



FIBERSHED

## 2021 Annual Report



On the Edge of Extinction, Santa Cruz Island Ram No. 1

*Artwork by Linda Gamble, illustrated with locally-sourced plant material inks from Biohue,  
and created to support the conservancy efforts of the Santa Cruz Island Sheep*

*This work is motivated by the intent to raise awareness of both the wonderful locally sourced  
plant-based inks and the work to protect the Santa Cruz Island Sheep from extinction.*

## Letter from the Executive Director

OUR REGION has been graced with life-giving rain and snow in such abundance that it's not easy to sit and type when I can hear the creek outside, knowing that countless waterways are spilling over into beautiful ephemeral waterfalls. This is the time of year to see these waters in person and imprint them into memory. I need these experiences to mitigate against the slipping ecological baseline that all too often has me forgetting what a healthy weather pattern is.

This precipitation brings reprieve from the 4 million acres that were on fire in our state just months ago (a doubling of the burned acreage record from the previous year), and quenches the thirst of the vegetation and soils experiencing the third driest year on record. We have had a tight succession of 1,000 and 1,200 year seminal drought cycles that now return in 2 and 3 year increments.

This gift of abundant water and snow from the sky, is not an indicator of an ongoing pattern however. Unfortunately, there has been no net reductions in the carbon dioxide, methane and nitrous oxide levels within our atmosphere. (These reductions are requirements for stabilizing the climate, which hinges upon restoring Holocene levels of arctic sea ice, which would return the jet stream to its historic spatial patterning and keep the storm doors more consistently open during our precipitation cycles.) The message has been clear from the scientific community for years; emissions were supposed to peak in 2020 and 7.6% reductions every year thereafter were and are needed by 2030 to keep earth within what is known as the 1.5C degree pathway<sup>1</sup>—which is still a life-threatening increase, and yet at the same time, proving to be a hard-to-achieve goal.

What might a 7.6% reduction in emissions feel like to an everyday American if we were taking this extinction threat seriously? As an indicator, we can look to the onset of the pandemic, when global emissions plummeted from 2019 figures by 8.8% from January to June<sup>2</sup>.

If we use the experience of COVID-19-induced shut downs as a marker for our understanding of what emissions reductions that align with the 1.5C pathway require—the first half of 2020 provided a glimpse of how to achieve this goal given current technologies for transportation, energy, agricultural production and manufacturing. One stark contributor to the global drop came from the United States where overall emissions plummeted by 13%; this was largely attributed to a sharp drop in ground transportation and a 48% drop in emissions from aviation<sup>3</sup>.

That precipitous drop in emissions from flights and the contribution that this made to meeting a known climate target is emblematic of a larger conversation of “who” is responsible for the emissions and “who” is responsible for climate chaos. This detail was further outlined in the scientific journal, *Global Environmental*

Change, noting that only 11% of the global population is flying, and only 2-4% of the global population flies internationally<sup>4</sup>. The inequity was explored more broadly in a report by Oxfam, noting that, “Carbon inequality is so stark the emissions of just the richest 10 percent would trigger catastrophic climate change by 2033 even if all other emissions were cut to zero<sup>5</sup>.” (Income breakdown as outlined in the report is defined as such: \$38,000 per year is enough to put someone in the world's richest 10%; \$109,000 per year puts them in the top 1%.) The report further outlined that, “the richest 10 percent (approx. 630 million people) accounted for over half (52 percent) of the carbon dioxide emissions.”

By the end of the COVID-19-induced lockdowns, the emissions from the United States and other industrialized nations surged for the remainder of the year, rising 2.6 parts per million by the end of the 12-month cycle<sup>6</sup>. This is the fifth highest global rate of increase in the 63 year record taking period. By May of 2021, the parts per million of CO<sub>2</sub> in our atmosphere peaked to 419, the highest measurement taken since measurement began. This is equivalent to the CO<sub>2</sub> concentrations that were in the atmosphere 4.1 to 4.5 million years

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<sup>1</sup> <https://www.unep.org/interactive/emissions-gap-report/2019/>

<sup>2</sup> <https://www.nature.com/articles/s41467-020-18922-7>

<sup>3</sup> <https://www.nature.com/articles/d41586-021-00090-3>

<sup>4</sup> <https://www.sciencedirect.com/science/article/pii/S0959378020307779>

<sup>5</sup> <https://oxfam.app.box.com/s/q36ywh37ppur8gl276zwe8goqr6utkej>

<sup>6</sup> <https://research.noaa.gov/article/ArtMID/587/ArticleID/2742/Despite-pandemic-shutdowns-carbon-dioxide-and-methane-surged-in-2020>

*“Industrialized, colonizing nations (such as ours), have the responsibility and the obligation to balance our own carbon budget. To achieve this, both improved personal decision making and sharp policy are needed and they are intricately intertwined. The citizenry of industrialized nations working to generate ecologically sound economies that work within the earth’s carrying capacity and internalize the impacts of economic decision-making, is ‘the essential work,’ (it is both personal and political).”*

ago when sea level rise was 78 feet higher than today and average temperatures were 7 degrees Fahrenheit higher than pre-industrial levels<sup>7</sup>.

Industrialized, colonizing nations (such as ours), have the responsibility and the obligation to balance our own carbon budget. To achieve this, both improved personal decision making and sharp policy are needed and they are intricately intertwined. The citizenry of industrialized nations working to generate ecologically sound economies that work within the earth’s carrying capacity and internalize the impacts of economic decision-making, is ‘the essential work,’ (it is both personal and political).

I relay this message at every given opportunity, including during a presentation for a United Nations political forum held in July, focused on circular, regenerative textile systems. I shared the message as part of the global launch of the OP2B “Scaling Up Regenerative Agriculture” framework at the IUCN conference in September, where I was able to present virtually in succession of a personal hero, climate scientist Johan Rockstrom of the

Potsdam Climate Institute. Rockstrom reminded the audience that current agricultural systems can only feed 3.4 billion people while safely remaining within the 9 planetary boundaries; if we continue to make shifts to land regenerating agriculture, we can safely feed 10.2 billion.

