

Wyoming Restoration Challenge Focuses on Restoring Weed-Infested Pastures

B.A. Meador^{1,2}, J.M. Workman¹, B. Fowers¹, and C.W. Wood¹

Introduction

Millions of acres of Western rangelands are negatively impacted by invasive species, and cheatgrass (*Bromus tectorum*) is one of the most widespread. Also known as downy brome, its ability to alter species composition and ecological functions negatively impacts habitat quality for livestock and wildlife alike. Hundreds of research papers have been published on its ecology and management, yet land managers in Wyoming and around the West are still uncertain of the most effective, cost-efficient methods to restore cheatgrass-dominated systems to a higher-functioning status. The Wyoming Restoration Challenge is a land-restoration competition where 13 teams are implementing their own strategies to restore a cheatgrass-dominated pasture to a more diverse, productive state.

Objectives

Objectives of this project are to: (1) increase land managers' knowledge about techniques for restoring weed-dominated pastures; (2) build awareness of the importance of managing invasive weeds in general; (3) evaluate various methods for restoring degraded pasture infested with cheatgrass and other annual weeds; (4) share information with various audiences on those methods and their relative performance; and (5) encourage friendly competition among teams.

Materials and Methods

We issued an open invitation through various outlets for teams to enter into the competition. Each team was assigned one of 13 quarter-acre plots by drawing plot numbers from a hat. Teams were given access to plots at the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC) in April 2015 and will be evaluated annually through fall 2017.

Any legal methods for removing cheatgrass and reestablishing a diverse, desirable plant community are allowed. Teams will be evaluated on multiple categories including vegetation productivity, plant species diversity, costs of implementation, ability to scale the methods to large landscapes, and educational program development. As approaches are implemented, the site becomes analogous to a traditional extension demonstration plot, with side-by-side cheatgrass restoration tactics available for direct comparison. The most efficient way to follow the competition is at www.facebook.com/WYrestorationchallenge/.

Results and Discussion

Twelve Wyoming-based teams and one from Nebraska registered for the challenge, including community college and university faculty and staff members, county weed and pest control district personnel, Extension educators, ranchers, government agency employees, and graduate, undergraduate, and high school students (Figures 1–3). During the first year of competition,



Figure 1. Julia Workman and Clay Wood, along with fellow members of the University of Wyoming Weed Control Freaks team, inspect their Restoration Challenge plot at SAREC. Workman and Wood are both graduate students in the Department of Plant Sciences.

¹Department of Plant Sciences; ²Sheridan Research and Extension Center.

teams assessed their plots, devised strategies, and began implementation. Integrated weed-management strategies were abundant as teams implemented high-intensity, short-duration grazing, multiple herbicide applications, mowing, burning, tillage, cover crops, and weed-suppressive bacteria applications. Cheatgrass canopy cover ranged from 5% in the University of Nebraska–Lincoln’s plot to more than 60% in the plots of several other teams. Overall plant species’ richness was relatively low in all plots, ranging from 3–11 species present. Most teams have implemented direct-seeding of desirable plants or plan to do so in 2016.

Acknowledgments

Many thanks go to the Wyoming Agricultural Experiment Station and the SAREC crew, including Bob Baumgartner, for their support of the challenge; our partners who helped publicize the event; the Wyoming Society for Range Management and Wyoming Weed and Pest Council; and the University of Wyoming range weed science team for assistance and participation.

Contact Information

Brian Mealor at bamealor@uwyo.edu or 307-673-2647.

Keywords: cheatgrass, rangeland restoration, participatory learning

PARP: III:3,5,7, VI:3,4, IX:2,3,4,5, XII:1



Figure 2. Brian Connely, center, district supervisor of Natrona County Weed and Pest, discussed his team’s approach to managing cheatgrass with Nebraska Extension Educator Gary Stone, left, and others attending a cheatgrass field day at SAREC.



Figure 3. Glendo, Wyoming, rancher Larry Cundall explains his team’s approach to restoring rangelands infested by cheatgrass. On his team are employees of the Cundall ranch, Glendo rancher Tim Millikin, and representatives of the Natural Resources Conservation Service in Platte County.