STUDY OBJECTIVES

This project is improving understanding of how sheep grazing can be used to reduce cheatgrass and the practical considerations that should guide targeted grazing implementation. Our team is:

01 Comparing spring and fall targeted grazing treatments to "traditional" light summer grazing

02 Measuring treatment effects on cheatgrass, vegetation composition, soil properties, and wildfire fuels

03 Conducting outreach to increase awareness of sheep targeted grazing as a management tool

A REGIONAL PROBLEM

Cheatrass invasion alters ecosystems and increases wildfire frequency. It is spreading rapidly (>500,000 acres/year) and is the leading cause of sagebrush habitat loss across much of the western U.S.

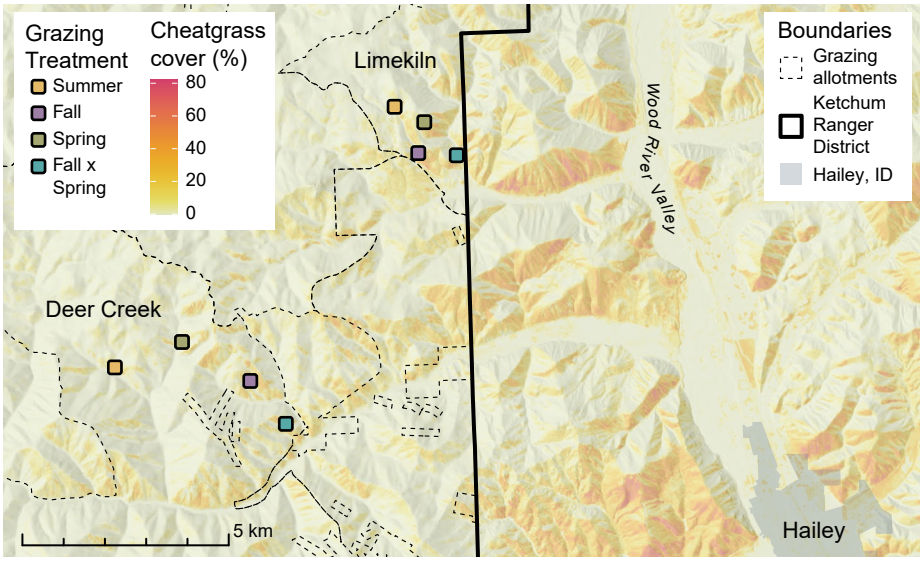
LIMEKILN SHEEP ALLOTMENT

1924: Permitted for sheep grazing
1981: Rangeland ecosystem assessment →
2007: Castle Rock wildfire
2022-present: Cheatgrass study →

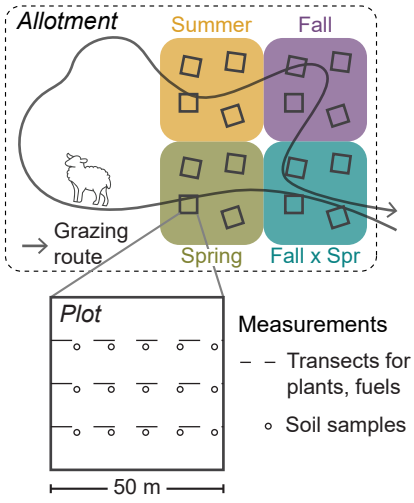
CHEATGRASS
TARGETED GRAZING
WITH SHEEP

FIELD DAY | JUNE 18, 2026

STUDY DESIGN

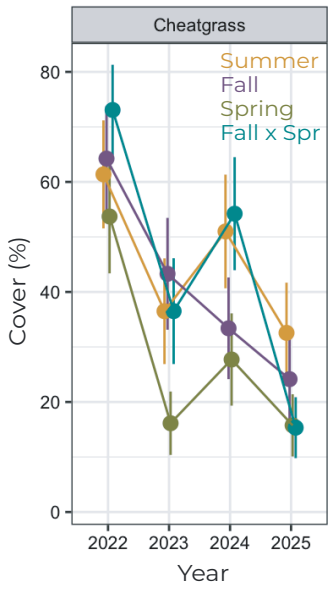


EXPERIMENT OVERVIEW



The experiment is located in the Deer Creek and Limekiln allotments. 32 study plots were selected according to ecological and logistical criteria. Baseline measurements were taken in 2022. Four grazing treatments are each applied across 4 plots in each allotment (32 total). We have completed 4 years of fall and spring treatments.

STUDY RESULTS



KEY FINDINGS

01 Cheatgrass cover varied from year to year. We account for these differences in our statistical analyses to isolate and quantify treatment effects.