In mid-November, I was able to personally (yet virtually) thank tribes, farmers, ranchers for their work on the front lines of climate change during my acceptance speech of the International Ryan Young Climate Leadership Award, bestowed by the Textile Exchange during their annual conference in Dublin. I had and continue to have the less public but potent opportunity to work as an Agricultural Liaison and consultant on a project that is working to meet our Governor’s N-82-20 Executive Order, focused on protecting 30% of our state’s natural and working lands and marine ecosystems. I and our Fibershed team are provided weekly opportunities to share, learn, educate and build this work from within our own community and translate these learnings to the global stage. We’ve never seen the interest or request level so high to provide learning

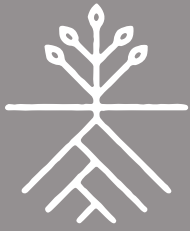
opportunities as it is right now; it seems to track with what appears to be a tipping point in awareness of our collective vulnerability. Whether this awareness translates into meaningful change has yet to be seen; the proof will be in the parts per million measurements.

While the global goal setting, commitments, and action plans are heartening, I continue to find the most hope and understanding as to what is required to achieve change while working at the local landscape level. I hope that you’ll enjoy reading about the communities and the climate benefiting metrics they are generating within our Annual Report. This place where our community is working is the place where things start, emerge, and percolate up. We thank you for your commitment, support, and willingness to work with us across the months and years and look forward to continued collaboration with you!



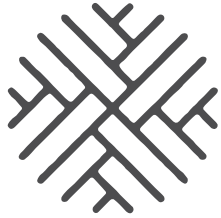
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<sup>7</sup><https://research.noaa.gov/article/ArtMID/587/ArticleID/2742/Despite-pandemic-shutdowns-carbon-dioxide-and-methane-surged-in-2020>



## Regional Textile Economies & Culture Program

FIBERSHED'S REGIONAL TEXTILE ECONOMIES & CULTURE PROGRAM focuses on developing regional supply networks, connecting growers, manufacturers, and wearers. In this program, we focus on providing technical assistance to strengthen our producer network and ensure access to regional manufacturing capacity.



## Producer Network

BY LEXI FUJII

THE FIBERSHED Producer Program is a membership-based network of farmers, ranchers, designers, sewers, weavers, knitters, felters, spinners, mill owners and natural dyers living and working within 51 counties in the North and Central regions of California. Our Producer Program provides access to a social network that is brimming with technical expertise in agriculture and textile development skills. We offer services like educational sessions on business development and land

stewardship embedded within social connectivity like meetups and a bi-annual printed membership newsletter.

### SUMMARY OF THE YEAR:

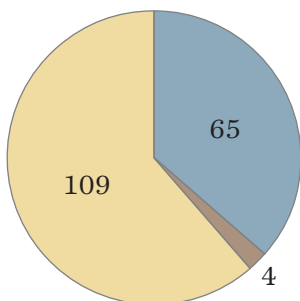
- 177 producer members in 51 counties working 178,931 acres of land.
- Added 13 new fiber producers and 10 new artisans to the Northern California Producer Program.
- Hosted 1 virtual meetup and 1 in-person meetup for the first time since February 2020.
- Published 10 professionally photographed stories on local farmers, mills, and artisans from our Fibershed producer program.
- Drafted, printed, and distributed 2 in-print Fibershed producer newsletters and sent 12 monthly e-newsletters with resources, updates and information gathered specifically for our producer audience.

- Hired and onboarded a new producer membership coordinator to focus on relationship-building within the broader producer community.
- Completed 1 of 2 group trainings for the Grazier's Toolbox with 3 producers, totaling 8 hours of training for individual and group Technical Assistance sessions.
- Completed 9 hours of business technical assistance with Fibershed producers.

*"This year was pretty strange (on many levels) but I made it through thanks to some devoted customers from the fibershed. The mill was able to purchase Mendocino's old spinning frame; looking forward to the ability to create new yarns at a faster pace."*

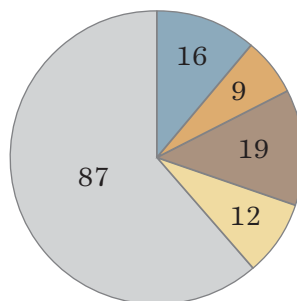
— MARCAIL MCWILLIAMS  
VALLEY OAK WOOL MILL

Fibershed Producer Membership by Type



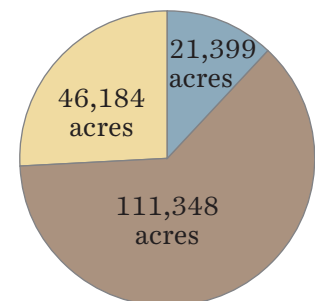
■ Artisans  
■ Small Manufacturers  
■ Fiber Producers

Number of Producer Members Raising Types of Animals



■ Goats  
■ Angora Rabbits  
■ Alpaca  
■ Llamas  
■ Sheep

Producer Member Acreage (178,931 acres total)



