



The Soil Health Movement & Carbon Farming Locally

Soil health management has always been important to Resource Conservation Districts (RCDs), but it became a global hot topic last year when the international community delegated it the International Year of Soil 2015. This term and the variety of practices associated with supporting healthy soil conditions have had a long history with many producers throughout Sonoma and Marin Counties. The protection of our soil resources is vital to the health of our agricultural community and our economy.

In 2015, Governor Jerry Brown allocated \$20 million into the Healthy Soils Initiative, which would quickly push California, the largest agricultural producing state, towards realizing climate solutions for agriculture (California Climate & Agriculture Network (CalCAN), 2015). The Governor's vision for reducing greenhouse gas emissions by 40 percent before 2030 relies on agriculture and encourages farms and ranches to manage their lands in order to store carbon. Climate-friendly practices have multiple benefits to producers as well as the environment.

Carbon sequestration is a direct result of increasing soil health and microbial life in our pastures, rangelands, crop lands, orchards, vineyards, and our forests. Carbon dioxide (CO₂) is a key driver in global climate change, but also occurs naturally in the environment and our atmosphere. The carbon farming movement was spurred as more information than ever before has been unearthed by science about soil structure, biological relationships, and the importance of increasing soil organic matter. Farmers and ranchers across the United States and beyond have partnered with researchers and are finding positive results in impacts on pasture productivity and forage quality, animal health, and habitat for pollinators and other species.



Carbon farming involves implementing practices that are known to improve the rate at which CO₂ is removed from the atmosphere and converted to plant material and/or soil organic matter. Pioneering efforts to study and improve carbon farming in our region began in 2008, when the Marin RCD

received a grant to commence what has become the Marin Carbon Project. “According to Marin Carbon Project research, sequestration of just one metric ton per hectare on half of the rangeland area in California would offset 42 million metric tons of CO₂e, an amount equivalent to the annual greenhouse gas emissions from energy use for all commercial and residential sectors in California (Carbon Cycle Institute, 2015).”

Potential practices to improve soil function and sequester CO₂ include: cover cropping, compost application, reduction in tillage, installing hedgerows and windrows, riparian planting and more. In addition to carbon sequestration, these practices can provide multiple benefits, including increased soil water holding capacity and pasture productivity, improved water quality and wildlife habitat, and an increased resiliency to the impacts of climate change. “The latest research shows the less you till, the more carbon you keep in the soil to build organic matter— living and dead plant roots, microorganisms, insects and earthworms (USDA – Natural Resources Conservation Service (NRCS), 2015).”

To calculate offsets from carbon and other greenhouse gases farmers and ranchers have access to the free online tool COMET-Planner (<http://www.comet-planner.com/>), which evaluates NRCS conservation practices implemented based on location and acreage. This tool, developed in partnership with NRCS, Colorado State University, and the Marin Carbon Project, can assist landowners with evaluating their potential emission offsets.

The RCDs are part of an innovative, regional effort aimed at bringing “Carbon Farming” throughout the North Bay Area and parts of the North Coast. In 2016, the LandSmart® Planning program (a regional effort for Sonoma, Gold Ridge, Napa and Mendocino RCDs) will feature a chapter on Carbon Sequestration and Soil Health. Meanwhile, the Marin RCD, continues to work with the Marin Carbon Project, to expand carbon farming locally. To date Carbon Farm Plans have been completed on three demonstration farms covering 1,782 acres, are currently being implemented on an additional eight properties covering 4,813 acres and another twelve plans will be developed in the next three years.



If you are interested in hearing more about these efforts please contact your local RCD. Currently, Gold Ridge RCD is accepting applications for farmers and ranchers interested in receiving a Carbon Farm Plan. Applications are available on their website at www.goldridgercd.org and are due May 31st. Sonoma RCD has a rolling application for interested rangeland and vineyard property landowners who can contact Kari Wester at kwester@sonomarcld.org for more information.