



FIBERSHED

Local Fiber, Local Dye, Local Labor

## 2018 Carbon Farm Fund Report



*Implementing the Anderson Ranch Carbon Farm Plan:  
Prescriptive herbivory taking place on a no-till, multi-species cover crop  
(Grazing photo by Paige Green, cover crop photo by Rebecca Burgess)*



*How the Private Sector is Working  
to Ameliorate Climate Change  
in Our Fibershed*

FIBERSHED’s Climate Beneficial™ fiber program develops direct relationships between brands, designers, farmers, and ranchers; generating technical service and financial incentives for Climate Beneficial agriculture. The Climate Beneficial program has been piloted through a focus on implementing carbon farming on our regional wool producing landscapes over the course of three sheep shearing seasons (from 2016-2018); we are now entering our fourth shearing season. To execute this Climate Beneficial Wool program in a manner that is positively transformational for the land, the land managers, and the brands, Fibershed provides services at no cost to the farmers and ranchers we work with. We administer funds for carbon farming practice implementation from our Carbon Farm Fund without any administrative fees.

Our planning and technical service partners who support us in developing Carbon Farm Plans for the ranchers and farmers we work with include the Carbon Cycle Institute and the California Resource Conservation Districts (RCDs). Carbon Farm Plans provide the foundation for understanding the possibilities of soil carbon sequestration and allow us to quantify these opportunities, utilizing measurement and modeling systems that we have been co-developing with land grant universities over the past several years.

Once a Carbon Farm Plan is in place, implementation and funding of that plan begin. Fibershed provides small grants from our Carbon Farm Fund—these funds are generated through premiums on Climate Beneficial wool, the point of sale revenues from the sale of Climate Beneficial Wool goods, and direct donations by small donors.

We want to thank the following brands and small donors for their contributions to our implementation-focused Carbon Farm Fund:

BRANDS INVESTMENTS

- A Verb for Keeping Warm
- Brooklyn Tweed
- Coyuchi
- Fiber Confections
- Frankenmuth Mill
- Full Circle Wool
- Imperial Yarn
- Sheep to Shop
- Sincere Sheep
- The North Face

SMALL DONOR INVESTMENTS

- |                      |                       |
|----------------------|-----------------------|
| Joan Anderson        | Kerry Keefe           |
| Paula Ann Balch      | Beth Koester          |
| Carol Berry          | Rebecca Konkell       |
| Catharine Bradshaw   | Lauren Magrisso       |
| Kenia Carreon        | Mary McClellan        |
| Katharine Darlington | Rachel Metcalf        |
| Diana Donlon         | Mare Pack             |
| Elizabeth J Flamm    | Nell Painter          |
| Dana Friedman        | Lauren Rasmussen Ranz |
| Emily Hanna          | Barbara Shaw          |
| Kerry Hughes         | FMR Smith             |
| Dustin Kahn          | Sarah Sweedler        |
| Naida Kanagawa       |                       |

PRIVATE SECTOR INVESTMENTS

Total implementation funds raised	\$70,485
Funds issued in small grants for carbon farm implementation	\$61,971
Funds remaining and earmarked for carbon farming projects	\$8,514

## How the Public Sector is Working to Ameliorate Climate Change in Our Fibershed

INVESTMENTS from the private sector are leveraged by the resources available to our producers through technical service providers and public funds that also support this work. In the recent years of our involvement with these projects, Fibershed has been able to promote public funding opportunities and provide some support to our producers in accessing those funds. Local RCD and NRCS offices are critical partners in helping producers plan projects and apply for funding. Four Fibershed producers have received recent federal funding through the United States Department of Agriculture Natural Resources Conservation Service's EQIP program, one through the CA Department of Water Resources (North Coast Resource Partnership), one through the CA State Coastal Conservancy, and six producer members received awards in the initial rounds (2017-18) of California's Healthy Soils Program (HSP).

### PUBLIC SECTOR INVESTMENTS

<b>Total implementation funds</b>	<b>\$362,247</b>
Funds derived from federal sources (USDA/EQIP)	\$156,805
Funds derived from CA Dept of Water Resources (NCRP)	\$9,707
Funds derived from CA State Coastal Conservancy	\$80,000
Funds derived from California's Healthy Soils Program	\$115,735

## Our Climate Impact

SIXTEEN of our Climate Beneficial and Climate Beneficial Transitional Fibershed producers have begun to track the projected carbon sequestration and greenhouse gas reduction impact of carbon farming practices they are implementing, using COMET-Planner and other research-based modeling. (Bodega Pastures, Fortunate Farm, Bare Ranch, Jensen Ranch, Stemple Creek Ranch, Meridian Farm, Chico Flax, Skyelark Ranch, Emigh Livestock, Anderson Ranch, Wild Oat Hollow, Freestone Ranch, Monkey Ranch, Weirach Farm, Wild Garden Farm, and Windrush Farm) Thirteen of these producers have complete or nearly complete Carbon Farm Plans to guide expanded carbon farming practices in the future, with associated projections for potential carbon capture.



