6/28/99

PITCHLOG ALLOTMENT (0887)
KLAMATH FALLS RESOURCE AREA - KLAMATH FALLS, OREGON
RANGELAND HEALTH STANDARDS ASSESSMENT

The following assessment is based on information collected over the last 10-25+ years on the Pitchlog allotment. All of the basic information and raw data supporting the statements and conclusions in the following narrative, is at the Klamath Falls Field Office. This includes the information, observations, and results of many years of rangeland monitoring studies and surveys; the field data from the recent Ecological Site Inventory (ESI) efforts; the past (1994-1997) and most recent (1998+) Section 7 (ESA) consultation information and related end-of-year reports and evaluations; an assortment of riparian, aquatic, and water quality studies; and the observations and professional opinions of resource specialists with field knowledge of the area. The major information analysis for this Assessment was performed during the most recent (2/99) section 7 consultation - an allotment evaluation functional equivalent. An explanation and description of the different monitoring studies, as well as references to the pertinent BLM Technical References, is found in the 1994 "Klamath Falls Resource Area Coordinated Monitoring and Evaluation Plan for Grazing Allotments", as revised.

One major fact in considering the conclusions of this Assessment is that during the 1960's, Pitchlog's grazing use was reduced by almost 65%. This reduced the permitted use from 1230 AUMs to the current 434 AUMs. This substantially reduced the potential for grazing induced resource problems. It is thought, however, that most of the historical grazing related resource damage dates back to the earlier portions of this century, prior to the grazing controls implemented through the Taylor Grazing Act in 1934. .

STANDARD 1 - WATERSHED FUNCTION - UPLANDS - ***This standard is being met on the allotment.*** The indicators used to evaluate this standard are the results of various trend and condition studies; utilization studies; plant community composition and structure; and various other resource attributes observed during the recent ESI including Soil Surface Factor (SSF), which estimates the level of soil surface erosion, and ground cover components (plant litter, rock material, biotic crusts, bare ground).

TREND

Photo Trend: There is at least one long term Photo Trend study located in each of the 4 pastures in Pitchlog which were originally established between 1972 and 1974. A comparison of the photographs - albeit a subjective comparison - shows that vegetative conditions have definitely improved since establishment. The photos show that perennial grass density and vigor has increased. Even more significant is the fact that even with the generally poorer than average growing conditions in the late 80's and early 90's, vegetative conditions, as interpreted from the photo plots, have at worst remained stable and mostly improved.

Frequency Trend: In addition, a frequency trend plot was established in each pasture in 1993 or 1994. One of the Pitchlog frequency trend plots was re-read in 1998. The information shows that two of the dominant native perennial grasses (Sandberg's bluegrass and Idaho fescue) have significantly increased and one early successional dominant native grass (bottlebrush squirreltail) decreased significantly - apparently displaced/replaced by the other two grasses, which are late successional dominant. This is a solid indicator of upward rangeland ecological trend. The other three of these studies are planned for re-reading in 1999.

Observed Apparent Trend: This was a collateral observation as part of the ESI efforts. Although the field data has yet to be compiled and input into a data base where it could be accurately acres weighted, a review of all the inventory worksheets and field maps shows that virtually all of the allotment (99%+) was estimated to have either static or upward trends. The only possible downward trend area noted, was a narrow, limited acreage "Dry Meadow" (*Artemisia cana*) ecological site area in an ephemeral drainage below Burnt Log Spring. However, this area has been impacted and compromised by an old eroding road along with the suspected channelization of a portion of the drainage (about half of which is on private land). The water table may have been lowered by these impacts, permanently altering the site potential. It is not related to current livestock grazing.

<u>*CONDITION*</u>

Key Area Condition: Site specific condition studies were established and read in 1994 and 1995 in all four pastures at the location of frequency trend plots. This ESI derived condition study allows for an initial quantitative assessment of the current vegetative conditions as well as establish a baseline for future comparison on a specific key area. On the Pitchlog allotment, all 4 of the studies rated the existing communities between 51-75% similarity to PNC, thus placing the vegetation in the Late Seral class or "good" condition. A Late Seral (or higher) vegetation condition implies a appropriate plant community that will ensure proper functioning upland conditions.