■ Irrigated  
■ Unirrigated  
■ Undesignated

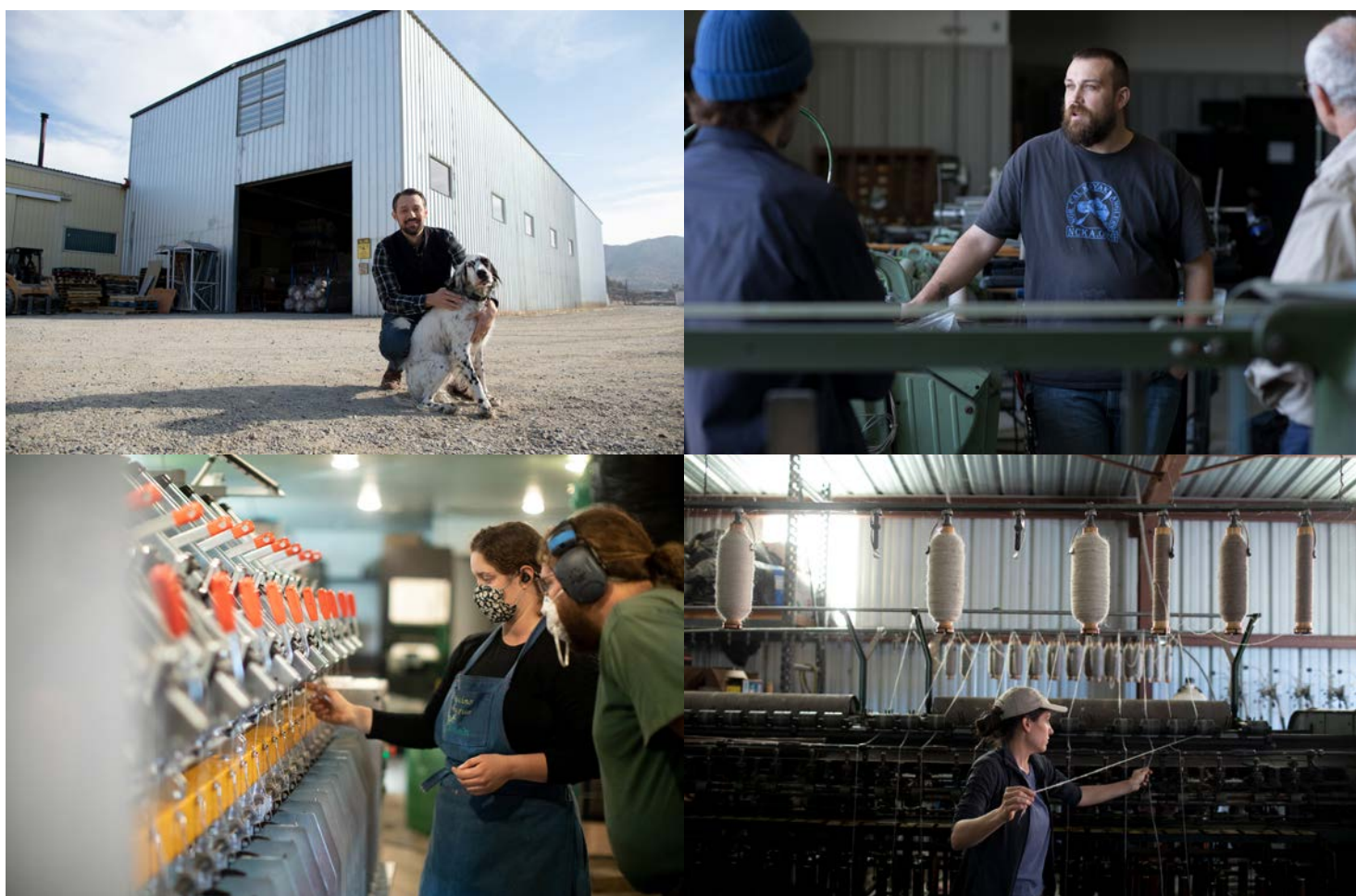
171,771 of these acres are in Fibershed's Climate Beneficial™ Program



*“2021 has been a year of growth and development for the team at Huston Textile Company. It was the first full year of ownership and creative collaboration between the Stoll Family, our founders, Kat and Ryan Huston and early investors. Infrastructure has been a focus with major reboots in accounting, communications, and technology systems. We have acquired two advanced 3D Flat Bed Knitting machines and Design Software from global leader, Shima Sekei. Of course, this has resulted in the investment of time and talent in training and trialing the equipment and software capabilities. We continue trialing natural regenerative fibers and look forward to releasing our production availability to the Fibershed Community soon.*

*“Additionally, we continue to invest considerable effort in the maintenance and restoration of our vintage weaving equipment—the looms require a great deal of TLC! In a wonderful collaboration with Lani’s Lana Climate Beneficial Wool and CO Company, we were able to create woven fabric for a project that was featured in Vogue and other major fashion news outlets.”*

— KAT HUSTON, HUSTON TEXTILE CO., [WWW.HUSTONTEXTILE.COM](http://WWW.HUSTONTEXTILE.COM)



## *Small Manufacturers*

*Clockwise from top left: Hank Kearns, owner and operator of the Wool Gatherer Carding Mill in Montague, CA;*

*Ryan Huston, owner and operator, along with his wife Kat Huston, of Huston Textile Co. in Mather, CA;*

*Marcaill McWilliams, owner and operator of Valley Oak Wool Mill in Woodland, CA;*

*Sarah and Matthew Gilbert, owners and operators of Mendocino Wool & Fiber, Inc. in Ukiah, CA.*

*(Photos by Paige Green)*





## Fall Producer Meetup

**I**N OCTOBER, Fibershed producer members met in-person for the first time in almost two years at the Hopland Research & Extension Center to tour their natural dye and native plant demonstration hedgerow, build connectivity within our producer network, and participate in a natural dye demonstration utilizing plants from the hedgerow. Producer members then toured Mendocino Wool & Fiber's mill with Sarah and Matthew Gilbert, owners and operators of the mill, to gain insight on how one of our small, family-owned manufacturers processes Fibershed natural fibers. *(Photos by Lexi Fujii)*

*"Attending the Producer meet up was one of my favorite 'field trips' in a long while. I loved taking a day to learn about hedgerows, natural dyes and meet with local producers. Sometimes it is hard to step away from your business for a day and this was the best investment of time for education, community and inspiration."*

– ELIZABETH WELBORN, STICK & BALL  
NEW FIBERSHED PRODUCER MEMBER

*"Attending the Fibershed producer meetup was a wonderful way to connect to others with shared passions. I left feeling inspired and supported."*

– LILY, DANU ORGANIC  
FIBERSHED PRODUCER MEMBER





## *New Producers*

Row 1: *Shannon Ranches, Indigenous Love Design, Folk Life Farm*  
 Row 2: *Stick & Ball, Victory Land Trust, Abigail Shields, Herderin, Shear Bliss*  
 Row 3: *Blackberry Farm, Wits End, Holst Station, Pennyroyal Farm*  
 Row 4: *Brunner Family Farm, Gonzales-Siemens Family Farm, Fillory Yarn*  
 Not shown: *Afloracor, Cold Growth Farm, Fruition Farms, Jenn Ban,*  
*Ronen Crow, Stoneland Farm, Transmutation*



## The Grazier's Toolbox: Business Resources for the Modern-day Grazier

BY OLIVIA TINCANI

As 2021's wildfire season comes to a close, we see increasing needs to bolster the alternatives to traditional fire mitigation by supporting small ruminant targeted grazing, one of the many arrows in our quiver for the climate change battle.

From within the fiber systems research arm of the Climate Beneficial Agriculture work, and as part of Fibershed's ongoing support of the Grazing School of the West project, we have created a body of tools, templates and instruments fundamental to running functional and successful contract grazing operations, with a complementary goal of grazing sector expansion. Through these business tools and trainings, we support graziers in an emergent and increasingly relevant field that can improve their operations, and have worked to spread these tools far and wide.

