8/29/00

EDGE CREEK ALLOTMENT (#0102)
RANGELAND HEALTH STANDARDS ASSESSMENT
KLAMATH FALLS RESOURCE AREA - KLAMATH FALLS, OREGON

Introduction

The *Topsy-Pokegama Landscape Analysis* (TPLA) area contains all or portions of 7 BLM grazing allotments in the Klamath Falls Resource Area (KFRA). This includes all of the Chase Mountain (0101), Dry Lake (0140), Chicken Hills (0141), Edge Creek (0102), and Dixie (0107) allotments. The TPLA also includes small portions of the Grub Springs (0147) and Buck Mountain (0103) allotments. The latter two allotments are being addressed in ongoing assessments: Grub Springs as part of the *Spencer Creek Pilot Watershed Analysis* (SCPWA) *Rangeland Health Standards Assessment* and Buck Mountain as part of the *Jenny Creek PWA Rangeland Health Standards Assessment* (JCPWA). Chase Mountain, Dry Lake, and Chicken Hills will be addressed in a combined assessment entitled the *East TPLA Rangeland Health Standards Assessment* and Dixie will be addressed in its own individual assessment. Both these assessments are scheduled for completion later in 2000.

This assessment will address only the Edge Creek allotment. The Edge Creek Allotment (#0102) is located in the southwest corner of the Klamath Falls Resource Area (KFRA) in the central portion of the TPLA. Please reference the attached map for a spacial orientation of the area. Edge Creek is an ownership fragmented grazing allotment that is comprised of approximately 8,860 acres of BLM administered lands mixed in with almost 30,000 acres of private land. The majority of the private lands are managed for intensive timber production and are owned by U.S. Timberlands, Inc. (UST), headquartered in Klamath Falls, Oregon. UST is the 1996 successor to the Weyerhaeuser Company (Weyco), who owned and logged the land for many decades.

The 1994 Northwest Forest Plan (NFP) required the completion of watershed analysis reports for all watersheds within the scope of that Plan; an area which includes those portions of the Klamath Falls Resource Area (KFRA) west of highway 97 in southwestern Klamath County. The Topsy-Pokegama area was analyzed in 1995-1996, with the final *Topsy-Pokegama Landscape Analysis* (TPLA) being issued in July 1996. The TPLA was completed by the KFRA staff with minor input from several other state and federal agencies, and the Weyerhaeuser Company. This analysis was designed to accomplish the following (quoted out of the TPLA, page 6):

> This analysis describes the current understanding of the processes and interactions of concern occurring within the Topsy/Pokegama landscape. The analysis looked at the entire area regardless of ownership so that a more complete understanding of the landscape could be achieved. It is intended to guide management on the federal lands within the landscape. It is also meant to help us understand how past land use activities interact within the physical and

> biological environments in the landscape. This analysis provides a logical way to learn more about how ecological systems function within the landscape. This information is essential to protect beneficial uses and to protect and sustain the natural systems that society depends upon. The analysis provide a vehicle to efficiently identify and balance multiple concerns. The analysis provides a summary of trends for resources where restoration actions are needed.

The TPLA does not precisely follow the boundaries of any specific watershed; thus the "landscape analysis" title. It essentially covers the remainder of the KFRA's "westside" that was not analyzed in the SCPWA to the north or the Jenny Creek PWA to the west and northwest. (The JCPWA was completed by the Ashland Resource Area (ARA) staff, with minor input from the KFRA staff; primarily providing information and review.) In addition, the TPLA does not necessarily follow the precise boundaries of the allotments; boundaries which are based on a mix of topography, political boundaries, land ownership patterns, and/or area specific historic events.

(Note: All of the TPLA area was originally part of the Medford BLM district. During a reorganization of the KFRA in 1988, these allotments - and all other management - were transferred to KFRA administration just after the 1988 grazing season.)

Current BLM policy direction is to primarily address grazing use as it relates to the 5 Standards for Rangeland Health (W.O.I.M. #98-91 and I.B. #OR-98-315). If one or more of the Standards are not met and the cause is <u>not</u> grazing, solutions may be pursued through non-range related remedies. Although non-grazing causes may be identified if known, proposing non-range remedies is beyond the policy defined scope of Rangeland Health Standards Assessments.

This assessment will begin with a brief, by pasture, overview of the allotment. Following that will be a Standard specific review of the pertinent information for each of the 5 Standards. References to and quotes from the TPLA - and other documents - will be made as appropriate, since the TPLA forms the primary basis for this assessment. The TPLA was an allotment evaluation functional equivalent, and thus, fully assessed the Edge Creek allotment based on the information at that time. However, the TPLA is a large document and this assessment will only briefly summarize or condense some of the appropriate major points and/or conclusions. (There has been additional information collected since the completion of the TPLA in 1996 that will also be briefly evaluated here, as this assessment will also act as an allotment evaluation update to the TPLA.)

At the end of this assessment, a "call" will be made on whether the overall Standards are met or not being met, and if not met, whether significant progress is being made towards meeting. If not met, or significant progress towards meeting is not occurring, appropriate grazing management changes would be proposed to move the management towards meeting the Standards. Reference the TPLA, or other noted documents, for more comprehensive information on the grazing, vegetation, and other resource uses and conditions for this area.

As with other documents of its kind, the TPLA addressed the entire landscape regardless of ownership, though it did emphasize publicly administered lands where the BLM may effect management changes. The 171,389 total acres within the TPLA are comprised of 74% private lands, 2.4% state administered land, 2.5% USF&WS administered land, 1% USFS administered land, and 20% BLM administered lands (18% in Oregon and 2% in California). However, within the boundaries of the Edge Creek allotment, the ownership pattern is approximately 77% private lands and 23% BLM, according to the KFRA Record of Decision/Resource Management Plan (KFRA ROD/RMP). Virtually all of the BLM administered lands in the Edge Creek allotment are located in its extreme southern portions or in the Klamath Canyon itself.

This assessment - analysis and recommendations - is only directed towards the management of BLM lands within the KFRA, where we have the authority and ability to effect change if necessary. The TPLA functioned as an allotment evaluation equivalent for the Edge Creek (and Dixie) allotment. Since neither the resource conditions nor grazing management has changed significantly since preparation of the TPLA, that analysis is still considered valid and current, and forms the primary basis for analysis and conclusions in this assessment. Information from the TPLA will be referenced and/or quoted extensively.

Edge Creek Allotment (0102)

The following allotment specific information is quoted from the TPLA (p. 136):

> The Edge Creek allotment includes approximately 38,260 acres of which approximately 8,860 are public land administered by the BLM. The remaining approximately 29,400 acres of private land are owned by Weyco (approximately 27,900 acres), Pacificorp (approximately 760 acres), and other landowners (total approximately 760 acres). The grazing allotment extends from Highway 66 on the north, the Klamath River on the east and southeast, the California-Oregon border on the south, and the vicinity of Long Prairie Creek on the west (see Map 12). The boundaries of the allotment are not all fenced. Topographic features like the Klamath River and the Klamath River canyon and non-natural features like Highway 66 help to define the allotment, but livestock movements are not totally restricted to the "designated" allotment. Practically speaking, the livestock will spend 90 percent of their use period within these boundaries with some drift into other allotments, mainly to the west into the Dixie allotment.
>
> In 1966 the BLM, the Oregon State Game Commission (currently the Oregon Department of Fish and Wildlife), and the Weyco began work on seeding and fencing projects to benefit the deer herd in the Pokegama deer winter range. The fencing projects were designed to protect deer winter range from late season use by livestock. The fencing projects resulted in the creation of three separate pastures in the Edge Creek allotment. These pastures were designated the North, Ward, and Edge Creek pastures. (see Map 12) The North pasture is the largest of the three pastures (approximately 29,000 acres) and includes mainly Weyco lands with some BLM-administered land (approximately 4,000 acres) in the south end of the pasture. The Ward pasture (approximately 5,000 acres) is located along the north side of the Klamath River canyon and includes BLM, Pacificorp, and smaller private lands within the Klamath River canyon and about 4 sections of BLM-administered land above the canyon. The Edge Creek pasture (approximately 3,500 acres) lies to the west of the Klamath River canyon and contains mainly Weyco and BLM-

administered lands.

Since the early 1980's, the Edge Creek allotment has been split into two different grazing leases, and thus functionally, into two separate de-facto allotments: the North and Edge Creek pastures in one lease, and the Ward pasture - including the Klamath River Canyon - in the other lease. This latter area will be called the Ward/Canyon pasture in this assessment. Since they have been and continue to be leased as separate grazing units, they will be addressed separately, as needed, in this assessment.

North & Edge Creek Pastures

There is currently no active BLM grazing lessee for these two pastures. The recognized base properties for these portions of the allotments BLM grazing lease are the timber lands currently owned by UST. The last year of licensed use was in 1993, after which Weyerhaeuser cancelled their grazing lease effectively cancelling the BLM lease. UST has continued that non-grazing course of action since purchasing these lands from Weyco in 1996, though they have indicated that future leasing for grazing is possible. There is no practical way for another applicant to discretely graze the highly intermingled BLM lands without the corresponding UST grazing lease. Thus, the property has been not been licensed for grazing use the past 7 grazing seasons. (The grazing lease actually is in UST's name and in non-use.)

The allotment received variable amounts of grazing use for the 10 years prior to the 1994 cancellation. The licensed cattle grazing use (1984-1993 inclusive) for the North and Edge Creek pastures are summarized below. The use per pasture was never split out separately; thus the license numbers below is the use for both pastures. In addition, the actual grazing use (i.e. actual forage consumption) for both pastures is impossible to determine at this point since the grazing use was usually combined with the grazing use of the neighboring Dixie allotment. During the period 1987-1993, the grazing lessee for both allotments was the same (Jerry Barry) and the Dixie allotment and North Pasture of Edge Creek were not fenced separately. Edge Creek is fenced separately, but it is not known if that fencing was effective.

