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**Habitat selection patterns of young cows in grassland/woodland mosaics in relation to stocking rate and weather**

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A study was conducted in central NM to evaluate effects of two levels of stocking rate and weather factors on habitat selection (grassland vs. woodland) of young rangeland raised cows grazing a grassland/woodland mosaic. Data were collected over four years by tracking 52 cross-bred cows grazing a 146 ha pasture (55% grassland and 45% woodland). GPS collars were used to record and store cow position at 5-min intervals. The pasture was stocked moderately in 2004 (73 AUMs) and 2005 (78 AUMs) and lightly in 2006 (34 AUMs) and 2007 (32 AUMs). A preference index which computed the ratio between percentages of time spent in the woodland by cows and percentage of woodland area in the pasture was used as the main response variable. Stocking rate level significantly ( $P < 0.01$ ) affected daily woodland preference during the entire 24h day + night period (D+N), daytime hours (DAY, from sunrise to sunset), pre-night hours (PRE, from midnight to sunrise), and post-night hours (POST, from sunset to midnight). During all four time periods, cows in moderately grazed treatment spent more time in woodland area (higher preference index) than counterparts in lightly grazed treatment ( $P < 0.01$ ). Cumulative precipitation, wind speed or direction, and air temperature affected woodland preference regardless of stocking rate. Lunar cycle affected the time spent in woodland area during D+N ( $P < 0.05$ ) and DAY ( $P < 0.01$ ). Previous studies indicate that woodland preference increased during the years when forage availability was scarce in the grassland open area. Our results support this hypothesis.