Ecological Site Inventory: In 1997 and 1998 the BLM performed an extensive ESI survey in the Gerber block. All the basic field data was collected for the Pitchlog allotment, providing a broader ecological "snapshot" of the area. ESI is primarily an upland vegetation oriented survey, although it does describe some meadow and other water dependent areas. The data has not been fully compiled and entered into the data base/GIS.

Analysis of the field data (using the vegetation write-ups and field maps and approximating on an acres weighted basis), however, does lead to several observations and conclusions. Primary among these is the fact that almost all of the allotment (95%) is in either late seral or PNC ("excellent" condition). These condition classes are indicative of fully functional upland ecological and watershed conditions. This included all of the ecological sites dominated by low sagebrush-bunchgrasses, mountain big sagebrush-bunchgrasses, western juniper-bunchgrasses, juniper-pine-bunchgrasses, and spike-rush meadows. It included the majority of the sites dominated by pine-sedge. There were no areas in this allotment that rated as early seral or "poor" condition.

There were only a few very small areas that classified as mid seral ("fair" condition), which combined equals about 5% of the allotment. This condition class - especially in the upper ends of it (i.e. 40-50% like PNC) - may be considered functional but typically lacks an "ideal" plant community. Almost all of the mid seral areas were in the pine-sedge ecological sites; areas which have been substantially impacted by past timber and fire management activities. Many of these pine-sedge sites actually rated numerically in the Late Seral condition class, but were "downgraded" to mid seral due to low production - a direct effect of the recent burning on the shrub component.

However, this underburning has also reduced the duff layer underneath the trees, allowing for a resurgence of the herbaceous community. All of this regeneration is occurring incrementally and the trend in most pine areas is definitely upwards. As a general statement about conditions within the allotment, it can be said that the more a site has pine potential, the more likely it is to have been disturbed and in a temporarily depressed condition state.

One very significant ESI observation is that most ecological sites in the Gerber area have been and are continuing to experience increased densities of western juniper. These increases are probably primarily due to the combined effects of fire suppression, historic livestock grazing, and possibly past timber harvest activities. The juniper increase has the future potential to dramatically effect ecological conditions more than it already has. This could include decreased forage production for wildlife and livestock, increased erosion potential due to diminished ground cover, mono-culture vegetation types that decrease wildlife diversity, decreased water availability, and other impacts. These observations are summarized as follows:

> The spaces between the older junipers (150-1000+ years old) in the "old" juniper sites (Juniper Claypan 16-20") are being slowly filled in with much younger trees - way beyond what would be needed for replacement of the older trees as they die off (very slow!).
> The shallow soil, non-juniper sites (Stony Claypan 14-20", Shallow Stony 10-20") are all experiencing varying increases in juniper, with the juniper generally increasing proportionally as soil depth increases. However, some of these areas are also seasonally (winter/spring) saturated - particularly the Shallow Stony 10-20" - which appears to suppress the juniper encroachment.
> Most of the other, deeper soil and non-pine ecological sites, that should have juniper as a minor late seral/PNC component, are experiencing increases in juniper density. On the Pitchlog allotment there is only one of these ecological sites in any abundance: Mahogany Rockland 10-20". Of particularly concern is the fact that in some of these sites the mountain mahogany component is collapsing due to the juniper competition. These areas are probably some of the most important to consider for juniper reduction activities as they would have the highest beneficial results to wildlife.
> The ponderosa pine areas (Pine-Mahogany-Fescue 16-20" and Pine-Sedge-Fescue sites) are also experiencing dramatic increases in juniper. This competition is placing pressure on the pine component of the community and is also causing the same problems with mountain mahogany as noted above.

