



Biodiversity surveys on Climate-Smart research ranches in Wyoming and South Dakota

Project Overview

Biodiversity Research Institute (BRI) biologists and seasonal staff conducted biodiversity surveys on six cattle and bison ranches across eastern Wyoming and South Dakota in 2024. BRI will revisit survey sites in 2027.

BRI conducted biodiversity surveys as part of the larger “Partnerships for Climate-Smart Commodities - The Grass is Greener on the Other Side - Developing Climate-Smart Beef and Bison Commodities” project coordinated by South Dakota State University.

The primary goal of the project is to create market opportunities for livestock producers who follow climate-smart rangeland management practices. The project will provide information to facilitate data-driven decision-making by private landowners while incentivizing the application of climate-smart alternatives to conventional practices.

The data collected by BRI in 2024 will serve as baseline values against which resurvey values obtained in 2027 can be compared.

Methods and Effort

BRI statisticians created the study design of the biodiversity component of the project. BRI will also calculate summary statistics and higher-level diversity and community structure metrics, which will be provided to project partners.

Over 3 months, BRI staff surveyed 628 2-m² vegetation plots at 157 points; conducted approximately 10 mi of sweep net surveys for grasshoppers at 157 points; 576 pitfall traps for dung beetles at 120 points; 1372 counts for birds at 796 points across over 44,000 ac; 360 mi of mammal driving transects; deployed 12 camera traps at 32 locations; designed and deployed 12 small mammal camera trap systems; and deployed 12 acoustic recording units for birds, amphibians, and bats.



In its over 25-year history, BRI has applied these techniques and a multitude of others across North America, Central and South America, East and southern Africa, and Southeast Asia for funding partners including the United Nations and several U.S. federal agencies.

For more information on this project, contact:

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Credits: p. 1: South Dakota landscape © BRI-Billi Krochuk; Small mammal trap © BRI-Mikaela Howie; Bri Frankina and Shea Tyrrel conducting fieldwork © BRI-Mikaela Howie; Billi Krochuk conducting fieldwork © BRI-Billi Krochuk; Camera trap © BRI-Billi Krochuk.

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