6/26/06 - Final

Bryant-Smith (#0855) & Bryant-Horton (#0837) Allotments Rangeland Health Standards Assessment (RHSA)

View picture from Langell Valley looking south at the northeast face of Bryant Mountain. Both allotments covered by this RHSA are located on Bryant from this ridge south; foreground is private lands as is the majority of Bryant Mountain itself. The picture at the end of this Assessment was taken on the ridge in the middle looking towards the foreground of this picture. (Picture taken 9/5/05)

Introduction/Background

Both the **Bryant-Smith** and **Bryant-Horton Allotments** (generally referred to in this RHSA as "Smith" and "Horton", respectively) are located on the northeast end of Bryant Mountain in southeast Klamath County about 20 miles due east of Klamath Falls, Oregon. Both allotments largely lie immediately adjacent to each other; thus the Ecological Site Inventory (ESI) information spans both. In addition, the plant communities, ecological conditions, grazing use, and other physical and ecological attributes of both allotments are very similar. Due to these similarities both allotments are considered together in this RHSA, though allotment specific details are usually kept separate. Both allotments are typically licensed and grazed every year more or less according to their respective grazing leases.

The **Bryant-Smith ("Smith") Allotment (#0855)** lies in the small basin immediately around Smith Reservoir. It is a largely blocked up parcel of public land (unusual for Bryant Mt.) that is also used in common with adjacent private lands like all of Bryant. This allotment is listed in the Klamath Falls ROD/RMP as 1,140 acres in size though the ESI tallied acres in the GIS system indicated 1274 acres (however 40 of the acres are actually private land literally in Smith Reservoir). The allotment is grazed via a section 15 (of the Taylor Grazing Act of 1934) grazing lease with up to 31 cattle from May 15th through August 31st (109 AUMs). However, field checks in recent years indicate that the cattle are usually removed (or wander home from off the mountain) prior to the late August end date.

The **Bryant-Horton ("Horton") Allotment (#0837)** lies immediately to west and northwest of Smith having a fenced boundary between. This allotment is listed in the Klamath Falls ROD/RMP as 1,249 acres in size; the ESI tallied acres in the GIS system indicated 1218 acres. Unlike Smith - but more typical of Bryant Mountain in general - Horton is fragmented into three widely detached parcels: "north", "middle", and "south." The north parcel is located on the extreme north end of Bryant Mountain and very distant from the south and middle parcels. The north parcel is included within (and grazed as part of) a larger parcel of land owned by the grazing lessee. The largest chunk of public lands is the south parcel (about 80% of the allotment acreage) which lies around and to the north of Harpold Reservoir and only has a small amount of private lands physically included (fenced) as part of the grazing area. The middle parcel is a very steep area on the northeast face of Bryant Mountain and is little used by cattle. Horton is also grazed via a section 15 grazing lease with up to 100 cattle from June 1st through July 9th (130 AUMs), though in some years a little later grazing use is allowed (discussed later).

The photo to the left was taken in SWA BH-8 north of Smith Reservoir which is a PNC (potential natural community with a very high rating of 90%) *Juniper Claypan 16-20"* ecological site area that is in exceptional condition. It exhibits the classic "juniper savannah" look as it has very few invasive (younger) junipers and widely spaced older trees. The understory is dominated (65% of the composition) by native perennial grasses and forbs, some scattered low sagebrush, and almost no exotic annual grasses.

The vegetation of both allotments is primarily of two main classes in roughly equal proportions. The rocky, thinner soil ecological site areas are dominated by western juniper (much of it "old growth" like in the picture above), several species of sagebrush (both low sagebrush and mountain big sagebrush), mountain mahogany, bitterbrush, and various bunch grasses. In the deeper soil areas, ponderosa pine defined ecological sites are the norm, which on Bryant also includes mixed white fir as well as understory vegetation dominated by a wide variety of shrub species, forbs, and grasses. Many areas within the two allotments have been either burned (wildfire and prescribed - largely in the pine areas) or received juniper control activities (the invasive juniper areas). The topography/terrain on top of the mountain (majority of both allotments) is relatively gentle to rolling, though the northeast face of Bryant Mountain is very steep with slopes exceeding 100% in places. (The vegetation communities are covered comprehensively under Standard 1 as is the past grazing use.)

Due to the long term lower priority status of both allotments no rangeland monitoring information has apparently ever been collected. Because of this dearth of information, ESI was completed for these allotments (and surrounding areas) during the fall of 2005 in preparation for Assessment. This Assessment is largely based on an evaluation of that ESI information - supplemented with what allotment specific information could be found - to determine if current livestock grazing management is meeting the Standards for Rangeland Health and LUP objectives.

