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Rangeland Resource Report

Westside Fire Recovery Project

Happy Camp/Oak Knoll and Salmon/Scott River Ranger Districts,
Klamath National Forest
Siskiyou County, California

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Table of Contents

Rangeland Resource Report	1
Methodology	1
Analysis Indicators.....	1
Spatial and Temporal Context	1
Affected Environment.....	2
Environmental Consequences	5
Compliance with law, regulation, policy, and the Forest Plan	7
References	8

List of Tables

Table 1: Allotments within the project boundary	2
Table 2: Condition based on Rooted Frequency Plots.....	2
Table 3: Most current BMPEP rating for each allotment within the project area.....	3
Table 4: Fire intensity	4
Table 5: Approximate acres of proposed activities within allotment boundaries.....	6
Table 6: Percentage of allotment acres treated under alternative 2.....	6
Table 7: Comparison of alternatives for rangeland resources.....	7

Rangeland Resource Report

The purpose of this section is to describe the condition of the range resource in the Westside Fire Recovery project (project) area and how rangeland resources may be affected by the proposed action and alternatives for this project.

Methodology

The method used to determine effects on rangeland resources included a qualitative comparison of each alternative's likelihood of affecting the amount of forage available for livestock use and rangeland condition. Existing rangeland conditions were determined through field visits, monitoring data, and historical records for each allotment.

To describe the rangeland resources in the project area and analyze alternatives, the following Klamath National Forest Geographic Information System data files were used:

- Allotment and unit/pasture boundaries;
- Fire intensity; and
- Project alternative maps.

Condition and trend of rangelands is determined by monitoring "key areas" on upland, meadow, and riparian rangeland areas. Key areas are a small ecological site or plant community that is responsive to management actions and indicative of the larger ecological site or plant community they are intended to represent (USDI 1999b). Condition and trend monitoring protocols employed include Best Management Practices Effectiveness Program (BMPEP), Photo Point Monitoring, and Rooted Frequency.

Following the 2014 fires, ocular observations were made to ground truth the fire intensity maps, assess condition of key areas, and estimate vegetation regrowth potential for forage.

Analysis Indicators

The effects of the project on rangeland resources are evaluated using two analysis indicators:

- Amount of Available Forage
- Rangeland Condition

Amount of forage and rangeland condition are the biggest impact to allotment viability. Adequate forage is needed to sustain cattle grazing without exceeding rangeland standards and guidelines and rangeland condition can indicate if grazing is a proper use of the land.

Spatial and Temporal Context

The spatial limits of this analysis are limited to the grazing allotments which fall within the project area. This allows for analysis of the total effect to all rangeland resources associated with the project. Due to the nature of grazing permits, effects are measured in the short term of 10 years or less and long term of 20 years to consider trend of the rangeland resource.

Affected Environment

The project encompasses portions of the East Beaver, Dry Lake, Horse Creek, Johnny/Seiad, South Klamath, Big Ridge, Scott Bar Mountain, Marble Valley, Etna Creek, and South Russian allotments and includes all areas on the Lake Mountain and Middle Tompkins allotments. Allotment names, status, use period, and permitted cow/calf pair numbers are provided in table 1.

Table 1: Allotments within the project boundary

Area	Allotment Name	Status	Use Period and Permitted Number
Beaver Fire	East Beaver	Active	4/1-6/15, 44 pairs 6/16-10/30, 250 Pairs
Beaver Fire	Dry Lake	Active	4/15-5/09, 116 pairs 5/10-10/15, 170 Pairs
Beaver Fire	Horse Creek	Active	4/15-10/15, 101 pairs
Beaver Fire	Johnny/Seiad	Vacant	N/A
Happy Camp Complex	Scott Bar Mountain	Vacant	N/A
Happy Camp Complex	Lake Mountain	Active	7/15-10/15, 25 pairs
Happy Camp Complex	Middle Tompkins	Vacant	Currently being analyzed
Happy Camp Complex	Big Ridge	Active	7/15-10/15, 120 Pair
Happy Camp Complex	Marble Valley	Active	7/15-10/15, 35 Pair
Whites Fire	Etna Creek	Active	7/15-10/15, 54 pair
Whites Fire	South Russian	Active	7/15-10/15, 40 pair

Seiad/Johnny, South Klamath, and Scott Bar Mountain will not be discussed further as they are vacant and are not expected to be restocked within the next 10 years. Middle Tompkins is also vacant; however, it is included because it is currently undergoing analysis to update the allotment management plan. Although Big Ridge is within the project boundary, it will not be discussed further as all grazing activities are in wilderness and therefore treatments will not overlap with rangeland resources.

Allotment Monitoring

Rangeland condition assessment methods most commonly used on the Forest are Rooted Frequency Plots (USDI, 1999a) in key areas. Table 2 shows the most current reading of rooted frequency plots within the affected allotments.

