanella	Archaeology
Craig Obermiller	Range / Preparer

External:

Lessee currently authorized to graze livestock in the Pryor Farms allotment

Bill Reynolds	Confederated Tribes of the Warm Springs
Scott Turo	Confederated Tribes of the Warm Springs
Terry McElroy	Watershed Council Coordinator
Bill Ewing	SWCD Riparian Buffer Specialist
Scott Hoefer	National Marine Fisheries Service
Ed Teel	Natural Resource Conservation Service
Josh Coiner	Natural Resource Conservation Service
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CHAPTER VI. LIST OF PREPARERS AND REVIEWERS

Jeff Moss
Fishery Biologist — Signature — Date

Craig Obermiller
Rangeland Management Specialist — Signature — 16 JUL 07 — Date

John Zancanella
Archaeologist — Signature — 7/23/07 — Date

The NEPA Requirements have been adequately met:

Teal Purrington
Environmental Coordinator — Signature — 8/14/08 — Date

VII. LITERATURE CITED

Bureau of Land Management, USDI. 1984. Rangeland monitoring, actual use studies. TR 4400-2. BLM Service Center, Denver, CO. 8 pp.

Bureau of Land Management, USDI. 1985a. Two rivers resource management plan, draft environmental impact statement. BLM, Prineville, OR. 150 pp.

Bureau of Land Management, USDI. 1985b. Rangeland monitoring in Oregon and Washington. Oregon State Office, Portland, OR. 54 pp.

Bureau of Land Management, USDI. 1986. Two rivers resource management plan, record of decision, rangeland program summary (RPS). BLM, Prineville, OR, 61 pp.

Bureau of Land Management, USDI. 1993. Riparian area management, process for assessing proper functioning condition (TR 1737-9 1993). BLM Service Center, Denver, CO. 51 pp.

Bureau of Land Management, USDI. 1996. Sampling vegetation attributes. National Applied Resource Sciences Center (BLM/RS/ST-96/002+1730). USDI, BLM, NARSC, Denver, CO. 163 pp.

Bureau of Land Management, USDI. 2005. Standards for Rangeland Health and Guidelines for Livestock Grazing Management, Evaluation and Determination of Public Lands in the Pryor Farms (#2607) Grazing Allotment. Prineville District, Prineville, OR. 13 pp.

Forest Service, USDA and Bureau of Land Management, USDI. 1995. Decision notice/decision record, finding of no significant impact, environmental assessment for the interim strategies for managing anadromous fish-producing watersheds in eastern Oregon and Washington, Idaho, and portions of California. USDA, FS and USDI, BLM, Washington DC.

Johansen, J. R. 1993. Minireview, cryptogamic crusts of semiarid and arid lands of North America. Journal of Phycology, 28:139-147.

Reed, T. L. 1995. Macroinvertebrate drift in managed streams. Posterboard presented at the 80th Annual Ecological Society of America Meeting, Snowbird, Utah, 30 July - 3 August, 1995.

Soil Conservation Service. 1984. Soil Survey of Gilliam County, Oregon. USDA, SCS in cooperation with Oregon Agriculture Experiment Station. 250 pp.

West, N. E. 1990. Structure and function of soil microphytic crusts in wildland ecosystems of arid and semi-arid regions. Adv. Ecol. Res. 20: 179-223.

Young, W. H. 1986. John Day river basin. State of Oregon, Water Resources Department, Salem, OR. pp. 264.

CHAPTER VIII. APPENDICES

Appendix A. Fence construction specifications

Stress panels would be installed every quarter mile. They would be built according to the specifications shown in the BLM Barbed Wire Fence, Type-A or Type-B, Drawing No. 02833-1 or 02833-2, dated March 9, 1984.

All **corner panels** would be either three-post or five-post depending on the amount of stress that would be placed on each corner. They would be built according to the specifications shown in the BLM Corner Panels, Drawing No. 02833-9, dated May 22, 1984.

Live **juniper trees** with a DBH of eight inches or greater may be used in place of corner panels when they occur at the needed location. Tree limbs would be removed to a height of approximately six feet. Two, two-by-fours or two-by-sixes, at least 30 inches long, would be nailed to the tree and the wires attached to the boards.