North and Edge Creek Pastures - Licensed Grazing Use

Year	*Ownership*	*Cattle #*	*Season-of-Use*	*AUMs*
1994-2000	No authorized grazing use			
1993	BLM	22	5/1 - 9/15	100
	Weyco	68	5/1 - 9/15	309
1992	BLM	20	5/1 - 10/1	101
	Weyco	160	5/1 - 10/1	810
1991	same as 1992			
1990	BLM	20	5/15 - 10/15	101
	Weyco	160	5/15 - 10/15	810

1989	same as 1990			
1988	BLM	11	6/1 - 10/15	50
	Weyco	89	6/1 - 10/15	400
1987	same as 1990			
1986	same as 1990			
1985	BLM	20	5/15 - 10/15	100
	Weyco	40	5/15 - 10/15	200
1984	same as 1990			

As the above information shows, in a typical year (e.g. 1990) 180 head/pairs of cattle grazed these pastures with about 11% of the use attributable to the BLM leased lands and 89% to the Weyco lease.

Ward/Canyon Pasture

This pasture area is currently leased to Bob Miller, via a private lease with PacifiCorp - owners of the recognized base property. Prior to Mr. Miller (i.e. prior to 1996), the property and BLM administered lands were leased by Joe Laubacher for many years (i.e. since the late 1950's). The grazing use of this pasture has been highly variable through the years and relatively hard to describe. However, some explanation is necessary for properly assessing the area.

During the Laubacher lease era (1961-1995) the Ward/Canyon pasture areas were, for all practical purposes, grazed as one big pasture with cattle in the area from early spring until late fall. Unauthorized use (and subsequent trespass action) was common. An accurate tally of actual use was not possible due to the terrain and other administrative problems. However, the authorized leased/licensed use since the mid-1980's was as follows: 59 head (43 for BLM and 16 exchange of use for intermingled private lands owned by Laubacher) from 5/1 to 7/15. These lease amounts were for the entire Ward pasture including the Klamath River Canyon portions. It is not clear whether the Canyon areas were ever formally adjudicated as part of the Edge Creek pasture, though there are no indications that this area was part of any other allotment. During the KFRA RMP efforts, it was suggested that the Canyon be made an allotment of its own (as reflected in the second Conflict/Concern listed below). It currently is and will continue to be considered as part of the Edge Creek allotment - Ward/Canyon Pasture.

Since 1996, the grazing use of this pasture has been much different than that described above. Due to several fencing projects in the mid to late 90's, the Ward/Canyon pasture is now composed of five, largely discrete, sub-pastures as follows (see map):

1. *Ward/Hayden Creek* - All the pasture above (north) the Klamath Canyon Rim; spanning from the Edge Creek/Ward pasture fence east to Grizzly Butte. This is the area that is typically referred to as the Ward Pasture.
2. *Hoover Ranch* - The area along the extreme lower end of Hayden Creek near

the Hoover Ranch, west of the Hoover fence.
3. *Way/Kerwin Ranches* - The area west of the Rock Creek fence, south of the Klamath River, and north of the California line.
4. *Frain Ranch* - The area north and east of the Rock Creek fence along the Klamath River; primarily south and east of the river (though a little bit is north and west).
5. *Middle Pasture* - The area east of the Hoover fence, north and west of the Klamath River, and below the canyon rim.

In 1995, PP&L contracted the preparation of a grazing plan for their lands in the area and included proposals for the BLM lease lands in the Ward/Canyon pasture. BLM personnel coordinated with the contractor in the preparation of this plan. Though the plan helped prompt the completion of several of the fencing projects, it has not been implemented and may never be. (The recent purchase of PacifiCorp by Scottish Power makes the future murky for these lands and future leasing for grazing.) The primary grazing management difference in recent years, is that most of the area is not actually grazed significantly by the current lessee. The primary use is in the Way & Kerwin Ranch's area in conjunction with the adjacent California BLM and private leases, and in the Hoover Ranch sub-pasture. Only occasional, inadvertent cattle use is typically made in the other three sub-pastures, which make up the bulk of the BLM acres in the Ward/Canyon pasture.

Land Use Plan Objectives

The KFRA ROD/RMP (page H-6) identified ten *Resources Conflicts/Concerns* for the Edge Creek allotment as a whole, with related *Management Objectives* to direct resource management towards resolving the concern. These objectives are noted here as many will be directly or indirectly addressed by the Standards. They are as follows:

Identified Resources Conflicts/Concerns	*Management Objectives*
Under current management the range condition, level or pattern of utilization, and/or season-of-use may be unacceptable; or carrying capacity may be exceeded.	Maintain or improve rangeland condition and productivity through a change in grazing management, practices, timing, and/or level of active use.
Large area that is not included in allotment but grazed in common with the Ward Pasture.	Include south and east side of the Klamath River Canyon in Edge Creek allotment and Ward Pasture.
Critical deer winter range occurs in allotment.	Management systems should reflect the importance of deer winter range.
Special status species and/or habitat exists within the allotment.	Prevent significant risk to well-being of special status species and/or habitat from BLM-authorized actions.

Riparian or aquatic habitat is in less than good habitat condition.	Maintain and improve riparian or aquatic habitat in good or better condition.
Water quality may not currently meet the Department of Environmental Quality water quality standards for beneficial use.	Maintain and improve water quality on public lands to meet or exceed standards for beneficial uses, as specifically established by the Department of Environmental Quality, where BLM authorized actions are having a negative effect on water quality.
River segment under study for inclusion in the National Wild and Scenic River System.	Ensure livestock grazing management within the river corridor conforms with the river management plan if Congressional approval of river segment occurs.
Potential Area of Critical Environmental Concern (ACEC) within this allotment.	If designated, grazing management will be consistent with the ACEC management plan.
Allotment makes up a large portion of the Pokegama Herd Management Area.	Manage wild horse grazing levels on public lands to ensure a thriving natural ecological balance and prevent deterioration of the range.
Potential for grazing/recreation conflicts within the allotment.	Grazing management should consider recreation concerns.

These *Conflicts/Concerns* were identified by an interdisciplinary team (IDT) early in the RMP process (1990-1991), based primarily on professional judgement, tempered by field observations. At that time full grazing was occurring throughout the allotment. The three most important resource related *Conflicts/Concerns* (1st, 5th, and 6th) were apparently based on some minimal monitoring observations done previously. The first concern (inappropriate grazing) will be primarily addressed under Standard 1 and the fifth (riparian) and sixth (water quality) will be addressed in Standards 2 & 4. The second (Canyon grazing) concern will not be addressed further than already discussed previously. Concerns three (deer winter range) and four (special status species) will be addressed under Standard 5. The seventh (Wild & Scenic river) and eighth (ACEC) concerns will not be addressed as they are beyond the scope of this assessment (at this time anyway - see next paragraph). The ninth (wild horses) concern will be addressed as necessary with livestock grazing in all the pertinent standards (particularly Standards 1, 2, & 3).

The tenth (grazing/recreation) concern will not be specifically addressed, as there are few livestock in most of the area to conflict with recreation and the specifics of the "conflicts" are speculative. The RMP process IDT notes (December 1990) for Edge Creek only notes that "...there are two potential recreation sites..." - i.e. Fox Lake and Klamath Overlook". Neither mention any specific grazing/recreation problems, but states that they both "...need to be fenced...", implying cattle exclusion from potential

recreation/camping areas. For the proposed Canyon allotment the IDT notes state that "the upper Klamath River is a potential ACEC...and is also a potential Wild and Scenic River". The 1995 KFRA ROD/RMP itself (where all these Concerns/Conflicts were taken from) designated the canyon as an ACEC. The Klamath River was designated a Scenic River by the Governor of Oregon under the Wild and Scenic Rivers Act authority shortly after the ROD/RMP. There were no specific grazing/recreation conflicts identified, though a future ACEC and/or Wild and Scenic River management plan could identify such.

Selective Management Categorization

This allotment was ranked as to management priority in 1982, with a re-ranking in 1987-88. Both processes were done by the Medford District prior to transfer to the KFRA and ranked allotments based on 5 different criteria. Categorization of grazing allotments has been required by Bureau policy since the early 1980's in order to direct limited manpower and funding to the grazing allotments that need and would benefit most . A brief summary of the categorization efforts follows as it is indicative of relative resource concerns past and present. (See the KFRA ROD/RMP Appendix H, pages H-69-70 for further information on the allotment categorization - "selective management" - process):

1982 Ranking
#1 - Range Condition: Unsatisfactory ("I" ranking)
#2 - Forage Production Potential: Production is moderate to high & present production low to moderate. ("I" ranking)
#3 - Resource Use Conflicts: Serious conflicts or controversy exist. ("I" ranking)
#4 - Economic Returns: Opportunities exist for positive economic returns. ("I" ranking)
#5 - Present Management: Unsatisfactory. ("I" ranking)

The following notes were listed on the 7/7/82 ranking form to support the overall "I" categorization rating:

> -This allotment contains important critical deer winter range and is under intensive forest management.
> - This allotment also contains the Pokegama Wild Horse Management Area. The recreation value associated with the Upper Klamath White Water use area are within this allotment.
> - This allotment consists primarily of Weyco lands under exchange-of-use.
> - T&E candidate species present.

At that time (1982) Medford apparently rated all grazing allotments in primary timber production lands as "I" category, though this allotment also had some other resource issues and concerns that supported that rating. During the re-evaluation in 1987-88, the allotment maintained the "I" rating with same ranking in each of the 5 categories noted above and with similar resource concerns noted. One additional concern was noted in that it was acknowledged that the allotment had a "history of uncontrolled cattle trespass." The "I" ranking was carried forward into the 1995 KFRA ROD/RMP for the reasons reflected in the allotment specific *Resources Conflicts/Concerns* noted earlier.

Pokegama Wild Horse Herd Management Area (HMA)

The Edge Creek allotment comprises better than half the acreage of the formally designated Pokegama HMA. The remainder is in the neighboring Dixie allotment and to the south of the California/Oregon line to the Klamath River. The HMA was designated under the Wild and Free-roaming Horse and Burro Act of 1971, even though 80%+ of the HMA is privately owned lands and the horses spend at least that much of their time on those lands.

During the KFRA ROD/RMP process, the existing information dealing with the HMA was analyzed resulting in the determination that the Appropriate Management Level (AML) for the herd, that "...will restore the range to a thriving ecological balance and prevent a deterioration of the range...", was 30-50 head. In 1996, additional herd and vegetation monitoring information analyzed via the TPLA confirmed this AML range as appropriate for the area, given competing forage demands (particularly from wildlife), vegetation conditions, and cooperative relations with the major landowner at the time - Weyerhaeuser.

