FARM AND CLIMATE PROGRAM

The Center for Land-Based Learning's Farm and Climate Program addresses the dual challenges of climate change and declining biodiversity. Based at CLBL's Maples Farm Headquarters in Woodland, CA, the program seeks to increase the rate at which CO_2 and other greenhouse gasses are sequestered, or stored, in agricultural soils while improving other measures of ecological health such as native habitat, biodiversity, and drought resilience. The Farm and Climate Program encompasses four main areas of action: **carbon farming**, **research**, **habitat restoration**, and **education and outreach.**

Carbon Farming

The term "carbon farming" refers to proven and measurable practices that increase the rate at which CO_2 and other greenhouse gasses (GHG) are removed from the atmosphere and stored over the long term in soil and plant material. Farmers do carbon farming all the time as it is a fundamental part of the carbon cycle and photosynthesis. In 2022, CLBL launched the Yolo Carbon Farming Partnership together with the Yolo County Climate Action Commission, the Yolo County Resource Conservation District the Carbon Cycle Institute and Yolo Land Trust. Our aim is to substantially increase the pace and scale of carbon farm planning on farmlands and associated natural habitats in Yolo County.

Since relocating our headquarters to Maples Farm in 2020, CLBL has already implemented several carbon-beneficial practices, including several native plant hedgerows, a pollinator bioswale, compost application and cover-cropping. In the next three years, we plan to install no fewer than three additional carbon-beneficial practices as demonstration sites.

Research

In partnership with UC Davis, the Farm and Climate Program has launched a demonstration project to assess the GHG impacts of using biochar as a soil amendment both alone and in combination with compost. Funded by the Healthy Soils Program (HSP) of the California Department of Food and Agriculture, this 3-year project encompasses 16 research plots in a soon-to-be established 5-acre olive

orchard at Maples Farm. Researchers will collect data on GHG emissions, soil organic matter, microbial diversity, and crop productivity.

In addition to the biochar demonstration project, the Farm and Climate Program collects ecological data to measure the impacts of CLBL's agricultural operations and conservation practices. We are measuring changes in soil organic carbon, vegetation, native pollinators, and wildlife through regular soil testing, vegetation surveys, bird and bee counts, and wildlife camera traps.

Habitat Restoration

Conservation practices such as installing hedgerows, windbreaks, and other perennial vegetation provide important on-farm habitat for native plants and animals while also improving soil health and sequestering carbon. Our ecological monitoring efforts are measuring these benefits as we improve on-farm habitat at Maples Farm. We are also planning new habitat restoration efforts, including a riparian restoration project on Cache Creek, which forms the northern boundary of Maples Farm. Among the activities planned are construction of a 1⁄4 mile walking trail on Cache Creek with interpretive modules as well as land management workshops and native plant walks featuring Native speakers and practitioners.

Education and Outreach

All our activities in carbon farming, research, and habitat restoration have at the core CLBL's mission to inspire, educate, and cultivate future generations of farmers, agricultural leaders and natural resource stewards. Consequently, we are integrating carbon farming principles into CLBL's existing youth programs and our beginning farmer training and farm incubator programs. In 2023 we will offer workshops in carbon farm planning tailored to Yolo County producers. Our biochar research includes a series of field days for farmers and community members interested in soil health. Finally, we are developing innovative outreach mechanisms, such as a self-guided tour with QR codes, to share our findings with visitors to Maples Farm, students, farmers and ranchers, and researchers.

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