Carbon Stock Analyses in Practice

SMUD Board of Directors

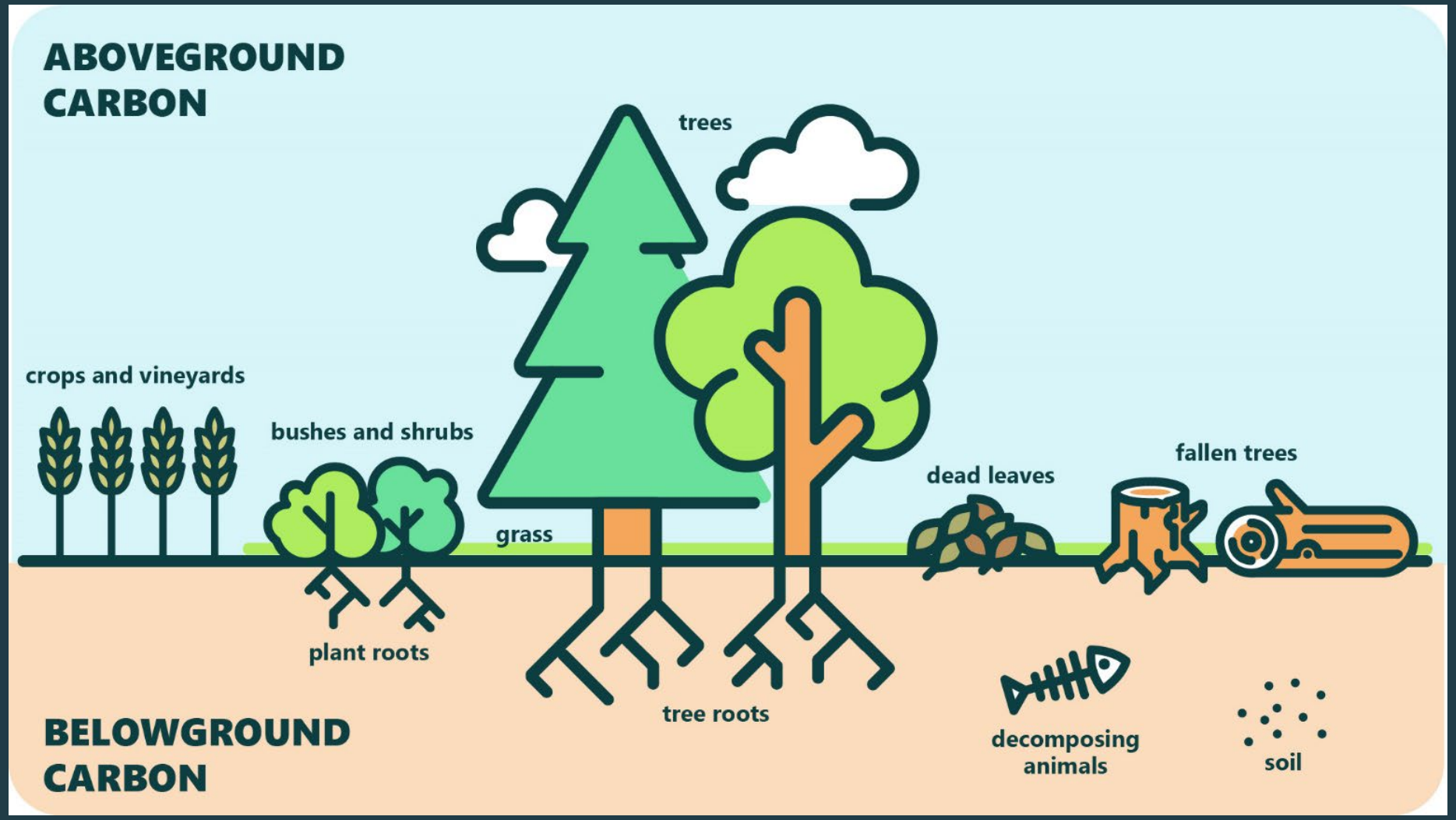
November 19, 2025

Carbon Stock and Carbon Sequestration

- **Carbon stock** refers to the total amount of carbon stored in natural and working lands at a specific point in time. It's measured in units of mass (tons of carbon).
- **Carbon sequestration** is the rate at which carbon is removed from the atmosphere and stored in these systems. It's measured as a rate (tons of carbon per year).