In 1996, it was estimated that herd numbed between 50-60 head, indicating the need for reduction to get the herd back within the AML. A removal of horses via a bait trapping method, was implemented during the late spring, summer, and early fall of that year. 20 head of horses were removed from the HMA by area personnel and shipped to Burns, OR. - Oregon's wild horse adoption facility. In the fall of 1996, it was estimated that approximately 40 head of horses remained in the area post-removal. By the spring of 2000, the horse herd had increased to at least 55 head and once again above the AML's upper range. Area personnel bait trapped wild horses during May and June of 2000, taking a total of 18 head off and leaving at least 38 head in the area.

TPLA Issues & Key Questions

The TPLA contained extensive discussions on past conditions and disturbance sources, described current conditions, and analyzed all this data relative to desired landscape/watershed conditions. This process culminated in an array of management recommendations to "fix" the problems described by the issue statements. A full reiteration of all the TPLA information is not necessary (or possible) in this assessment; the TPLA can be referenced for more information. However, brief summaries would be useful and are found throughout this assessment. A reiteration of the grazing related management recommendations are found at the end of this assessment.

In addition, the TPLA was driven by wide array (21) of "Issue" statements with commensurate "Key Questions" that helped guide the analysis. The Issue statements were developed by the TPLA team early in the process and were designed to help focus the analysis on what were thought to be the major issues within the analysis area. The array of Key Questions for each Issue helped to further zero in the analysis of impacts and conditions. Many of the Issues/Key Questions deal with or pertain to the

effects of past and present livestock grazing, at least indirectly. Since the TPLA forms the primary basis for this Assessment, various grazing pertinent Issues/Key Questions - and the analyses that followed them - will be reiterated where necessary or useful.

Most of the Edge Creek allotment specific information and analysis is found in the TPLA on pages 146-154 (Grazing section) with some additional information in the wild horse section on pages 155-168. Grazing management recommendations for livestock and wild horses are found on pages 218-222. However, other sections of the TPLA do include information, analysis, and recommendations pertinent to livestock grazing; those sections will be referenced and/or reiterated as necessary.

Note to readers:

Some of the information discussed under one Standard could be - and sometimes is - discussed under one (or more) of the other Standards. This is due to extensive crossover between the 5 Standards and the TPLA "Issues" and related "Key Questions". An attempt has been make to properly stratify the discussion in an intuitively satisfying manner; however, that was not always possible or practical.

In addition, the brief description of the Standard in bold, is quoted from the approved "Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington - August 12, 1997". This assessment process is also in accordance with that direction and other related policy guidance.

With no grazing occurring currently (or since 1994) on major portions of this allotment, the point of this assessment may appear moot. However, leases for the North and Edge Creek pastures and full use of the Ward/Canyon pasture could be requested in the future. UST has stated that they may re-issue the cancelled Weyerhaeuser grazing leases if an appropriate lessee could be found. They have stated however, that if re-issued several important riparian areas would first be fenced and livestock grazing levels would be less than allowed under past leases. If this grazing resumes, the BLM would have to decide if the commensurate BLM leases should be re-issued, and if so, with what grazing parameters. **This assessment assumes that the BLM grazing leases will be re-issued with the grazing parameters as stated in Appendix H of the KFRA ROD/RMP (page H-5 to H-7)**.

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STANDARD 1 - WATERSHED FUNCTION - UPLANDS (Upland soils exhibit infiltration and permeability rates, moisture storage and stability that are appropriate to soil, climate and land form.)

Though this Standard is currently not being totally met, BLM management

(grazing and non-grazing) is making significant progress toward meeting it on the public portions of the Edge Creek allotment. Current BLM leased/licensed livestock use is not considered a factor. Future grazing use (as per KFRA ROD/RMP, Appendix H) would also not be expected to be a significant factor on this allotment.

Besides the overall analysis done in the TPLA, the primary indicators used to evaluate this standard are the results and observations of various rangeland monitoring studies - particularly trend and utilization; rangeland survey information; and miscellaneous information sources, including professional judgement.

General Information

One Issue/Key Questions statement primarily guided the livestock grazing portions of the TPLA - particularly for the uplands since they comprise the majority of the area. It was as follows:

> *Issue: Livestock grazing has impacted other resources and activities within the TPLA watershed.*
> Key Questions: What are the historic and current livestock grazing uses within the TPLA area? What are the historic and current livestock forage use levels and patterns within the TPLA area? What monitoring of livestock use has been done on public lands within the watershed? What has the analysis of this monitoring data shown? What livestock management improvements have been installed in the TPLA area?

One other Issue/Key Questions is probably at least as pertinent to this Standard as the others, though it does have applicability to Standards 2 & 3 also. It is as follows:

> *Issue: Soil and site productivity has been altered in the TPLA area.*
> Key Questions: What are the dominant characteristics of soils in the TPLA area? Are there sensitive soils within the TPLA area that deserve special protection or mitigation consideration? What erosion processes are dominant within the TPLA area? Where have they occurred or are they likely to occur? Do compaction and loss of soil organic matter associated with logging activities affect soil productivity? Do potential reductions nitrogen fixation and in populations of mycorrhizal fungi occur with management activities? What is the nutrient status, especially for nitrogen (N), in forest soils in the TPLA area? What historic processes affected soil productivity in the TPLA area? What are the historic erosion processes within the TPLA area? Where have they occurred? What are the natural and human causes of changes between historical and current erosion processes and soil productivity in the TPLA area? What are the influences and relationships between erosion processes, soil productivity and other ecosystem processes?

Livestock grazing, at levels practiced in distantly past years, invariably contributed to the currently diminished upland and riparian conditions in the grazed (less forested) portions of the assessment area. However, timber harvest activities, including road building, have probably been the primary impacts to the areas upland conditions. It is thought that the heavy grazing use of the assessment area began in the late 1800's when people and logging activities increased, opening large portions of the area and

allowing grasses and other forage species to dramatically increase. After WWII, logging activities greatly expanded from the pre-Depression levels. In some case, grass seeding was done after timber harvest specifically for livestock forage. As the tree density and cover increased, grasses became less abundant and the area less rangeland like (this gives rise to the term "transitory range" for these type areas). As the TPLA states (page 17):

> Selective logging, fire exclusion, and livestock grazing associated with Euro-American settlement of the inland west (has) resulted in profound changes in forest succession, composition, structure, and function across the landscape.

This holds true for the "rangeland" areas also. However, the magnitude of such change is very hard to describe or quantify, as stated in the Soils section of the TPLA (p.38-39):

> The extent to which soil productivity has been affected in the watershed by management activities has not been quantified, due to the lack of research on the subject area, the lack of on-the-ground surveys with which to quantify the extent of impacted soils, and time constraints. This analysis discusses the likelihood of whether or not impacts have occurred, based on the type of activities commonly implemented and on the characteristics of the soils upon which they are implemented.

The affects by livestock on upland soils can be summarized by the following TPLA excerpt (p.43):

> The TPLA area has experienced grazing by cattle and horses for much of this century…The historic numbers of livestock are not well recorded. Livestock grazing was probably dependent on the existence of natural, non-forested openings and on openings in the forest canopy which had adequate forage production. Natural openings were likely more abundant in the lower elevations, where wildfire was more active. Thus, until openings were created by wildfire or human activities (timber harvest, creation of clearings through fire), much of the grazing was probably centered in the elevations where the least productive soils occur. The main impact from livestock grazing was probably loss of soil cover, although compaction and altered nutrient cycling likely occurred to a lesser extent. Because livestock numbers are currently at a 50 year low in the TPLA area, it is likely that the highest level of impact from livestock grazing has already occurred.

As the above information implies, site specific information on soils or other resource impacts, is largely lacking. However, the 100+ years of generally known impacts and their continuation - albeit at much diminished levels - is the reason this Standard is thought to be "not met". It is management changes over the past 10-20 years - as amplified and reinforced by implementation of the 1994 Northwest Forest Plan - that leads to the judgement that the area is "moving towards meeting" this Standard. If grazing use were to be fully leased again in all of the pastures, it would be a fraction of what occurred in the area historically and it is thought it would not be a significant factor to continued improvements in watershed health. However, since the majority of the area (Edge Creek allotment and the greater TPLA area) is private land, future grazing levels and overall improvements in watershed health, are at least partially out of BLM control.

Vegetation/Rangeland Survey Information

During the 1981 field season, a SVIM (Soil Vegetation Inventory Method) type rangeland survey was completed for the BLM administered lands within the allotment. Incomplete and confusing records exist from this effort, though some summaries and references can be found for this allotment that appear useful. One bit of information is a table from the early 80's (probably done during Medford's RMP efforts at that time) that provides an overview of the results of the SVIM. It was as follows (total BLM acres do not add to what we have in the KFRA ROD/RMP for reason's unknown now; though the figures are close):

RANGE CONDITION & TREND
Edge Creek Allotment (0102)

	Excellent	Good	Fair	Poor
Upland (Ecological Condition)	0	0	336	5,104
Forest Sites (Livestock Forage Value)	0	0	13	4,024
Totals	0	0	349	9,128

This information represented by this table is a strong indicator that the history of heavy disturbance in the area substantially altered the landscape from pre Euro-American settlement conditions. In general, the SVIM survey information indicates that virtually all vegetation types in the allotment have undergone significant changes from Potential Natural Community (PNC) conditions that may imply less than adequate upland watershed functionality. *Fair* and *Poor* conditions would be equivalent to the current *Mid Seral* and *Early Seral* ratings, respectively, using our current rangeland survey method - the Ecological Site Inventory (ESI; which is a survey method directly descended from and very similar too SVIM). Field observations in recent years confirm that many of the non-forested areas in the allotment - especially the areas with little slope - are still in early to mid seral states, being dominated by exotic annual grasses and forbs. The exception, would be the artificially seeded areas in the Ward pasture, which was and is still dominated by an exotic perennial grass (more below).

The Livestock Forage Value (assumed to mean Forage Value Rating) should be a rating of the amount of useful forage plants as a percentage of the total vegetation composition. "Poor" would imply that less than 25% of the composition was composed of valued forage plants, e.g. perennial grasses. The dominance of this rating above reflects the high canopy cover/low herbaceous nature of the forested areas.

