

Sierra Foothill Research and Extension Center

Located 60 miles northeast of Sacramento in Browns Valley, the Sierra Foothill Research & Extension Center (SFREC) is one of nine centers under

the University of California Division of Agriculture and Natural Resources. SFREC research focuses on management, stewardship and function of California rangelands, water quality, beef cattle health and grassland management, as well as leading and facilitating extension and education programs.



The Future of Invasive Plant Management on Rangeland

Invasive plants pose a multi-dimensional threat to the economic sustainability of ranching enterprises and the critical ecosystem services these working landscapes provide, including water and nutrient cycling and wildlife habitat. Because of these serious threats, SFREC has long supported an array of research and extension programs focused on the ecology and management of invasive rangeland plants. While this previous research has generated foundational understanding of how to manage some of the most serious invasive plants such as yellow starthistle, goat-grass and medusahead, high management costs, large uncertainty in practice outcomes and logistical constraints have greatly limited the ability of public land managers and producers application of this research.

A multi-state effort is exploring three major pathways to overcome long-standing barriers to weed management, including:

- the degree to which current decision support systems allow ranchers to address management goals,
- the impact of these decision systems on multiple ecosystem services including soil carbon cycling, biodiversity and nitrogen cycling,
- the cost:benefit of different weed management programs on beef cattle production.

Historically, rangeland weed management and other rangeland improvement practices have not been economical because treatment costs exceeded return but as pasture has become increasingly scarce throughout the West pasture rental rates and hay process have climbed dramatically. This line of work will help illuminate practical opportunities for ranchers to manage invasive plants in a manner that yields a long-term benefit in terms of pasture health and productivity.

Research conducted by Elise Gornish



Beef Cattle Production and Drought

As California experienced one of its worst droughts on record with most of the state receiving no or minimal precipitation for almost the entire fall and winter SFREC, UC faculty, county-based advisors and industry professionals quickly mobilized to develop a full day extension workshop on what California ranchers could do to mitigate the devastating effects of drought. Because beef cattle producers rely on rain to grow most of their feed for



livestock, this sector of the agricultural industry is often the first to experience the impact of drought. Mitigation strategies address how to maximize use of feed producers had access to, the nutrition and economics of nutritional supplements and a swell as economics, tax and insurance issues that surround decision making on responding to drought. Over 130 stakeholders attended the workshop which was also broadcast live at six satellite locations in the state. Recognizing the seriousness of the drought for California agriculture this event was covered by a large array of media outlets including the New York Times, Capital Public Radio, Canadian Broadcast Company, Newsweek and the Washington Post. Information from this event and supplementary material for producers has been organized on the SFREC webpage including YouTube videos of the presentations (<http://sfrec.ucanr.edu/Outreach/Workshops>).

Research conducted by Kasey Deatley

Outreach, Extension and Education

The future of agriculture and natural resource management hinges on the understanding and value systems of future generations. A major goal of SFREC is to develop educational opportunities for local youth that utilize the unique learning opportunities of the REC system and complement ongoing regional educational programs.

After collaborating with local UCCE 4-H staff and high school agriculture teachers to assess the needs of their programs, SFREC hosted the first annual Beef and Range Field Day for 4-H and FFA youth in the fall of 2014. SFREC staff and UC Cooperative Extension Advisors led students through interactive sessions involving proper cattle handling and range forage management techniques and helped them make clear connections between beef cattle production, range management and water quality and availability; issues commonly dealt with on a working ranch.

Local schools and community organizations continue to utilize SFREC's Yuba River Education Center and nature trails to learn about the many ecosystems that can be found within the Center's natural landscape.

