



The Grass is Greener on the Other Side: Developing Climate-Smart Beef and Bison Commodities

Today's livestock producers face increasing public scrutiny because animal agriculture is often cited as a major contributor to greenhouse gas emissions. However, this negative perception does not take into account the carbon sequestration benefits of grazing livestock. Grazing beef cattle and bison are key to healthy grassland ecosystems and provide the most nutrient dense source of protein available for human consumption. Additionally, ranchers are known as excellent stewards of the land, soil and water, and livestock under their care.

Many strategies exist to provide incentives to livestock producers to enact climate-smart land management practices, such as the NRCS EQIP program that rewards producers for practices such as prescribed grazing, planting cover crops and improving riparian and watershed function. A major limitation is the lack of a market to attach premiums and provide economic returns to livestock produced using these established practices.



The long-term goal of this pilot project is to create market opportunities for live beef and bison commodities that are produced using climate-smart practices. The specific goals are:

1. Quantify, monitor and verify the carbon and greenhouse gas benefits that come from employing various climate-smart practices on beef and bison ranches.
2. Guide and educate producers on the practices that are best suited to their operations.
3. Manage data generated across ranches to inform management decisions and position producers to enter into new market opportunities.
4. Initiate climate-smart beef and bison commodity markets that will reward producers for implementing climate-smart practices to meet consumer demand.

CONTACT



We will work with range beef cattle and bison producers throughout the project by: 1) initially meeting with each producer to discuss operational goals and conduct baseline assessments; 2) working with each producer to develop a customized grazing plan and determine possible climate-smart practices specific to his/her operation; 3) collecting on-site measurements alongside each producer to verify practice impacts; 4) working with each producer to help him/her transition into new marketing opportunities. Educational workshops and modules will be available to producers to ensure they have the knowledge and resources necessary to implement these practices.

This project also involves a basic research component to test cost effective methods for measuring soil carbon and greenhouse gas impacts for various land management practices. This verification is needed to not only ensure that practices are impactful and feasible, but also to provide producers with the data needed to enter into market opportunities.

Consumers are increasingly voicing that they want to understand more about where their food is coming from and how it is raised. This is in parallel with an increase in demand for more sustainably-produced food and fiber products. This project will enable producers to showcase and be rewarded for their resource stewardship by creating new market opportunities.

Incentives for Producers

- Incentives for implementing climate smart land management practices
 - Prescribed Grazing
 - Cover Crop Planting
 - Forage and Range Planting
 - Upland Wildlife Habitat Management
- Customized technical assistance
- 30% of funds to historically underserved producers
- Land and producer impact:
 - 850 producers
 - 3.9 million acres
 - \$24 million in incentive payments to producers
 - \$22 million in direct producer benefits
 - 329,393 tonnes of CO₂ equivalence

MMRV (Research)

- Quantify carbon, GHG, and ecosystem services benefits
 - Soil Carbon
 - Soil Microbial Community
 - Enteric GHG Emissions
 - Biodiversity Monitoring
- Assess novel/lower cost technologies for widespread use
- Data used to calculate carbon sequestration and mitigation for each practice
- Producer interface will allow real time visualization of land management efforts and guide future decisions

Market Development

- Development of markets for beef and bison raised using climate smart land management practices
- Commodity – climate smart beef and bison calves
- Approach: Development a 'certified' labeling system that can be applied to beef and bison raised with approved practices
- Instill confidence in beef and bison consumers
- Producer and market impact:
 - 85,000 head of beef/27,000 head of bison
 - \$9,500,000 in premiums for beef and bison calves

Project partners include: *SDSU, *SDSU Extension, *SDSU Center of Excellence for Bison Studies, *AgSpire, *Millborn Seeds, *Buffalo Ridge Cattle Company, *Tanka Fund, Texas A&M, National Bison Association, Cold Creek Buffalo Company, SmartScore.ai, Yard Stick, and *C-Lock *Based in South Dakota

CONTACT

Kristi Cammack, Assistant Dean of West River Operations or Amanda Blair, Professor & SDSU Extension Meat Science Specialist
711 N Creek Dr. Rapid City, SD 57703 | Kristi.Cammack@sdstate.edu | 605-394-2236