

Rangelands

CATTLE GRAZING SITE PREFERENCES IN PASTURES WITH DIFFERENT AMOUNTS OF JUNIPER WOODLAND: WHAT WE'VE LEARNED

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THE STORY IN BRIEF: This abstract synthesizes the main findings and conclusions of a series of papers published between 2008-2014 reporting results from studies conducted at CRLRC that sought to describe woodland use of rangeland-raised cows. We found that although cows grazed in open grasslands most of the time, they used PJ woodlands opportunistically when days were cold or windy or when forage in open grasslands was less abundant. When grazing in PJ woodland, cows usually selected stands of up to 20% tree cover but were observed grazing in dense stands (50-65% tree cover) on a few occasions. Time spent in PJ woodlands was positively associated with calf weaning weights when stocking rates were moderate. The opposite occurred when stocking rates were light.

THE PROBLEM: The forage production benefits of woodland clearing (less trees = more grass) could be offset at some point by the reduction in available sheltered or shaded grazing and/or resting areas for livestock. There is a need to describe livestock grazing site preferences in pastures with woodland patches to develop better guidelines for piñon-juniper woodland (PJ) thinning prescriptions so as to optimize both forage and non-forage attributes of grazing environments.

OBJECTIVES: The overarching goal of this project was to determine whether livestock behavior data could be used as an additional criterion to inform PJ woodland thinning decisions. Specific objectives were to: a) determine the influence of weather, animal physiological state, animal temperament and stocking rates on PJ woodland use patterns of young cows; and b) describe patch re-use patterns of cows in relation to a number of patch attributes including PJ woodland cover.

APPROACH: We report results from five related studies conducted at CRLRC between 2004-2013 that involved tracking cows with GPS collars and analyzing large spatial datasets to understand activity patterns and grazing site preference of tracked animals in relation to forage-, weather-, and animal-associated variables. All studies were conducted in pastures where PJ woodlands covered approximately half the area available to grazing animals. The first study (Black-Rubio et al. 2008) sought to identify factors that influence PJ preference of either open or pregnant young cows grazing pastures with PJ woodlands in late winter. The second study (Wesley et al. 2012) was designed to understand how animal temperaments affect grazing site preferences of cows in a pasture containing PJ and open grassland. The third field study (Prileson 2013) sought to identify factors that affect seasonal (winter, spring, summer, and fall) patterns of PJ woodland use by cows in pastures containing PJ and open grassland. Our last study (Sawalhah 2014, and Sawalhah et al. 2014) re-analyzed data collected by Black-Rubio et al. (2008) and Wesley et al. (2012) to determine how stocking rates affect PJ preference of young cows during late winter/early spring, and to determine whether cattle generate their own patterns of rotation when grazing rangeland pastures that contain a mixture of PJ and open grassland.