



FIBERSHED

Local Fiber, Local Dye, Local Labor

2021 Carbon Farm Fund Report



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Fibershed partnered with Bowles Farming Company and California State University, Chico, to trial a suite of soil regenerating practices against a conventional approach in cotton production. Here Derek Azevedo of Bowles Farming Company walks between a conventional plot and a regenerative plot that is trialing reduced tillage, multispecies cover cropping, fungal-dominated compost application, and reductions in synthetic chemical use.

(Photo by Paige Green)

Activating Land Stewardship and Ameliorating Climate Change

As a contributor to Fibershed’s Carbon Farm Fund, you are directly supporting land stewardship practices that build soil health, ameliorate climate change through carbon drawdown, and improve the ecological function on the land bases cared for by our producer-members. These are farmers, ranchers, and contract grazers who collectively steward over 170,000 acres of land across 51 counties throughout Northern California, from San Luis Obispo county north to the Oregon border. Thank you for your continued support.

The Carbon Farm Fund is a vehicle that aggregates and directs funding to support land regenerating practices through our grant program and by creating market incentives. Fibershed administers, organizes, and directs funding from four main avenues to support practices on the ground. These include direct donations from the general public, philanthropic grants, point of sale (POS) revenue, and brand donations.

Beyond these four avenues, textile brands also contribute to land regeneration through paying growers a premium pricing for raw wool. This pricing averages anywhere from 15-20% above commodity market values. These price premiums provide immediate and direct benefits to growers, drive improvements in breeding quality, and elicit commitment to responsible land stewardship.

Climate Beneficial™ Agriculture

FIBERSHED’s Climate Beneficial Program works to provide producers access to technical assistance, documents practice implementation, and connects growers to both our Carbon Farm Fund, and publicly funded programs. The program is the hub that aggregates the details of producer’s practices such as acreage, linear feet, and other characteristics in order to make CO2e drawdown estimates (eg. is the cover crop leguminous or non-leguminous? Are they practicing prescribed grazing on irrigated pasture or non-irrigated rangeland? etc.)

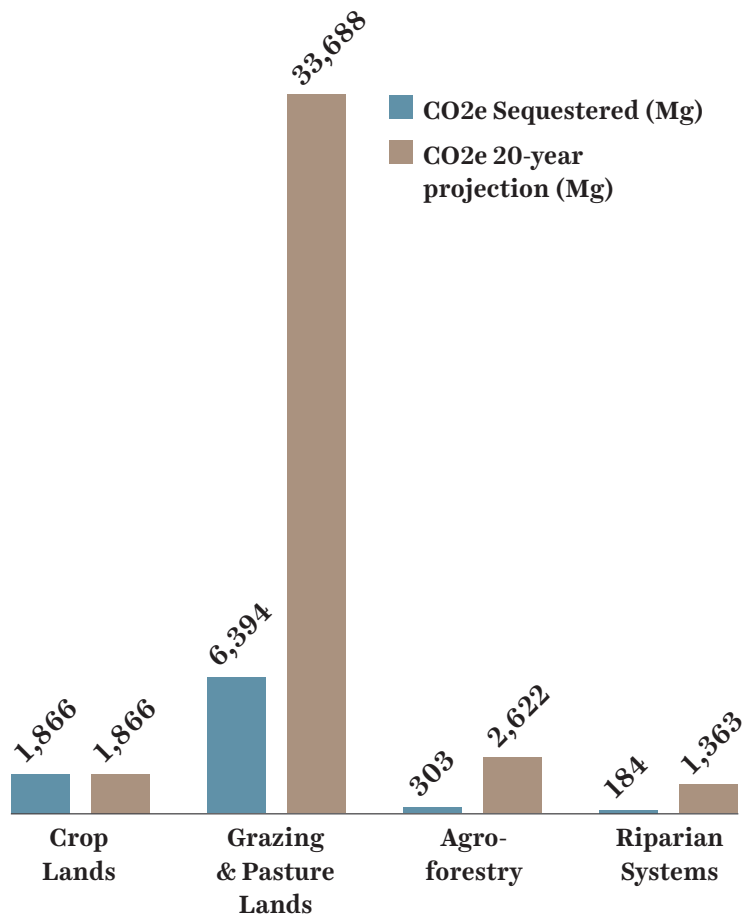
From 2019 through mid 2021, producers in the Climate Beneficial Program collectively implemented a total of 199 carbon farming practices, accounting for an estimated 8,746 Mg CO2e sequestered and 39,538 Mg CO2e drawdown projected over the next 20 years. Practices designated for grazing and pasture lands, as well as agroforestry practices were the most commonly implemented practices. Prescribed grazing was the most widely utilized practice and was employed across 10,416 acres. Compost application on rangeland accounted for the highest amount of carbon drawdown—approximately 3,609 Mg CO2e currently sequestered and a 20-year projection of 30,902 Mg CO2e.