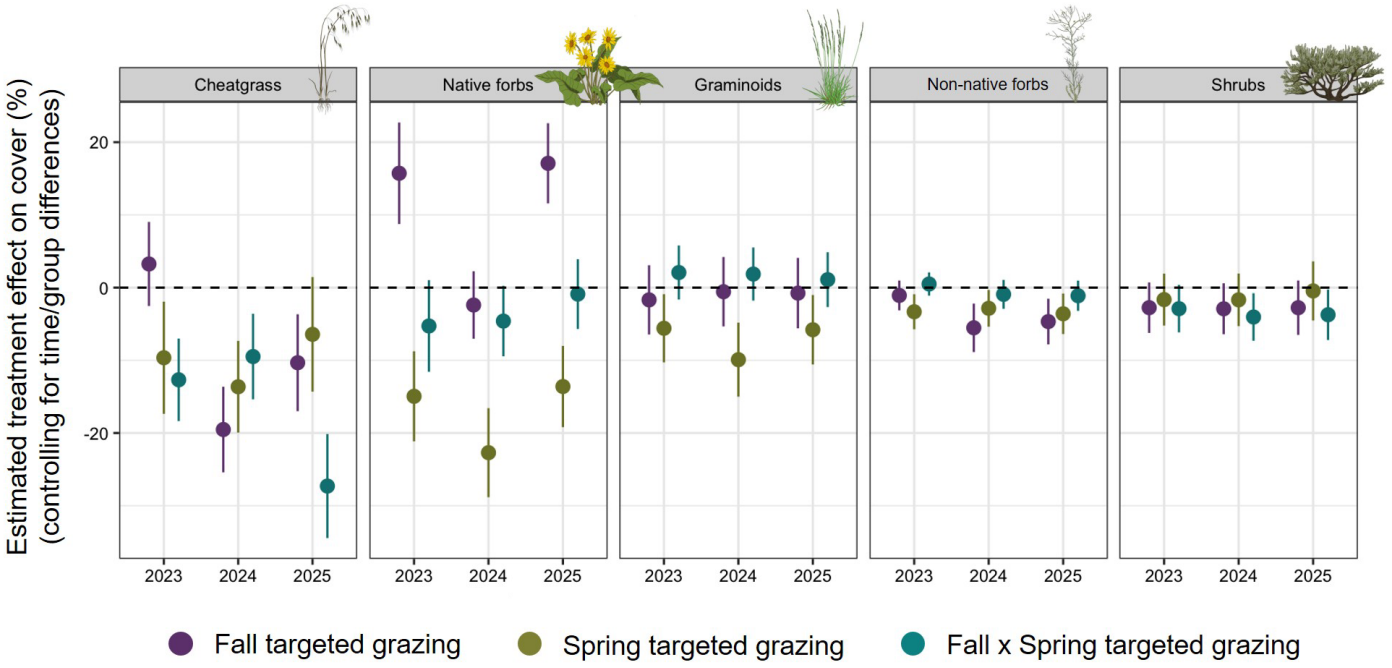
02 From 2022-2025, fall and spring targeted grazing treatments decreased cheatgrass cover by 6-27% (range across treatments and years).

03 Fall targeted grazing also increased native forb (wildflower) cover (+13-15%) and decreased non-native forb cover (–5-6%) in 2 out of 3 years.

04 Spring targeted grazing decreased native forb (–15-23%) and graminoid (grass) cover (–6-10%) and reduced species diversity in the short term.

05 Targeted grazing decreased plant litter on the soil surface. This reduced horizontal fine fuels and microsites favorable for cheatgrass seedlings.

06 Wildfire modeling suggests that targeted grazing treatments that alter fuel structure can influence wildfire behavior under low to moderate wind conditions, but effects diminish as wind becomes the dominant driver.

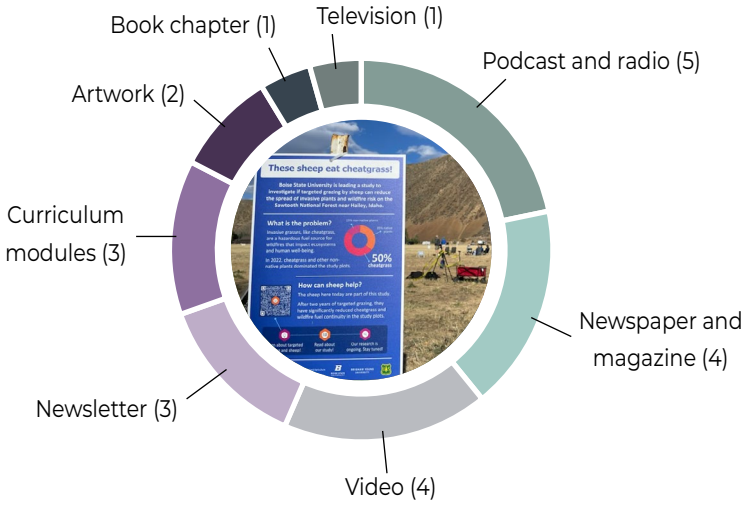


A fall targeted grazing plot after 3 years

OUTREACH AND EDUCATION

We are conducting outreach about cheatgrass targeted grazing with sheep through media outlets, public events, industry groups, classroom visits, scientific publications, and more, with local to national reach.

- 4+ Scientific journal articles drafted
- 31+ Scientific presentations
- 35+ University students gained research experience



NEXT STEPS

- At least 1 more year of targeted grazing treatments
- At least 2 more years of July plant and soil measurements
- Building toward landscape-level targeted grazing planning guidance

NEW DIRECTIONS FOR 2026-2028:

- Refine grazing utilization estimates
- Assess targeted grazing effects on soil nutrient cycling and carbon storage
- Quanitfy trampling and trailing effects on slope stabilization vs. erosion
- Incorporate practitioner knowledge to understand plot-level differences

OUR TEAM

Dr. Kelly Hopping, Boise State University
Dr. April Hulet, Brigham Young University
Dr. Marie-Anne de Graaff, Boise State University
Renee Kehler, U.S. Forest Service
Dan Macon, UC Cooperative Extension
Dr. Briana Swette, Boise State University

Kowitz Sheep Company: Riley Kowitz, Cirilo Freddy Machacuay Román, Dario Palomino Huancaya, Roberto Machacuay Román

Plateau Farms: Mark Henslee, Alfredo Castañeda, Fredy Castañeda, Sixto Castañeda

Past graduate students: Maddi Sorrentino (2022-2025), Kloe Walter (2023-2025), Raechel Hunsaker (2023-2026)
Current graduate students: Tshianeo Ndou, Catie Schwartzmann, Naomi Shapiro, Olivia Johnson

Additional collaborators: Dr. Kyle Palmquist (Marshall University), Dr. Kerry Byrne (Cal Poly Humboldt), Dr. Allison Simler-Williamson (Boise State University), Dr. Sergio Arispe (Oregon State University)

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