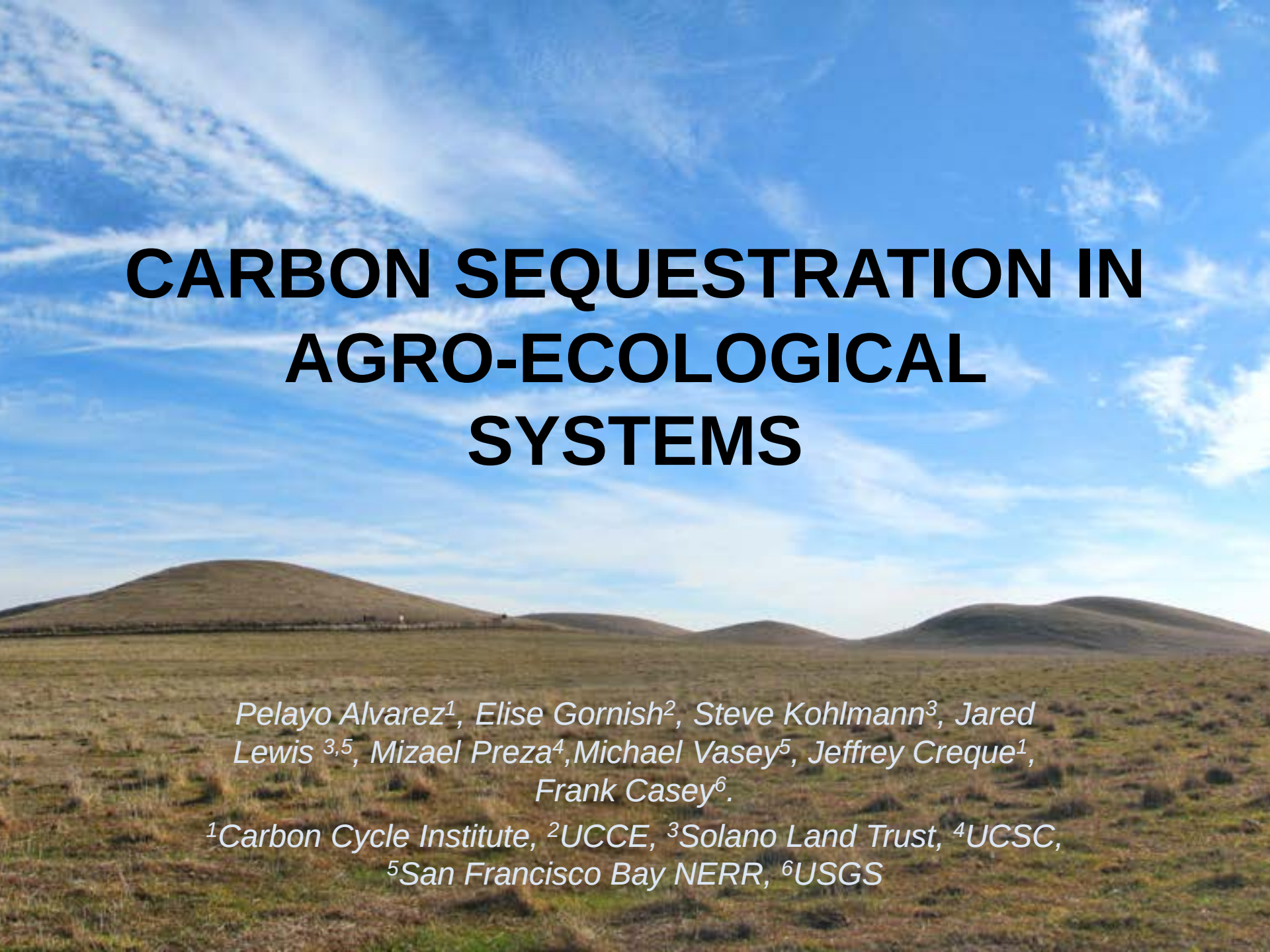

CARBON SEQUESTRATION IN AGRO-ECOLOGICAL SYSTEMS

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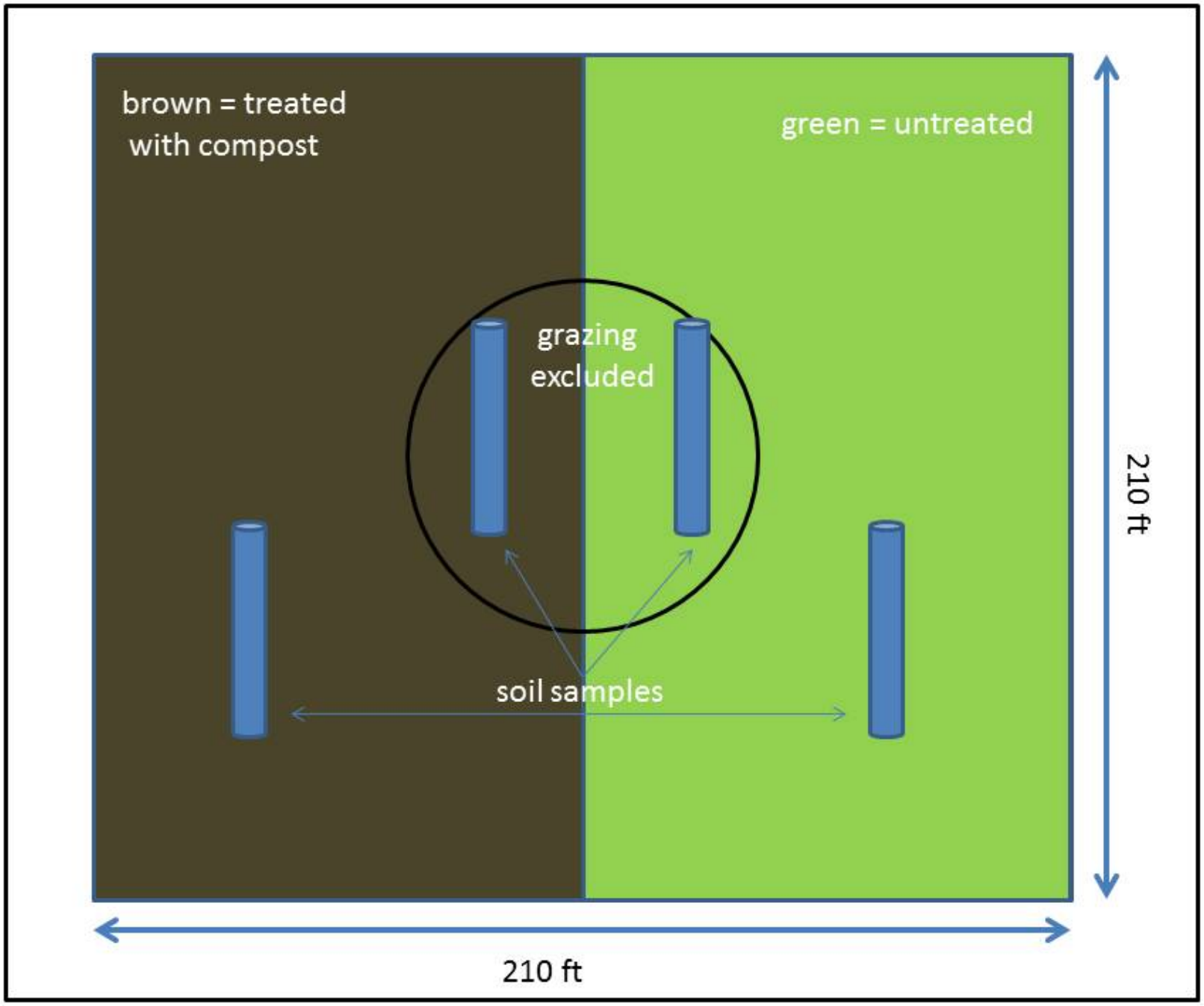
Overview

Potential for atmospheric carbon sequestration in rangeland soils as a viable climate mitigation and green-house gas (GHG) reduction method:

- ecological factors that drive ecosystem carbon storage in the context of a sustainable agricultural enterprise
- evaluate the management, socio-economic, and ecological implications of enhancing carbon stocks and improving ecosystem services through compost addition.

Experimental Design

- Twenty (20) 1-acre plots in rotationally grazed rangelands.
- 4 soil types
- Mature, locally sourced green-waste compost is spread ~0.5” thick in a single application (about 33 cy/ac).


brown = treated
with compost
green = untreated
grazing
excluded
soil samples
210 ft
210 ft

Sample Design

- Plots will be sampled up to 3 times per year in treatment and control sites
- Soil: total soil carbon, texture, bulk density and PH, water infiltration rates
- Vegetation: plant productivity, plant community composition including natives and exotic species
- Performance metrics and financial/economic indicators at a sample of representative sites that will track the market and nonmarket costs and benefits of implementation.

Outcomes

- A full accounting of carbon cycle dynamics, carbon storage and associated ecological benefits provided by compost addition to rangelands. Potential benefits will be assessed in the context of potential positive and negative impacts to the natural environment

- A complete economic cost benefit analysis of project implementation, including associated ecosystem services benefits

- An effective outreach strategy and program, that facilitates knowledge transfer to a broad audience including local producers, regional decision makers, state and federal agencies, and elected officials.

Questions?

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