This year our focus was to improve internal capacity at Fibershed by training staff members to fully understand and then disseminate the toolbox tools themselves. Alongside internal training, we have continued to provide direct producer assistance through peer learning opportunities. We also began initial research and brainstorming to develop a herder/manager business training program specifically for native Spanish language speakers to empower upper managers as accountable and engaged business thinkers in their operations.

We hope for this "toolbox" to grow with ongoing dissemination via invigorated grazer outreach, new organizational collaboration, reflections from graziers using the tools, and additional tool development in 2022.

*"This year was my first year launching my business, Shepherdess Land and Livestock Co., years in the making. Fibershed has been an essential part of the many projects, collaborations, and education informing how I can be a change agent in the world. Olivia, in specific, has provided me technical assistance and coaching throughout this time of development and in 2021 helped to equip me with the tools and skills to launch my targeted grazing business as a sole, women-owned, first-generation agrarian, owner-operator. We have collaborated to develop tools for graziers like myself through our on-going project the Grazing School of the West and Olivia has spearheaded the development, dissemination, and training of invaluable tools in the Grazier's Tool Box. As the demand and interest grow for this work in not only providing the ecosystem services for bioregional fire safety and ecological health, our operations are supported to also produce food and fiber critical to community-based solutions for resilience combating the impacts of climate change."*

— BRITTANY COLE BUSH  
SHEPHERDESS LAND & LIVESTOCK CO

### TOOLBOX PRODUCER TECHNICAL ASSISTANCE (TA)

- Completed 1 of 2 group trainings with 3 producers, reviewing CA FarmLink Grazing Contract Agreement and Contract Job Breakeven Calculator
- 8 total hours of training for individual and group TA sessions

### STAFF TRAINING

- 2 staff trainings with Mike Conover and Lexi Fujii to train toolbox tools

### GRAZING BUSINESS TOOLS & TEMPLATES "LIBRARY"

- 1 template tool completed: Herder Job description & Hiring Guide

## Producer Program Business Technical Assistance

BY OLIVIA TINCANI

SINCE releasing our business skills training program, the "Producer Business Curriculum," in 2017, we have ushered in continuous opportunities to encourage producers' use of the resources by providing intimate individualized technical assistance or group learning opportunities. Producers who have engaged with our extensive webinars, tools and templates have come to us to take advantage of additional coaching offered for free. This year GDS Cloth Goods and Kaos Sheep Outfit were two producers who continued to utilize this ongoing

service, alongside those engaged with the Grazier's Toolbox tools, which are separate but complementary to the more universal Business Curriculum.

Since 2019 we have worked intimately with Kaos Sheep Outfit's founders and leaders, Jaime and Robert Irwin, in a one-on-one business coaching relationship. Fibershed has continued to support Kaos as both a vanguard and leader in fire mitigation and perennial crop management grazing. Kaos is continuously uplifted by time with a dedicated business and financial advisor connected to their history and their evolving future as a multi-million dollar exemplar in the field. Jaime and Robert are the types of producers that benefit most from in person meetings, and with the relaxation of COVID-19 restrictions, we were finally able to



connect again with them on their best ground. Through our one-on-one consulting, we continue to meet Kaos wherever they are at, together attacking various issues related to strategic planning, financial management, contract grazing agreements, potential partnerships, HR/personnel management techniques, land acquisition, and scaling/growth.

#### HOURLY TECHNICAL ASSISTANCE (TA)

- 2 in depth in-person meetings with Kaos Sheep Outfit. Topics covered: debt management, financial budget planning, land acquisition, partnership negotiations, contract negotiations, personnel management.
- 9 hours total producer TA delivered



Jaime Greydanus and Robert Irwin of Kaos Sheep Outfit (Photo by Paige Green)

*“Our relationship with Olivia as a financial advisor is a safe place to talk about how the company is doing and where it needs to go. Her experience offers both financial and management type advice. It’s important to bounce honest ideas around and there are not many avenues that are safe.”*

– JAIME GREYDANUS  
KAOS SHEEP OUTFIT

## Community Grazing: Developing Models for Intersectional Land Stewardship, Fuel Load Reduction, and Indigenous Fire Ecology for Healthy, Fire-Safe Neighborhoods

BY SARAH KEISER

WITHIN Sonoma Counties catastrophic fire recovering neighborhoods, Fibershed Producer member Sarah Keiser has been and continues to support groups of neighbors to develop Community Grazing Cooperatives. In 2021, six new Community Grazing Cooperatives were established and five of those cooperatives are in highly fire prone areas within the county, one of them in a community where each participant in the Coop lost their home in 2017.

Grazing Cooperatives receive support and training in animal welfare, fencing, shearing, and holistic grazing strategies as a means to provide affordable and accessible ecological fire fuel load reduction services at a scale of operation that brings neighbors and members of the community closer together through the love and care of four leggeds.

The Community Grazing Projects expanded their learning journey this year through an offering that Sarah



*The Kinship Canyon grazing Coop welcomed its first goats to the land and worked with Intersectional Land Stewardship facilitators Clint McKay (Dry Creek Pomo/Wappo/Wintun) and Peter Nelson (Federated Indians of Graton Rancheria) to identify forest stewardship practices that would make the small community in Western Sonoma County more fire resilient. The neighbors marked vegetation and worked on clearing areas and invited AmeriCorps volunteers to assist them to execute their self-generated plan. (Photos by Paige Green)*





*Top row, left to right: Healdsburg firefighter feeding a baby goat from Chasing Goat Grazing; Clint McKay (Dry Creek Pomo/Wappo/Wintun) describes the role of fire within the context of family, tribe, and bioregion*

*Middle row, left to right: Fire Marshal Linda Colister explains how she is leading the collaboration on Fitch Mountain, working to transition this beautiful open space into a healthy fire ecosystem. Emma from Chasing Goat Grazing holds two of their lambs, Chase from Chasing Goat Grazing explains the regenerative land stewardship work his goats are doing on Fitch Mountain*

*Left: Peter Nelson of the Federated Tribe of Graton Rancheria describes colonization as the contributing force to catastrophic fire” (Photos by Paige Green)*

Keiser, members of Fibershed staff and Nichole Warwick (of sister non-profit, Daily Acts), designed and coordinated to deepen the collective understanding of our region’s fire ecology history.