*Taking inventory of carbon farming opportunities (Photo by Rebecca Burgess)*

### SNAPSHOT OF CARBON SEQUESTRATION IN OUR FIBERSHED, DUE TO PUBLIC AND PRIVATE INVESTMENTS

Carbon Sequestration and GHG Reduction\* (MT CO<sub>2</sub>e\*\*)

	<b>Annual Impact**</b>	<b>20-year Impact**</b>	<b>Acres</b>
<b>Current practices</b>	1422	28,440	2904
<b>Planned practices</b>	6492	129,840	25,814

\*Cumulative of the farms and ranches mentioned above

\*\*Metric tons carbon dioxide equivalent



## *Carbon Farm Cohort: Enhancing Producer Engagement at the Community Scale*

**I**N 2018 we launched the first Fibershed Carbon Farm Cohort, a pilot peer-to-peer learning network focused on equipping and supporting a community of producers to manage their landscapes through the lens of carbon. The cohort brought together owners and operators from six different farm or ranch operations located within a region of northern Marin and southern Sonoma counties.



*Learning how to write a grazing management plan and manage complex systems with Richard King (Photo by Sarah Keiser)*



*Learning about compost at Terra Firma Farms (Photo by Rebecca Burgess)*



*Discussing riparian restoration at Freestone Ranch during a Cohort field walk (Photo by Paige Green)*

Through a multi-season process of shared site visits and farm walks led by experts on a variety of topics, the Carbon Farm Cohort project resulted in co-creation of a complete Carbon Farm Plan for each cohort member. These plans encompassed a detailed list of farm or ranch goals, GIS maps and data about each location, current and past management practices, USGS Web Soils Survey data, a discussion of current and planned carbon farm practices with greenhouse gas emissions reduction analysis from the COMET-Planner tool, and an appendix with resources. Most of our cohort members also created a Grazing Management Plan as a component of their Carbon Farm Plan with guidance and assistance of a Certified Rangeland Professional.

In addition to supporting this carbon farm planning, Fibershed is working with the cohort members to ‘land’ the carbon farm practices identified in their Carbon Farm Plans.



*Finding new grass growth in the middle of summer at Wild Oat Hollow (Photo by Erin Walkenshaw)*



Through grants provided from the Carbon Farm Fund and support from other local advisors, we saw the implementation of at least one carbon farming practice on all six cohort member land bases in 2018, including hedgerow planting, prescribed grazing, conversion to no-till crop management, improved fencing, and tree/shrub establishment. Altogether in 2018, we saw planting- or in one case restoration- of 576 linear feet of hedgerows on the landscapes of cohort members Windrush Farm, Wild Oat Hollow, Weirauch Farm, and Freestone Ranch. Another 797 linear feet of infrastructure is in place for a new hedgerow at Wild Garden Farm. Monkey Ranch has a site and plan for 166 linear feet of hedgerow, with some plants already in the ground. Infrastructure improvements undertaken by cohort members to support new carbon farming practices included new temporary electric fencing for better pasture management at Wild Oat Hollow, new permanent fencing and a new barn for better pasture management at Weirauch Farm, and allocation of an appropriate site for an on-farm composting operation at Monkey Ranch. Additionally, Weirauch Farm continued cover crop and no-till management of their main pasture, and Wild Oat Hollow, Freestone Ranch, and Monkey Ranch planted and/or protected existing trees in grazed grasslands.

### *Hedgerows: A Practice with Uptake in Our Community*

WHILE over 35 carbon farming practices have scientifically documented carbon benefits and modeling for use in a Carbon Farm Plan, when it comes to implementation, we focus on what a producer wants to do first. We've found that many producers are interested in starting with hedgerows. Hedgerow agroforestry systems offer many opportunities to land managers seeking to mitigate and adapt to climate change while also meeting the needs of their farm or ranch business. In 2018 at least eight different farms and ranches in the Fibershed community installed hedgerows on their landscapes, with an additional two producers waiting for the right soil and climate conditions to install planned hedgerows. The total linear feet of these hedgerows installed in 2018 was approximately 6,176 linear feet.