The Horton Allotment had no "Identified Resource Conflicts/Concerns" noted in the ROD/RMP (Appendix H, page H-18); the Smith Allotment had three "Identified Resource Conflicts/Concerns" (page H-45) which will be addressed at least implicitly by one or more of the 5 Standards in this Assessment. The conflicts/concerns and related "Management Objectives" 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.
Riparian or aquatic habitat is in less than good habitat.	Maintain and improve riparian or aquatic habitat in good or better habitat condition.
Potential for grazing/recreation conflicts within the allotment.	Grazing management should consider recreation concerns.

Apparently some occasional problems with livestock distribution and/or utilization were perceived at some point in the Smith Allotment accounting for the first general RMP concern/objective, though no data or information was found in the files to support this. The second and third concerns/objectives undoubtedly result from Smith Reservoir being in the allotment (which used to be called Bryant Mt. Reservoir prior to the mid-1970s). The riparian concern is relative to the artificial fringe spikerush meadow around Smith reservoir (i.e. exists only due to the reservoir construction) and the recreation concern reflects the fact that the reservoir has a variable fishing resource (warm water species). These issues are discussed later in this Assessment.

Categorization of grazing allotments has been required by Bureau policy since the early 1980's in order to direct limited manpower and funding to resource problem areas that are most in need of it and the probability of success is reasonable. A brief summary of the allotment specific categorization efforts follows as it is indicative of the relative resource concerns on this allotment - past and present. ("I" or "Improve" allotments have the highest priority resource concerns, "M" or "Maintain" allotments are moderate to low priority; and "C" or "Custodial" allotments are the lowest resource priority, usually due to small size and/or lack of ability to make significant change. See the ROD/RMP Appendix H, pages H-69-70 for further information on the allotment categorization - "Selective Management" - process.)

1982 Ranking (**Bryant-Smith**)
#1 - Range Condition: Satisfactory ("M" ranking).
#2 - Forage Production Potential: Potential is moderate to high & present production near potential. ("M" ranking)
#3 - Resource Use Conflicts: Limited conflicts or controversy may exist. ("C" ranking)
#4 - Economic Returns: Opportunities may exist for positive economic returns. ("M" ranking)
#5 - Present Management: Satisfactory. ("M" ranking)

The Smith Allotment was ranked overall in the "M" category during the 1982 ranking exercise.

Given these rankings, the grazing problems must not have been considered particularly noteworthy at that time. In August of 1989, the allotment was informally changed to a "C" category allotment by the range conservationist at that time (elements #2, #4 & #5 were changed from "M" to "C"). The adjusted 1982 ranking form had the following note of justification added: *"Changed to "C" category because of low BLM acreage to high private acreage"* – a common constraint to the ability to effect change if change is needed. The allotment was carried forward in the "C" category during the RMP process in the early 1990's and is so listed in the 1995 KFRA ROD/RMP. The information collected during the recent ESI supports the original "M" ranking in categories #1 and #2 because the majority of the allotment is in good to excellent condition (late seral or PNC) and exhibits appropriate forage production for the given ecological sites. Ranking criteria #4 and #5 would still be considered as "C" rankings due to the mixed ownership issue which has not (and will not) change.

For reasons unknown, the Horton Allotment was not ranked during the first round of Selective Management classifications in 1982 though was ranked as a "C" category allotment in the 1995 ROD/RMP. That ranking is also thought to still be appropriate today, though the recent ESI would support an "M" ranking in categories #1 and #2 due to the elevated ecological conditions found on the allotment.

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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.)

> The primary information to be used in evaluating this Standard is that collected during the recent Ecological Site Inventory (ESI) including the general ESI related observations with some limited observational notes from the grazing files and the professional judgment of BLM personnel who have worked in the area for many years. The indicators that this information helps address are: plant cover, litter, composition, production, age class and community structure; level of erosion and overland flow; apparent trend. Some of these indicators are implicitly addressed with the ecological condition rating and others with the variety of ESI related observations (e.g. SSF, OAT).

Ecological Site Inventory (ESI):

An ESI was completed for the north end of Bryant Mt. – including the entire Smith and Horton allotments - during the fall of 2005 by KFRA range staff members. This included the author of this RHSA who did the ESI on these two allotments. The details and observations of this survey were documented in notes to the allotment files entitled *"**North Bryant Mountain Allotments: Ecological Site Inventory**"* dated *"**Late Summer/Fall 2005**."* This ESI resulted in the preparation of a large assortment of *"Rangeland Inventory - Ecological Status Worksheets"* covering many different "Site Write-up Areas" or SWA's in 5 different allotments, including Smith and Horton. A SWA is a distinct zone of vegetation that is relatively homogeneous within the SWA (though may be made up of several ecological sites) but different than the other SWA's. Many of the SWA's continued from one allotment to the adjacent one(s) with the same SWA # used in several allotments for consistency; these are noted in the tables that follow.