Initial outreach to local indigenous leaders lead to several months of relationship building. As the relationships matured and trust was built, the group worked to organize three land walks that engaged Grazing Coop members and neighbors. Each land walk was led by Dry Creek Pomo/ Wappo/ Wintun Tribal member Clint McKay and Peter Nelson—a member of the Federated Indians of Graton Rancheria. The land walks encompassed a depth of land-learning that is not simple to

convey or quantify in words, the holism of the experience was both healing and wisdom-producing.

Growing out of these land walks and the continued need to develop intersectional understanding and approaches to creating fire resilient neighborhoods, Sarah Keiser organized a fire safe public education event at Fitch Mountain in the city of Healdsburg, that brought together contract grazers, city council members, Sonoma Ag Extension, multiple fire departments, Sonoma Ag and Open Space, foresters, and local COPE leaders. The event featured and centered the voices of Clint McKay and Peter Nelson, and provided both men the time and space to address subjects

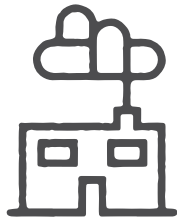
such as: colonization of their lands, the role of fire, their tribes’ history with fire and their personal relationships to it. The event sparked deep conversations in the community specific to the role of indigenous leadership. In the aftermath of the event, Clint McKay (whose ancestral territory is Fitch Mountain), was asked by the city of Healdsburg to work with city officials on developing onsite signage, narratives, and educational offerings that would help the community understand the depth of human interaction and stewardship within Wappo traditional territory that now exists as city parks and public spaces.



	Location	Acres impacted	Hooved animals on the ground	Individuals participating	Fire risk-prone households given tools to steward their land	Community grazing cooperatives developed
Grazing Cooperatives						
Hunter Coop	Santa Rosa, CA	20	10	13	5	6
Herding Hope Coop	Santa Rosa, CA	20	9	18	5	
Toyon Lane Coop	Healdsburg, CA	200	150	8	5	
Blue Rock Ridge Coop	Hopland, CA	500	30	4	3	
Road to Home Coop	Sebastopol, CA	50	0	15	10	
Kinship Canyon Coop	Forestville, CA	3	3	4	3	
Educational Event						
Fitch Mountain Community Education	Fitch Mountain, Healdsburg, CA	173	150	100	n/a	
TOTAL		963	352	162	31	



*Herding Hope is one of six Community Grazing Projects. The neighbors lost their homes to the Tubbs fire, and have since banded together to form a collective, ecologically-sound response that includes staying with and on the land. Their work includes both grazing ungulates that they collectively care for (via cost sharing and collective building of winter shelters for their goats), and the implementation of their understanding of woodland forest ecology that was initially shared and catalyzed during an incredible in-person convening with participation and presentations by Clint McKay (Dry Creek Pomo/Wappo/Wintun) and Peter Nelson (Federated Indians of Graton Rancheria). (Photos by Paige Green)*



# The Regional Fiber Manufacturing Initiative

BY NICHOLAS WENNER,  
NATASHA MEHTA,  
ADRIAN RODRIGUES,  
FRANCOIS JEROME SELOSSE,  
TEJU ADISA-FARRAR,  
& REBECCA BURGESS

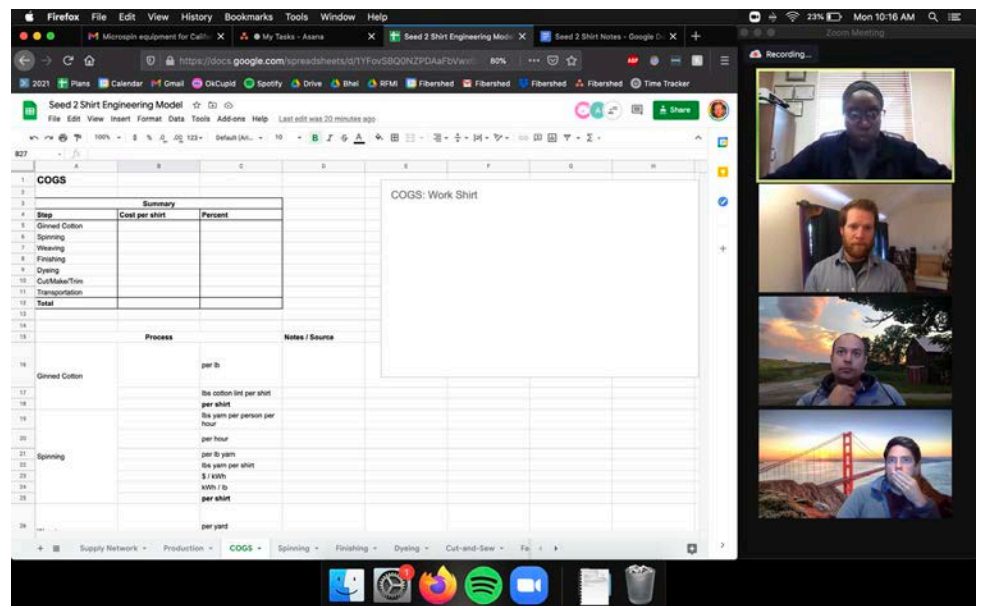
WE LAUNCHED the Regional Fiber Manufacturing Initiative (RFMI) to support the regionalization of the production of textiles to provide climate solutions and community prosperity. Based on our findings from mapping the ecosystem last year, we selected a cohort of textile entrepreneurs who fill critical needs in the Western US fiber ecosystem. In 2021, we provided engineering, business, and impact support to these existing businesses, helping them attract financial capital and create positive social and environmental impacts. We also invested in foundational organizational and financial work for the emerging regional manufacturing system, envisioning a Regenerative Textile Network and an Integrated Capital Fiber Fund.

## Technical Assistance to Key Businesses

IN ADDITIONAL to completing the technical assistance summarized in the table on page 13, we coordinated with and assessed opportunities for projects related to natural leather tanning and wool processing, including:

- Supported two local leather tanning and sewing businesses to identify a list of key next steps for their business development and facilitated meetings with local economic development district leadership to begin working relationships to advance federal and state level funding

- Assessed and made recommendations on wool processing systems for Eames Ranch and coordinated meetings with local mills to explore opportunities for collaborative wool milling and R&D. Provided machinery recommendations, provided floor layouts, and developed an engineering model that estimates costs, space requirements, and production capabilities.
- Assessed opportunities for advancing large scale wool scouring and the production of wool insulation with funders, sharing wool research, resources, and recommendations.



