Submitter: Shannon Cappellazzi

On Behalf Of:

Committee: Senate Committee On Natural Resources and Wildfire Recovery

Measure: SB1534

I come from a cattle ranching family and was raised to honor and nurture the soil which we all depend on for our food, water, and air quality. I have been working in soil health research for the last 15 years, first at a ranch in Montana, then Oregon State University, then at the Soil Health Institute, and now at Grassland Oregon. I strongly support Senate Bill 1534. It is time for Oregon to join the other agricultural and natural resource leaders and put together a strong statewide program to support, foster, and train land managers, consultants, technicians, and the next generations of scientists about the capacity of the soil to function as a vital living ecosystem that sustains life.

There are many variables when it comes to greenhouse gas emissions, and the potential for soil carbon storage. The number of variables that influence sequestration rates and emission rates are the reasons we have the idiom “no model is perfect, but some models are useful.” Consider that there are both positive and negative feedback cycles that are interact among each of the following variables, typical climatic temperature and moisture dynamics as well as individual weather events, the species and varieties of crops in the rotation, residue management, past and current tillage practices, fertilization rate, timing and type, irrigation practices, pH, texture, mineralogy, slope, aspect, depth to the water table or other root restrictive features, and the whole host of various organisms that live in and on the soil.

This is enough to make a mathematician dizzy and enough to employ a whole host of graduate students to research the levels of interactions for generations. It is the reason that we need to take measurements of the soil carbon stock and create registries with set verification rules in order to insert some semblance of trust in the carbon market related to agriculture and forestry management practices and why we need a statewide database to understand our baseline soil carbon status. With a strong baseline we will have a measurable standard with the ability to determine which policies and practices are making a positive or negative impact on carbon and in turn the downstream ecosystem services provided by a healthy soil.

I am particularly encouraged that this bill seems to focus on soil health and increasing soil carbon not just for the sake of “carbon sequestration” (which is challenging to quantify, particularly the permanence) but for the range of ecosystem services that the soil provides as the base of our entire terrestrial ecosystem. The additional benefits related to water quality, biodiversity, nutrient management, drought and flood resilience, economic resilience of people making their living from

the land, as well as food quality and security.

I am happy to provide additional information once this passes out of committee. I will be available to help with training or consultation or live testimony or writing protocols for statistically rigorous sampling designs to establish baselines. Please do not hesitate to reach out.

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