

SB 2246

Jan 30, 2025, 2:30 pm

Testimony by Dr. Beckie Phillips

I think we can all agree that, regardless of political persuasion, ranching communities and sustaining the rangelands that support them are good for North Dakota. Ranching is more than a business—it is a way of life. I believe ND state legislatures are interested in learning about new directions and new ways they might support our ranchers—now, and into the future.

I am Dr. Beckie Phillips. I have researched ecosystem biogeochemistry for over 25 years, which is the study of how energy and materials cycle through the environment. I specialize in atmospheric exchange of trace gases at ecosystem scales. I have served as faculty at the University of North Dakota, the USDA ARS, a research leader in New Zealand, and am now the Executive Director for a nonprofit in Hazelton, ND that specializes in carbon cycle research and education. I have worked all over the state, from Max to Dickinson, from St. Thomas to Napoleon, and into Lemmon SD.

This bill proposes a scientific assessment of nature-based carbon dioxide capture and the importance of this topic to North Dakota's ranching communities. The report resulting from this research will show current knowledge of carbon dioxide exchange and rangeland carbon budgets as well as potential future directions and how additional research could help sustain the ranching lifestyle we know and love. Rangelands naturally store carbon, but the annual amount of carbon stored or lost depends on grazing management, *ceteris paribus*.

Carbon flux measurements can show us how management alters natural carbon dioxide capture in real time for entire ecosystems. This is distinctive from soil measurements, where cores are taken over several years at points in space. Since grazing management and grazing impacts on vegetation changes year to year, it is difficult to ascribe a particular practice to the annual ecosystem carbon budget without flux measurements, which are collected year-round every ½ hour.

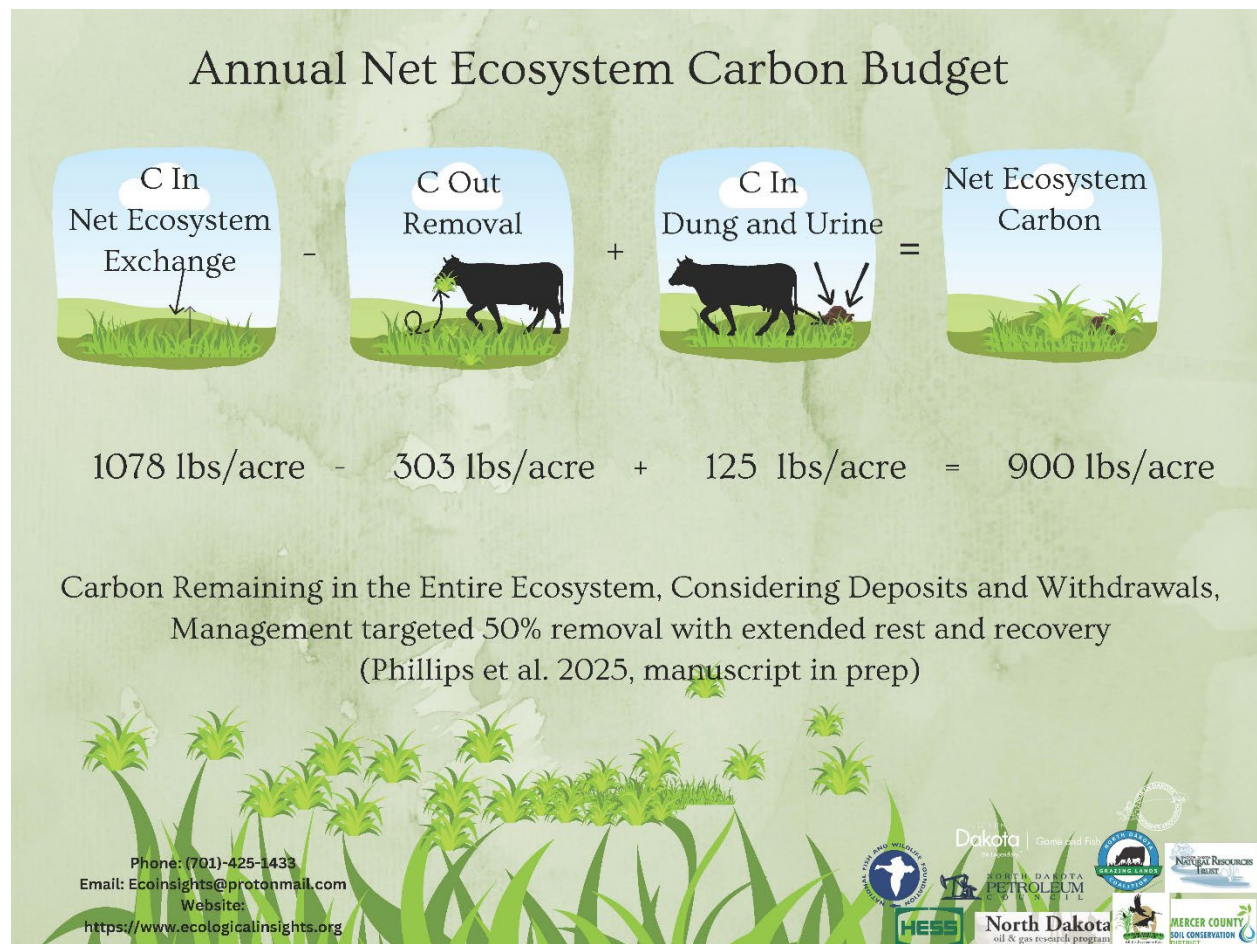
This study would explore funding opportunities for a Grand Ranch, where this research could be showcased to the public and could serve as a platform for collaboration. While carbon dioxide fluxes are central, additional lines of research could emerge, such as managing grazers for plant secondary compounds, carbon-smart beef marketing, and economic analyses. Carbon is the common denominator fueling multiple research pathways.