Carbon sequestration estimations were calculated using COMET Planner, CDFA HSP COMET Planner, and data sourced from Ryals and Silver (2013).

PROGRAM OVERVIEW

	# of Producers	Total Acres
Climate Beneficial Verified	15	143,117
Climate Beneficial Transitional	35	25,534
New producers	16	3,120
Total	66	171,771

CO2e Drawdown by Practice Category, 2019 - mid 2021

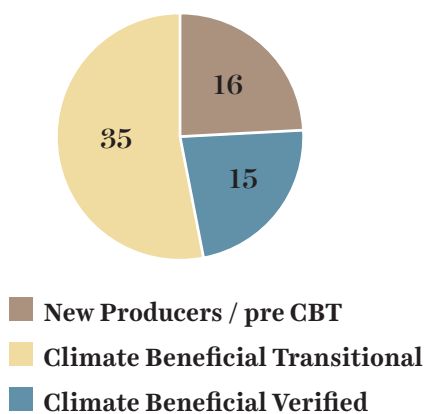


WHAT IS Mg CO2e?

Mg refers to metric tons (also known as MT, “tonnes,” or “megagrams”) and is equal to 1000 kilograms or about 2,240.6 pounds. It is a common way of quantifying and measuring greenhouse gas emissions.

CO2e (or “carbon dioxide equivalent”) is the standard unit for quantifying greenhouse gas emissions. Because different greenhouse gases contribute to global warming at varying degrees (methane, for example causes 25 times more warming than carbon dioxide) using “CO2e” allows the impact of all greenhouse gas emissions to be expressed in a common unit, where 1 Mg CO2e is the global warming equivalent of 1 metric ton of carbon dioxide.

Producers in the Program



SOC AND SOM AT BLACK ROCK RANCH

Soil sampling at Black Rock Ranch this year showed an increase in soil organic carbon (SOC) from 2% to 3.5% since the previous sampling, which suggests that Sandra and Robert Guidi's grazing practices have contributed to a significant increase in organic carbon over the past 5 years.

Soil organic carbon constitutes about 58% of soil organic matter (SOM), which would equate to a 2.6% increase in soil organic matter. While this may not seem like much, according to Kansas State Extension, every 1% increase in SOM results in as much as 25,000 gallons soil water per acre. Given the severe water crisis the American West is facing, boosting soil organic matter is a great strategy for increasing the water holding capacity in our landscapes and making them more resilient to drought.

Carbon Farming Practices Implemented within the Climate Beneficial Program, 2019 – mid 2021

CROPLANDS	
Compost application on cropland: 13	
Conservation crop rotation: 4	
Cover crop: 15	
No till: 6	
Nutrient management: 2	
Residue and tillage management: 1	
Strip till: 1	
Conservation cover: 1	
GRAZING & PASTURE LANDS	
Compost application on rangeland: 24	
Forage and biomass planting: 14	
Prescribed grazing: 47	
Range planting: 10	
AGROFORESTRY	
Alley cropping: 1	
Hedgerow: 15	
Mulching: 16	
Silvopasture: 12	
Tree/shrub establishment: 4	
Windbreak & shelterbelt: 4	
Windbreak & shelterbelt renovation: 1	
RIPARIAN SYSTEMS	
Critical area planting: 1	
Riparian forest buffer: 2	
Riparian herbaceous cover: 1	
Riparian restoration: 4	

The Carbon Farm Seed Fund: Meeting Needs, Filling Gaps for Producers and Leveraging Public Support

AS ONE COMPONENT of the overall Carbon Farm Fund, the Seed Fund is an annual grant program that supports the implementation of carbon farming practices. Comprised of an aggregate of donors from philanthropy and small public donations, the Seed Fund serves to amplify the effectiveness of larger public funding pools by filling in the gaps of funding that exist within state and federal programs. For example, the Seed Fund supports producers whose scale may not match with state funding programs or who have projects that state funding does not support (such as fencing for prescribed grazing). The Seed Fund also supports multi-year projects that prove to need support beyond the public-funding grant cycle. For these and other reasons, the Seed Fund complements public financial support and creates a more widely accessible method for implementing projects.