RFMI team members Nicholas Wenner, Adrian Rodrigues, and FJ Seloosse provide engineering and business TA to Seed 2 Shirt founder Tameka Peoples in one of many online sessions.

*“Working with Teju and the Fibershed team is like working with your sister who happens to be a PhD professor in environmental world systems and the sociological impacts of these systems on people of color. With her knowledge and commitment to people, equity, and justice she profoundly highlights how social/environmental systems should be working for the betterment of humankind versus the destruction of it. Working with Teju is refreshing, educational, and enhancing. She provided me and my team much needed value and perspective on how to set up systems of equity and justice in all efforts of our work.”*

– TAMEKA PEOPLES, FOUNDER OF SEED2SHIRT



Business	Fibreolution
<b>Description</b>	Long-line flax scutching and hackling mill in Oregon. Industrial scale. Women-owned.
<b>Business TA: Provenance Capital Group</b>	Strengthened business plan and identified capital needs. Highlighted key areas for development, created a predictive financial model, and developed an overview presentation of the opportunity.
<b>Engineering TA: Bhel Engineering</b>	Modeled GHG emissions of mill and made recommendations for minimizing emissions and sourcing renewable energy
<b>Cooperative Development TA: The Democracy at Work Institute</b>	Led two 1:1 sessions providing education and resources on cooperative business models and long-term strategies to incorporate participatory practices into Fibreolution's growth strategy.

Business	Seed2Shirt
<b>Description</b>	Fully vertically-integrated cotton mill in California. Medium scale. Black- and women-owned.
<b>Business TA: Provenance Capital Group</b>	Defined fundraising strategy and established key milestones for each round. Identified key achievements to highlight in marketing. Redefined overall business framework and developed a predictive financial model. Reviewed existing team and suggested key additions. Restructured finances and made recommendations for legal frameworks.
<b>Engineering TA: Bhel Engineering</b>	Developed spreadsheet tool for modeling fully vertically integrated facilities for woven, knit, and 3D knit cotton products at a range of scales, assessing capabilities and requirements such as capital expenditures, production levels, and costs of goods sold.
<b>Cooperative Development TA: The Democracy at Work Institute</b>	Led two 1:1 sessions providing education and resources on how to increase employee participation and ownership in Seed2Shirt's growth plan. Provided resources and training in participatory practices and creating an employee trust model.
<b>Equity TA: Teju Adisa-Farrar</b>	Developed a strategy to expand Black-ownership in cotton systems. Produced a paper outlining the historical context and case for supporting Black-owned organic cotton systems in California, setting the foundation for Fibershed cohort program for aspiring Black cotton farmers in California that is currently seeking funding.

Business	Botanical Colors
<b>Description</b>	Natural dyeing facility in Washington. Industrial scale. Women-owned.
<b>Business TA: Provenance Capital Group</b>	Worked with team to articulate 5 to 10-year vision and envisioned pathways to manifesting that vision. This vision was then used by Bhel Engineering to provide engineering TA. We may reengage with Botanical Colors in 2022 to translate this engineering framework into a business model and fundraising strategy.
<b>Engineering TA: Bhel Engineering</b>	Developed spreadsheet model for garment dyeing to assess production capacity, capital expenditure, costs of goods sold, energy requirements, and water usage for a range of production levels. Assessed options and made recommendations for sourcing renewable energy.

Business	Mendocino Wool & Fiber
<b>Description</b>	Wool mill in California. Small-scale. Family-owned.
<b>Business TA: Provenance Capital Group</b>	Worked with Fibershed to support the acquisition of a new spinning machine through a recoverable grant. Developed grant in cooperation with the Economic Development and Financing Corporation to align with their existing loan and see the mill succeed.
<b>Engineering TA: Bhel Engineering</b>	Assessed new spinning machine and specified its capabilities, costs, and requirements.

Envisioning the  
Regenerative Textile  
Network

THE RFMI Stewardship Committee held a series of strategy sessions to envision an organizational structure for a “Western Textile District.” Our team developed scenarios for alternative futures of the textile and fiber industry and delved deeply into the concept of how a “textile district” would function and how it could transform the status quo by providing regional (yet replicable) solutions for establishing new equity focused fiber and dye textile systems that make regional production accessible to the human communities living and working in those locales. We ideated around key questions like: how we might change consumer behavior, how we might build community and inclusiveness, and how we might facilitate growth of regional fiber manufacturing. The team generated over 100+ ideas and synthesized these into the following key needs.



The RFMI Stewardship Committee doing some group brainstorming. Bottom left photo, left to right: Adrian Rodrigues, Nicholas Wenner, Rebecca Burgess, Teju Adisa-Farrar, Natasha Mehta, and FJ Seloosse. (Photos by Natasha Mehta)

Current Fibershed Strengths		Opportunities for the “Regenerative Textile Network”		
Research & Strategy	Community Education & Communication	Raise Funds	Supply Chain Coordination	Organize Producers / Manufacturers
Ecosystem mapping & education	Investor education	Design integrated capital fund	Brand partnerships and coordination	Facilitate cooperative ownership / land trusts
Roadmap for brands	Political education / movement building	Engage state / local government	Data and supply aggregation	Manage shared facilities
Knowledge production on key topics	Community partnerships		Network-building and producer coordination	Memberships / collective advocacy
				Business incubation / producer TA

Throughout this process we were inspired by a vision of resilient regions that were deeply connected, collaborative, and actively shaping the narrative around regeneration. This led us to rename the concept to the “Regenerative Textile Network.”

A key component of manifesting a Regenerative Textile Network is developing a stable source of capital to fund its long term operations. As we look to 2022, the team will focus on developing an integrated capital fund for this purpose, limiting the growth of

the RFMI and staging the development of a Regenerative Textile Network until the Integrated Capital Fund is launched and a long term funding mechanism becomes available.

