



RANGELAND RESEARCH ROUNDUP

By Justin Derner, Emily Kachergis & Justin Reeves - Agricultural Research Service

So What? Who Cares?

So what? Who cares? These two questions are routinely asked by Agricultural Research Service (ARS) leadership related to our research. Answering them for each of our research projects is essential prior to committing the necessary financial and personnel resources, as we need to be sure the research is relevant to issues facing rangeland managers. Conducting research important to rangeland managers provides us with the opportunity to have impact with our science findings. Fulfilling this opportunity, however, is more than just conducting science and publishing it in a peer-reviewed scientific publication. It is about sharing those findings with rangeland managers and the general public in a timely manner with accessible and available information. Seems simple enough, right? The traditional model is to do the research, analyze the data, write the paper and publish the results. However, this model has proven unsuccessful in many cases; such that new approaches are needed to ensure key information is provided to rangeland managers.

So how do we do research and effectively communicate the results to rangeland managers? Many difficult questions facing rangeland managers require long-term research. For example, how does grazing affect rangeland ecosystems? How can we sustain livestock production in a variable climate? Most ARS research addresses long-term questions like these. However, it can take several years to a decade or more before the full answers to these

questions can be understood. Although the wait required by long-term studies can be frustrating, they provide a wealth of information about the time it takes for rangelands to respond to treatments, and about variation from year to year. For example, Justin Reeves is using several long-term studies in the Northern Great Plains to understand the influence of seasonal weather variability on livestock weight gains. Justin's findings for cow-calf and steer beef production from the High Plains Grasslands Research Station have been accepted for publication.



Central Plains Experimental Range by Nunn, Colo. Courtesy Photo

These findings are being incorporated into simulation models for extending the results across additional sites, and we are looking at development of "apps" for smart phones that could be used by rangeland managers in the field for real-time, predictive information.

Adding short-term experiments to long-term treatments can provide relevant information quickly. Emily Kachergis collected several vegetation and soil variables in 2012 from a long-term grazing study at the High Plains Grasslands Research Station that was started in 1982 by Richard (Dick) Hart. Her data will be quite valuable regarding short-term responses of these long-term grazing treatments to the 2012 drought. This data will be highlighted in the upcoming summer issue of *CowCountry*, as well as at upcoming field tours of the Station by high school students and the general public.

Repeated measurements over time are another

way of investigating trends related to management and climate. Jerry Schuman took soil samples in 1993 and again in 2003 from these long-term grazing treatments to determine management by climate interactions on soil carbon storage. A third set of samples is scheduled this spring to further look at the long-term trends in how grazing management and climate may interact to influence soil carbon. While we did use traditional methods of publishing several papers and book chapters on soil carbon responses to rangeland management from this information, the information has been also used by the Chicago Climate Exchange for carbon trading programs on rangelands, for assessments of management approaches that would be beneficial for adaptations to climate change, and for use in carbon models that are assessing greenhouse gas budgets for individual ranches/farms, states and regions.

In today's information age where continued advancements in technology (e.g., mobile devices) provide society with the ability to "Google"

anything from almost anywhere, we need to do a much better job of making our information accessible. Although publications from our research unit are posted on the unit website (www.ars.usda.gov/npa/rrru) for your access, many publication outlets charge you to download the articles. We have some recent articles by scientists Emily Kachergis and David Augustine where the journals are Open Access; that is the papers in these journals are freely available to the public immediately following publication and available to read, download and share. Here is the link for Emily's article (www.scirp.org/journal/nr/), and for David's (www.mdpi.com/1424-8220/13/3/3711).

We know from those that participated in the Rangeland Decision-Making Survey last year at this time with Emily Kachergis, that the vast majority (69 percent) of survey respondents prefer to receive information about rangelands in print. Thus, you will continue to see us use this opportunity in each issue of *CowCountry* to answer the So What? and Who Cares? questions. ●

Advertisement



Since 1981
**BKS Environmental
Associates, Inc.**



**Soils
Vegetation
Wetlands**

**Reclamation Planning
Baseline Assessments
Environmental Monitoring**

P.O. Box 3467
Gillette, WY 82717
307-686-0800
bschladweiler@bksenvironmental.com

P.O. Box 3017
Rock Springs, WY 82902
307-382-2443
cadams@bksenvironmental.com

P.O. Box 1930
Dickinson, ND 58602
701-300-0672
bschladweiler@bksenvironmental.com

www.bksenvironmental.com