In the 2020 round, Fibershed provided \$50,696 in awards to 12 producers, with most awards between \$2,000-\$6,000. Projects involved constructing fencing to support prescribed grazing, planting hedgerows, establishing silvopasture systems, range plantings for forage and biomass, compost application to rangeland and cropland, cover cropping, planting trees and shrubs, mulching, and planting buffer strips, among others. We estimate 143 Mg of current CO₂e drawdown with a projected 717 Mg sequestered over the next 20 years.

Our 2021 round awarded 17 producers a total of \$66,875. Projects ranged in scale and scope and included: increasing on-farm water holding capacity (via a rainwater catchment system), riparian restoration with native plants and shrubs, planting a windbreak, on-farm compost production, and spreading compost over croplands and rangelands, among others. Of these, compost application on rangeland will account for the greatest amount of carbon drawdown. Three projects, totaling 68 acres of rangeland, involve compost application amounting to an estimated annual drawdown of 130 Mg CO₂e and a 20-year projection of 2608 Mg CO₂e. Two fencing projects will also account for a substantial amount of carbon drawdown—2.5 miles of fencing to support prescribed grazing over a total of 450 acres is estimated to draw down a cumulative 1000 Mg CO₂e over the next 20 years.

ESTIMATED CO₂e SEQUESTRATION FROM CARBON FARM SEED FUND PROJECTS

	Estimated annual drawdown	20-year projection
2020 Projects	143 Mg CO ₂ e	717 Mg CO ₂ e
2021 Projects	289 Mg CO ₂ e	4084 Mg CO ₂ e

CARBON FARM SEED FUND AWARD RECIPIENTS

	2020	2021
Number of projects	12	17
Total acreage of project area	242 acres	544 acres
Amount awarded	\$50,696	\$66,875
Producers	Black Rock Ranch Blue Oak Canyon Ranch Bodega Pastures Chico Flax Ferndale Farms Integrity Alpacas & Fiber Kaos Sheep Outfit Macedos Mini Acre Millertown Sheep Farm Owl Oak Acres Shepherdess Land and Livestock Co. Skyelark Ranch	Audubon Canyon Ranch Barinaga Ranch Bodega Pastures Chico Flax Ferndale Farm Foggy Bottom Boys Fruition Farms Full Circle Wool Gonzales Siemens Family Farm Harston Ranch Integrity Alpacas & Fiber Kirabo Pastures Meridian Farm Outlaw Valley Ranch PT Ranch Stemple Creek True Grass Farm



Planting silvopasture of oaks and mulberries at Shepherdess Land and Livestock Co. (Photo by Brittany Cole Bush)



Establishing a silvopasture with mulberry trees at Integrity Alpacas (Photo by Paige Green)

“As a city dweller, I learned a lot when I began ranching. I thought I could just have my herd graze the pastures and life would be grand. As we had a few years with good rainfall, I found challenge managing the excess water. In the years of drought, I have to buy a lot of orchard grass. Our climate seems to be all over the place and each year I was met with new teachings. As I became more involved with the Fibershed, I learned about a variety of practices that could be used to regenerate the soil health, sequester carbon, and manage water absorption all while raising my alpaca herd.

“After entering the Climate Beneficial program guided by the Fibershed, I made plans to plant a silvopasture as a means to sequester carbon and provide a sheltered space from heat for the alpacas. I have since planted 14 fruitless mulberry trees as this tree grows to provide good shade and it is not a toxic plant for the alpacas—in fact, they will eat every leaf that drops!

“I am also grateful to learn about place-based regenerative practices. Our ranch is located in the San Francisco Delta region and as such, we sit upon a heavy clay pan landscape. One of our regenerative practices is to till in a mixture of alpaca poop, less desirable alpaca fiber and wood chips. We have a rotational plan for working the organic matter into the clay as we hope to plant forage for the alpacas.”