The following is a summary of the ESI information which is keyed to the SWA numbers on the ESI maps located in the "Bryant Mountain (North) ESI" file (to be placed in the allotment file cabinet) the information from which has also been entered into ArcView (GIS). All of the noted ecological sites are in the Major Land Resource Area (MLRA) 021X - *Klamath and Shasta Valleys and Basins*

which is the MLRA that covers the entire KFRA. The pertinent ecological sites, which were created and administered by the NRCS, are found on-line at this URL: http://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx Copies of the KFRA specific (slightly modified for our lands) 021X ecological site guides are located in the KFRA office in the "range" area. The modified guide is what was used to do the actual condition ratings.

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Bryant-Smith (0855)

SWA#	SWA%	Ecological Site Name	Worksheet #	Acres	Condition	Trend
BS-1	100%	Smith Reservoir/Playa - some spikerush around edges, and/or water; no site write-up prepared (129.8 acres - 40 acres of which are private).				
BS-2	90%	*Pine-Fir-Sedge 18-30"*	BL-05-20	120.5	PNC	Upward
	10%	*Pine-Sedge-Fescue 16-24"*	BL-05-15	13.4	Mid	Upward
BS-3	30%	*Pine-Sedge-Fescue 16-24"*	BL-05-17	120.5	Late	Upward
	20%	*Pine-Mahogany-Fescue 16-20"*	BL-05-16	80.4	Late	Down*
	50%	*Pine-Mahogany-Fescue 16-20"*	BL-05-12	200.8	PNC	Down*
SWA's extending into #0855 from the neighboring #0837 allotment						
BH-8	100%	*Juniper Claypan 16-20"*	BL-05-18	510.9	PNC	Upward
BH-10	75%	*Pine-Sedge Fescue 16-24"*	BL-05-17	73.4	Late	Upward
	25%	*Mahogany Rockland 10-20"*	BL-05-11	24.5	Late	Static

Bryant-Horton (0837)

SWA#	SWA%	Ecological Site Name	Worksheet #	Acres	Condition	Trend
BH-1	100%	*North Slope 14-18"*	BL-05-05	53.1	Late	Static
BH-2	100%	*Shallow Stony 10-20"*	BL-05-06	13.2	PNC	Static
BH-3	100%	*Shrubby Loam 16-20"*	BL-05-07	5.7	Late	Static
BH-4	100%	*Pine-Sedge Fescue 16-24"*	BL-05-15	32.9	Mid	Upward
BH-5	100%	*Pine-Mahogany-Fescue 16-20"*	BL-05-16	29.4	Late	Down*
BH-6	100%	*Pine-Sedge Fescue 16-24"*	BL-05-17	91.8	Late	Upward
BH-7	100%	*Mahogany Rockland 10-20"*	BL-05-11	35.3	Late	Static
BH-8	100%	*Juniper Claypan 16-20"*	BL-05-18	283.7	PNC	Upward
BH-9	100%	*Ephemeral Lakebed*	BL-05-19	71.0	PNC	Static
BH-10	75%	*Pine-Sedge Fescue 16-24"*	BL-05-17	26.9	Late	Upward
	25%	*Mahogany Rockland 10-20"*	BL-05-11	8.9	Late	Static
BH-11	50%	*Mahogany Rockland 10-20"*	BL-05-11	171.4	Late	Static
	30%	*Pine-Sedge Fescue 16-24"*	BL-05-17	102.8	Late	Upward
	20%	*Pine-Sedge Fescue 16-24"*	BL-05-15	68.6	Mid	Upward
BH-12	100%	*Pine-Sedge Fescue 16-24"*	BL-05-15	27.2	Mid	Upward
SWA's extending into #0837 from neighboring allotments						
HC-14	40%	*Shrubby Loam 16-20"*	BL-o5-09	11.3	PNC	Down
	60%	*Mahogany Rockland 10-20"*	BL-05-11	7.5	Late	Static
HC-16	60%	*Pine-Mahogany-Fescue 16-20"*	BL-05-14	81.0	PNC	Upward
	40%	*Juniper Claypan 16-20"*	BL-05-02	54.0	PNC	Upward
BS-2	90%	*Pine-Fir-Sedge 18-30"*	BL-05-20	37.8	PNC	Upward
	10%	*Pine-Sedge Fescue 16-24"*	BL-05-15	4.2	Mid	Upward

*The observed apparent trend (OAT) for these areas was actually determined to be static/upward, though with the juniper encroachment the trend must be considered as slowly downwards (i.e. lowering condition rating).