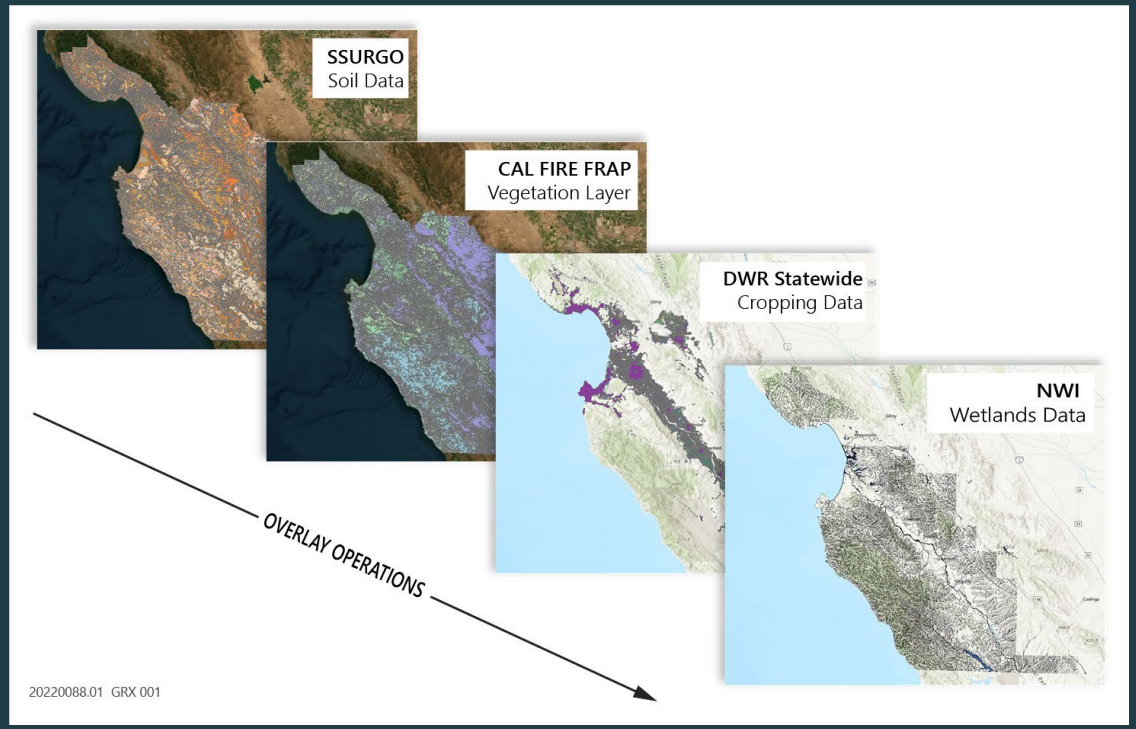
- SMUD's Feasibility Study will incorporate both carbon stock and carbon sequestration.