– CHARLENE SCHMID OF INTEGRITY ALPACAS & FIBER
2020 CFSF AWARD RECIPIENT



Spreading compost at Chico Flax (Photo by Sandy Fisher)



Compost staged and ready to be spread at Gonzales-Siemens Family Farm in Buttonwillow. (Photo by Jesse Smith)

2021 CARBON FARM SEED FUND PROJECT SPECIES LIST

Trees	Shrubs	Dye plants and other herbaceous	Cover crops	Range planting
Big leaf maple	Currants	Black eyed susan	Bell beans	Beardless barley
Box elm	Elderberry	Black hollyhock	Biomaster peas	Beardless wheat
Coast Live	Salmonberry	Dyers chamomile	Buckwheat	Bell beans
Garry Oak		Hopi black dye sunflower	Cayuse oats	Biomaster peas
Hawthorn		Lady's bedstraw	Common vetch	Common vetch
Mulberries		Safflower	Dundale peas	Nemfix mustard
Olive trees		Weld	Fava beans	Red and white oats
Oregon ash			Hard red winter wheat	Rye grain
Poplar			Japanese Millet	Triticale
Red alder			Lana wooly pad vetch	<i>Mixes:</i>
Serviceberry			Pandale peas	LA Hearne Forage Mix
Wild apple			Purple vetch	Peace Valley Forage Blend
Wild plum			<i>Mixes:</i>	Dryland Pasture mix
Willow			Premium Soil Builder Mix	Peaceful Valley
			LA Hearne SoilMax	Sodbuster Mix
			Legume Mix	

2020 CARBON FARM SEED FUND PROJECT SPECIES LIST

Trees	Dye plants and other herbaceous	Cover crops	Range planting
Ash	Calendula	Bell beans	Austrian winter peas
Blue oak	Dyers coreopsis	Biomaster peas	Berseem clover
Citrus	Indigo	Buckwheat	Bison 2 Intermediate ryegrass
Mulberries	Mardi gras coreopsis	Cayuse oats	Calibra perennial ryegrass
Oak		Common vetch	Monida oats
Pear		Dundale peas	Organic white clover
		Hard red winter wheat	<i>Perseus festulolium</i>
		Hairy vetch	Reisling white clover
		Japanese Millet	Renegade red clover
		Purple vetch	



*Loading compost for field application at Blue Oak Canyon Ranch
(Photo by Lynn Moody)*



Range planting at Kaos Sheep Outfit (Photo by Jaime Irwin)

“Beyond the other side of grateful for @fibershed_ friends; we are recipients of their Carbon Farm Seed Fund in support of our journey....in the scheme of things, we know we are small, but we are big vision thinkers with our tiny team of seven.”

– BLACK ROCK RANCH
2020 CFSF AWARD RECIPIENT



Seeding cover crop at Chico Flax, October 2020 (Photo by Durl Van Alstyne)



Cover crop close up at Chico Flax (Photo by Sandy Fisher)

Carbon Farming Cohorts

FIBERSHED has catalyzed two cohorts of producer-members in order to socialize knowledge and skills exchange through a peer to peer support system. Support for this is funded by our general fund, which is based on philanthropic donations.

The two cohorts are based in Sonoma/Marin and in Mendocino counties. The Sonoma/Marin Cohort regularly hosts in person meetups on members' farms and ranches and has hosted two annual seed and cutting exchanges.

The Mendocino Cohort is newer to Fibershed and has been meeting virtually about once every two months. In 2021, \$8,000 was allocated to the Mendocino Cohort to support carbon farming projects for 4 producer-members.



Cohort 1 Site Visit at Windrush Farm (Photo by Paige Green)

Cohort 1 — Sonoma/Marin	Cohort 2 — Mendocino
Blue Dot Farm	Folk Life Farm/Radicle Herbs
Freestone Ranch	Fortunate Farm
Herding Hope Grazing Cooperative	Hopland
Hunter Lane Grazing Cooperative	Navarro Vineyard
Layla Aguilar	Red Creek Farms
Meridian Farm	Ridgewood Ranch
Monkey Ranch	
Roy Smith	
Wild Oat Hollow	
Windrush Farm	

“Huge shout out to @fibershed_ for including us in the Mendocino Carbon Farming Cohort and for the grant to be able to buy 2,000 linear feet of native perennials plus 420 feet of berry bushes.”