UTILIZATION STUDIES

Utilization information has been collected on this allotment since at least 1984. The utilization data, from the established points, has shown consistently moderate or less utilization since full implementation of the 4 pasture rotation system in the early 90's. The utilization pattern mapping - done every year since 1992 - has also shown consistently acceptable patterns of use throughout the allotment. The light-moderate utilization levels, which are within the KFRA ROD/RMP parameters, imply long term stability and grazing pressure that is appropriate to the conditions of the landscape.

OTHER ESI RELATED OBSERVATIONS

Soil Surface Factor (SSF): As a collateral observation during the ESI, the SSF was estimated for each soils/vegetation site write-up area. Although the field data has not been compiled and input into a data base as noted above, a cursory check of the inventory worksheets and field maps shows that almost all of the allotment (95%+on an estimated acres weighted basis) is in either the "stable" or "slight" erosion condition classes. These two lowest erosion classes imply stable conditions.

Cryptogamic Crust Rating: Another secondary observation made during the ESI was a general rating of the existing cryptogamic crusts (a ranking system recommended for ESI, by Jane Belnap, a noted NPS expert on crusts) from between the lowest rating of 0 ("bare ground") to the highest of 10 ("Cyanobacteria, big bumps, lots of lichens and mosses - >20%" (cover)). The average rating for the Pitchlog allotment was just over 5.0 - a moderate crust rating. This would be considered neither exceptional or unacceptable, but adequate, given the limited knowledge of these crusts and the long historical use of the allotment for cattle grazing.

STANDARD 2 - WATERSHED FUNCTION - RIPARIAN/WETLAND AREAS - ***This standard is believed to be substantially met on the allotment.*** The indicators used to evaluate this standard are the results of the various riparian monitoring studies and Proper Functioning Condition (PFC) determinations.

RIPARIAN MONITORING STUDIES

Riparian Photo Points: Barnes Valley Creek, Pitch Log Creek, and the Wildhorse drainage all have photo points at numerous locations along their length within this allotment. The points on Barnes Valley (11 pts.) and Pitch Log (10 pts.) were formally established in 1989, with some pictures going back as far as 1980. On Wildhorse (7 pts.) the points were formally established in 1994. Each point has three different photos taken at distinctly different angles.

A comparison of the photo points, although subjective in nature, shows that the conditions of the riparian areas have variably improved over the years. None of the photo points show any changes in vegetation that could be called poorer conditions or a downward trend. Specifically, the general conditions within the Pitchlog drainage, during the last 10+ years have been static to somewhat

upwards. Improvements in riparian conditions are more obvious throughout Barnes Valley Creek, with obvious upwards trends. Most of the photo points on the Wildhorse drainage have only been taken since 1994 and show little change. However, the one old photo station (PS-1) in the Wildhorse meadow shows definite improvement since 1973. Even though the current condition of this meadow is still less than ideal, it has shown a significant increase in perennial plant cover during the past 24 years, implying improved conditions.

Streambank Stability Rating: This study type, established in 1996 and re-read in various grazed drainages in 1997 and 1998, is to determine the post-grazing impact of livestock induced mechanical damage to stream banks. As stated in the Biological Opinion for Pitchlog, the standard is that "At least 90 percent of natural stream bank stability shall be maintained..." and that "No more than 10 percent of the natural streambank stability may be altered by livestock during the authorized grazing season." All grazing use since the studies were first read has consistently met this requirement, with the ratings ranging from 96% to 99%+.

Utilization Studies: "Key Forage Plant Method" utilization points have been read along grazed drainages since establishment in 1995, at several existing photo point locations within each of the three major drainages in this allotment. Measured grazing use has been consistent with Land Use Plan objectives and the Biological Opinion, which were designed to promote stability and upward trends.

Stream Cross Section/Greenline Riparian Vegetation Plots: These riparian classification studies were established within the allotment on Pitch Log (two studies) and Barnes Valley (one study) creeks in 1994 and 1995. The interpretation of these studies shows that Pitch Log creek has a "mid stability rating" and Barnes Valley creek has a "high stability rating"; both ratings consistent with and supportive of the following PFC determinations.

