



SINGING FROGS FARM

Stewardship Profiles in California Agriculture
Environmental Leadership with Soil Health

Elizabeth and Paul Kaiser met while serving in the Peace Corps in Gambia. Paul was involved with agroforestry and natural resources management and Elizabeth was working in health and nutrition. Both Paul and Elizabeth come from families with backgrounds in agriculture, so when they returned to Sonoma County in 2005 they established Singing Frogs Farm, a diversified, direct market vegetable operation in Sebastopol specializing in row crops.

PROBLEM

After just two seasons of farming, the Kaisers found that the soil was degrading rapidly and was subject to weeds and pests. They noticed that was an absence of earthworms in the beds. Their yields were lower than expected.

SOLUTION IMPLEMENTED

The Kaisers implemented a unique combination of no-till, agroecological, and intensive farming methods on the three acres they farm. This involves growing as many different species as possible (including perennials in the hedgerows, annuals, orchards etc.) and keeping living plants in the soil to create system that supports the soil food web, increases soil organic matter, crop nutrient density and overall productivity. Covering the soil with a canopy of plants at all times helps to maintain soil health and increase carbon sequestration. The Kaiser's cropping strategy entails planting three to seven sequential vegetable crops per year without leaving the soil bare or disturbed soil between crops. Rather than utilizing traditional cover crops, they consider every crop a harvestable crop with money-making potential (for example, chicory, lettuce, tomatoes, and broccoli). In the rare instances that a bed isn't being used, breathable landscape fabric keeps the soil covered and promotes healthier soil biology and decomposition without creating an environment for soil diseases. Once the plants are in the ground, the Kaisers top-dress the bed with a quarter to a half-inch of plant-based compost that is not incorporated into the soil.

In an effort to maintain soil cover, the Kaisers plant very little from direct seed and consider transplanting to be key.

ACHIEVEMENTS

- Increased crop sales up to \$100,000 per acre per year
- Increased soil organic matter



“A farmer’s footstep is the best fertilizer. Barren fields starve the soil, so build your ecology because topsoil is black gold”

-Elizabeth and Paul Kaiser

All of the plants that go in the ground are large healthy transplants that come from seedlings grown in the nursery. Healthy transplants are subject to less pest pressure, outcompete weeds, and, most importantly, help keep the soil covered and protected at all times while maximizing photosynthesis. Dense cropping of the annual vegetables provides competition against weeds and compost applications improve soil structure.

Hedgerow plantings were installed on the farm to function windbreaks that stabilize micro climates, and provide vegetative habitat and food resources for pollinators, beneficial insects, snakes and songbirds that control pests.

CHALLENGES/OBSTACLES OVERCOME

At the beginning of their farming venture Paul & Elizabeth plowed using a tractor and later with a rototiller. The Kaisers had to establish new no-till fields, prepare beds, research tools for non-mechanized production, and educate themselves about the science and application of compost. They found that they had to increase soil testing frequency to three times per year, and from depths of nine-to-twelve inches to 36 inches.

Now they almost never have to use the broadfork, and the soils have begun to contain an abundance of earthworms and microbial life. Observing what is happening in the field has led the Kaisers to make other management changes, such as reducing fertilizer and compost use for crops that mature quickly.

For the Kaisers, the most important factor in developing their no-till soil management plan was finding consistent, well-trained employees to implement the healthy soil principles they embrace.

MEASURING SUCCESS

The innovative, super-intensive soil management practices utilized by the Kaisers are incredibly time consuming, however they have proven to be worth the investment. The land now produces \$100,000 in gross crop sales per acre per year. Three-thousand hedgerow plants were installed.

When they acquired the land, the soil consisted of 2.4 percent organic matter. Now soil organic matter is 8-10 percent. This was achieved despite a 25 percent reduction in compost and fertilizer amendments.



This project is supported by a Specialty Crop Block Grant from the California Department of Food and Agriculture and the Agricultural Marketing Service of USDA.

STEWARDSHIP PRACTICES



Soil Health



PROJECT PARTNERS

- California Climate and Agriculture Network (CalCAN)
- Ecological Farming Association
- The Marin Carbon Project
- Natural Resources Conservation Service
- Resource Conservation District
- T&D Wiley Farm

American Farmland Trust
California State Office

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