

DR. MITCH STEPHENSON

RANGE AND FORAGE MANAGEMENT SPECIALIST

Targeted grazing on cheatgrass (*Bromus tectorum*)

Cheatgrass is one of the most pervasive invasive weeds on rangelands in western Nebraska. In 2020, we conducted year 4 of a 5-year study evaluating the efficacy of early season cattle grazing on the diet selection cheatgrass. The objective of this research is to identify key times when cheatgrass is selectively grazed by cattle and develop models based on plant phenological characteristics that can guide management on the best time to incorporate grazing to manage cheatgrass on native rangelands. Preliminary results indicate that cattle typically select cheatgrass at the highest amounts between stem elongation and flowering, but this is variable depending on precipitation and cheatgrass growth characteristics.

Oat and pea annual forage mixtures

Spring forages provide important options to crop and livestock producers in western Nebraska to diversify crop rotations. A study was developed to identify which oat/spring pea forage mixtures would best meet the needs of producers in variable environments in western, central, and eastern Nebraska. A key finding of this study was that in drier environments, spring pea forage contributions to total forage production was typically limited and oats outcompeted the expression of the pea in improving the forage quality. In wetter environments, substituting pea for oats provided greater forage CP and TDN without sacrificing production. Results of this study were published in the *Agronomy Journal* in early 2020.

Monitoring rangelands in the Nebraska Sandhills

Native rangelands cover approximately 46 % of the land area in Nebraska. These ecological systems are important to Nebraskan's for several ecosystem services (wildlife habitat, carbon sequestration, etc.). We have developed collaborations with several ranches in the Sandhills to develop monitoring programs that analyze how vegetation and soil dynamics vary from the western to the eastern Sandhills. More information on this project can be found here <https://beef.unl.edu/beefwatch/2020/what-should-my-pastures-look-interpreting-rangeland-monitoring-data>



PROFILE

Dr. Stephenson began working at the Panhandle Research and Extension Center in 2015. His research has focused on understanding spatiotemporal dynamics of plant production on native rangelands and how this influences management strategies that adaptively match livestock forage demand with an annually fluctuating forage supply. Stephenson's research also evaluates variables that influence behavior of cattle managed to strategically graze on invasive range plants. Lastly, Stephenson is working with producers to better understand optimal opportunities to utilize annual forages within integrated crop and livestock systems.

CONTACT

PHONE:
308 – 632 – 1355

EMAIL:
mstephenson@unl.edu