A quick review of the actual 1981 vegetation field worksheets (copies located in the KFRA) shows that the ratings should probably be a bit higher - particularly in the seeded areas of the Ward Pasture where no rating "credit" was given to the seeded species - an exotic, though perennial, *Agropyron* species (see next page). In addition, no "credit" was given to the dominant native shrub species - wedgeleaf ceanothus (*Ceanothus cuneatus*) - a critical deer winter forage species that is used sporadically by cattle. These and other examples imply ecological conditions (and infer an upland

functionality) that appeared worse than it probably really was at the time. In any event, it is thought that conditions have improved significantly since the survey was completed 19 years ago (more on this later).

The primary range and forest sites (type vegetation communities using the SVIM surveys naming nomenclature) in the area were:

Vegetation Type	%of allotment	Comment on natural state grazing value*
Oak-Pine-Fescue	37%	Moderate grazing value site.
Klamath White Fir forest	29.5%	Limited grazing value
Douglas Fir-Mixed Pine forest	13%	Limited grazing value
Shrubby Scabland	12.5%	Moderate grazing value
Pine-Oak-Fescue	3.6%	Moderate grazing value
Steep Mtn. Grassland	2.3%	Low to High, depending on slope
Dry Meadow	1.1%	High grazing value
Semi-Wet Meadow	<1%	High grazing value

(*Current estimates of relative livestock grazing utility at PNC - not from the 1981 survey information.)

The forested types are generally of little grazing value at PNC; utility is largely dependent on the amount of tree cover (i.e. amount of timber harvest) - less trees, more grass. This information was not broken out by pasture, though in general, the further north one goes, the more the area becomes true forest vegetation types. A significant portion (42.5%) of the information is forest community related, with the altered conditions being a function of past timber management activities - and beyond the scope of this assessment.

The best livestock and elk grazing areas in this allotment today are the wheatgrass seeded areas in the Ward Pasture, which were believed to be in converted or altered (wildfire burned and mechanically seeded) “Klamath White Fir” forest site, though there are apparent contradictions in the existing SVIM information. The seeding was put in primarily to enhance deer forage in the spring, while providing cattle forage also. Since this area was and is still almost totally unlike the Potential Natural Community description, it classifies as “poor” condition (early seral) even though most of the attributes of upland functionality are probably intact.

The SVIM survey recorded low levels of the seeded wheatgrass in the Ward Pasture during the 1981 survey. Since then, the wheatgrass has apparently dramatically increased in density and/or production. Specifically, the SVIM estimated the total production (current years growth) of the seeding areas at 150-250 lbs/acre for **all** vegetation, with the wheatgrass only being 5-16% of the total (the seeded areas were included in at least 4 different site writeup areas). A double sampling (clip, weigh, & estimate) condition transect done in August 1992 (an extreme drought year) in the

eastern portion of the seeding found the wheatgrass dominant and producing over 850 lbs/acre. Since 1992, the seeded areas appear to be more productive and dense. Given this information, the areas Forage Rating Value would be considered “excellent” - the highest rating class. This may change over time, since a large portion of the seeded areas were extensively planted with seedling pine trees 5-6 years ago.

Trend Studies

There are a three frequency trend plots in the allotment - one in the Edge Creek pasture, one in the Klamath Canyon, and one in the Ward pasture. They will be addressed separately as follows:

Edge Creek plot (#5E-3-1): This quadrat frequency plot was originally established in 1986 by Medford personnel. It is located in the meadow fringe of the very small portion of Edge Creek that is BLM, approximately 1 mile south of the Pokegama site. The 1986 reading was with a plot size different than used during the re-readings in 1995 and 2000, making the latter two years the only ones that can be directly compared. Of significance, California oatgrass (a highly desired native perennial grass) dramatically increased (from 29% to 60%) and bulbous bluegrass (a less desired, exotic perennial grass) significantly decreased (48% to 28%) - both indications of upward trend. Vegetation cover and litter increased (18 to 19% and 20% to 43%, respectively) and bare ground decreased (59% to 37%) - all also indicators of upward trends. Added evidence of this conclusion is the rushes appear also to have increased significantly since 1986.

Klamath Canyon (#KCW-1): In 1991, three quadrat frequency trend studies were established in the Canyon. Two studies were located on private lands (PP&L) and will not be re-read. The third one is in the Frain Ranch area, on BLM lands north & west of the river, and was re-read in 1997. The 1991 and 1997 readings are not directly comparable due to the 1997 transect being re-located (i.e. 1991 transect not relocatable). A 3x3 photo plot was also established in 1991 and relocated in 1997. The subjective interpretation of the data from both study types indicates that perennial grasses (*Stipa* and *Poa* spp.) have increased though the area is still dominated by exotic annual grasses. Medusahead also may have significantly decreased in frequency between the two readings though annual bromes may have increased slightly. Another reading is scheduled for 2002 which may provide more insight into trend. This area has not been grazed since the early 1990's.

Ward Pasture (#5E-1-1): This nested frequency plot was also originally established in 1986, with re-readings in 1992 and 1997. Results of this study are hard to interpret. Some perennial grasses (Lemmon’s needlegrass and California oatgrass) significantly increased between 1986 and 1992 then significantly decreased from 1992 to 1997, while others (Kellogg’s rush, blue wildrye, and two bluegrasses) did the opposite. Annual grasses - both native and exotic - have been equally inconsistent. Minimal

livestock grazing has occurred since 1994 or so. What has occurred was primarily in the wheatgrass seeded areas to the east of the study; so livestock grazing is not considered a significant issue. Moisture conditions have been generally above average since 1992, though that sheds little light on the apparent inconsistency. The scheduled re-reading in 2002 may help clarify the true trends in this pasture.

In general, the trend studies in conjunction with field observations and professional judgement, lead to the conclusion that overall, the trends are moderately upwards and conditions are improving throughout the BLM portions of the allotment. The limited livestock grazing over the past 5-6 years also leads credence to this assessment.

Utilization Studies

Since little grazing has taken place within the Edge Creek allotment since the TPLA was completed, that analysis is still "current". The utilization information and analysis is found in the Grazing section on page 149 and the Wild Horse section on pages 165-167; see that document for specific information. The monitoring data collected and analyzed was a combination of utilization pattern mapping for the entire allotment and some established utilization points within the Ward Pasture. This information showed that the vast majority of the upland areas are utilized in the slight to light use classes, though most are not used at all. It also shows that the areas which did receive moderate to heavy livestock use were in the immediate vicinity (within 1/4 mile) of water sources - most of which are on privately owned lands. Past riparian-wetland/grazing problem areas in this allotment - on BLM lands - were in the Frain Ranch area along the Klamath River, the Fox Lake-Bear Reservoir area, Hayden Creek, and Edge Creek. Since little livestock grazing has been licensed in any of these areas since the mid-90's, the problem has diminished significantly and what minor impacts that have been noted are related to wild horse or elk use or to occasional estray cattle. In addition, most of the BLM portion of lower Hayden Creek (where the semi-perennial water is) has been effectively fenced removing the potential for either livestock or wild horse grazing. Riparian grazing use will be discussed further under the next Standard.

In addition to the above types of utilization, Cole Browse studies have also been performed in the allotment. This study measures the use of important browse species in the area - primarily wedgeleaf ceanothus, the most important and abundant deer winter browse species in this area. A summary and analysis of this information is found on pages 150-152 of the TPLA. These studies have shown that use on the wedgeleaf is at appropriate levels, and is primarily by deer and not by livestock or wild horses. (NOTE: A fecal analysis study done from 1979-1981 also confirmed that horses do not utilize shrubs any time of the year, but also that cattle will to some extent during the late summer and fall. That is why the season of use in the Ward Pasture was cut back in the mid-1980's from an ending date of late September to mid-July.)

* * *

In summary, the monitoring information collected to date indicates that the upland

conditions in the allotment have been relatively unaffected by livestock grazing in recent years. The current non-attainment of this Standard is related to past forest harvest activities, grazing in the more distant past, and not to grazing as licensed (BLM and private) the last 10-15+ years of significant use. Some riparian related grazing concerns may resurface when/if full grazing is leased again by UST and the BLM (see Standard 2).

It is thought that current overall (non-grazing) related BLM management activities, as directed by the NFP and TPLA and related policy and guidance, appear to be moving conditions towards future attainment of this Standard - or as much as can be effected on publically managed lands. If the grazing leases were to be reissued on the entire allotment in the future, it is thought that the effects on upland watershed health would be negligible - depending on the level of use. UST has been exploring the possibility of re-issuing their grazing lease for the Edge Creek allotment the past few years. They have indicated that if their lease is re-issued, the grazing would be substantially less than Weyerhaeuser leased in years past. In addition, they would be requiring substantial riparian and meadow fencing to protect these areas. However, there appears to be only limited interest in grazing the area - by both UST and several potential lessees.

One unalterable fact remains that 3/4ths of the lands comprising the TPLA area are privately owned and managed for intensive timber production; natural ecosystem and watershed functioning are not primary goals. Since these extensively altered lands will continue to dominate the landscape area, those lands functionality will substantially define the area. Regardless of that, all BLM management activities are directed towards the eventual meeting of this Standard - to the extent BLM management activities can effect change. (See the management recommendations section at the end of this assessment.)

STANDARD 2 - WATERSHED FUNCTION - RIPARIAN/WETLAND AREAS

(Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and land form.)

This Standard is currently thought to be met, or if not totally met, overall BLM management (grazing and non-grazing) is making significant progress toward meeting it on the public portions of the Edge Creek allotment. Current BLM leased/licensed livestock use is not considered a factor. Future grazing use (as per KFRA ROD/RMP, Appendix H) would also not be expected to be a significant factor on this allotment.

Besides the overall analysis done in the TPLA, the primary indicators used to evaluate this standard are the results and observations of various rangeland monitoring studies - particularly utilization and photo points; Proper Functioning Condition (PFC) determinations; and miscellaneous information sources,

including professional judgement.

General Information

One Issue/Key Question from the TPLA is primarily pertinent to this Standard on riparian/wetland functioning, as follows:

> *Issue: Vegetation communities in riparian-wetland areas have been altered in the TPLA area.* Key Questions: What is the array of plant communities and seral stages in riparian-wetland areas? What processes caused these patterns? What are the current conditions and trends of the prevalent plant communities and seral stages in the riparian-wetland areas? What is the historical array of plant communities and seral stages in the riparian-wetland areas? What processes caused these patterns? What are the natural and human causes of change between historical and current vegetative conditions in riparian-wetland areas? What are the influences and relationships between vegetation and seral patterns and other ecosystem processes in the TPLA area?