Carbon Stock Inventories



Monterey Bay Area Natural and Working Lands Study

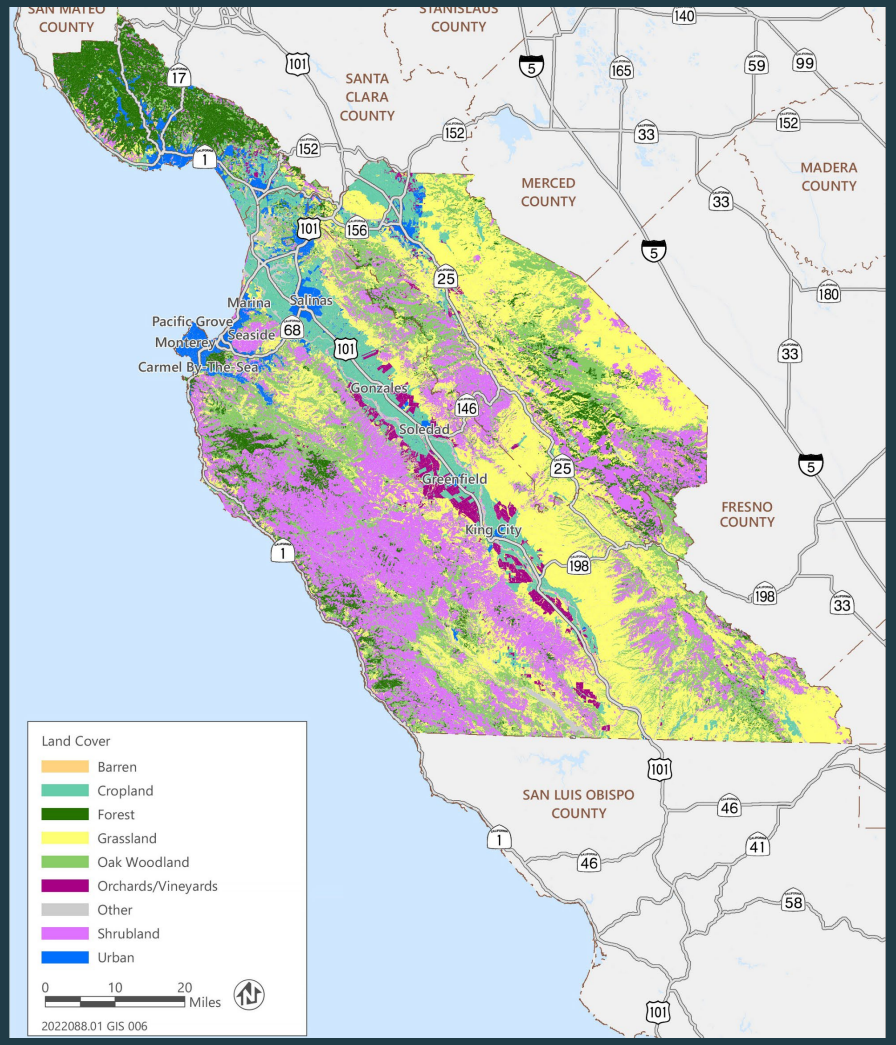
- Created a geospatial carbon model for natural and working lands of Monterey, San Benito, Santa Cruz counties
- Identified strategies to enhance climate resilience and maintain carbon stock