Gates would be four wires and would be built according to the specifications shown in the BLM Wire Gates diagram, Drawing No. 02833-6, dated May 30, 1984.

Vegetation clearing of trees and brush would be allowed only where it interferes with the efficient placement of wires and posts. All areas where vegetation would be removed must be flagged and authorized for vegetation removal prior to construction starting. An area no greater than four feet on either side of the fence line would be cleared. Only trees and brush would be removed, but no digging or pulling-out by the roots would be allowed. Also, no blading with heavy equipment would be authorized.

Wire spacing (inches above ground surface) would be as follows: 18, 22, 28 and 40. All fence posts would be metal, five-and-a-half feet long. The post spacing would be sixteen-and-a-half feet (one rod). One 30 inch long wire stay would be placed halfway between each post with the bottom five inches removed. Metal clips would be used to fasten the wires to the fence posts. (See Barbed Wire Fence, Type-A; Drawing No.02833, dated March 9, 1984.)

Live juniper trees may be used in place of fence posts when the trees are on the fence line. Tree limbs would be removed to a height of approximately six feet. Two, two-by-fours or two-by-sixes, at least 30 inches long, would be nailed to the tree and the barbed wires stapled to the boards.

Appendix B. Spring development construction specifications

The following specifications would be used as the standard for development of all the proposed springs.

Fence. Each spring area would be fenced to prevent damage to the collection systems and protect the riparian area. Four strand barbed wire fences would be constructed based on the specifications used for this type of fence in Appendix C.

Collection System. Springs would be dug out using a backhoe or by hand to install the collection system. The focal point of the system would be the head box consisting of a length of three foot diameter metal culvert. Sections of perforated four to six inch diameter PVC pipe may be used of increase the water capturing capabilities of the system. To minimize sediment infiltration into the capture system, first, gravel or small rock would be laid down, followed by some type of screen material, the water capture system, more rock, screen material, rock and a final layer of soil. The head box would be filled with rock and covered with a lid.

Concrete or butyl rubber cutoff walls would be installed if necessary to stop the flow of water away from the collection area and concentrate water at the head box.

Pipe. The water supply and overflow pipes would consist of one-and-a-half inch black plastic pipe with a 100 psi rating. The overflow pipe would return any excess water back to the same drainage. All pipe would be buried to a depth of approximately sixteen inches.

Troughs. Troughs would be placed on a level foundation of 8" by 8" treated timbers or similar type material. They may be made from steel, fiberglass, plastic or concrete. The colors may be green, brown or gray. Some type of bird ramp would be installed in each trough. Float valves would be installed as needed to control the rate of flow.

Appendix C. Monitoring study descriptions and applications

Upland Vegetation and Soil Cover.

Daubenmire Transects monitor vegetation trend of individual species and ecological condition by measuring species composition, cover and frequency (BLM, 1996).
3x3 Photo Plots monitor trend of individual plant species by measuring vigor, recruitment and persistence of individual plants (BLM, 1996).
Special Status Plants monitors condition and trend of known populations by measuring population size, vigor, reproduction and threats (BLM 1985b).

