2027 Rangeland Cup Contest

The Challenge

Grasslands are among Earth's oldest and most ecologically significant ecosystems, persisting through millennia of environmental fluctuations, climatic shifts, ecological succession, and generations of human influence. Their endurance reflects an extraordinary capacity for resilience, adaptation, and renewal.

Yet, in an era of unprecedented environmental change, grasslands face mounting pressures from climate change, habitat fragmentation, agricultural conversion, invasive species, altered fire regimes, and changing land-use practices.

What enables grasslands to endure, and what will it take to ensure their persistence for generations to come?

For this year's Rangeland Cup competition, participants are challenged to investigate the ecological resilience, evolutionary adaptations, biodiversity, and long-term sustainability of grassland ecosystems. Through scientific research, evidence-based analysis, and compelling visual communication, explore how grasslands have persisted through generations of change and examine the critical role of ecological stewardship in shaping their future.

Scientific Areas of Exploration

Teams may focus on one or more of the following areas:

1. **Ecological Resilience and Adaptation:** Investigate the biological, ecological, and evolutionary mechanisms that allow grasslands to withstand environmental disturbances and recover from change.

2. **Biodiversity and Ecosystem Function:** Explore the interconnected relationships among native grasses, wildflowers, pollinators, wildlife, soil organisms, and microorganisms that sustain grassland ecosystems.

3. **Climate and Environmental Change:** Examine how changing temperature and precipitation patterns, drought, carbon cycling, and extreme weather influence grassland health and persistence.

4. **Soil Health and Ecosystem Services:** Investigate the importance of grassland soils, below ground biomass, nutrient cycling, water retention, and carbon sequestration.

5. **Human Influence and Land Stewardship:** Examine how Indigenous land management, prescribed fire, grazing practices, restoration ecology, and contemporary conservation strategies influence grassland resilience.

6. **The Future of Grasslands:** Evaluate emerging scientific research, innovative restoration approaches, conservation policy, and management strategies that can support grassland sustainability in a rapidly changing world.

Contest Objective

Develop a scientifically rigorous, visually engaging research poster that communicates a meaningful scientific question, presents evidence-based findings, and demonstrates an understanding of the ecological importance and enduring resilience of grassland ecosystems.

Posters should move beyond describing grasslands to critically examine **why they endure, how they respond to change, and how science and stewardship can help secure their future.**

Poster Requirements:

- Present a clearly defined scientific research question or hypothesis.
- Incorporate credible, peer-reviewed scientific literature and relevant ecological data.
- Demonstrate understanding of grassland ecology, biodiversity, or ecosystem processes.
- Include appropriate scientific visuals, such as maps, graphs, data visualizations, photographs, or conceptual models.
- Discuss implications for conservation, restoration, or sustainable land management.
- Include properly formatted scientific references.
- Conclude with a forward-looking perspective on grassland resilience and long-term sustainability.

Your presentation will be judged utilizing the below rubric

Please register your team and topic to Kevin (kkunkel@blm.gov) by Friday January 11th, 2027

Rangeland Cup Judging Sheet

Poster #_____ Institution (University) _____

Judge_____

Student posters displaying their problem solving approach will be judged on content, organization, and presentation. Points will be assigned based on the criteria listed below. Judges scores and comments will remain anonymous and will be provided as typed summaries for each team.

(60 pts) Content refers to the employment of a creative, logic-based approach to the problem. The approach should be bolstered by scientific evidence, in a similar manner to a grant proposal. The poster should display a clear rationale behind the approach, but should attempt to expand on existing knowledge pertaining to the topic.

A. *Abstract:* should provide a concise summary of the proposed solutions

Circle Points	Points (5 max)
Thorough (5-4-3-2-1-0) Incomplete	A: ____

B. *Introduction:* should introduce the importance of the topic and provide pertinent background information about the theory behind the team's approach

Circle Points	Points (10 max)
Relevant and complete (10-8-6-4-2-0) Incomplete	B:____

C. *Narrative:* should clearly describe the team's approach for addressing the topic. This is where the team will "sell" their ideas. Should demonstrate the team's knowledge of the subject matter and their logical approach to the task. Each part of the topic should be addressed. Suggested research methods, long-term management plans, expected results, potential pitfalls, budgetary concerns, conclusions, etc. are all acceptable information for the narrative.

Circle Points	Points (45 max)
Completely addresses topic with logical progression (45-35-25-15-10-5-0) Incomplete	C: ____

Content subtotal:_____(60 max)

D. (20 pts) Organization describes the design and flow of the poster. The poster should be easy to read and understand without interpretation by the author. Tables, figures, and photographs should be well designed, clear, and with informative legends. All visual aids should be referenced in the poster.

Circle Points	Points (20 max)
Well-organized (20-15-10-15-10-5-0) poorly organized	D:____

Organization subtotal: _____(20 max)

(40 pts) Presentation deals with the students' ability to discuss their approach and field questions concerning the background and potential outcomes of that approach. Additionally, the students' professionalism, in manner and personal presentation, will be evaluated during the competition.

E. *Professional manner:* Do the students exhibit confidence and enthusiasm? Do the students effectively communicate their ideas verbally?

Circle Points	Points (15 max)
Very professional (15-12.5-10-5-2.5-0) Inappropriate	E: ____

F. *Knowledge:* The students' ability to address questions and provide comments on their approach should clearly demonstrate *their individual involvement* in the creative process of problem solving. Do the students' display insight into how their ideas fit into the larger context of range management?

Circle Points	Points (25 max)
In-depth knowledge (25-20-15-10-5-0) Lacking	F:____

Presentation subtotal: _____(40 max)

Total _____(120 max)

PLEASE provide comments on the reverse side of this sheet