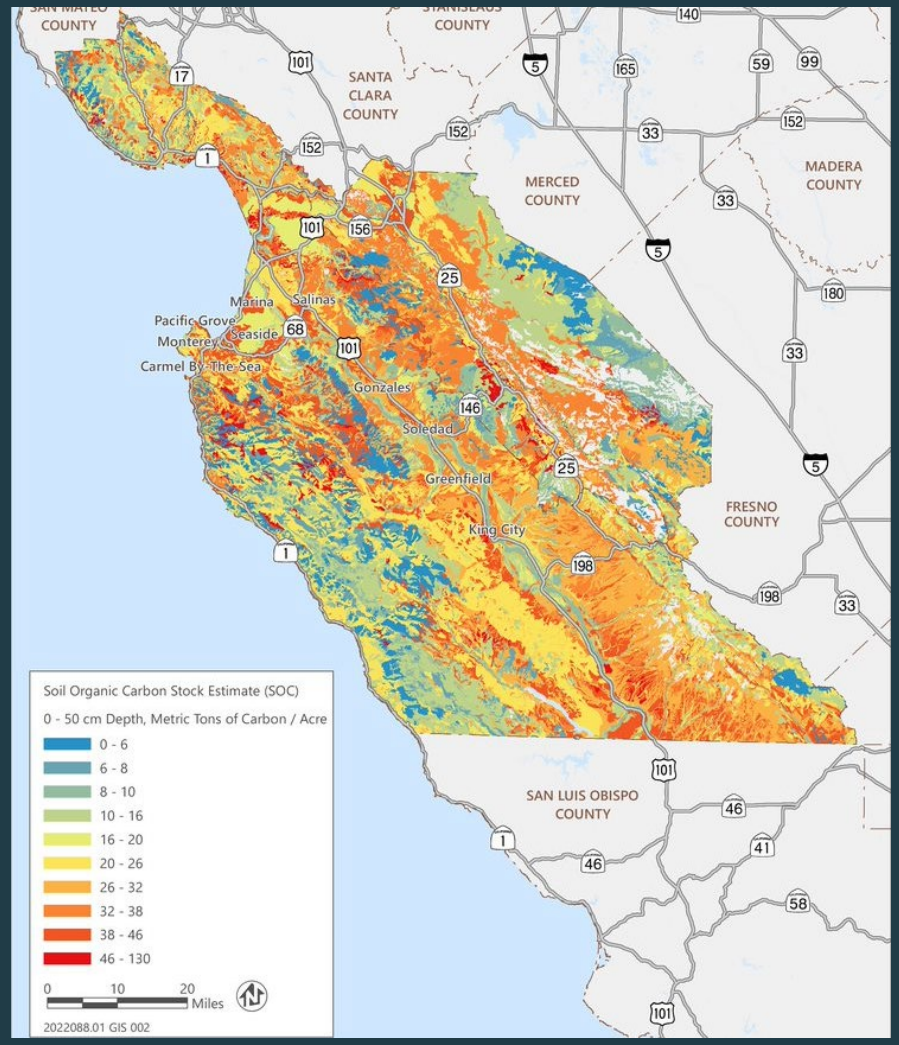


Methodology

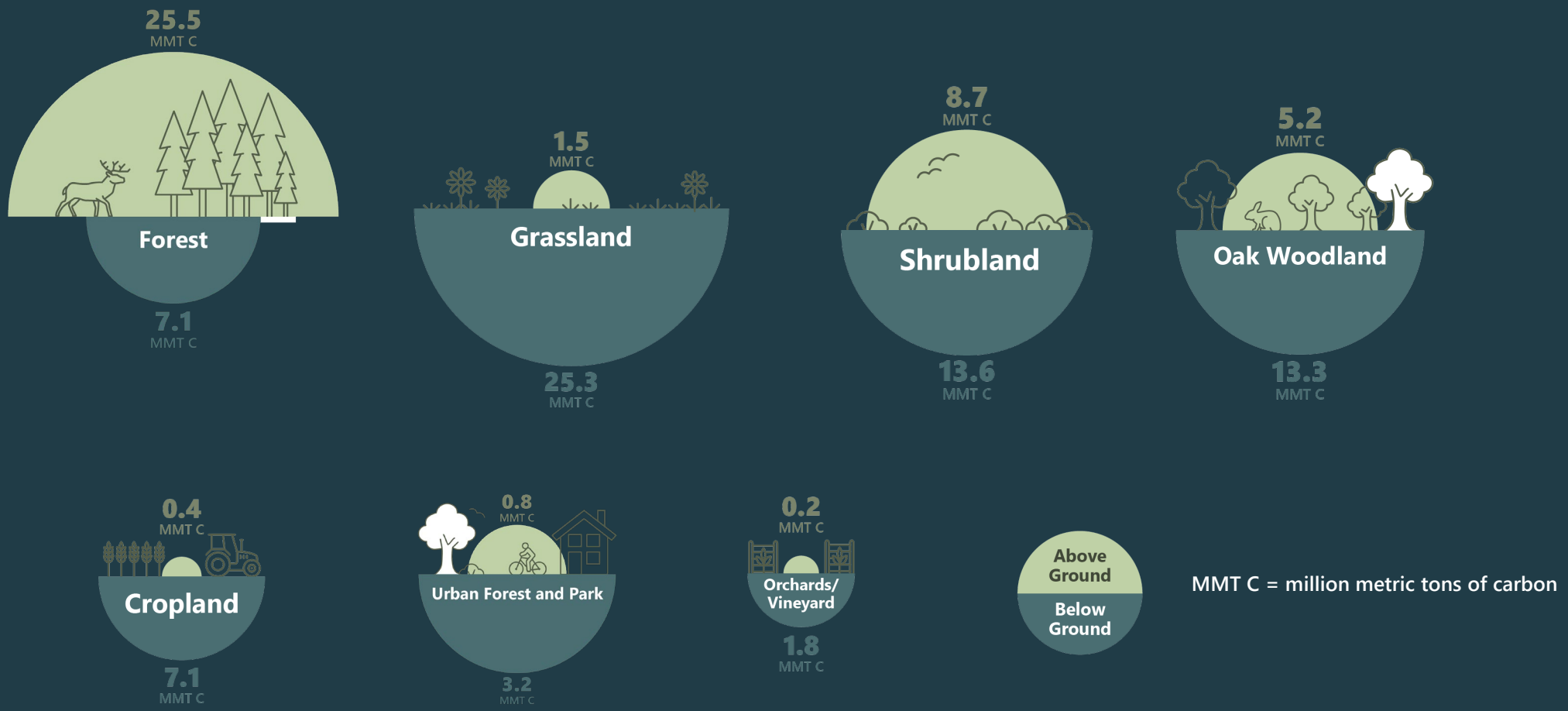
- Best available spatial data
- Carbon stock values
  - Specific to land cover type
  - Peer-reviewed scientific literature
- NRCS Soil Survey Geographic Database

