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Response to Barnes et al.

By Ted Toombs, Justin D. Derner, and Kevin Bracy Knight

Our original article "Cross-Fencing on Private US Rangelands: Financial Costs and Producer Risks" (April 2011) demonstrated that producers incur high initial and continuing long-term costs associated with cross-fencing rangelands.[1] While these costs can be partially offset by USDA Natural Resource Conservation Service cost-share programs, increases in stocking rate are needed to maintain break-even economic conditions for the ranch.

The purpose of our analysis was to explore the financial costs of fencing incurred by producers and to demonstrate a simple method for determining these costs. It was not our intention to debate or undermine the potential benefits of fencing. The model ranch example we used was purposefully simplistic; a complicated, real-world example would not have adequately illustrated our point. For Barnes et al. to focus on the simplicity of the ranch model used is to miss the more important points of our analysis. Installing fencing creates significant short- and long-term financial costs and might encourage higher stocking rates to maintain break-even financial conditions. Our analysis did not and was not intended to convey that fencing will *never* be cost effective. To determine the cost effectiveness of fencing is obviously a site- and project-specific calculation. Our paper simply provided the tools with which to make this determination.

We recognize and it has long been known that fencing can facilitate access to underutilized forage in complex topography and increase grazing management flexibility on the ranch. The use of fencing for these purposes can obviously increase gross income for ranchers—but at what long-term financial and environmental costs?

As our paper shows, the financial costs of cross-fencing can be considerable to producers. Our paper arose from the concern that these costs, which are not well understood and are site specific, are not being accurately accounted for in the project development stage. A clearer understanding and more accurate accounting of the short- and long-term costs is only fair to those paying for these practices—the producers and taxpayers. Our analysis was meant to be helpful to producers and their technical service providers by enabling them to better account for the full financial costs of cross-fencing throughout its lifetime. Our paper also more generally highlights the need for more accurate accounting to assess management alternatives prior to project initiation.

Although not the primary subject, our paper also arose from the observation that, perhaps similarly, the environmental costs of fencing are being overlooked and/or not communicated during the course of project development and in broader conversations about national policy. Research on cross-fencing's direct (e.g., bird and big game collisions) and indirect environmental costs (e.g., reduced habitat heterogeneity) are ample and should be considered by technical service providers when evaluating project alternatives. Other techniques are available to influence movement and distribution of livestock on landscapes that can avoid the direct and indirect costs of cross-fences. These include use of patch burning, low-stress herding, virtual and temporary fences, strategically located supplemental feed sites, use of different breeds, and individual animal selection. The environmental costs of fencing are also cumulative across landscapes and the nation. This is something that NRCS should consider as it revises its practice standards for fence and for prescribed grazing.

The results of the analysis presented in our paper show that the financial costs and environmental costs of fencing

are linked in a way that is problematic for producers and the environment. That is, as the addition of cross-fencing raises producer costs, they might be encouraged to increase stocking rates to pay for the fence. While this financial calculation is a site-specific one for the producer, consideration of how fencing might encourage producers to increase stocking rates and its effect on natural resources is one that NRCS should consider before approving a project.

We strongly challenge the assertion by Barnes et al. that intensive management or planned grazing, facilitated by cross-fencing, can benefit both economic livestock production and conservation goals simultaneously. We recognize that this is a commonly held perception among practitioners of intensive management, but scientific evidence is to the contrary. The reality is that there are clear tradeoffs between production and conservation goals (e.g., Dunn et al.[2]). A project-level analysis of the full suite of tradeoffs associated with cross-fencing of rangelands that goes beyond a consideration of traditional soil and vegetation measures and moves toward a more comprehensive ecological view that includes biodiversity might evoke questions such as What does the increase in stocking rates of 1.5 to 3 times as noted by Barnes et al do to riparian habitat conditions or residual upland vegetation used by native grassland birds? How did the habitat structure upon which the biodiversity of the site depends change? Which species of wildlife are "abundant," how did their populations change, and what others may have declined?

In summary, intensive management and its associated infrastructure (including cross-fences) as outlined by Barnes et al. is not a panacea for simultaneously maximizing all potential outcomes from rangelands. There are alternatives. Rangeland professionals need to better understand and consider multiple rangeland ecosystem services and values and recognize that there may be inherent tradeoffs, not just seek to maximize livestock production and soil conservation goals. The accurate accounting of costs in addition to benefits is a key to accomplishing this. At the project level, our analysis helps producers and technical service providers to quantify and communicate the financial costs of fencing, not just its potential benefits. At the national level, it is important for NRCS and other agencies to consider the cumulative financial and environmental costs of fencing and the practices it facilitates.

Reference

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