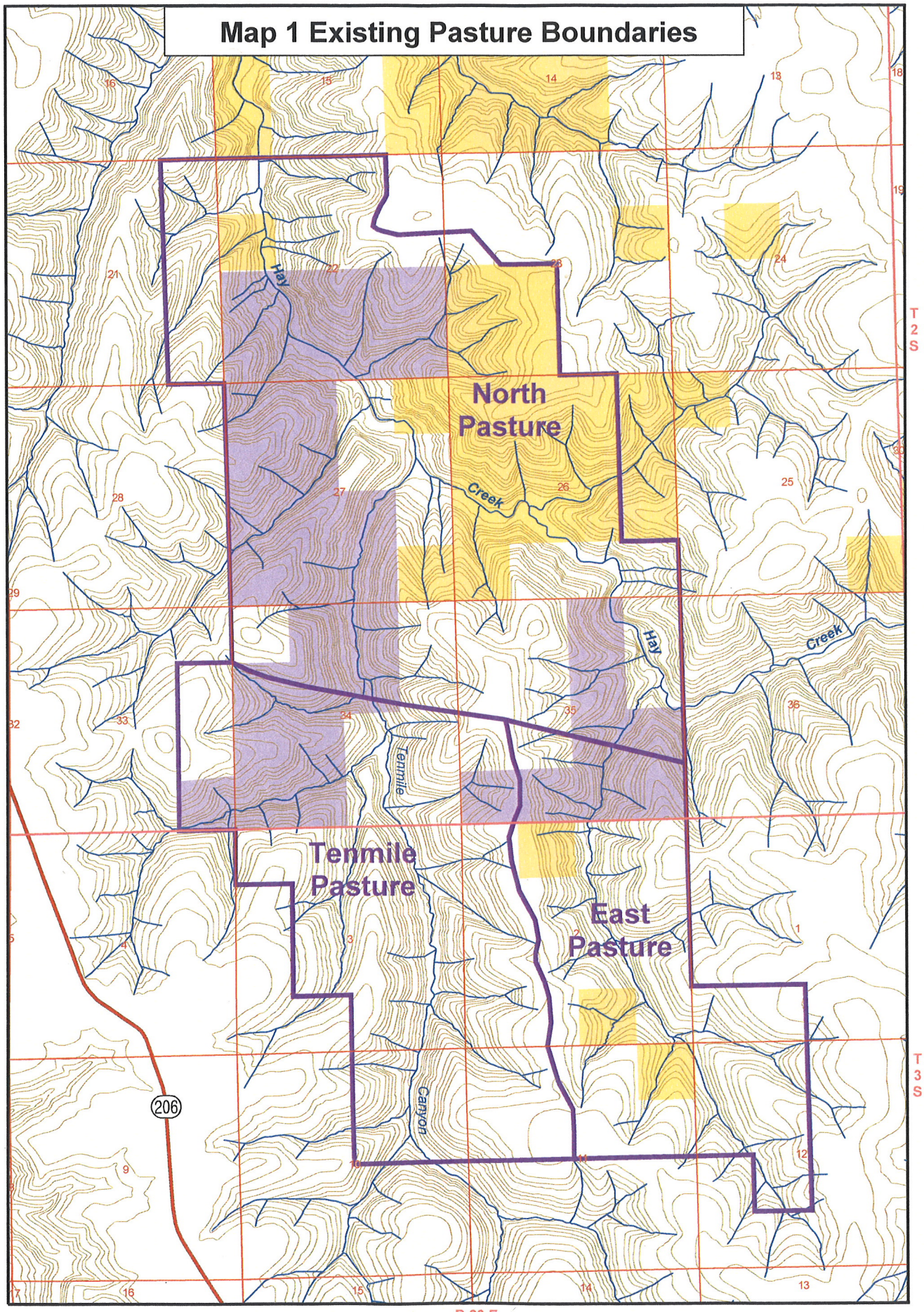
Vegetation Utilization.

Actual Use monitors amount of livestock use by measuring the period of grazing use and number of animals (BLM, 1984).
Key Species monitors grazing intensity of target perennial species by measuring percent of vegetation removed per species in a specific area (BLM, 1996).

Riparian / Fish Habitat.

Cover Boards monitor riparian vegetation trend by measuring changes in structure and cover of specific plants (BLM, 1996).
General View Pictures monitor riparian vegetation trend by documenting conditions (BLM, 1996).
Spawning Survey monitors steelhead spawning activities by counting redds in available habitat (Coordinated with Oregon Dept of Fish and Wildlife).
Proper Functioning Condition monitors in an interdisciplinary team framework the hydrological, geomorphological, and biological components of a riparian area and associated uplands (BLM, 1993).