Table 2: Condition based on Rooted Frequency Plots

Allotment	Plot Name	Year of Last Reading	Vegetation Type	Vegetation Condition ¹	Overall Condition ²	Ecological Condition ³
Dry Lake	KLA1402-Dead Cow*	2014	Moist Meadow	Fair	Good	Satisfactory
East Beaver	KLA9904-Trapper Creek*	2009	Wet Meadow	Moderate	Moderate	Satisfactory
East Beaver	KLA0202-Trapper Creek*	2007	Dry Meadow	Moderate	Moderate	Satisfactory
Horse Creek	No Frequency Plots Established					

Allotment	Plot Name	Year of Last Reading	Vegetation Type	Vegetation Condition ¹	Overall Condition ²	Ecological Condition ³
Lake Mountain	KLA1301-Kuntz Creek	2013	Dry Meadow	Moderate	Moderate	Satisfactory
Middle Tompkins	KLA1302-Tyler Meadows	2013	Moist Meadow	Moderate	High	Satisfactory
Middle Tompkins	KLA1201-Middle Creek Meadows	2012	Moist Meadow	Moderate	Moderate	Satisfactory
Marble Valley	KLA0103- Big Rock*	2006	Moist Meadow	Moderate	Low	Unsatisfactory
Etna Creek	KLA1401-Meeks Meadow*	2014	Moist Meadow	Good	Good	Satisfactory
South Russian	No Frequency Plots Established					

*Plot is not within the Westside Project boundary but is the nearest key area within the allotment that is representative of rangeland conditions.

¹Vegetation condition:.. There are two ranking scales displayed in the table because region 5 recently changed their scoring system for rangeland plots. High, Moderate, and Low refer to high seral, mid seral and early seral respectively. The terms poor, fair, good, and excellent are the current classifications for rangeland condition.

² Overall condition is based upon hydrologic, vegetative, and soil conditions.

³Ecological condition simply summarizes overall condition as either satisfactory or non-satisfactory

As outlined in table 2, most rangeland key areas are in satisfactory condition. Marble Valley is in unsatisfactory condition due to shallow rooting depth and bare soil, which can put rangeland at risk of undesirable plant invasion. However, the vegetation in the Marble Valley area had been maintaining mid-seral species since 2001 and reevaluation of this site is expected to occur in 2015. Conditions within the South Russian and Horse Creek areas have been measured by other methods, thus no frequency plots have been established to date.

Riparian conditions on the Forest allotments are assessed through the BMPEP (table 3). The grazing protocol for the Pacific Southwest Region (Region 5) of the Forest Service records herbaceous and woody utilization levels, stream-bank disturbance, ground cover, bank angle, riparian and upslope erosion, and riparian vegetation condition.

Table 3: Most current BMPEP rating for each allotment within the project area

Allotment Name	Key Area	Year Evaluated	Met Implementation Standards?	Met Effectiveness Criteria?
Dry Lake	Dead Cow*	2009	Yes	Partial
East Beaver	West Long John*	2008	Yes	Yes
Horse Creek	Salt Creek*	2012	Yes	Yes
Lake Mountain	Lookout Spring	2013	Partial	Partial
Middle Tompkins	Tyler Meadows	2008	Yes	Yes
Marble Valley	South Fork Kelsey	2009	Yes	Yes
Etna Creek	Meeks Meadow	2010	Partial	Partial
South Russian	Lees Meadow	2013	Yes	Yes

Allotments that met both implementation and effectiveness BMPEP criteria demonstrate that grazing is not degrading water resources in the allotment. Changes in grazing management are recommended and implemented for sites that partially meet the criteria. In the three allotments that partially met effectiveness criteria, trampling had caused stream-bank vulnerabilities or

exposed soil at the edges of ponds. These disturbances were localized and did not cause impacts to beneficial uses such as fisheries and wildlife use.

2014 Wildfire

During the summer of 2014, the Beaver, Happy Camp Complex, and Whites fires burned about 200,000 acres of land. As a result, the project was developed in response to landscape-level changes to forested habitat resulting from the 2014 wildfires on the Klamath National Forest. Table 4 outlines the levels of burn mortality by acre for each allotment as a result of these fires.