Monterey Bay NWL Study: Vegetation Cover and Soil Carbon Estimates



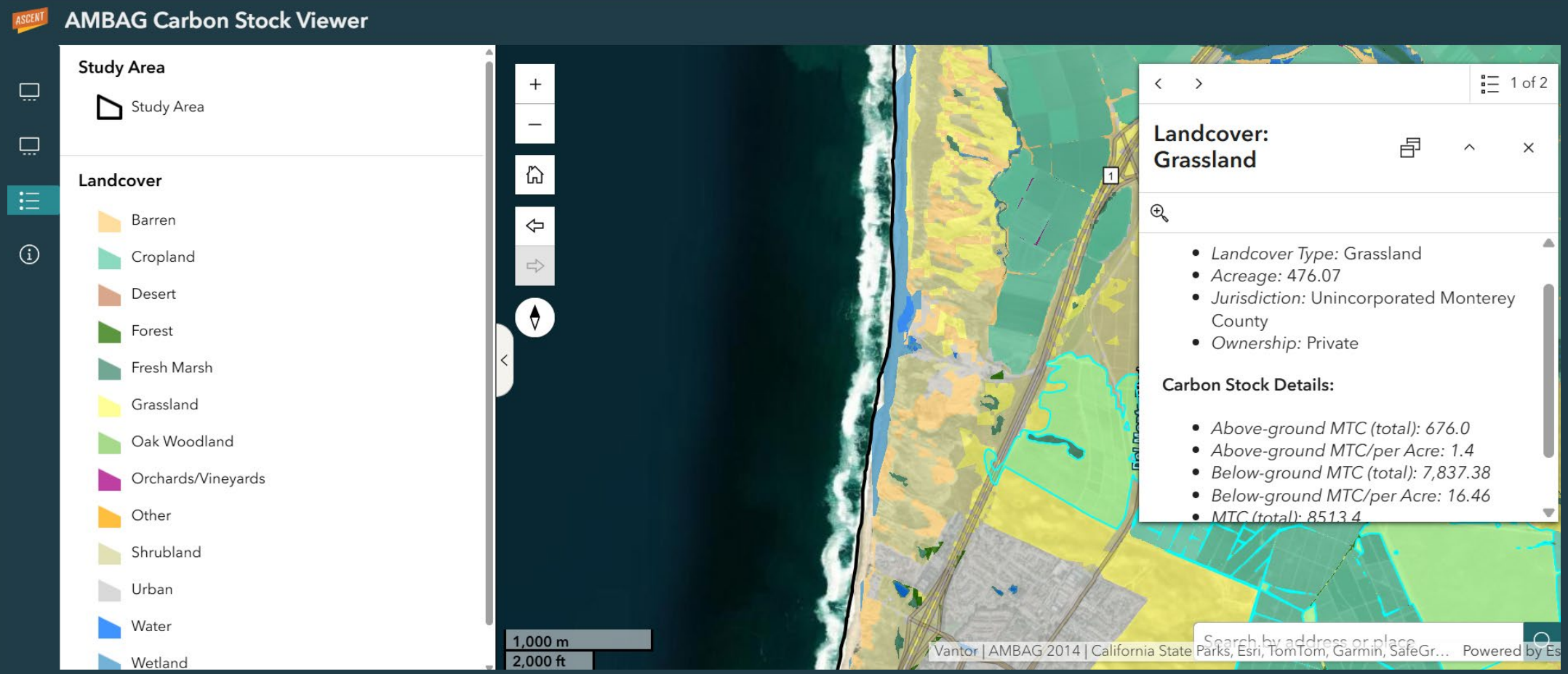


Monterey Bay NWL Study: Carbon Stock Inventory Results by Land Cover Type



117 MMT C = 430 million metric tons of CO_2 or ~ 100 years' worth of GHG emissions

Monterey Bay NWL Study: Sharing Data Through a StoryMap



[Link to Monterey Bay NWL StoryMap]