*“Botanical Colors is a natural dye supplier and custom dye house located in Seattle, Washington. Our work with Fibershed and RFMI has been rewarding and extremely helpful for us to envision our next phase of growth and impact. As a small and rapidly growing business having a resource like RFMI was key to articulating our business expansion and delving deeply into both opportunities and challenges to our growth. The vision, contacts and expertise we were provided were resources we would not have been able to manage on our own and we are grateful for the opportunity and generous offer from Fibershed. We look forward to the next step in the process to grow our sustainable and circular enterprise.”*

– KATHY HATTORI  
PRESIDENT OF BOTANICAL COLORS

*“Fanny [Fanny Corpet, Director of Advisory Services for Provenance Capital] is a financial wizard with heart for the financial support of multiple sizes of organizations who’re looking to positively impact the world. Her talent for helping organize the numbers and create the right financial structure to help you succeed is amazing and has helped us set up a structure and system to help our team succeed now and in the future.”*

– TAMEKA PEOPLES  
FOUNDER OF SEED2SHIRT

## Envisioning the Integrated Capital Fibers Fund

**T**HIS YEAR, the RFMI laid the groundwork for an integrated capital fund focused on the bottlenecks that prevent the adoption of Climate Beneficial natural fibers and textiles. The global fiber, textile, and leather industry is a \$1T sector with critical impacts on health, environment, land, and communities. Yet, this sector has received little attention from funders and investors. Currently, “market-rate” returns from global textile industry investments reflect a reliance on the global oil and gas industry as a feedstock, the pervasive use of extractive labor practices, and a host of externalized social and environmental costs. At the same time, U.S.-based fiber producers and processors struggle to access capital to pioneer more just, equitable, and regenerative practices. The Integrated Capital Fibers Fund offers a pathway for investors to rebuild soil-based natural fibers, unlock potential for regenerative land management, and reform the current extractive textile industry model.

Working in tandem with Sarah Kelley, Calla Rose Ostrander, Jenny O’Connor and the Sustainable Agriculture & Food System Funders organization, we codified the key bottlenecks (highlighted below) that could be solved with an integrated capital fund.

- **The Commitment Catch-22:** Entrepreneurs seek contracts that will guarantee revenue to increase production, but brands seek guaranteed scale of production before they will commit to contracts.
- **Collateral Gap:** The inability to use inventory or equipment as collateral often limits producer access to debt capital.
- **Prototyping Gap:** Entrepreneurs seek funding for prototyping, but brands want to see fibers already at the fabric stage before committing.
- **Working Capital Gap:** Small scale textile producers have trouble financing their working capital because of the high cost of inputs.
- **Patient Equity Capital Gap:** Financial structures such as VC funds demand aggressive timelines that are often incompatible with natural textile production.

- **Racial and Gender Justice Gap:** The industry’s legacy of racial injustice compounds barriers for farmers and entrepreneurs who are women and people of color.

We developed a 4-page concept overview to highlight the scope and vision of the fund and engaged potential advisors and funders to catalyze the development of the fund. Our work will continue in 2022 and will be focused on:

- Developing an equity-focused advisory committee
- Evaluating joint/linked structures and fund holding vehicles such as CDFIs and entities like RSF Social Finance, drawing inspiration from agriculture and other fields
- Identify key types and amounts of capital needed for each fiber type and develop a detailed financial case study
- Finalize fund structure, operational strategy, and governance and develop appropriate legal and financial agreements
- Conduct initial conversations with interested investors and brand participants





*“It’s faster. A lot faster. And all the things work on that spinner! All the things work without you having to jerry-rig it or fix it or get out your file.”*

– SARAH GILBERT  
OWNER AND FLOOR MANAGER  
MENDOCINO WOOL AND FIBER INC.

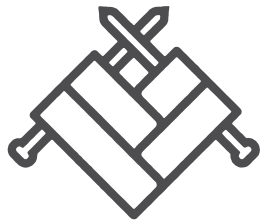


### *A New Spinning Frame for Mendocino Wool and Fiber Inc.*

**I**N 2020 AND 2021, we supported the Mendocino Wool and Fiber Inc. mill by developing a financial vehicle for a new spinning frame to support the growth of the business. Assistance to obtain the appropriate piece of equipment involved identifying the spinner and specifying its size, capabilities, costs, requirements, customs, taxes, certifications and shipping details. We worked with a California Farmlink attorney to develop a recoverable grant agreement that aligns and streamlines the payment plan in accord with the mill’s existing loan from the Mendocino Economic Development and Financing Corporation. It was important to align the recoverable grant with the mill’s existing financial obligations to ensure all parties needs were being appropriately met. The mill has been ramping up production with the new machine, which was delivered from the Italian manufacturer and installed in September. While the owners need more time to quantify the increase in production over time, it is clear they can spin yarn more quickly and efficiently with this new machine, which they have used already to spin many pounds of local wool fiber into high quality yarns for our region’s farms, ranches, and artisans.

*(Photos by Paige Green)*





# Supply Network Support

## California Cotton and Climate Coalition

BY REBECCA BURGESS, LAUREN BRIGHT, & LAUREN TUCKER

THE California Cotton and Climate Coalition is a project of Fibershed, in collaboration with the White Buffalo Land Trust, textile engineers, food and fiber farmers, California headquartered textile brands, and domestic durable goods makers. The mission of the coalition is to develop relationships between brands and growers to incentivize the implementation of land stewardship practices known to enhance carbon draw down and protect human health within our regional agricultural systems.

We are working specifically to incentivize a stack of land regenerating, on-farm practices where cotton is grown in rotation with grain, melon, herb and vegetable crops. We are also prioritizing the localization and regionalization of the supply network partners (mills) as we design this program. This year's success includes a historic pre-harvest commitment on pricing and poundage between brands and growers; a notable 160,000 pounds of cotton was committed to 10 months prior to harvest by participating brands. (For comparison value, our first year of working in wool systems in 2016, we received pre-commitments for 5,000 pounds of fiber). The contract included a commitment contingent on reductions in synthetic chemistry, reductions and elimination of tillage, the use of untreated seeds, and the planting of an over-winter multi-species cover crop.