PROPER FUNCTIONING CONDITION DETERMINATIONS

Evaluations of riparian condition - "Proper Functioning Conditions (PFC) Determinations" - were performed for the public land portions of Wildhorse, Pitch Log, and Barnes Valley Creeks in 1994. Barnes Valley Creek (semi-perennial) rated out into two distinct sections. The upper reach (which is almost all on unfenced private land) - from the USFS boundary south to the beginning of public land - was rated as "Functional - at Risk" with no apparent trend. The remainder of the creek (public land portions) were rated as in PFC, with upward trends.

Pitchlog Creek (intermittent drainage) rated out across the condition spectrum from Non-functional with no apparent trend to PFC with upward trends. Specifically, the entire drainage rated out as 39% PFC, 20.6% Functional - at risk, and 40.4% Non-functional (part of which is on unfenced private lands). The estimated observed trends were all either not apparent (assumed static) or upwards. Past disturbances including road and bridge building activities on and around the Main Haul road, past heavy livestock grazing, and possible channelization of the drainage on the upper end have all

contributed to the condition problems apparent on the creek today. Present livestock grazing management is not thought to be a significant factor in the still depressed conditions in portions of this drainage, based on the information summarized previously in this Assessment. This is thought confirmed by the fact that the one remaining exclosure on the creek, just above the bridge and in place since 1981, still has a mix of all the condition classes, including Non-functional. The drainage inside the exclosure - even with no grazing for 18 years - looks very similar to outside the exclosure where it has been rotation grazed during that period.

The Wildhorse drainage (ephemeral creek) rated out as 75% PFC and 25% Non-functional during the 1994 determination. The PFC stretches are the rocky, minimally riparian plant dominated connection "channels" between the two primary meadow areas. Much of the length of these channels are essentially low spots in the bed rock. Both of the "non-functional" meadows have dugout waterholes in them which not only attract the cattle, but probably affect the condition of those meadows by lowering the water table or otherwise changing the hydrology. These waterholes were specifically built decades ago for livestock and wildlife watering. In addition, the upper meadow is immediately below the Main Haul Road. The road itself as well as the culvert and years of work done on both, have inevitably effected the conditions and potential of this meadow. It is thought that current livestock management is not the significant factor in the present lack of full PFC attainment. (See the Proposed Management Changes at the end of the document.)

Extensive yearly field observations made since the initial reading confirms that conditions are at least equivalent (i.e. as functional), and often better, than when the PFC ratings were originally done in 1994. The trends all appear to be static to largely upwards (i.e. conditions as defined on the PFC rating sheet continue to be the same or better). In summary, it is thought that current livestock management is either allowing this Standard to be met, of if not totally met, it is allowing significant progress towards fully meeting the goal.

STANDARD 3 - ECOLOGICAL PROCESSES - ***This standard is being met on the allotment.*** The indicators used to evaluate this standard are the same as listed for Standards #1 and #2. Of particular importance are the studies and information provided in Standard #1, since the vast majority of the allotment is upland vegetation. However, all of the information presented in Standards #1 and #2 strongly indicate that the ecological processes of energy flow, nutrient cycling, and the hydrologic cycle are functioning at least adequately and probably fully on the allotment.

Although this Standard is currently met, there is one area of future concern. As noted in the condition discourse under Standard 1, most ecological sites in the Gerber area have been and are continuing to experience increased densities of western juniper. The juniper increase has the future potential to dramatically effect ecological conditions. This could include decreased forage production for wildlife and livestock, increased erosion potential due to diminished ground cover, mono-culture vegetation types that decrease wildlife diversity, decreased water availability, and other impacts.