Table 4: Fire intensity

Allotment Name	Total Allotment Acres	1-10 %	10-25 %	25-50 %	50-75 %	75-90 %	>90 %	Total Burned Acres	Percentage of allotment acres burned
Dry Lake	41,501	2962	1704	2031	1633	1046	7890	17,266	42 %
East Beaver	67,042	1941	982	920	685	399	2567	7,494	11 %
Horse Creek	37,055	401	191	188	147	94	1017	2,038	6 %
Lake Mountain	9,655	1334	724	838	686	455	2735	6,772	70 %
Middle Tompkins	14,736	3204	1471	1344	795	420	1759	8993	61 %
Marble Valley	8,136	7	2	2	0	0	0	11	<1 %
Etna Creek	18,903	351	112	94	63	48	253	921	5 %
South Russian	13,200	647	275	269	215	149	796	2351	18 %
Total	210,228	10,847	5,461	5,686	4,224	2611	17,017	45,846	21 %

Field visits performed after the fire revealed that burning was patchy and irregular throughout the allotments. The fire severity drifted toward the extreme with most acres either being in the 1-10 percent mortality category or over 90 percent mortality category. The most intense burning occurred where dense closed canopy forest dominated the landscape. Herbaceous forest understory and shrublands were burned in a patchy manner, but because this forage component is widely scattered and separated, effects could not be comprehensively assessed at time of inspection. Direct effects of the burn on meadows were minimal. Most meadows were either unburned or lightly burned in some areas. In general, the fire did not produce serious mortality on primary rangeland to the point of altering existing conditions.

To allow for post-fire recovery of vegetation, livestock grazing areas will be modified within the project area where necessary. For the Middle Tompkins allotment, livestock grazing permits will not be authorized until 2016 or later. Lake Mountain and Dry Lake allotments will be monitored prior to the 2015 grazing season to determine if vegetation has recovered enough to support grazing and grazing won't hinder tree establishment. If grazing is allowed, animals may be turned out at a later date and/or the season may be shortened in the fall to allow for optimal vegetation recovery and the most beneficial use of livestock grazing. These modifications for post-fire livestock use of rangelands will be variable based to rangeland conditions and climate as observed by rangeland managers.

Environmental Consequences

Alternative 1

Direct and Indirect Effects

Under alternative 1, no treatments are proposed for the project area. As a result, there will be no direct effects to rangeland resources, and rangelands will slowly heal from wildfire effects. New areas of transitory rangeland will likely be available for livestock and wildlife where moderate or low severity burns occurred. Not removing hazardous trees through salvage harvest, hazardous fuels treatments, roadside hazard treatments, and site preparation, planting and release may limit livestock access to forage in the short term and could make livestock management (turnout, moving, and gathering cattle) dangerous for permittees. Areas that were severely burned will be susceptible to weed invasion which may lower productive rangeland conditions in the long term.

Cumulative Effects

This alternative will not add project-related incremental effects to the effects of current or future grazing projects, because no management activities are proposed. Grazing, projects on private lands, and recreational activities will not adversely affect the availability of rangeland forage, and rangeland conditions will continue to fluctuate in response to climatic conditions, wildfire, and grazing management.

Alternatives 2, 3, and 4

The description of treatments for all alternatives are provided in chapter 2.

Salvage harvest, hazardous fuels treatment, roadside hazard treatments, and site preparation, planting, and release activities are planned as proposed treatments within the allotment boundaries. The alternatives maps and descriptions have been reviewed and the proposed activities will have minimal effects on rangeland resources because the proposed activities do not often overlap the same areas where cattle graze. Most salvage harvest and planting activities take place on steeper slopes which cattle rarely, if ever, use. Capable rangeland, or areas that are accessible to cattle and produce forage, are generally limited to a 40 percent or less slope during rangeland capability analysis on the Klamath National Forest (Holechek 1989; USDA Forest Service 2001). Project activities are also planned in timbered vegetative communities that are not likely to be able to produce substantial forage because of heavy canopy cover and lack of a seedbank.

Efforts will be taken to schedule grazing in areas that are not actively being treated so as to minimize stress to livestock and protect young seedlings. Permittees will be notified through Annual Operating Instructions of areas where harvesting, burning activity, and/or grazing restrictions will occur that could affect their permit. Additionally, Range project design features have been created to protect rangeland improvements such as cattle guards and corrals.

For a description of alternatives and a list of project design features, see table 2-1 of chapter 2. Alternatives 2, 3, and 4, are discussed together as they all have similar effects on rangeland resources. Acres of proposed activities within range allotments for alternative 2 are displayed in table 5 since this alternative proposed the greatest number of acres of treatment of any alternative.

Table 5: Approximate acres of proposed activities within allotment boundaries

Allotment Name	Fuels	Salvage Harvest Units	Roadside Hazard	Prep and Plant	Total
Dry Lake	2,102	859	1,921	1,481	6,363
East Beaver	922	12	756	0	1,690
Horse Creek	238	0	246	301	785
Lake Mountain	1,018	1,551	1,306	155	4,030
Middle Tompkins	482	1,172	2,423	1,178	5,255
Marble Valley	0	0	103		103
Etna Creek	228	20	48	0	296
South Russian	12	0	24	0	36
Grand Total (acres)	5,002	3,614	6,827	3,115	18,558

Many of the proposed activities overlap spatially so the footprint on the landscape will be less than the acres proposed under each individual treatment: this is displayed as the number of “dissolved” acres in table 6.

