TURNER INSTITUTE *of* Ecoagriculture

DIFFERENCES IN FEMALE AND BULL BISON BEHAVIOR AND RESOURCE SELECTION WITHIN A SANDHILLS MIXED-GRASS PRAIRIE

Researchers.
Dr. Jamie Brennan, South Dakota State University
Dr. Carter Kruse, Turner Institute of Ecoagriculture
Tyrell McClain, Turner Institute of Ecoagriculture

Rationale. Quantifying grazing behavior and locations of free ranging animals can be difficult, especially on extensive rangelands. Remote tracking with GPS technology has tremendous potential to study bison grazing selection and use patterns on the landscape. Commercially available wildlife tracking devices have traditionally been used to monitor wildlife movement, but are expensive and often cost prohibitive for researchers and managers, often at the expense of limiting sample size and thus knowledge gained. Most studies to date in bison have examined movement patterns and resource selection using GPS fix intervals of one to several hours; GPS collars with higher temporal resolution (30 minute) have been used to study bison habitat selection and spatial variability in Yellowstone National Park. While these studies highlight the benefit of studying movement and selection across larger landscapes to better understand bison ecology, these devices lack the temporal precision necessary to accurately predict behavior (e.g., grazing, resting, walking). In addition, the majority of bison tracking research has focused on wild free or semi-free ranging animals with little work conducted on a selection of more intensively managed bison such as at the Institute. Most grazing management recommendations are based on observing cattle behavior and use with little to no information specific to bison. Understanding spatial variability of bison grazing patterns within pastures and seasonal shifts in selection can help better develop grazing strategies unique to bison producers to improve rangeland health and animal production.

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Researcher:	Brennan, Kruse, McClain
University:	South Dakota State
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