– RADICLE HERBS (MENDOCINO COHORT)

FIBERSHED CARBON FARM COHORT #1 2021 SUMMARY

by Sarah Keiser (Cohort 1 mentor)

The Fibershed Carbon Farm Cohort had an amazing year in 2021. We gained four new members, including two Community Grazing Cooperatives. Which means two more communities are beginning to utilize carbon farming practices and moving their entire neighborhood into creating a carbon farm plan.

We had four land walks on four different members' property. Each land walk had a theme, that we used to begin our discussion and support each other in the development of that topic. These topics included hedgerows, riparian areas and water, starting and growing new plants, etc. We developed an emergency support spreadsheet for our members in which we all listed how much land we had available for animals and human evacuation, what we can house, and how many and what our resources are. This gives all members options and a support system in case of a fire or other emergency.

We had our second annual cutting and seed exchange that was a huge success and enabled several cohort members to plant hedgerows 100% from the gleaned plants.

The Fibershed Carbon Farm Cohort is a supportive, educational and creative group that is deeply attached to the land they tend and the members of their cohort. We look forward to another year of development and more carbon sequestration.



Sarah Keiser on her land at Wild Oat Hollow (Photo by Paige Green)

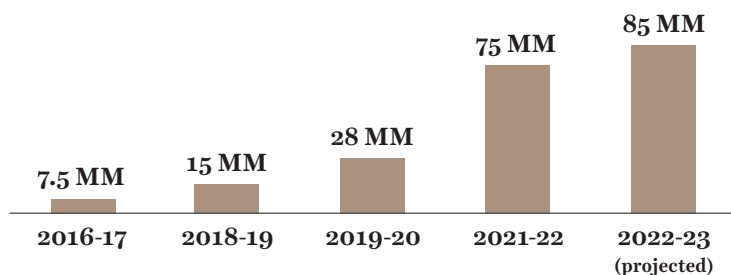
Public Funding and Advocacy for Systemic Carbon Farming Support

CONTRIBUTIONS to Fibershed’s Carbon Farm Fund from individuals and charitable donors are complemented and amplified by public funding invested in federal, state and local government programs that recognize the social and ecological values carbon farmed landscapes provide. The foundation of work undertaken on farms and ranches in our community serves as a critical lever in galvanizing additional public investment and support.

Together with colleagues in CalCAN’s Healthy Soils Network and the California Food and Farming Network, Fibershed has been an advocate for state funding toward carbon farming practices. Elevating the impacts of carbon farming projects within our producer community, along with the supportive partnerships we have built among producers, processors and brands, we have been able to convey the value of these practices to serve the public good.

California Department of Food and Agriculture’s Healthy Soils Program (HSP) provides funding directly to producers for a suite of conservation farming practices proven to sequester carbon and build soil health (carbon farming practices). The growth of this state program reflects the remarkable attention and value recognition that these projects and practices have garnered.

Growth of Funding for California’s Healthy Soils Program (in \$ millions)



CALIFORNIA HEALTHY SOILS PROGRAM INVESTMENTS IN THE FIBERSHED PRODUCER COMMUNITY: STATE SUPPORT FOR CARBON FARMING

Number of HSP Incentives grants to Producers	HSP Incentives funding to Producers	HSP Demonstration Project Funding
21	\$904,174	\$197,000
Combined annual GHG impact	Practices funded in Fibershed community by HSP	
1850 Mg CO ₂ e	Hedgerows, Windbreaks, Riparian Buffers, Silvopastures, Cover cropping, Compost application, Pasture improvements, Conversion to no-till farming, Alley Cropping	



Fibershed Producer Members touring the newly installed Demonstration Hedgerow at UC Hopland Research and Extension Center, funded by HSP and developed in partnership with Fibershed. The hedgerow incorporates a range of native plants for carbon sequestration and habitat biodiversity, including natural dye plants and fodder plants for sheep. (Photo by Lexi Fujii)

Our advocacy agenda going forward into 2022 recognizes that carbon farming practices won’t achieve widespread adoption among fiber producers until systemic economic drivers within the textile system begin to shift. The entire way we produce, process, manufacture, use and return textiles to the origin point of soil, can and must be transformed to improve ecosystem and community health. We are partnering with other organizations pushing for these systemic changes, like the California Product Stewardship Council and the international Make the Label Count Campaign. We will continue to engage with the California Ocean Protection Council on their Statewide Microplastics Strategy, and with the California Natural Resources Agency to align public investments and incentives with carbon farming-based textile systems.