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The overall condition of the **Bryant-Smith Allotment** by condition class and weighted by acres (1274.2 acres total, *including 40 acres of private in Smith Reservoir) is summarized in the following table:

PNC	**832.2 acres**	**65.4%**
Late Seral	**298.8 acres**	**23.5%**
Mid Seral	**13.4 acres**	**1.1%**
Unclassified (water/playa)	**129.8 acres***	**10.0**%

The overall condition of the **Bryant-Horton Allotment** by condition class and weighted by acres (1136.7 acres total) is summarized in the following table:

PNC	**471.0 acres**	**41.4%**
Late Seral	**532.8 acres**	**46.9%**
Mid Seral	**132.9 acres**	**11.7%**
Early Seral	**0 acres**	**0%**

The information presented above shows that the area is ecologically diverse for its size (9 different ecological sites) and in good to excellent condition with over 98% of Smith (excluding Smith Reservoir) and over 88% of Horton classifying as late seral and PNC. The elevated ecological conditions found on the large majority of both allotments strongly indicate that the overall area is within appropriate ecological site description parameters for functionality relative to the three major attributes of rangeland health - *Soil/Site Stability*, *Hydrologic Function*, and *Integrity of the Biotic Community*. In fact, a couple of the vegetation communities in the area (i.e. the *Juniper Claypan 16-20"* (BH-8) and *Pine-Fir Sedge 18-30"* (BS-2)) have ecological conditions sufficiently elevated to be considered as ecological reference areas (i.e. excellent condition areas to compare other similar areas against). A proper vegetation management objective for both allotments would be to at least maintain the current condition ratings in the areas that are now late seral or PNC. (See the "*Management Recommendations*" section later in this document.)

All of the recorded mid-seral vegetation within both allotments were a couple different *Pine-Sedge-Fescue 16-24"* ecological site areas represented by write-up BL-05-15. These were areas that had been burned (wildfire) at some point in the past 15-20 (?) years and are still dominated by relatively dense stands of shrubs - primarily buckbrush (*Ceanothus velutinus*) and rubber rabbitbrush (*Chrysothamnus naseousus*). The majority of the mid-seral was a burn area in Horton (SWA BH-4) about a mile northwest of Harpold Reservoir (picture to left) with the remainder a small burn in part of SWA BS-2 in the Smith Allotment just south of Smith Reservoir.

One additional condition note is that an extensive amount of juniper control activities (sheared, piled, and burned) was completed several years ago on BLM lands along the western edge of the Horton Allotment (SWA HC-16). This is part of the BLM administered lands on top of the main north Bryant Mountain ridge east of the big transmission lines though extensive juniper control was also done to the west of the power lines (other allotments). The treated areas were primarily in the *Pine-Mahogany-Fescue 16-20"* ecological site represented by write-up BL-05-14. Most of the shearing activity was in the neighboring Harpold Canyon Allotment (0895) which is covered by another RHSA, but some was in Harpold. Here is the brief description of this SWA from the fall 2005 ESI notes:

> **HC-16**: This SWA is a large area on top of the main ridge to the east of the transmission lines that also makes up portions of the McFall (most of the "south" pasture) and Bryant-Horton allotments. It is a complex of a juniper sheared *Pine-Mahogany-Fescue 16-20"* (BL-05-14) and *Juniper Claypan 16-20"*. Both appeared to be at least static to upwards (particularly in sheared areas) trending in condition. There is a fair amount of annuals – again particularly where burned – but not enough to impair the excellent condition rating...

A typical area within SWA HC-16 is represented by the picture below. As noted, most of the shearing was in the *Pine-Mahogany-Fescue 16-20"* areas with a little in the intermingled (complexed) *Juniper Claypan 16-20"* inclusions. The pictured area exhibits the "flush" of annual vegetation typical of recent juniper removal sites though it is still dominated (59% of composition) by native perennial grasses which will likely crowd out most of the annuals over time. In short, this was an excellent area for treatment with an appropriate treatment applied.

To the right is a 9/12/05 photo showing a *Pine-Mahogany-Fescue* ecological site (write-up BL-05-14) that received juniper treatment 3-4 years ago. This treatment area was complexed with *Juniper Claypan 16-20"* ecological site areas as SWA HC-16. The current flush of annual species apparent in the picture is being quickly displaced by native perennial grasses and forbs.

Other Monitoring/Observational Information:

No rangeland monitoring data has apparently been collected on these allotments due to their lower priority; thus the need for doing the ESI discussed above. During that survey, two additional resource condition observations are made at each write-up area – trend (Observed Apparent Trend or OAT) and soil erosion (Soil Surface Factor or SSF).