Fibershed supported these installations through micro-grants, volunteer labor, organizing and outreach for planting work parties, plant palette design, plant sourcing, and assistance with grant applications for Healthy Soils Program funding and NRCS funds. Fibershed also brought forward innovative options for the infrastructure that a hedgerow often requires, namely fencing and irrigation. For example, we explored options for a new model for irrigation through a biodegradable self-watering device called a "Cocoon." Several of our producers expressed an interest in establishing a hedgerow, but they are not able to deliver water to the selected site via conventional irrigation options. These Cocoons are



*Hedgerow and windbreak installed at Bare Ranch in Modoc County (Photo by Erin Walkenshaw)*



*Renovation of an existing hedgerow at Windrush farm (Photo by Paige Green)*





‘planted’ with the tree/bush and provide a reservoir of water to the plant that should last long enough for the plant to become established and resistant to the drought periods of our California dry season. Fibershed obtained a quantity of these Cocoons that are being trialed by many of our members to test their effectiveness in our bioregion.

Hedgerows are highly customizable to the needs of each farm or ranch, and they serve a multitude of functions beyond increasing the carbon storage in biomass and soils. The diversity of hedgerow designs that our producers implemented indicates that hedgerows can serve as a powerful practice for a variety of landscapes. In addition to an average of .83 metric tons of CO<sub>2</sub>e sequestered per acre per year for hedgerows planted in dry arid climates (COMET-Planner Report), some of the additional benefits include:

- Crop diversification
- Increased or enhance wildlife habitat
- Increased forage availability
- Opportunities for livestock to self-medicate
- Improved water quality
- Screens and barriers to noise and dust
- Reduced chemical drift and odor movement



*Top, containers of hedgerow plants at Wild Garden Farm (Photo by Paige Green). Above, fencing infrastructure installed at Wild Garden Farm with Carbon Farm Fund donations to protect a newly planted hedgerow amid a 7-acre pasture.*



*Above, Freestone Ranch collected a selection of seeds from their property for one of their hedgerow plantings. (Photo by Jonathon Gay). Right, Newly planted hedgerow at Freestone Ranch*







*Compost being spread on a hay field at Bodega Pastures in October 2018. The estimated additional net carbon that will be stored in the soil of the 9.5 acre field following this practice is 42 MT CO<sub>2</sub>e annually, an additional 840 MT CO<sub>2</sub>e over 20 years. Full implementation of practices in Bodega Pastures' whole Carbon Farm Plan is projected to sequester 7090 MT CO<sub>2</sub>e over 20 years, with that soil carbon creating an increase in soil water storage capacity of at least 36 acre-feet. (Photo by Jason Hoorne)*

## *Our Policy Work: Quantifying the Potential for Carbon Sequestration on California's Agricultural Landscapes*

AS YOU READ ABOVE, public funding is critical for the implementation of carbon farming practices in our bioregion, as is publicly supported infrastructure of skilled technical assistance providers. Fibershed recognizes that advocacy to support effectively directed public funding and technical resources for producers is a key part of our work.

The State of California is currently developing goals and policy for maximizing carbon sequestration and greenhouse gas reduction in California's natural and working lands, including farms and ranches. Fibershed is advocating for the establishment of an ambitious statewide goal, using data from our Climate Beneficial programs to inform projections on the potential for climate change mitigation through carbon farming practices implemented at scale across the state. In 2018 we worked with our partners at CCI to support an assessment of how Carbon Farm Plans completed to date in California provide both a road map for, and verification of, our state's ability to meet the French Ministry of Agriculture's '4 per 1000' goal for soil carbon improvement to address the threat of global climate change, to which the California Department of Food and Agriculture (CDFA) signed an alliance in September 2018. Looking at a '4 per 1000' soil carbon sequestration goal (working to increase soil carbon



*Two-row multi-species hedgerow and windbreak spanning 2640 linear feet, installed at Bare Ranch in 2018 (Photo by Rebecca Burgess)*

levels by 0.4% per year), our soil carbon data indicates that California's farms and ranches could sequester the equivalent to 59 million metric tons of carbon dioxide on 8.4 million acres by 2030, and 146 million metric tons on 20.4 million acres by 2050.

Building healthier soils and increasing the carbon stored in our ecosystems both above ground and—even more critically in our bioregion—below ground, provides a solution to multiple issues with self-reinforcing benefits. Increased farm productivity, crop and animal health; improved water storage in our soils; and drought resilience are some of the co-benefits of increasing carbon stocks in our agricultural ecosystems. These are services with wide-ranging public benefit, underscoring the value of investing in the full-scale deployment of these practices on our landscape.



*Compost application to rangelands at Stemple Creek Ranch (Photo by Loren Poncia)*



**FIBERSHED**

Local Fiber, Local Dye, Local Labor

P.O. Box 221, San Geronimo, CA 94963   [office@fibershed.com](mailto:office@fibershed.com)   [www.fibershed.org](http://www.fibershed.org)