SB 2246 does not represent carbon buyers or any interest group and is not led by a government agency. SB 2246 would authorize a fact-finding mission focused on what we know and what we do not know about managing rangelands for greater carbon yields—to enhance the amount of carbon remaining in the ecosystem.

The current work in this space has been led by me and my team at the Heaton Ranch in McKenzie, ND. We use a working herd in production to demonstrate carbon dioxide capture under real world conditions. This non-governmental research is not saddled by bureaucracy and overhead and is the first of its kind on a working ranch.

When we started this research, we did not know how managed grazing would impact the annual carbon budget because this type of experiment had not been done before. We found intensive grazing events followed by extended rest and recovery enhanced the annual amount of ecosystem carbon remaining in the first year.

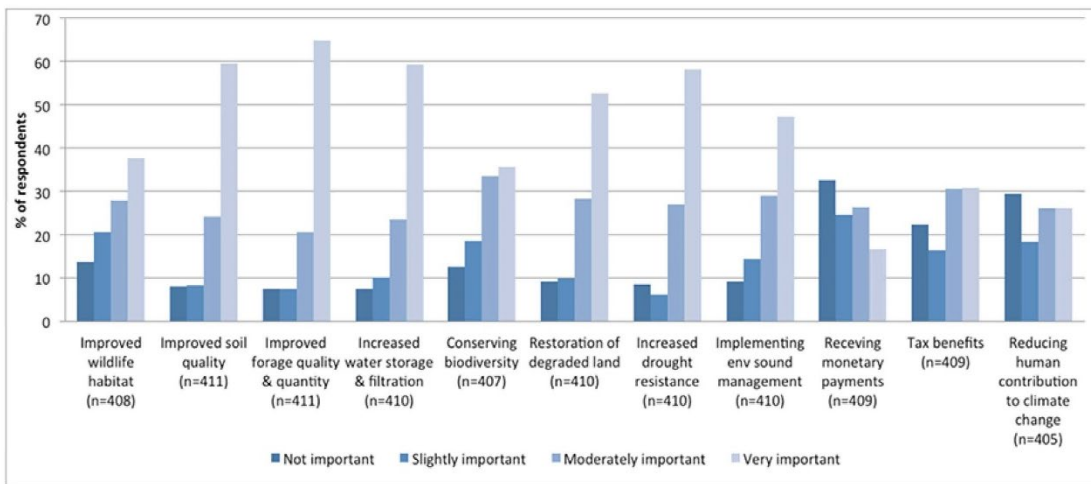
You can see in this graphic what I mean by the annual carbon budget.



Now, we need to extend this research to the grasslands of western ND, but these sites need to be carefully selected. Not all terrains are suitable for carbon dioxide flux research.

I am talking to ranchers near Dunn Center, about setting up similar field experiments on their ranch. A rancher in Alexander is also interested in participating, and the Dickinson State Range Department would like to see their students have a chance to study and apply this new technology under real-world conditions.

There is great interest in how to enhance C in rangelands, and it's not always about carbon credit dollars. Here, a survey of 598 ranchers across 29 counties in Utah show that they place a higher value on carbon for the ecosystem benefits, such as greater plant production and water storage, as more important than carbon credit payments.



I am supporting this bill because I think this approach is good for the state, for ranchers, for rangelands, and for legislators. The essence of this bill is education, which is always a good place to start.