Bryant-Smith Allotment: The OAT for the 7 allotment pertinent worksheets indicated 4 upward trend areas, 1 static (or not apparent), and 2 downward trend areas. Both downward trend areas were *Pine-Mahogany-Fescue 16-20"* areas in SWA BS-3 (described by worksheets BL-05-12 & BL-05-16 and about 70% of that SWA). These areas nominally ranked out as static to upwards based on the elevated ecological condition ratings (late seral to PNC) but must be considered as slowly trending downwards due to juniper encroachment; these areas are in need of juniper treatment. Complimenting these trend readings, the SSF ratings for Smith were all within the "Stable" erosion condition class primarily due to the ample ground cover.

Bryant-Horton Allotment: The OAT for the 13 allotment pertinent worksheets indicated 6 upward trend, 5 static (or not apparent) trend areas, and 2 downward trend areas. These are overall appropriate and indicating that conditions are generally at least stable. The two downward trend readings were in areas with the same juniper encroachment problems as noted for Smith above and rated downwards for that reason. Complimenting the trend readings, the SSF ratings for Horton were dominated by "Stable" to "Slight" erosion condition classes (12 write-ups) with one "Moderate" ranking (SWA BH-3). This was a small (5.7 acres) area in the small "north" parcel of the Horton Allotment which is intermingled with lessee owned private lands. However, the area is *Shrubby Loam 16-20"* ecological site still in late seral condition, i.e. appropriate condition.

Forage Allocation & Use History:

Based on a review of the older grazing files, the section 15 grazing lands in the old Lost River Resource Area (which is now a large part of the current KFRA) were converted from acres based to AUM based leasing in 1968-1970. (The section 15 lands are essentially all the KFRA administered lands outside of the Gerber Block.) The section 15 lands were typically converted at the ratio of 7 to 10 acres equaling one AUM, e.g. a 100 acre lease of BLM land would be leased at 10-14 AUMs. These conversions were not based on any type of specific range survey or monitoring information, but were instead converted based on allotment acreage and an estimate of the forage capabilities of the area. Given the elevation and climatic regime of the BLM lands in our area (13"-18" precipitation) and the vegetation communities that this precipitation can support, a rating of 7-10 acres per AUM can be an acceptable maximum allocation though in many areas a lower rating (more acres per AUM) is warranted if topography, condition, or other factors limit the availability or usability of forage. Unfortunately, no specific information on past forage capacity allocations was found for either of these Assessment allotments.

Bryant-Smith Allotment: The following is the short "case history" that someone (most likely Jon Collins, the range conservationist during the 1980s) put together and placed in the lessee's grazing file; it is reiterated completely here:

> "On August 23, 1963, Walter Smith Sr. made application for cattle use within the Smith-Bryant Allotment. The application was approved for 44 AUMs. On March 3, 1969, the ranch was transferred from Walter Smith to his son Richard A. Smith and an application for grazing use made and approved for 74 AUMs. As a part of his 1974 grazing application, Richard Smith requested that his preference be increased to 109 AUMs. This application

was approved and a new preference of 109 AUMs established. Then on May 6, 1985, Walter Smith Jr. and Richard A. Smith, (brothers) exchanged title for private land inherited from their father Walter Smith Sr. The result of this exchange left Walter Smith Jr. with the Bryant-Smith BLM allotment. May 8, 1985, a ranch transfer was approved, resulting from this action, while the preference remained at 109 AUMs."

The reason for the request for an increase from the original 55 AUMs to 74 AUMs and finally to 109 AUMs are not clearly stated in the file, though the increase to 109 in 1974 is undoubtedly related to a 1973 grazing decision which added 540 additional acres to the allotment from the Horton Allotment. This was done to simplify the management of both allotments which prior had split Smith Reservoir into two unwieldy portions entailing problematic fence maintenance. The current grazing lease for the allotment is still for the 109 AUMs authorized in 1974 and represents a rating of about 10.5 acres/AUM. Grazing use (or at least the licensing) on the allotment appears to have been pretty much continuous over the time noted in the case files and since 1974 at the current preference, i.e. 31 head from mid May to late August, though as noted earlier, the cattle in recent years appear to be off the allotment by mid-summer.

Utilization observations made during the ESI in 2005 indicated slight to light use dominates the area with the exception of a few scattered acres of heavy use at the reservoir – a function of that (and the ditch out of it) being the only watering source in the allotment. Given the excellent ecological conditions and overall light grazing use the current grazing use is deemed appropriate.