In addition, during the RMP process the IDT identified - in notes dated 12/15/90 - the following for the Edge Creek allotment:

> Watershed: Edge Creek and Hayden Creek are in this allotment. Hayden Creek was historically a Class 2 fisheries stream, now is Class 3 due to degradation….Historically there have been problems with grazing, but utilization levels are not a problem now.

For the Klamath River Canyon, the following was IDT identified:

> Watershed: The limited numbers of livestock, the creation of pastures to rotate use, and the timing of the use are such that no adverse effects to the river or its associated riparian areas should occur.

As the above IDT notes indicate, grazing problems related to riparian issues were being addressed and rectified in 1990. Since then, the livestock accessible BLM portions of Hayden Creek have been virtually all exclosure fenced, the Canyon area has been "pasturized" with virtually no use occurring along the river riparian corridor, livestock numbers are down, and most significantly, unauthorized use has been almost entirely eliminated.

Utilization Monitoring

Quoted from the TPLA (p.149):

> Use pattern mapping has also been completed for the Edge Creek allotment for the years 1984 to 1987 and 1992 and 1993. This mapping has shown most areas to have light use. The areas that have shown heavy to severe use are Griffith, Ward, and Bear Flat reservoirs, the Frain Ranch area, and portions of Hayden, Tom, Edge, and Long Prairie Creeks. These use areas are associated with water sources and riparian areas that support higher levels of green forage throughout the growing season. Some of these utilization patterns are a direct effect of unauthorized grazing use.

The majority of the noted problem areas are on private lands, though they are unfenced from the BLM administered lands. With no licensed grazing use occurring in most of the Edge Creek pastures, these problems are largely non-existent on any ownership lands. In addition, recent fencing projects have eliminated or reduced most of these problems on BLM lands (and some on private) - as noted elsewhere in this assessment. If grazing were to resume again (UST & BLM) in the now ungrazed areas, the levels would be much less than in past years, according to indications from UST. In any event, extensive use supervision and rangeland monitoring would be done on BLM administered lands to ensure that proper use is made within the constraining LUP objectives.

Proper Functioning Condition Determinations

A primary information source for the condition of riparian/wetland sites within the assessment area are the "Proper Functioning Condition" (PFC) surveys. These determinations were performed for the major creeks within the allotment in 1994, 1995, and 1997. A summary/analysis of the determinations for Hayden and Edge Creeks were done in the TPLA (p.107-108), as follows (referenced map in the TPLA):

HAYDEN CREEK

The following surveys were completed on Hayden Creek on 7/27/94. See Map 10 for locations of stream sections.

Riparian Photo Point H-R-1: This section of Hayden Creek was rated as Functional-At-Risk with an upward trend. This section is within an exclosure that was built to exclude livestock. The stream has severely downcut at some point in time but is now starting to revegetate with willows, sedges, and rushes. Most of this vegetation is of a young age class. The large meadow area that the stream goes through has dried up due to the stream downcutting and the plant community is dominated by weedy species and exotics.

Riparian Photo Point H-R-2: This section was rated as Function-At-Risk with no apparent trend. Late season cattle grazing was identified as a risk. Many riparian plants were present but had been heavily grazed including the willows. Cattle and horse tracks were evident.

Riparian Photo Point H-R-3: This section was rated a being in Proper Functioning Condition. Numerous willows were noted with little impact from grazing in this stretch. This point compared similarly to Point H-R-2 but without as much grazing pressure. It was noted that a road crosses through the creek below this point, but not much impact was evident.

Riparian Photo Point H-R-4: This section was rated as being in Proper Functioning Condition. This section does not appear to have much water during a significant part of the year. This reason was given for the lack of riparian vegetation species. Plants that were present have low water demands. A road crosses through the creek upstream of the point and another follows along the channel.

Riparian Photo Points H-R-5, 6, & 7: This section was rated as being in Proper Functioning

Condition. It is also thought to mainly intermittent with few riparian species present. There were a few willows and a small stand of young black cottonwoods was noted. Klamath Weed (*Hypericum perforatum*) was a dominant species along the channel.

EDGE CREEK

This survey of Edge Creek was completed on 5/26/95. See Map 10 for location of survey. This small section of Edge Creek that is on BLM-administered land was rated as being in Proper Functioning Condition. A high amount of fine sediments were noted in the stream bed. This portion of the creek flows through wide meadows that appear to be flooded during spring runoff. Evidence of hoof action from livestock and wildlife was noted. The meadows also have received heavy grazing pressure in the past as evidenced by the high percentage of annual weed and grass species.

Since completion of the TPLA, PFC determinations were additionally done (1997) on the Klamath River and Rock Creek, which is a tributary of the Klamath River in the southwest corner of the Frain Ranch sub-pasture. The Klamath River was determined to be in PFC, with the note that the "flow control by dam resulting in fluctuating levels". Rock Creek was largely PFC with the note that the creek had a "*very rocky streambed entrenched from past events*". One small (<0.1 mile) section at the road crossing (small bridge) was judged to be Non-Functional "*where it (streambed) was manipulated to channel water through bridge*."

A summary of the PFC information is found in the following table:

Name of Stream	Total Miles on BLM	Proper Functioning Condition (PFC)	Functional-At-Risk (FAR)	Non-Functional (NF)
Hayden Creek	**2.2**	**1.6**	**0.6**	**0.0**
Edge Creek	**0.2**	**0.2**	**0.0**	**0.0**
Klamath River	**8.0**	**8.0**	**0.0**	**0.0**
Rock Creek	**0.7**	**0.6**	**0.0**	**0.1**

The FAR portions of Hayden Creek are now all within exclosure fences and the rating is probably PFC, or at least an definitive upwards trending FAR. The portion of Rock Creek that is NF is due to past road work, not grazing. In fact, since 1997, this area has been fenced away from cattle grazing with the construction of the Rock Creek fence. Recent field observations (7/00) found this section of the creek at the bridge to be dominated by a thick stand of willows, implying a strong upward trend. Overall Edge Creek stream riparian areas and their conditions are not being affected by livestock grazing.

There are also a couple small wet meadow areas within the allotment on BLM administered lands that are not connected with the riparian areas already noted. They

are Fox Lake and Bear Flat, which are both on the extreme eastern edge of the North Pasture, near the Klamath Canyon Rim. These areas have not had PFC determinations made and were not site specifically addressed in the TPLA, but rather that document addressed the issue of wetland conditions generically. Although no livestock grazing use has been licensed in this pasture for 7 years, these areas have continued to receive grazing use from wild horses, elk, and deer. Fox Lake and Bear Reservoir (UST owned) are both entirely exclosure fenced and not accessible to livestock or wild horses. Bear Flat, which lies below Bear Reservoir, is not fenced and has received substantial use by wild horses during the past couple years. However, all the horses removed during the 2000 capture activities were the band that has been observed making the grazing use of Bear Flat. This entire band of 13 adults (and 4 young of the year) were removed, eliminating this use potential for some time in the future, i.e. until the horse numbers build up enough to spread out into this area again.

* * *

In summary, it appears from the information pertinent to this Standard, that past livestock use - at least in recent years - was not a significant resource concern on most of the BLM portions of the major drainages in the assessment area. This is especially true when compared to the other ground impacting events that have and continue to occur in the area (timber harvest, road building). All of the drainages were either in PFC or if in a lesser condition, have upward trends, are excluded from grazing use, or otherwise not affected by livestock. As grazed now, the allotment has no grazing related resource problems of note. If full grazing were to resume in the future, the now ungrazed portions of the allotment would need increased field monitoring - and possible management changes - to ensure that irreversible riparian/wetland problems do not occur. In addition, the current overall non-grazing program related BLM management activities, as directed by the NFP and TPLA and related policy and guidance, are moving conditions towards future attainment, if not already met. (See management recommendations section at the end of this assessment.)

<u>STANDARD 3 - ECOLOGICAL PROCESSES</u> (Healthy, productive and diverse plant and animal populations and communities appropriate to soil, climate and land form are supported by ecological processes of nutrient cycling, energy flow and the hydrologic cycle.)

Though this Standard is probably not being met on the Edge Creek allotment, overall BLM management (grazing and non- grazing) is making significant progress toward meeting it on the public portions of the allotment. Current BLM leased/licensed livestock use is not considered a significant factor. Future grazing use (as per KFRA ROD/RMP, Appendix H) would also not be expected to be a significant factor on this allotment.

The primary indicators used to evaluate this standard is the overall analysis done

in the TPLA and the data, analysis, and discussions for the other Standards.

Many of the TPLA Issues/Key Questions pertain to this broad ecosystem function Standard. However, five are particularly pertinent to this Standard, as follows:

Issue: Forest succession, composition, structure, and function have been altered in the landscape analysis area.
Key Question: What changes have occurred in the forested landscape as a result of selective (highgrade) logging, fire exclusion, and livestock grazing?

Issue: Ecosystem structure and function (forest health) have been altered by human-introduced disturbance in the landscape area.
Key Questions: Are there forest stands in the landscape area that are at moderate to high risk of disease outbreak, insect attack, and catastrophic disturbance? Are there significant disease or insect problems in the landscape area?

Issue: Hydrology has been altered in the TPLA area.
Key Questions: What are the dominant hydrological characteristics and other notable hydrologic features and processes in the TPLA area? What are the current conditions and trends of the dominant hydrologic characteristics and features prevalent in the TPLA area? What are the historical hydrologic characteristics and features in the TPLA area? What are the natural and human causes of change between historical and current hydrologic conditions? What are the influences and relationships between hydrologic processes and other ecosystem processes?

Issue: Biological diversity has been altered in the landscape area.
Key Questions: Has biological diversity of plant and animal species decreased or increased in the landscape analysis area? What changes in biological diversity have selective logging, fire exclusion, and livestock grazing brought about in the landscape area? Will activities such as commercial thinning and the introduction of prescribed fire increase or decrease biological diversity?

