

# Increasing Soil Carbon for Climate Resiliency

Healthy soils are a critical part of the long-term sustainability of food production and can contribute to reducing greenhouse gases. Compost provides a direct addition of carbon to soil, along with a diverse population of microbes to boost soil health, helping plants grow stronger. Organic matter and soil carbon helps water percolate into clay soils, instead of running off, and also helps hold water in sandy soils, so plants can use it before it sinks below the root zone. Mulch protects soil from sun, wind, and water erosion, adds more carbon as it breaks down, and helps conserve water by keeping soil temperatures down. Whether the future holds droughts, heat waves, or stronger, wetter storms, increasing the organic matter and carbon in California soils is an effective way to help California agriculture adapt and stay strong.

California Farmland with Soil Carbon is less than 1 percent.

Potential soil carbon sequestration rates from restorative management practices.

- 400 kg C per hectare per year (Average from Lal, 2006) intensive restorative agricultural practices
- 900 restoration of wetlands, marshes, sea grasses kg C per hectare per year (Average from Lal, 2006)
- 1,250 restorative practices in soils with low carbon or depletion kg C per hectare per year (Average from Lal, 2006)

The average compost in the Western U.S. is 22% by dry weight, according to data from soil control labs.

Farmland data acquired from California Farmland Mapping and Monitoring Program and filtered to categories of Prime, Statewide Importance, Unique, and Local Importance. Organic Matter Content data obtained from USDA Gridded Soil Survey database.