STANDARD 4 - WATER QUALITY - ***This standard is not being met on the allotment.***

Barnes Valley Creek does not meet the state standards for summer water temperatures. However, the livestock grazing on the Pitchlog allotment is not presently considered a significant factor in the non-attainment of this Standard. Because of changes in grazing management in recent years (noted in the current management section later), the current livestock use is believed to be making as much progress as possible towards meeting this standard. In addition, BLM grazing management is meeting the USF&WS Biological Opinion requirements for the areas around both creeks, as it pertains to appropriate habitat for the endangered shortnose sucker. Another factor is that large portions of the creek above and to the northeast of the BLM administered lands, are privately owned or Forest Service administered, and the use of these lands is beyond BLM control.

However, it is also thought that the current state standard for summer water temperature cannot be met for the public land portions of Barnes Valley Creek even with no livestock grazing and/or pristine conditions. In the near future (next 1-3 years) a formal Watershed Analysis is planned for the Barnes Valley Creek watershed. At that time water quality issues would be analyzed in depth and, if problems are found attributable to public lands, appropriate solutions proposed.

STANDARD 5 - NATIVE, T&E, and LOCALLY IMPORTANT SPECIES - ***This standard is being met on the allotment.*** The indicators for this standard are various population studies and monitoring; the Ecological Site Inventory (ESI); the vegetation monitoring and studies noted in Standards #1 and #2.

SHORTNOSE SUCKER & SECTION 7 CONSULTATION

This allotment has been under formal Section 7 (ESA) consultation since 1994 in regards to the grazing management and the Federally listed (endangered) shortnose sucker. Through this consultation process it has been affirmed that the current grazing management is compatible with the survival of the sucker because, as currently managed, the use is compatible with the maintenance of a healthy functioning watershed and landscape. In addition, the apparent spawning success of the suckers in Barnes Valley creek has been consistently good, even during the drought years of the late 80's and early 90's.

The 1995 Biological Opinion issued by the USF&WS (1-ERO-95-F-001) for the allotment found that the grazing was "...not likely to jeopardize the continued existence of the sucker..." or "...result in the destruction or adverse modification of proposed critical habitat..." (Proposed Critical Habitat Unit 6 - Gerber Reservoir and Watershed). The recent re-consultation process has indefinitely affirmed and continued the 1995 Biological Opinion, via the USF&WS memo dated April 6, 1999.

OTHER WILDLIFE

The recent ESI has shown that the ecological conditions on the allotment are good to excellent. Specifically, 95%+ of the allotment is in either Late Seral or at Potential Natural Community (PNC). This is a strong indication that the vegetation habitat for wildlife species is in good condition and not

a significant limiting factor.

There is also no known or suspected forage competition problems between the major wildlife grazing species and livestock. The KFRA ROD/RMP and EIS allocated forage to wildlife as follows: 174 AUMs for deer, 37 AUMs for Elk, and 64 AUMs for antelope. Post livestock grazing average utilization levels are consistently light, implying plentiful residual herbaceous forage for large wild herbivores. Utilization pattern mapping also shows large areas of the allotment which get little livestock use and would be available for wildlife use. Grazing use is completed early in the year, thus limiting the potential for late season competition on important browse species - upland and riparian. This has been shown to be true via the rangeland monitoring studies.

PLANTS

As noted previously the ecological conditions of the allotment, as determined by the ESI, are good to excellent. The dominance of functional vegetation communities implies that the potential for noxious weed invasion is suppressed since the conditions for weed spread are largely lacking. The ESI and ongoing rangeland monitoring studies have not revealed significant concentrations of medusaehead, cheatgrass, or other annual bromes in this allotment.

Special status species: Surveys of portions of the allotment from 1979 to present have not found any populations of special status plants. Earlier surveys located populations of Peck's lomatium (*Lomatium peckianum*) and Sierra onion (*Allium campanulatum*), which were considered rare at the time. However, these species are no longer listed by the Oregon Natural Heritage Program (ONHP) because they are considered too common (ONHP 1998).