Table 6: Percentage of allotment acres treated under alternative 2

Allotment Name	Forest service acres within allotment	Total dissolved acres	Percentage of allotment acres being treated
Dry Lake	37,457	4860	13 %
East Beaver	41,607	1489	4 %
Horse Creek	23,224	558	2 %
Lake Mountain	9,655	3217	33 %
Middle Tompkins	14,736	4533	31 %
Marble Valley	8,136	103	1 %
Etna Creek	17,254	217	1 %
South Russian	12,277	34	0.3 %
Total	164,346	15,011	9 %

Only a small percentage of the East Beaver, Horse Creek, Marble Valley, Etna Creek, and South Russian allotments have acres proposed for treatments. This is largely due to the fact that only a portion of those allotments were burned, and what was burned, did not burn at high intensity. Additionally, the Marble Valley, Etna Creek, and South Russian allotments include wilderness areas which are not treated in any alternative.

Direct Effects and Indirect Effects

Where capable rangeland overlaps with salvage logging or fuels treatments, the project will likely provide new areas of transitory range. This will temporarily (5-10 years) increase the amount of forage available for livestock and wildlife, encourage animals to disperse on the landscape, and decrease grazing pressure on primary rangelands. Heavy equipment operations during treatment will likely increase the chance of weed dispersal; however, weed project design features (NNIS-1 through NNIS-5) will be in place and provide for proper mitigation. Livestock management will also be safer for permittees after hazardous trees have been removed.

Rangeland conditions should not be negatively affected as a result of alternatives 2, 3 and 4, as a Range project design feature (Range-3) protects allotment meadows.

Cumulative Effects

Adding the effects of alternatives 2, 3, or 4 to the ongoing and reasonable foreseeable future actions identified in alternative 1 will not have substantial cumulative effects to range. There will be a slight increase of transitory range available for livestock and wildlife foraging and rangeland conditions will continue to fluctuate in response to climatic conditions, wildfire, and grazing management.

Alternative 5

Direct Effects and Indirect Effects

Direct and indirect effects of alternative 5 will be similar to alternatives 2, 3, and 4. Fewer acres will be available as transitory range as the proposed number of harvested acres is reduced by 75 percent in alternative 5 from that in alternative 2; however, the number of acres to be planted is only reduced by half. Overall, the condition of the range should remain relatively the same and forage will increase marginally when compared to alternative 2, 3, or 4. The same project design features as previously outlined in the direct and indirect effects of alternatives 2, 3 and 4 will be incorporated into alternative 5 to mitigate effects.

Cumulative Effects

Cumulative effects will be similar to those of alternatives 2, 3, and 4.

Comparison of Effects

Alternative 1 will have neutral effects to rangeland resources but will be more dangerous to permittees managing cattle in allotments as a result of no treatment activities. Alternative 5 will slightly increase forage availability and reduce hazards to permittees, as compared to alternative 1.

Alternatives 2, 3 and 4 will benefit rangeland resources the most as the treatments proposed will increase the amount of forage available, decrease grazing pressure on primary rangelands, and reduce hazards for permittees who maintain rangeland conditions.

Table 7: Comparison of alternatives for rangeland resources

Rangeland Indicator	Alternative 1	Alternatives 2, 3, and 4	Alternative 5
Availability of Forage	No effect	Increase	Increase somewhat but less than alternatives 2, 3, or 4.
Rangeland Condition	neutral	neutral	neutral

Compliance with law, regulation, policy, and the Forest Plan

The project is in compliance with law, policy, and regulation related to rangeland resources, and is in compliance with the standards of the Forest Plan as displayed in the Forest Plan consistency checklist, available on the project website.

References

- Holechek, J. L., R. D. Pieper, and C. H. Herbel. 1989. Range Management: Principles and Practices. Englewood Cliffs, N.J.: Prentice-Hall. pp 193-194.
- USDA-FS, Pacific Southwest Region. 2001. Sierra Nevada National Forest Environmental Impact Statement, Appendix K Rangeland Capability and Suitability. Forest Service.
- USDI-BLM; USDA-FS; USDA-NRCS, Cooperative Extension Service. 1999a. Sampling Vegetation Attributes. Interagency Technical Reference 1734-4. Bureau of Land Management. Available at <http://www.blm.gov/nstc/library/pdf/samplveg.pdf>.
- USDI-BLM; USDA-FS; USDA-NRCS, Cooperative Extension Service. 1999b. Utilization studies and residual measurements. Interagency Technical Reference 1734-3. Bureau of Land Management. Available at <http://www.blm.gov/nstc/library/pdf/utilstudies.pdf>.