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Botanical Composition and Diet Quality of Beef Cattle Grazing at Three Stocking Rates Following Fuels Reduction in Mixed Conifer Forests

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Abstract

Due to the increasing cost and concern of catastrophic wildfires in the Western United States, there is an increasing interest in fuels reduction projects. Fuel reduction treatments utilize various methods of thinning and/or prescribed fire to obtain desirable forest stand conditions. However, the effects of fuels reduction on ecosystem function are not well known. To explore the effects of fuel reduction, a series of studies have been developed. One of these studies was designed to look at how cattle diets are affected by fuels reduction and stocking rate. The study occurred at the Starkey Experimental Forest and Range in Northeast Oregon. A split plot factorial study design was used, with the whole plots (3 ha) being fuel reduced or no treatment (extant) and the split plots (1 ha) within grazed to three levels of forage utilization; (1) 3 cows/ha, (2) 6 cows/ha, (3) 9 cows/ha, with a 48 hour grazing duration. Grazing treatments were applied in August of 2005 and 2006. Cattle dietary composition information was collected from six cows in

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each experimental unit (1 ha) using the bite-count method with 20 minute grazing bouts. Masticate samples were collected after each 20 minute grazing bout from six ruminally cannulated cows in each experimental unit in order to determine diet quality. Masticate samples were analyzed for CP, ADF, NDF, and invitro digestibility. Preliminary results indicate foraging efficiency of cattle decreases with increased stocking rates along with an increase in shrub use across both treated and untreated sites. The results of this study will be used as part of a larger, long-term study that will provide information and models on the interaction of ungulate herbivory and episodic disturbance that will help inform and guide the management of multi-use forests.

Key Words: Diet Quality, Beef Cattle, Stocking Rates, Fuels Reduction