

Cattle site preference in northeastern Oregon.

Kerry Wilson, Pat Clark, Larry Larson, John Williams, Michael Johnson, Mounir Louhaichi
Oregon State University, United States

Free-roaming beef cattle naturally gravitate to locations on the landscape that provide them food, water, shelter, and security. In mountainous environments, animals are also sensitive to land physiography, generally preferring level terrain near established trails and travel routes. Our study was designed to quantify ecological site usage by cattle on mountainous rangelands in eastern Oregon, USA throughout a grazing season. Three landscapes were categorized and classified from physiographic and plant sociological perspective. Land elevation, as a digital elevation model, was used to produce slope and aspect maps. These in turn were converted to 13 topographic site classes based on cardinal direction (north, east, south and west) and slope (0° to 5° , 5.01° to 15° , 15.01° to 30° , and $>30^\circ$). Vegetative communities were also classified by dominant and sub-dominant species. Ten cows on each landscape (30 total) were fitted with GPS collars that recorded position at 5-minute intervals for the spring through fall grazing season. Cattle positions were centered on favorite foraging locations and resting areas; those where animals remained for more than 1 hour were generally close to grazing areas. Livestock presence was quantified as the frequency of cow positions in each 20m by 20m cell. These frequencies were used to create maps of livestock concentration, which were compared between research sites. Preference of livestock for both plant community and topographic position was calculated as percent of livestock positions/percent of type on the landscape. Preference indices were also compared between sites.