Noxious weeds: Three noxious weed populations are known within this allotments. One population of musk thistle (*Carduus nutans*) is along Wildhorse Creek in the SE quarter of Section 34 of T39S R14E. There are two sites of Canada thistle (*Cirsium arvense*) along Pitchlog Creek at the road crossing in the NE quarter of section 25 of T39S R15E. These sites are on the annual operations plan for treatment and monitoring of noxious weeds.

Current Management and Recent Management Changes

The maximum permitted number of cattle that may be grazed is 302 head, which includes 255 head for the public lands permit and an additional 47 head "Exchange-of-Use" (EOU) for the intermingled, unfenced private lands. The permitted season-of-use is 5/10 to 6/30 for a total of 434 AUMs for the public lands and 80 for the private lands EOU.

Livestock management changes in recent years include the implementation of a fenced 4 pasture, rest-rotation system "flash" grazing system which includes the separation of the Pitch Log and Barnes Valley Creeks into their own pasture which is only used early in the season (completed 1994); permanent fence exclusion of a major portion of Pitch Log Creek (1981); and more intensive rangeland monitoring studies on the allotment - both upland and riparian (initiated in 1992). Based

on the past 7 years of monitoring studies and field observations, the forage production and conditions within the allotment can accommodate the full permitted use under the current grazing system.

Due to the importance of the NE pasture - which contains this allotments' portion of Barnes Valley Creek - the grazing rotation system is designed to optimize creek and riparian stability and conditions in this pasture, without fencing the creek separately (tried in the past without success). Specifically, the NE pasture will be used in rotation with the other 3 pastures, but will always have the early season of use, i.e. 5/10 to 5/25. Past utilization studies within the allotment, including drought and wet years, have shown that with the growth (and regrowth) that typically occurs after 5/25, utilization made to that date will be more than compensated for by the continuing growth yet to occur. Also, cattle are less inclined to use the riparian areas in May due to both high water levels and the fact that the upland vegetation is as attractive at that time as the riparian plants. Riparian conditions on the drainages in the NE pasture continue to exhibit overall good conditions with upward trends.

Proposed Management Changes

No changes in grazing management are proposed because the current grazing management is either meeting the Standards, or is making significant progress towards meeting them, where grazing is known to be a resource issue. The current grazing management is also required to be followed under the most recent Biological Opinion (from the ongoing Section 7 consultation) for Pitchlog.

The only minor issue, which may be grazing related, is the condition of the Wildhorse meadows. Specific lentic PFC assessments will be completed on these two areas during FY 1999 or FY 2000. These assessments would be done by an interdisciplinary team and may (or may not) reach a different determination than the 1994 assessment. This determination may lead to the proposing of specific management to remedy what problems are thought to exist. This could include fencing the meadows, reclamation of the waterholes, road re-routing, a combination of these or other appropriate remedies, or no changes, depending on the problems found, the probability of rectifying the problem(s), and the priority and importance placed of doing it.

Juniper reduction should also be pursued in most ecological sites on the Pitchlog allotment. This needs to be seriously considered if we are to stop the deterioration of conditions on most of the ecological sites in the Gerber Block. Specifically, the following juniper removal or thinning should be considered as listed below (with dominant ecological sites in Gerber listed):

> Virtually all juniper could be removed from the true non-juniper ecological sites (Shallow Stony 10-20", Stony Claypan 14-20"). Non-juniper sites should have 0-1% juniper.
> Most of the younger trees (<100 years) could be removed from the true “old” juniper sites (Juniper Claypan 16-20").
> Reductions to achieve a mix of age classes could be done in the other juniper potential sites (Mahogany Rockland 10-20"). Juniper amounts should reflect amounts allowed in ecological site descriptions.

Juniper should be brought closer to that described in the ecological site description on the ponderosa pine sites, with all age classes represented but as a minor component (Pine-Mahogany-Fescue 16-20", Pine-Sedge-Fescue).

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Determination

(X) Existing grazing management practices and/or levels of grazing use on the Pitchlog allotment promote 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 on the Pitchlog 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.

/s./ Teresa A. Raml — 9/14/99

Manager, Klamath Falls Resource Area — Date