At the Healthy Soils Program-funded Buttonwillow Alley Cropping Demonstration Project, volunteers joined members of the Gonzales-Siemens family at a tree planting day in May, 2021 to install rows of mulberry trees between alleys where cotton will grow. (Photo by Heather Podoll)

Developing Market Incentives to Build Soil

TO COMPLEMENT the public sector grants administered through state and federal agencies, Fibershed coordinates, organizes and administers brand donations and point of sale revenue to support the full and holistic implementation of carbon farming on ranches that produce a range of wool types utilized in both textiles and durable goods. The table on page 11 aggregates the total acres where implementation has occurred on six ranches that are participating in the market incentives efforts. Sweaters,

bedding, and cool-weather garment creation and sales are directly supporting practices focused on improving hydrologic function, biodiversity, carbon sequestration, and overall ecosystem function on our region's working landscapes.

The goal of the market incentives program is to more tightly stitch our material culture to the landscapes from which our necessities are produced, and to instill reciprocity with these pastures, rangelands and cropping systems.

“This is really impactful and a remarkable partnership, to incentivize additional conservation practices, stewardship efforts, and pride in our entire wool handling process from the soil, grass, and biodiversity....to the sheep, and the shearing/bailing/ tagging, and shipping. It has really taken a break-even process or even loss with the wool and helped to make it a value-added product we can share and are incredible proud of.”

– JIM JENSEN, JENSEN RANCH



Climate Beneficial Wool on the body (clockwise from top left): Imperial Yarn's children's wool beanie; Co Collection showcases wool pieces from the Natural World Collection; Coyuchi issues another round of the Tahoe Blanket and wool mattress toppers; Mara Hoffman showcases her wool Juliana Sweater; Close ups of Mara Hoffman's and Co Collection's 2021 wool pieces; a shepherd featured in the Co Natural World Collection; undyed wool yarn produced for indie natural dyers by Imperial Yarn; gloves by Imperial Yarn.



Top row, left to right: Bare Ranch installs beaver analogs with the support of NRCS and Point Blue Biologist Briana Schnelle; Solano County Resource Conservation District restores native grasslands and wildflowers to Emigh Livestock Ranch; Stemple Creek Ranch installs a windbreak of Redwood trees. Middle row, left to right: a shelter belt at Bare Ranch is weeded by the Cal Deer Association; a student group plants a Riparian Herbaceous Cover at Emigh Livestock Ranch; Compost steams at Stemple Creek Ranch. Bottom row, left to right: a no-till native grass seed planting is implemented at Jensen Ranch; native forage appears at Jensen Ranch; Stemple Creek Ranch plants a hedgerow of native ceanothus.

CARBON FARMING AND CLIMATE BENEFICIAL WOOL

Ranches Engaged	Acres under Implementation	Additional CO2e Sequestered	Practices Implemented	Premiums paid directly to growers	Donations from textile brands
Kaos Sheep Outfit Jensen Ranch Stemple Creek Ferndale Farms Bare Ranch Emigh Livestock	6,963 acres	Beyond business-as-usual scenarios, between 2019-2021: 3,945 CO2e (Equivalent to removing 857 vehicles from the road for one year)	Riparian herbaceous cover Compost applied to croplands Cover cropping No-till rangeland seeding Prescriptive grazing Shelterbelt Windbreak	\$63,951 (Via 10% mark-up over commodity pricing, 2019-2021) All premiums are paid directly by textile brands to ranchers.	\$22,036

Cumulative Funding Directed to Producers, 2019-2021
\$203,558

FIBERSHED is leveraging a growing pool of funding available and amplifying its effectiveness on the ground. We are filling gaps that exist in public funding grant structures and helping move public dollars to make land stewardship more feasible and accessible.

We'd like to grow our program and support more producers, projects, and the regional economy at the intersection of responsible land stewardship and climate change mitigation. We want to put more plants in the ground and spread more compost across the working lands of this state. Your dollars make this possible.

Don't hesitate to reach out with any questions about our programs, to learn more about our work, or to support future land projects.

Thank you,
The team at Fibershed



FIBERSHED

Local Fiber, Local Dye, Local Labor