Map 1 Existing Pasture Boundaries



Legend

- Exisiting Pryor Farms Allotment Boundary
- Bureau of Land Management
- Confederated Tribes of Warm Springs
- Private

N

Contour Interval = 40 feet
Scale = 24,000
2.64 inches per mile

0 0.25 0.5 1 Miles

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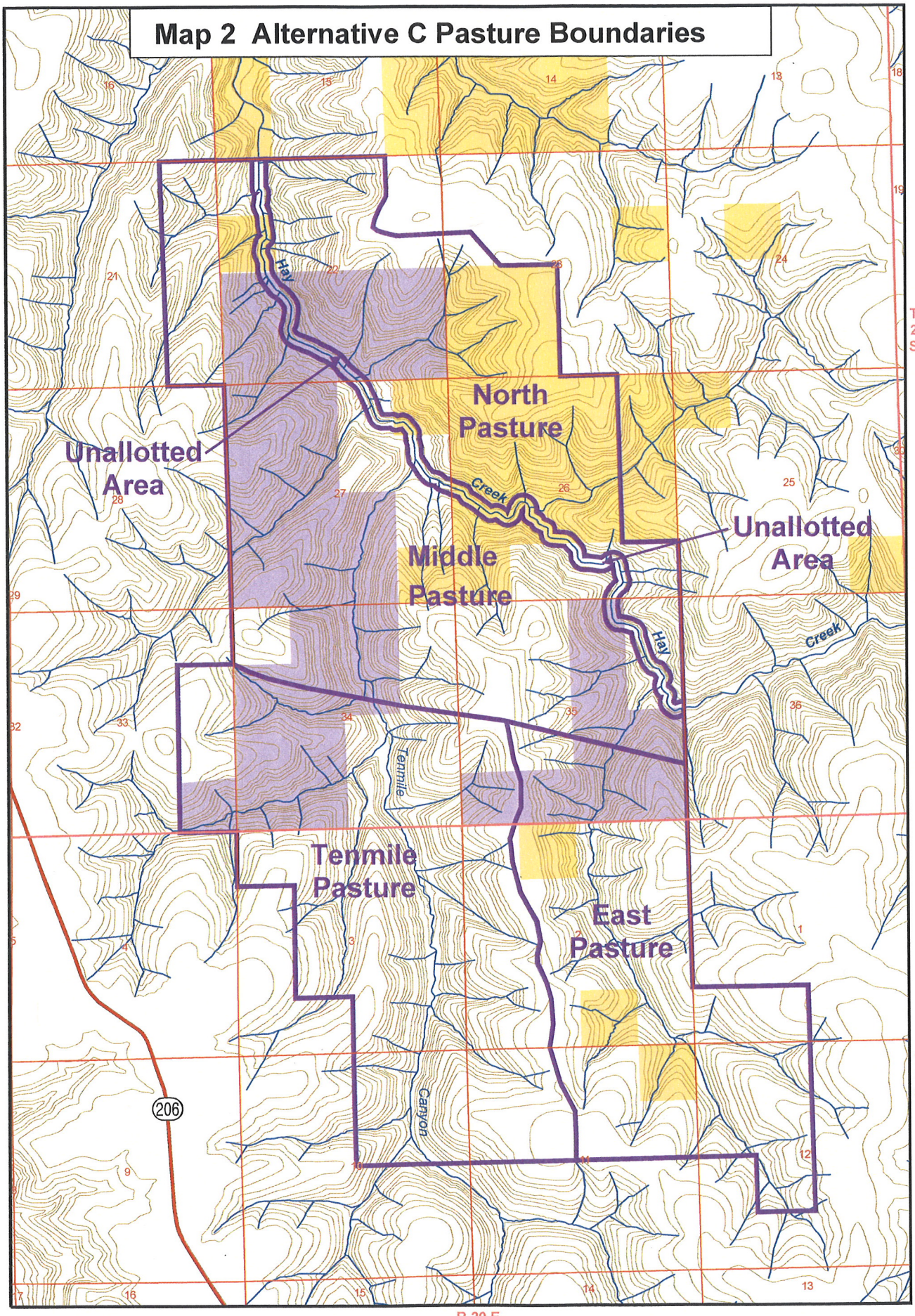
Map 2 Alternative C Pasture Boundaries



Legend

- Pryor Farms Alternative C Boundary
- Bureau of Land Management
- Confederated Tribes of Warm Springs
- Private