Bryant-Horton Allotment: For the Horton Allotment the available files go back to the early 1980s, with some earlier records carried forward from other files that are not available today (probably in the archives). Grazing use on the allotment has been consistently licensed almost every year since the early 1980s (the severe drought year of 1992 being an exception when non-use was taken) at full lease defined amounts, i.e. 100 head typically from June through early July. In more recent years the current permittee (Jan Wright) often requests – and is granted – delayed use due to a combination of the cattle coming back from California in the late spring and to allow time for Harpold Reservoir water levels to lower and expose more forage (i.e. spikerush). Specifically, the use is often made between mid-June and mid to late July. The allotment was and remains allocated at about 10 acres per AUM, which given the high amount of forage in the Harpold meadow (which is partially private), is likely reasonable most years.

Utilization observations made during the ESI in 2005 indicated slight to light use dominate the allotment with one exception. That exception is the widely detached "north" 40 acre parcel of BLM that is intermingled with the permittees private lands (this area is shown in the previous picture). This parcel exhibited high moderate utilization though still acceptable with a lower late seral ("good") ecological condition. Like with the Smith Allotment, the good ecological conditions of

Horton in hand with the light overall grazing utilization indicates that the livestock level and season of use is appropriate and having no significant impact on conditions.

Determination: ***This Standard is currently being met.***
The recent ESI and other observational information indicate that the BLM administered lands in both allotments are dominated by good to excellent (late seral to PNC) ecological conditions appropriate for meeting this Standard. Recent and pending future juniper treatment have and will continue to enhance conditions in those areas that were (are) suffering from excessive juniper encroachment and related understory and ecological impairment, though there may be a post-treatment temporary increase in annual species as shown in the picture on page 7. The only current condition issue is related to wildfires resulting in a couple areas still dominated by brush which lowers the condition rating. However, these areas would be considered "functional" and the issue is unrelated to cattle grazing. (See the "*Management Recommendations*" section.)

Picture of the PNC spikerush meadow (*Ephemeral Lakebed* ecological site) that occupies almost all of Harpold Reservoir (SWA BH-9) looking south towards the aspen stand (which is on private). Picture taken 9/26/05.

STANDARD 2 - WATERSHED FUNCTION - RIPARIAN/WETLAND AREAS

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

> The primary information, monitoring, and indicators to be used in evaluating this Standard are the same as those listed under Standard 1.

There are two significant wetland areas on BLM administered lands – one within each of the

allotments addressed in this Assessment. Specifically, Smith has Smith Reservoir (in background of picture below) and Horton has Harpold Reservoir (previous picture without water late in the season) both of which are artificial impoundments created for irrigation and/or livestock watering. Both have water rights that are owned entirely by nearby private land owners; the BLM has no water rights and thus no control of the water releases. The following ESI observations were taken directly from the fall 2005 ESI notes and listed by the Site Write-up Area (SWA) number:

> **BS-1**: This is Smith Reservoir itself. It includes a little spikerush like write-up BL-05-19 for Harpold Reservoir meadow, and a few acres of a *Dry Meadow* ecological site at the extreme southeast end of the flat that the reservoir is in. Neither was significant in size and thus not separated out. The rest of SWA BS-1 is water, dike, or mud flat.
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> **BH-9**: This is the spikerush meadow (*Ephemeral Lakebed* site) in Harpold Reservoir. It was almost entirely spikerush with some mat muhly (*Muhlenbergia richardsonis*) and unknown forbs. It rated out as PNC (77%) and must be considered as static trend. Utilization was overall quite light.

Both reservoirs provide the only livestock water to their respective allotments so they would be expected to receive disproportionately heavy use. As noted, Smith Reservoir has limited wetland vegetation areas being more of a lake or playa depending on the time of year. A few very small areas of heavy utilization were noted near the reservoir edge, but this is unavoidable and the remaining 99% of both allotments exhibited primarily light use or less in 2005. The Harpold Reservoir spikerush meadow (pictured on the previous page) receives substantial livestock use, but still typically exhibits moderate utilization levels or less in most years (with occasional heavy use during drought years) based on informal observations over the past 14 years by the author of this assessment. Observations in the area over that time have indicated that spikerush meadows are very resilient to grazing pressure and can withstand occasional heavy utilization while still maintaining good to excellent conditions. Given that fact and that the utilization observed in 2005 was largely appropriate in and around the reservoirs as well as on the dominant uplands, grazing use levels appear to be appropriate.

There are also numerous ephemeral drainages in both allotments which have little in the way of riparian characteristics and only flow during late winter or early spring runoff for short periods. Both allotments appear to be functioning from a hydrological perspective as they should and there are no known present resource problem areas related to livestock grazing.

Determination: ***This Standard is currently being met.***

Given the dominant good to excellent overall ecological conditions of the uplands and the spikerush meadows (primarily Harpold) this Standard is considered met.

STANDARD 3 - ECOLOGICAL PROCESSES

(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.)

The primary information, monitoring, and indicators to be used in evaluating this Standard are those listed under Standard 1.