Issue: Landscape ecology has been altered in the landscape area.
Key Questions: What functions do landscape features and patterns have? What is the present structure and composition of forests across the landscape analysis area? What sort of future forest matrix across the landscape analysis area do we wish to achieve? Are we creating a disproportionate amount of young forests that lack structural and compositional complexity? Are we providing for late-successional and old-growth forests and the unique assemblage of plant and animal species that such forests support? Are we creating a landscape diversity of forest structures to absorb future destructive disturbances, to maintain minimal habitat requirements and migration pathways for species and to maintain viable population “sources” for recolonization of depleted areas? In short, will be create a functional or dysfunctional landscape with future proposed management activities?

As one can see from the list above, the concept of functioning ecological processes, as reflected by overall watershed health, was the dominant theme driving the preparation of the TPLA. The TPLA contains exhaustive information and analysis directly pertinent to the addressing of the Standard on ecological processes - terrestrial, riparian, and aquatic. Reference the TPLA sections that address the above listed Issues/Key Questions, for specific information. (Information relative to the above five issues is

found primarily on TPLA pages 17-34, 75-91, and 181-200.) A comprehensive summation of that documents' analysis, in this assessment for this Standard, is not necessary. A brief overview of general findings would be useful, however.

As noted earlier, the TPLA determined that the landscapes vegetation and soil conditions have been altered significantly during historic times; to the point that the watershed is not thought to be functioning as it should or used to be. This includes the uplands, riparian/wetland, and aquatic ecosystems where these alterations have lead to diminished capabilities for many of the major attributes of a fully functioning ecosystem. However, management activities on BLM administered lands, both grazing and non-grazing, are required by the NFP - as refined by the TPLA - to enhance and restore ecosystem function. Recent management changes include diminished livestock grazing, two reductions of the wild horse herd (in 1996 and 2000), elaborate riparian buffering schemes within timber treatment areas, road restoration efforts, lighter impacting timber harvest techniques, special status species inventories and subsequent protective buffering, and other restorative activities. In addition, many similar activities have been implemented on the extensively intermingled private lands - including the cancellation of the UST grazing lease, which caused a similar cancellation for the BLM lands.

However, one unalterable fact still remains: 3/4ths of the lands comprising the TPLA area are privately owned and managed for intensive timber production; natural ecosystem and watershed functioning are not primary goals. Since these extensively altered lands will continue to dominate the landscape area, those lands functionality will substantially define the area. Regardless of that, all BLM management activities are directed towards the eventual meeting of this Standard - to the extent BLM management activities can effect change. (See the management recommendations section at the end of this assessment.)

<u>STANDARD 4 - WATER QUALITY</u> (Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.)

> *This standard is not met within the allotment. Current BLM leased/licensed livestock use is not considered a significant factor. Future grazing use (as per KFRA ROD/RMP, Appendix H) would also not be expected to be a significant factor on this allotment.*
>
> The primary indicators used to evaluate this standard are water quality studies and information; the overall analysis done in the TPLA; and some of the data, analysis, and discussions for the other Standards.

Water quality was addressed in the TPLA through one primary Issue/Key Questions, as follows:

Issue: Water Quality has been altered in the TPLA area.
Key Questions: What beneficial uses dependent on aquatic resources occur in the TPLA area? Which water quality parameters are critical to these uses? What are the current conditions and trends of beneficial uses and associated water quality parameters? What were the historical water quality characteristics of the TPLA area? What are the natural and human causes of change between historical and current water quality conditions? What are the influences and relationships between water quality and other ecosystem processes in the TPLA area?

The TPLA extensively and technically addressed water quality, following these key questions, on pages 111-125; a discussion that will not be reiterated here. Reference that document as necessary. Within the TPLA ,and the Edge Creek allotment specifically, the Klamath River is the only 303(d) listed stream. It was listed due to summer temperatures (too high) and dissolved oxygen (too low). None of the Klamath Rivers' water quality problems are attributable to current or recent livestock management on any BLM lands, including the Edge Creek allotment. In addition, none of the other drainages within the TPLA assessment area have enough recorded water quality problems to apparently warrant 303(d) listing, though they do have some condition problems - as analyzed in the TPLA.

As noted throughout this assessment and in the TPLA, management activities on BLM administered lands, both grazing and non-grazing, are required by the NFP - as refined by the TPLA - to enhance and restore ecosystem function. This should lead to better water quality over time. Recent management changes include riparian related fencing, reduction in the wild horse herd, elaborate riparian buffering schemes within timber treatment areas, road restoration efforts, lighter impacting timber harvest techniques, special status species inventories and subsequent protective buffering, and other restorative activities. In addition, a host of similar activities have been implemented on the extensively intermingled private lands. However, one unalterable fact remains that 3/4ths of the lands comprising the TPLA area are privately owned and managed for intensive timber production; natural ecosystem and watershed functioning are not primary goals. Since these extensively altered lands will continue to dominate the landscape area, those lands functionality will substantially define the area.

In summary, all BLM management activities lands are directed towards the eventual meeting of this Standard - to the extent BLM management activities can effect change via their minority land ownership in the area. (See the management recommendations section at the end of this assessment.)

<u>STANDARD 5 - NATIVE, T&E, and LOCALLY IMPORTANT SPECIES</u> (Habitats support healthy, productive and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate and land form.)

Though not totally met on the Edge Creek allotment, significant progress is being

made towards meeting this Standard. Current BLM leased/licensed livestock use is not considered a significant factor. Future grazing use (as per KFRA ROD/RMP, Appendix H) would also not be expected to be a significant factor on this allotment.

The primary indicators used to evaluate this standard are plant and wildlife surveys and information; the overall analysis done in the TPLA; and some of the data, analysis, and discussions for the other Standards.

Wildlife issues were another primary component of the TPLA, because wildlife was the driving reason behind the preparation of the NFP (i.e. spotted owls and their old growth forest habitat requirements.) The TPLA Issues/Key Questions specific to this Standard were as follows:

Issue: Distribution and abundance of special-status plants have been altered in the landscape area by human-introduced disturbances.
Key Questions: What special-status plants occur in the landscape analysis area? Where are known populations of these plants located in the landscape analysis area? What are the habitat requirements for each species?

Issue: Alteration of the landscape area has resulted in the introduction of populations of noxious weeds and the displacement of native plant species.
Key Questions: What species of noxious weeds occur in the landscape analysis area? Where do known populations of these plants occur in the area? Are populations increasing in size and, if so, what is their estimated rate of expansion? To what extent are population sources displacing populations of native plant species?

Issue: Critical use areas for terrestrial listed and non-listed wildlife have been altered.
Key Questions: How has habitat been changed by management practices? What have been the habitat changes? What are the species of concern, their life history characteristics, and how has habitat alterations affected these species?

Issue: High road densities, grazing, hydrologic modifications, and intensively managed forests have impacted aquatic ecosystem function in the tributary watersheds.
Key Questions: What is the relative abundance and distribution of species of concern in the watersheds? Where are key aquatic habitats? What is the current habitat condition? What is the historic condition of species distributions and habitats? What are the causes for observed changes in distribution and habitat? Which are natural and which are human caused?

Issue: Concentrated recreational activity, grazing, exotic species, and hydrologic modifications have impacts to aquatic species in the Klamath River Canyon.
Key Questions: What is the relative abundance and distribution of species of concern in the Klamath River Canyon? Where are key aquatic habitats? What is the current habitat condition? What is the historic condition of species distributions and habitats? What are the causes for observed changes in distribution and habitat? Which are natural and which are human caused?

Because of the importance of this issue, a large amount of the TPLA was devoted to wildlife and wildlife habitat. See that document for more specifics - information and analysis (TPLA pages 47-74 & 127-134). However, some summary information split

into plants and animal sections would be useful and follows. Some plant related information was also addressed under the narratives for Standards 1 & 2.

Plants

Special Status Species: The TPLA (p. 47-48) noted that there were at least 4 special status plant species (SSPS) in the analysis area - Bellinger's meadowfoam (*Limnathes floccosa* ssp. *bellingeriana*), pygmy monkey flower (*Mimulus pygmaeus*), red root yampah (*Perideridia erythorrhiza*), and Green's mariposa lily (*Calochortus greenei*). Some or all of these may have been affected by past grazing use, as well as by the other impacting activities that have occurred in the area for the past 125 years.

The TPLA (p.47) noted the following about "Historic Conditions" of SSPS:

> Little is known concerning the historic distribution of special status plant species within the landscape area. Many special status species are naturally rare within the communities in which they occur, or are restricted to particular, uncommon habitats even if they are abundant within those habitats. Species are classified into one of the special status categories when human activities alter relative abundance and species composition of plant communities or further reduce the abundance of uncommon habitats.

In addition, the TPLA noted the following in "Processes of Change" (p.47):

> The primary changes in the landscape are the result of human activity, and include timber harvest, livestock grazing, road construction and water diversion for irrigation. Timber harvest can change the environmental conditions, such as relative humidity and exposure to sunlight, at a site that will affect the ability of individual species to survive or compete in the affected area. **Livestock grazing can change relative abundance of species and species composition through selection of more palatable species for consumption, and trampling and compaction of soils**. Road construction can contribute to fragmentation of habitat and decrease interior forest habitat through an increase in edge conditions throughout the landscape. Water diversion for irrigation can change the amount, geographic distribution of water thus changing habitat conditions in affected areas which results in changes in species composition and relative abundance. (emphasis added).

The following was noted relative to the condition trends of SSPS:

> To the extent that human activities continue to affect species abundance, relative abundance of species, and the distribution of uncommon habitats, the abundance and distribution of special status plant species will likely continue to be reduced within the landscape area. This would probably result in contributing to an increased level of concern and/or to the need to list individual species. As a result, management activities will; probably be constrained to conserve the species, and/or the species will eventually be extirpated.

Survey and Manage (S&M) Species: The NFP (Table 3C) listed numerous lichens, fungi, and bryophytes that were of suspected management concern in the planning area. Surveys during the past several years have found numerous populations of

several of the S&M species throughout the TPLA, including the Edge Creek allotment. The past affects of grazing on these species is unknown and currently there is little grazing occurring in the areas where these species have been found. Most all of the S&M species occur in dense forested areas where there is limited herbaceous understory to attract cattle. If full grazing were to occur, it is thought that little in the way of livestock induced impacts would occur in these areas.

