



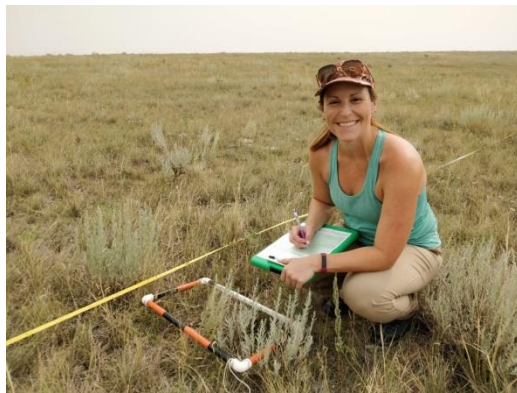
## **Assessing Range Health in Relation to Grazing Systems Used on Alberta Ranches**

Prepared by Dr. Edward Bork, University of Alberta

Ranchers are well known for being highly individualized operators that employ a wide variety of grazing management practices, which in turn, may influence the condition of grasslands. Management practices include grazing systems, which characterize where, how often and how intense individual pastures get used during a particular grazing season. Range health is a contemporary method used to report on pasture condition that integrates measures of vegetation composition, structural diversity, hydrologic function, site stability, and threats from invasive weeds.



One of several ranch locations taking part in the study. Photo by Kristine Dahl.



MSc student Kristine Dahl assessing range health, July 2018.

Kristine Dahl recently explored the relationship between grazing systems and range health, including how this may vary across Alberta's growing environments, while completing her MSc thesis under the joint supervision of Drs. John Parkins and Edward Bork at the University of Alberta.



Northern Fescue Sub-Region near Castor, AB. Photo by Kristine Dahl.

After recruiting 28 willing rancher participants, Kristine travelled across the province in 2016 conducting in-person surveys of the factors influencing rancher management behavior, and also undertook biophysical range health surveys on 3-4 representative pastures across each operation. Pastures included native grasslands and introduced (seeded)

pastures, as well as those under forested vegetation. Using specific information on the length of grazing periods and subsequent rest intervals, pastures were characterized as either continuous, slow rotation or fast rotation grazing, with fast rotation further separated into those producers self-described as holistic managers. When range health outcomes were compared among pastures exposed to different grazing systems, few differences were detected. Instead, range health scores generally declined with increasing aridity of the environment and greater levels of observed forage use. Forests were generally in greater health than grasslands, but also exhibited high susceptibility to declines in condition with even low to moderate use. Continuous grazing systems were more prevalent in arid grasslands of SE Alberta, with introduced pastures exposed to continuous grazing more likely to experience decreases in health with increasing aridity. Compilation of the sociological data provided by producers suggested that ranchers across the study region had more in common as grazing practitioners than differences. Several key social themes were identified. Regardless of the type of pasture management system, producers had a strong sense of identity and independence, a belief in what they were doing, and a need to remain financially viable. Although we expected more tension between producers who approached pasture management differently we did not observe these tensions. Instead, producers appeared to accept the diversity of motives and approaches to management found across the ranching community. Results of this study provide direction for further enquiry into the sociological factors regulating rancher behavior, and suggest a need to understand how this translates into differences in environmental outcomes, specifically range health.



Central Parkland Sub-Region near Kitscoty, AB. Photo by Kristine Dahl.