Since both allotments are upland in nature (excluding the reservoirs noted above) the analysis and information previously listed under Standard 1 is the basis for the determination under this Standard. The 2005 ESI found that outside of the couple small wildfire areas (largest pictured to the left; SWA BH-4) these allotments classified as almost totally late seral or PNC and exhibited relatively low evidence of erosion. Even in the wildfire areas, the ecological conditions are functional with a high shrub component and upward trends. These elevated ecological conditions are considered as reliable indicators of proper functionality for all the processes noted in the Standard description above.

One further ecological issue needs some discussion: western juniper (*Juniperus occidentalis*) and its place in the ecosystem of this area. Most portions of the Klamath Basin, above the valley floor and below about 5500' (though aspect dependent), have been experiencing varying degrees of the "juniper problem." This includes juniper encroachment into vegetation communities - particularly those with big sagebrush, mountain mahogany, and bitterbrush - that previously had limited juniper and

significant density increases in areas where juniper was and should be present, though in lesser quantity. Though a native plant, in the absence of fire (a function of increased suppression and grazing related fine fuels reduction) and with the catalyst of heavy livestock grazing in the past reducing shrub and grass competition, juniper can increase to the point that the vegetation community approaches a juniper monoculture. This results in diminished habitat capabilities for most native wildlife species, dramatically reduced forage production for all grazing animals, increased probability of soil erosion, and frequently an environment conducive to the invasion of undesirable exotic plants.

On the Smith and Horton Allotments, juniper encroachment has been an ever increasing problem with many areas having juniper densities well in excess of historic levels as defined by the ecological site descriptions. This is particularly true in the *Mahogany Rockland 10-20"* (pictured above; SWA BH-7), *Shrubby Loam 16-20"*, *Pine-Mahogany-Fescue 16-20"*, and to a lesser degree in this area, the *Juniper Claypan 16-20"* ecological sites. Some of the areas on the allotment have been treated (sheared, piled & burned) several years ago and several hundred acres more are scheduled (at the time of writing this Assessment) in the near future within both allotments.

Determination: ***This Standard is currently being met.***
As with the determination for the first Standard, the current good to excellent ecological conditions of the vegetation communities on a large majority of both allotments strongly indicates that Standard 3 is met. (See Standard 1 for the data, evaluation, and determination information that is pertinent to this Standard.) Fortunately, the juniper encroachment issue is being aggressively pursued as a fuels reduction issue throughout the KFRA and particularly of recent, on Bryant Mountain. (See the "*Management Recommendations*" section.)

STANDARD 4 - WATER QUALITY

(Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.)

As discussed under Standard 2, there is only one reservoir on each of the assessed allotments – Smith Reservoir on Smith and Harpold Reservoir on Horton. Both are more or less drained each year for irrigation below the mountain and neither is exceeding state water quality standards (though they may not be checked). The BLM lands on Bryant Mountain are disconnected from any significant water body (Lost River) by extensive tracts of variably developed private lands. Past (and future) grazing on these allotments is not thought to have the potential for any effect on the water quality external to the BLM lands because of the detachment and the fact that the vegetation communities on the BLM administered lands are functional, i.e. dominated by late seral to PNC conditions.

Determination: ***This Standard is currently being met (or is not applicable).*** At this time, neither the surface water nor groundwater within the allotment has been listed for exceeding State water quality standards.

STANDARD 5 - NATIVE, T&E, and LOCALLY IMPORTANT SPECIES

(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.)

The primary information, monitoring, and indicators to be used in evaluating this Standard are those listed under Standard 1.

Animals: The dominant good to excellent vegetation ecological conditions (Standard 1) indicate strongly that habitat conditions for all native wildlife species are likely good also. The recent and pending juniper control activities will also enhance future conditions for all wildlife by restoring or maintaining more "correct" ecological conditions over the next few decades, though of course, juniper will again begin to make inroads at some point in the future. The importance of the BLM lands in this area is due to their positioning as "islands" of wild lands in and adjacent to a "sea" of variably developed and altered private lands.

Fisheries: Smith Reservoir reportedly has a sustainable population of introduced warm water fish species (bass, sunfish) which survive low water and winter in the deep hole near the dike. There are no habitats within either allotment that contain listed fish.

Plants: The 40 acres in section 27 (allotment 837) was surveyed for botanical resources in 2002. No special status plants or noxious weeds were found in these 40 acres. All other areas in these two allotments were surveyed for botanical resources in 2005. Three populations of Baker's globe mallow (*Iliamna bakeri*), a Bureau sensitive species, were found in sections 1 and 12 of allotment 837.