Noxious Weeds: According to the TPLA (p.52-53), there are 5 species of noxious weeds documented on BLM administered lands in the analysis area. These are yellow starthistle (*Centaurea solstitalis*), diffuse knapweed (*C. diffusa*), white top (*Cardaria draba*), tansy ragwort (*Sencio jacobaea*), and bull thistle (*Cirsium vulgare*). It is also known that St. John's Wort (*Hypericum perforatum*) is in the area. All of these species are exotic (introduced) plants associated with disturbance activities, e.g. timber harvest, livestock grazing, and road construction.

By way of summary, the TPLA stated the following (p.53):

> Many of the plant species and communities of concern have been affected by human activities that change environmental conditions and introduce exotic pest plant species (noxious weeds). This results in changes in species composition and relative abundance of species within plant communities, and distribution of uncommon plant communities. Additionally, noxious weeds can affect the ecological processes that maintain native plant communities. Management actions are needed that are designed to reduce the level of disturbance usually associated with these activities, and designed to mitigate the impacts already present from past activities.

Grazing at current - or potential (i.e. KFRA ROD/RMP) future levels - is not thought to be a significant factor in the current spread of noxious weeds, though past levels of grazing inevitably did contribute to the existing problem. Disturbances of the extensive timber harvest activities - particularly on the dominant private lands - as well as the extensive road system, is probably the primary causes of the current spread.

Animals

The TPLA contained extensive information and analysis on various wildlife species (terrestrial on pages 61-74 & aquatic on 127-134). As noted in all the other Standards discussions, the TPLA performed the primary analysis work about conditions in the Edge Creek allotment and will not be reiterated here. However, highlights would be useful and follow.

Terrestrial: Over the years, the forage competition potential between livestock, horses, and wildlife - particularly deer and elk - has been a much debated issue for the Edge Creek allotment and surrounding area. A longtime concern has been the perceived competition between deer and livestock for important deer winter forage species - particularly wedgeleaf ceanothus. Studies done during the late 1970's and early 1980's

indicated that late season cattle grazing use (i.e. after about August 1st) in wedgeleaf areas occasionally resulted in overutilization of this shrub and limited critical deer winter forage. In about 1985, this resulted in the season of use for the Ward Pasture being shortened from a grazing end date in September to July 15th. (Note: This change was strongly opposed by the lessee at the time who appealed the decision. The decision was apparently affirmed on appeal and the grazing end date still remains July 15th.) Since that time, the browse competition problem has not resurfaced.

Over the last 10 years, elk numbers have significantly increased in the area. Elk and cattle have the potential to be a major forage competitors as they have almost complete dietary overlap (i.e. they eat all the same things). However, no forage competition problems are currently thought to exist. The following from the TPLA (p.70):

> Elk were first spotted about 20 years ago in the South Keno Management Unit east of the Cascades, which is a part of the landscape area....The number of elk continues to expand and are expected to reach population goals of 700 animals by the year 2000...Provided the number of elk does not exceed 700, it is believed there would be no direct conflicts for forage or cover between livestock, wild horses, deer, and in the overall health of riparian areas...

Currently, the elk herd in this management unit is estimated at 600 head, close to the population objective. Recent and extensive logging activities on the dominant UST lands will invariably increase the amount of elk forage in the area by dramatically reducing tree over stories and allowing for a transitory increase in grasses. This would limit or eliminate the potential for forage competition problems with cattle. If and when livestock are again fully licensed in the area (i.e. UST reissues their lease), the issue would be investigated and monitored as necessary.

Several other terrestrial wildlife species were discussed in the TPLA - owls, eagles, bats, etc. Since the impacts or competition between cattle grazing and these species is either very minor or much less well established than with deer and elk, they will not be discussed further. See the TPLA for further information.

Aquatic: The TPLA (p.127-134) discussed aquatic species and habitats. Discussions under Standard 2 - *Watershed Function - Riparian/Wetland*, also addressed the related issue of riparian conditions. Since riparian conditions are thought to directly affect populations of aquatic wildlife, that discussion is pertinent to this Standard also. The following excerpt is from the TPLA's *Aquatic Species and Habitats* section (p.128):

> The dominant management factors that have defined the current condition of these habitats are logging, roads, impacts form (sic) cattle and horse grazing, and past and present impoundments with associated de-watering and flooding events...The current aquatic fauna reflects a system limited by warm water and intermittent and ephemeral stream flows. Connectivity of these habitats to perennial systems is limited to species with terrestrial life stages and overland dispersal behaviors such as the amphibians and reptiles or species which can navigate the steep rocky canyon draws of the Klamath River canyon.

And from pages 129-130:

> Water diversions and stock ponds create habitat for some species adapted to still water...Problems associated with man-made impoundments include impacts from concentrated livestock and wildlife use...Most of the spring areas in the analysis area are (or have been) in a degraded vegetative condition due to grazing. Many have been developed as stock watering areas and therefore have had water diverted from the natural condition. Species such as snails and some aquatic insects have low mobility and therefore have a high rate of endemism. This dependency on specific spring sites combined with their relative immobility makes them very vulnerable to disturbance.

From page 131:

> The causes of changes in habitat condition are covered in the respective analysis of issues including grazing, hydrology, water quality, channel condition and riparian vegetation. The history of land use practices is described in the Cultural core topic. From this it is assumed that habitat quality has undergone and incremental and downward change over the last 120 years. The effects of grazing and streamside logging were first realized before the turn of the century as the railroads were built and cattle and sheep were herded through the area. It should be noted that severe overgrazing was known to occur in other areas of Klamath County during this era and some of the degraded channels observed today may be lingering effects from that period...The effects of roads on the drainage network were probably a more recent impact to aquatic systems as the rate of road building and logging increased in the 1950's through the 1980's

Without a doubt, past grazing use had significant impacts on the riparian systems in the area, and thus to aquatic wildlife. This use in years past was a much higher levels than currently practiced. With most of the BLM portions of the important aquatic systems (Hayden Creek, Long Prairie Creek, and the Klamath River) fenced off from most cattle use - or otherwise access limited - it is thought that livestock grazing is a minor issue relating to current aquatic conditions or trends. As already noted, the NFP - as refined by the TPLA - directs all management activities on BLM administered lands towards restoring ecosystem functionality. One of the primary yardsticks of progress in doing this, is the health of the various wildlife populations.

Finally, and as also noted previously in this assessment, one unalterable fact remains that 3/4ths of the lands comprising the TPLA area are privately owned and managed for intensive timber production; natural ecosystem and watershed functioning are not primary goals. Since these extensively altered lands will continue to dominate the landscape area, those lands functionality will substantially define the area.

Current Management and Recent Management Changes

As previously noted, there has been limited cattle grazing on most of this allotment since 1994. Future grazing use can not be precisely predicted as it is dependent on the status of the private land leases which are the recognized base properties for both BLM leases. Currently, UST is not leasing their lands for grazing and the future of such is

unknown. PacifiCorp was recently acquired by Scottish Power and is being re-organized; the future of their grazing leases is also unknown at this time. Most other management changes in the area in recent years have been related to the requirements of the NFP - as modified by the TPLA - and beyond the nominal scope of this assessment.

Proposed Management Changes

Chapter 3 of the TPLA - *Management Recommendations*, listed numerous *Restoration Opportunities* with related (and prioritized) *Management Considerations* and *Information and Monitoring Needs* for a wide array of resources and concerns - for both public and private lands. Of course, the BLM can only effect direct change on lands under their administration. See pages 201-225 of the TPLA for a complete listing of this information. Pertinent grazing management related proposals from the TPLA (p.218-222), relevant to the KFRA administered lands in the Edge Creek allotment, are brought forward verbatim into this document and reiterated below (in smaller print); including wild horses. (There are also numerous non-grazing related management recommendations that are not noted.) Additional updated information has been added, where needed in italics within parenthesis, based on new information, accomplishments, and/or projections since completion of the TPLA.

LIVESTOCK GRAZING

Problem Statement

Livestock grazing on public lands within the TPLA area can be detrimental to some resources if not managed properly. Riparian and wetland areas within the Dixie and Edge Creek allotments have been negatively impacted by improper levels and timing of utilization of forage species and the physical impact of livestock on the vegetation and soils. Some upland areas have also been impacted by the improper utilization of forage species.

Restoration Opportunities

High Priority

Exclosure areas including Fox Lake, Bear Flat Reservoir, and Hayden Creek should be inspected and repaired as needed before turning out livestock. (*This is done every year by range staff personnel even though no cattle have been grazing, as it helps protect these areas from wild horse use.*)

The pasture fences around Edge Creek and Ward pastures should be maintained prior to livestock turnout to control drift. (*Neither of these areas have been grazed in recent years. If grazing resumes, this would be more important.*)

The following items from the PacifiCorp grazing plan should be implemented:

Rebuilding of the Hoover meadow fence. This will help control the drift of livestock onto BLM-administered lands outside the season of use. (*The Hoover Fence, which lies 1/3 mile east of the Hoover Ranch, was completed in 1998 and performs the same function that rebuilding the Hoover meadow fence would - control cattle drift out of the Hoover Ranch area.*)

Coordinating with the BLM on construction of the Rock Creek fence. This will help control the drift of livestock into the Frain Ranch area which has been an area of chronic unauthorized use. (*This fence was completed in 1998 and is functioning well - few if any cattle now get into the Frain Ranch area.*)

Moderate Priority
In addition to the PacifiCorp plan, the following items should be implemented in the Ward pasture to provide for additional resource protection:

Installation of several small sections of drift fence along the upper rim of the Klamath River Canyon. This will help stop the drift of livestock from the upper Ward Pasture into the canyon. This would allow for use of a rotation system between these two areas that would provide for period of rest from livestock grazing. (*These "gap" fences were completed in 1998 and 1999, primarily to keep cattle from the Hoover Ranch area from going above the rim where the rancher has a hard time finding them. If grazing were to be made in these pastures again, this fencing would help control the drift as desired.*)

Construction of a small reservoir in the east part of the upper Ward pasture. This would spread the livestock use to the east end of this pasture where there currently is no water source and very little utilization of a seeded wheatgrass area. This would help to decrease the use in the west end of this pasture which has shown levels of use higher than the accepted guidelines. (*This would still be worth pursing if significant cattle use were to be made. However, even without a reservoir, the wild horses have made substantial use of this area in the spring when more surface water is available via spring runoff.*)

Management Considerations

High Priority

Edge Creek and North Pastures

Recent changes in grazing management have been made, mainly due to the private land lease cancellations leading to no grazing use in the Edge Creek and North pastures. Weyco owns the lands which are currently considered the base property for these areas of the allotment. If Weyco decides to lease their lands for grazing again, the Exchange of Use grazing previously allowed for in the BLM lease should be reevaluated based upon the desired objectives for the allotment. The following items should be considered when formulating the objectives and the grazing system for these pastures:

> Utilization pattern mapping has shown heavy use in riparian areas and meadows. Follow the guidelines for forage use from Table D-7, Utilization Standards in Riparian-Wetland Areas and Table D-8, Degree of Allowable Use in the KFRA ARMP/ROD (*ROD/RMP*) document.
>
> The allotment is within the Pokegama Deer Winter Range. Consider the recommendations of the Pokegama working group and resource area wildlife biologists.