Contour Interval = 40 feet
Scale = 24,000
2.64 inches per mile

0 0.25 0.5 1 Miles

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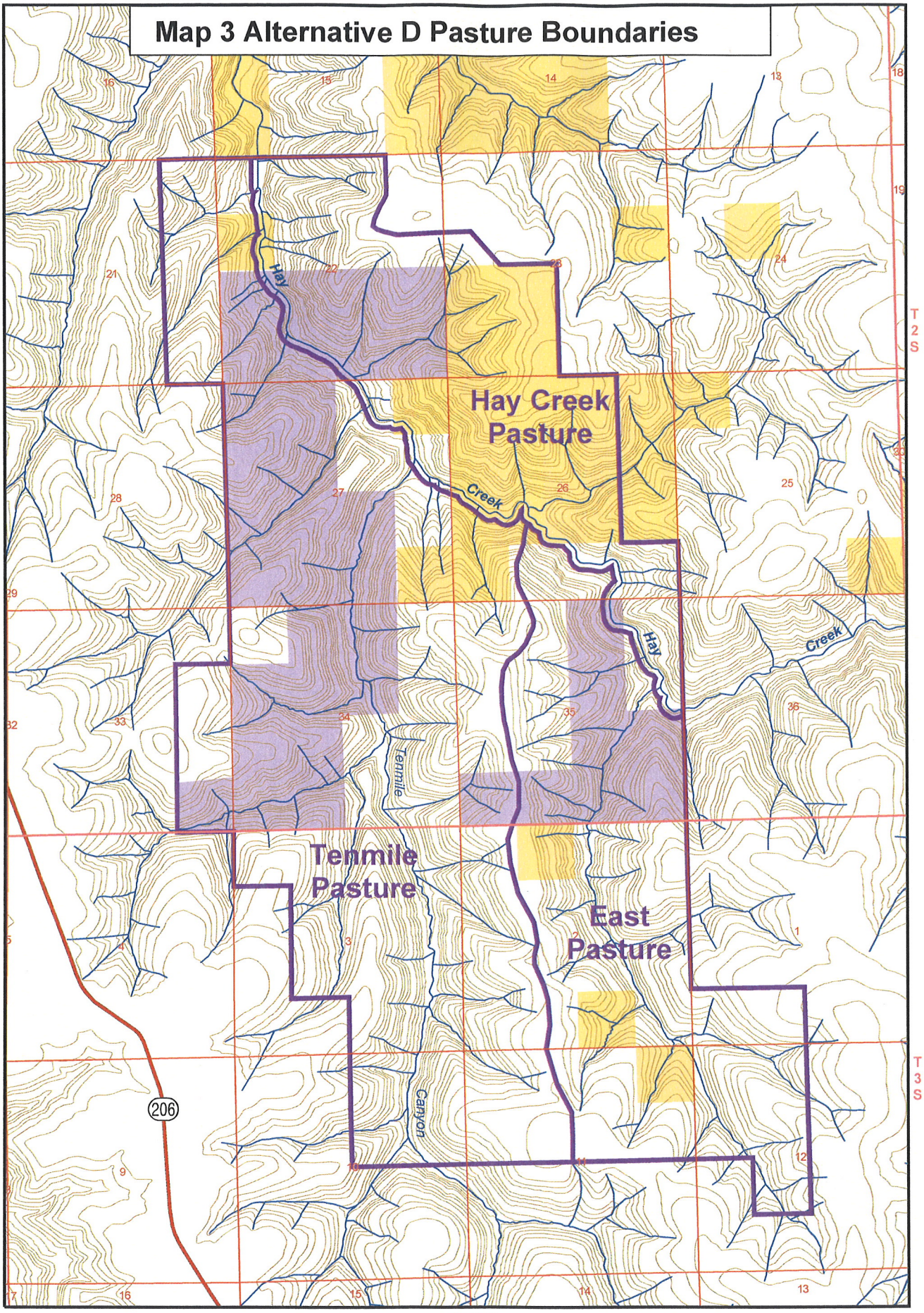
Map 3 Alternative D Pasture Boundaries



Legend

- Pryor Farms Alternative D Boundary
- Bureau of Land Management
- Confederated Tribes of Warm Springs
- Private

Contour Interval = 40 feet
Scale = 24,000
2.64 inches per mile

0 0.25 0.5 1 Miles

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