Noxious weeds species documented include leafy spurge (*Euphorbia esula*), Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum acanthium*), and musk thistle (*Carduus nutans*). Numerous and some large populations of leafy spurge occur in section 12 parallel and west (uphill) from the jeep road and in sections 17 and 18 south and uphill from Smith Reservoir. Several populations of Canada thistle are concentrated on the north end (section 7) and west side (section 18) of Smith Reservoir.

Determination: ***This Standard is currently being met.***
Standard 5 is considered fully met on both allotments. See Standards 1, 2, and 3 for the data, evaluation, and determination information that is pertinent to this Standard. However, the primary indicators of proper wildlife/plant habitat functionality are the elevated ecological conditions, the lack of grazing related problems, and the recently completed and proposed juniper control activities which will likely enhance the ecological conditions of many areas over the next 5-10 years and beyond. (See the "*Management Recommendations*" section).

Management Recommendations:

As noted already, the good to excellent (late seral/PNC) ecological conditions dominating both allotments strongly indicate that livestock grazing as currently authorized is appropriate and no specific changes in livestock management or the current leases are needed. The following management recommendations or affirmations are common to both allotments and reflect the findings of this Assessment, none of which affect the current grazing leases:

1. The ongoing maintenance of the fencing between the two Assessed allotments and on boundaries with neighboring allotments and adjacent private lands has been historically problematic. The entire Bryant Mountain area with its large trees and heavy winter snows is not conducive to fence integrity or easy maintenance. Because of this, the area does have periodic cattle drift issues. In general, the various lessees on the mountain work out these problems on their own though on occasion the BLM becomes involved and we deal cooperatively with the lessee(s) as needed. This often includes

providing materials for maintenance, notifying the lessees of the problem and requiring maintenance, or even maintaining portions ourselves. This approach is expected to continue in the future since rangeland improvement money is very limited, situations and lessees vary, and no broad scale approach to the fencing issue (i.e. rebuilding them all) is practical. Case-by-case remedial action is all that can practicably be done.

2. The Klamath Falls Resource Area has a very proactive weed program which includes inventories and site treatments that consist of biological, chemical, and manual treatments. The treatment efforts are to contain weed sites, reduce population size, and eradicate weed sites where possible. This effort will continue to be pursued on these and all grazing allotments in the KFRA.

3. It is recommended that all of the BLM administered lands in both allotments be retained in public ownership, i.e. not sold or exchanged. Currently, all of the lands in both allotments are listed as Zone 1 which is the retention category. Given these lands high values for wildlife, grazing, and watershed functionality and it is recommended that they remain classified as Zone 1 in the upcoming RMP revision scheduled for completion in 2008.

4. Plant community objectives for both allotments are to maintain (or improve) the vegetation communities at near the currently determined ecological condition ratings for all of the different SWA's, as listed under the ESI section in Standard 1, indefinitely. To "maintain or improve" the current ecological condition rating is defined as managing each noted vegetation community (i.e. recorded ecological sites) towards maintaining (or increasing) the 2005 determined ratings within 5 points to the minus side (i.e. 5 points less to reflect the lack of rating precision between observers) or higher indefinitely. Short term disturbance (5 to 7 years or less) which temporarily sets back the ecological condition rating more than 5 points would be allowed to recognize that some treatments, like juniper shearing/burning, would temporarily depress the condition rating but would lead relatively quickly to an increased ecological rating for the longer term.

5. Juniper encroachment is an issue in two *Pine-Mahogany-Fescue 16-20"* ecological site areas; one in each allotment. Specifically, most (70%) of SWA BS-3 in Smith (NE of Smith Reservoir) and all of SWA BH-5 in Horton (about a mile north of Harpold Reservoir) are in need of juniper removal (sheared, piled, and burned without any dragging utilization) in the next 5 years. Both SWA's are areas that still have good herbaceous understory vegetation communities though the shrub component is collapsing fast, particularly the mountain mahogany. (See the ESI file for locations.)

6. Due to the good ecological conditions and relatively low priority status of the both allotments, the establishment of formal rangeland monitoring studies is not necessary in the foreseeable future. It is recommended that both allotments receive use supervision every 1 or 2 years during or just after the grazing use to ensure that no significant grazing related resource problems are occurring.

* * *

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Determination

(X) Existing grazing management practices and/or levels of grazing use on the Bryant-Smith (#0855) and Bryant-Horton (#0837) Allotments promotes achievement or significant progress towards the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management (Appendix 1).

( ) Existing grazing management practices and/or levels of grazing use on the Bryant-Smith (#0855) and Bryant-Horton (#0837) Allotments 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/ *Heather Bernier* (Acting Field Manager) — 7/20/06

Field Manager, Klamath Falls Resource Area — Date

View from the high northeastern ridge of Bryant Mt. in the Bryant-Smith Allotment looking towards Langell Valley with Horsefly Mountain in the middle background and Gearhart to the left.