(*All this would be done as needed once livestock grazing use became significant again.*)

Ward Pasture

PacifiCorp will implement a new grazing management system for their lands along the Klamath River in Oregon and California beginning in 1996. The Ward pasture has been included in this system due to the intermingled land ownership patterns in this area. The Ward pasture would have a season of use from 5/15 to 7/15 with 60 cows for a total of 120 AUMs. This is different than the KFRA ARMP/ROD (ROD/RMP) document which has a use period from 5/1 to 7/1. This should not cause any resource problems as the AUMs are the same. Monitoring of the use in riparian areas would be needed to insure that guidelines for forage use levels would not be exceeded.
(*Full implementation of the PacifiCorp plan never really fully came about, though some parts of it are being followed. Specifically, the division of the Ward/Canyon pasture into more discrete units was accomplished and some of the grazing in the canyon and below the California/Oregon border does follow*

the plan. However, the current lessee does not make use of the Ward pasture due to distance from his ranch. If use were to be made regularly again, the season of use would be as stated above - 5/15 to 7/15.)

Moderate Priority
Specific, measurable desired plant community objectives need to be developed for the Edge Creek and Dixie allotments. These objectives should be based upon Ecological Site Inventory data and developed by a team of resource specialists familiar with the allotment area and the needs of the dependent resources within the allotment. These objectives should include considerations for the multiple use nature of the allotment area and the intermingled private lands. The objectives should consider the different geographic areas including riparian and wetland sites, meadow habitats, forested areas, and rocky upland sites.
(*This is still true, though no ESI survey is planned for the area. There is the old SVIM information which could be useful for establishing these type objectives, though it is confusing to use and the actual range or ecological site descriptions are missing - or never transferred over from Medford.)*

Information and Monitoring Needs

High Priority
The utilization monitoring points that have been established in the Ward pasture provide sufficient coverage to assess the annual livestock use. The eight points within the canyon portion of the pasture have only been read once, in 1992, and need to be ready yearly along with the points in the upper pasture. (*The points in canyon need not be read as there is little cattle grazing in the area since recent the recent fencing was completed. The points are also not accessible except by rafting the river and many are on private lands.*)

If the Edge Creek and North pastures are used again, utilization points need to be established to properly monitor the use there. These could be established in conjunction with the permission of the private landowners in these pastures. By putting some points on the private land, a better picture of the utilization on a watershed scale could be realized. (*This could be done once grazing resumes, though we would probably just utilization pattern map these areas - public and private - and not establish formal utilization points.*)

Utilization mapping should be continued on the allotment. This will be essential in determining whether the new PacifiCorp plan is providing adequate resource protection. (*See notes above.*)

Monitoring of livestock movement during the season of use through use supervision should also be continued. This is normally done by range personnel from the BLM. Other resource specialists that spend time in this area have also provided good information on livestock movements and this should be continued and encouraged. (*This continues to be done, even in areas without licensed grazing use.*)

Moderate Priority
As mentioned earlier, objectives for the allotment areas should be based upon Ecological Site Inventory data. At this point, a formal ESI inventory will probably not be completed in the KFRA and the inventory has been done only on rangelands of the eastern Oregon type (not in coniferous forests). Some Ecological Site Inventory descriptions are available for land types in the KFRA. They do not match the landscape areas within the TPLA area precisely, but could be used with some professional judgement applied. Range Condition sites should be established at several sites within the Dixie and Edge Creek allotment. The current plant community data from these inventories could then be used to establish reasonable management objectives for the areas based upon the existing conditions and the use of professional judgement to help determine the ecological potentials. Selection of the sites for these studies should be done by an interdisciplinary team that is familiar with the landscape and the concepts of

ecological site inventory. At a minimum, sites should be established in the vicinity of the Dixie exclosure, in the upper Ward pasture, the Klamath River canyon portion of the Ward pasture, the Edge Creek pasture, and the North pasture. (*This may be pursued if and when full grazing were to resume in all pastures of this allotment and priorities at the time allow for it.)*

WILD HORSES

Problem Statement

A formally established wild horse herd management area exists and the horse herd is creating impacts within the landscape area.

Restoration Opportunities

High Priority

Remove sufficient wild horses from the HMA to get the numbers to as close to the 30 head minimum AML as possible. This action is being pursued and scheduled for completion within the next two years. This action is addressed and authorized by EA #OR-010-95-10 and the related Decision Record. Emphasis will be given to specifically removing those horses which have been drifting north of the formal HMA boundaries to remove that "racial memory" from the herd. Once achieved, the Pokegama herd will not need additional removals for many years, given the historically slow growth rates. (*20 head of horses were removed during the 1996 field season. All came from south of highway 66 - the northern boundary of the HMA. This left an estimated 30-35 head still in the HMA. Between that removal and the spring of 2000 the herd grew to at least 55 known horses. Since the herd was above the AML, during May and early June of 2000, 17 more head were removed. All of these horses were from the one large band that typically goes north of the highway during the summer. This band was completely removed and were all caught near Camp 3 which is 2 miles north of the highway.*)

Moderate Priority

Maintain the existing BLM riparian protective fencing and pursue additional protective fencing as feasible. Most of the important riparian areas on BLM lands are already fenced to preclude livestock and wild horse use. Maintenance of these existing fences is important and must be done in the spring of each year. Additional fencing around the currently unfenced BLM portions of Long Prairie Creek, the meadow around Wild Gal spring, and possibly other areas, should be investigated. (*As noted previously, the existing riparian fencing is maintained every year. The other projects have not been seriously pursued since the TPLA, though still merit consideration - particularly Long Prairie Creek. This will be addressed in the Dixie Rangeland Health Standards Assessment later this year.*)

Low Priority

No specific herd make-up or composition related management changes or alterations are proposed at this time. Since the herd, as is, is apparently happy and healthy, no animal related management recommendations are proposed at this time besides the removal of excess animals. (*A revision of the HMAP may result in some recommendations in this realm. This revision is planned to be initiated in the next couple years.*)

Prescribed burning will continue to be pursued within the HMA. There is currently a program to periodically burn decadent brush stands and excess fuel loads in the area for wildlife habitat and fire danger reduction purposes, respectively. The currently planned level of prescribed burning is sufficient to meet the wild horse HMAP objectives in that regard. (*This continues to be periodically done in the general area.*)

Management Considerations

The following are the "Management Actions/Directions" quoted from the Klamath Falls R.A. ROD/RMP/RPS. These actions range from the general to specific and provide an overriding planning

framework for the additional management recommendations that are outlined next (priorities added):

High Priority
The rangeland monitoring studies outlined in the Livestock Grazing section and explained in Appendix H, "Rangeland Monitoring and Evaluation" section, will be used to collect information on the vegetation, riparian affects of grazing, including wild horses, and to determine if the objectives for wild horse management are being met or not. (*Monitoring studies continue to be done within the HMA, including the Edge Creek allotment, in conformance with the KFRA "Coordinated Monitoring and Evaluation Plan for Grazing Allotments"*.)

Base future adjustments in the appropriate management level on an evaluation of rangeland monitoring data (this process is also summarized in Appendix H). If the evaluation(s) show that wild horse numbers are exceeding the forage carrying capacity within their range, are responsible for unacceptable damage to soils or riparian-wetland areas, or become a management problem to the private land owners in the area, initiate control measures to return the horse numbers to the appropriate management level determined through those evaluations. (*The TPLA functioned as the noted monitoring evaluation affirming that the AML of 30-50 was indeed appropriate. The 1996 and 2000 removals were done to keep horses within the AML, limit horse impacts to riparian areas, and particularly to limit the numbers making use of private lands outside the HMA*.)

Apply the management actions/direction in the Special Status and Supplemental Environmental Impact Statement Special Attention Species section. (*This would be done if wild horse related problems are identified and specific remedies are possible*.)

Moderate Priority
Revise and update the 1978 Pokegama Herd Management Area Plan based on current information, conditions, and herd management area plan standards. (*The Pokegama HMAP was written in 1978 and is very out of date. An update of this plan over the next several years would be recommended. The District wild horse & burro lead (Tonya Pinckney) has expressed an interest in beginning this process in FY 2001*.)

Make aerial reconnaissance flights and/or ground survey of the herd management area every two to three years to census the wild horse numbers. (*Census counts have been done every year - at least from the ground - and will continue to be. Aerial census counts are done approximately every 2nd or 3rd year*.)

Low Priority
Establish area with mineral and salt licks away from streams, riparian-wetland areas, and wildlife guzzlers. (*This continues to be BLM policy for livestock permittees and lessees*.)

Information and Monitoring Needs

High Priority
Monitoring and future evaluations will be performed in accordance with the Klamath Falls Resource Area's "Coordinated Monitoring and Evaluation Plan for Grazing Allotments", which also pertains to wild horse related vegetation monitoring. The wild horses will be periodically counted as noted in the Klamath Falls R.A. ROD/RMP "Management Actions/Directions" above. (*This will be continue to be done as needed in the future, though the TPLA analysis - as affirmed by this Assessment - will suffice as the evaluation for the near foreseeable future. Wild horses will be counted as noted previously*.)

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Determination

( ) Existing grazing management practices and/or levels of grazing use (i.e. potential grazing use as per RMP) on the Edge Creek allotment promotes achievement or significant progress towards the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

( ) Existing grazing management practices and/or levels of grazing use (i.e. potential grazing use as per RMP) on the Edge Creek allotment will require modification or change prior to the next grazing season to promote achievement of the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

_____ _____

Manager, Klamath Falls Resource Area Date