*Clockwise from top: California-based brand team members learn about cotton blooming cycles from farm owner Canon Michaels of Bowles Farming Company; technical service providers, California brand production teams, technical textile developers and growers pose for a group photo during a soil-to-skin farm tour organized by Fibershed at Bowles Farming Company; 17 acres of native plantings of yarrow, creeping wild rye, milkweed and evening primrose is planted at Bowles farm as part of their restoration efforts; cotton growing in the no-till research plots; Eileen Mockus, CEO of Coyuchi discusses their company's agricultural goals at a farm tour in the San Joaquin Valley; Coalition Book Club was started with non-fiction, including This Dreamt Land, Imperial San Francisco, and San Joaquin Valley Naturalist's Guide (Photos by Paige Green)*







*Clockwise from top left: California Cotton and Climate Coalition tours the cotton harvest, handles individual bolls of fiber, and reviews the thermal defoliator used for organic defoliation; Textile brands tour a cotton gin at work in Southern California and handle cotton seed once removed from the fiber. (Photos by Paige Green)*

To further galvanize and codify relationships and commitments between brands and growers, the coalition led in-field and virtual learning experiences for eight brand teams. This educational curricula included two onsite farm tours, and 6 educational sessions focused on subjects such as farm labor and labor history, water infrastructure & ground water recharge, water for human communities and fisheries, climate modeling and regional projections on snow pack, soil health research, carbon sequestration mechanisms, and cotton quality and milling.

To operationalize this work in year one and into the future, each of the brand teams received education on “Farm Forward” textile creation. Farm forward design is not a well understood science by most designers. It is rooted in an understanding of micron, tensile strength, elasticity, and staple length of fibers. We are teaching and sharing information on how to make goods within the variability that any single harvest yields (normally a single yarn is made from fiber from across the world and mills blend bales from multiple countries to meet technical specifications, making traceability and

grower-brand relationships a challenge to forge.) This educational process is coupled by sharing information specific to how to work pre-competitively across brands; we are answering questions about how work can be shared, efforts streamlined, and how to support everyone make mill minimums as a collective.

Goods and textile lines will begin to emerge from the coalition in mid-2022.

Stay tuned!



## Climate Beneficial Wool Pool

BY REBECCA BURGESS

THE Climate Beneficial™ Wool pool has graduated from research and pilot scale demonstration to a true supply network support system that is able to consistently connect local wool producers with designers, makers and brands. The pool was created, coordinated and financially modeled in 2020 in response to the impacts of COVID-19 on the ranching community. Fibershed shared its fine micron wool pool design during a series of presentations to several working groups to determine the best legal architecture to hold the project long term. The woman-owned and operated business known as Imperial Yarn Company was providing and continues to provide a home for the project. In

addition to the fine fiber pool, a coarse wool pool (designed for use in durable goods) operated by Fibershed producer member Marie Hoff, continues to advance Climate Beneficial wool price incentives for a number of ranchers who were often excluded from the commodity markets due to producing wool with coarser textures. COVID-19 was a catalyst to find for-profit partners and more permanent locations for wool pooling. Outside of the economic pressures imposed by the pandemic, the necessity for combining wool ‘clips’ from multiple ranches and farms is necessary for making the milling minimums at our last remaining large-scale washing stations and fine gauge domestic yarn spinning mills. To keep the raw materials within the country, to retrieve price premiums that incentivize climate benefitting land stewardship, and to provide useful materials to local designers

and clothing makers, Fibershed’s collaboration with Imperial Yarn and Full Circle wool has enhanced and sustained economic and ecological outcomes for the ranching community. In 2021, the non-profit served the network of ranchers and textile creative by providing in depth soil health education to 10 brand teams, addressing the importance of revaluing wool and improving revenue for Climate Beneficial agriculture. We also continued our work to administer the use of ‘greasy’ wool price premiums for a series of ecosystem restoring projects. The model we have designed and are implementing is replicable. We are already developing opportunities in 2022 to share our last 24 months of research and data to our Fibershed Affiliate Network to expand the wool pool model.



*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.*



## CLIMATE BENEFICIAL WOOL POOL IN 2021:

- 33% increase wool purchased and utilized from 2020 to 2021
- \$18,920 in aggregated price premiums were obtained for each pound of wool purchased (this is a 10% increase over commodity pricing); funds were earmarked and/or dispensed for land restoration projects during the wet season of 2021 and early 2022
- 6,963 acres are under implementation of carbon farming
- 5 ranches enrolled in the fine count Climate Beneficial® wool pool; 3 ranches enrolled in the coarse wool pool (a 25% increase in numbers of ranches since last year)
- Riparian herbaceous cover, compost applied to croplands, cover cropping, no-till rangeland seeding, prescriptive grazing, shelter belts, windbreaks were implemented in 2021
- 3,945 metric tons of CO<sub>2</sub>e have been drawn down beyond business as usual ranching from 2019-2021 (13,000 metric tons of CO<sub>2</sub>e will be drawn down annually when full carbon farm implementation on each ranch is completed)
- 20,000 sheep were grazed on 84,000 acres of land to generate the Climate Beneficial Wool Pool



*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.*



# Sheep Shearing School 2021

BY HANNAH M. BIRD & JOHN BAILEY

**D**UE TO continued COVID-19 restrictions we were unable to host an in-person shearing school. After consulting with trainers, and University of California Extension Risk Services the decision was made to offer an online alternative. Fibershed continued to offer support via direct instruction and provided 6 students full or partial full scholarships. Below is a description of the class.

The online course served 13 students and provided individuals the opportunity to ask questions online between classes to shape the in person sessions and create a tailored course that was well suited to the needs of the registrants. Case studies formed from the questions and considered by the panel of instructors allowed for a class curriculum informed by real world scenarios.

Each participant was mailed a copy of the Hopland REC Sheep Shearing Handbook and access to a file of online resources including videos and files relating to infrastructure, suturing techniques, hedgerow incorporation, zoonotic diseases and toxic plants.

100% of evaluation respondents agreed/strongly agreed that the class:

- Improved their knowledge of sheep shearing.
- Improved their knowledge of sheep health.
- Improved their knowledge of sheep management.
- Would recommend the class to others.
- Rated the class as above average or excellent.

## THE FUTURE

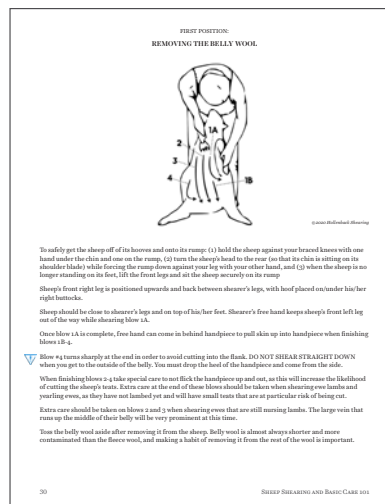
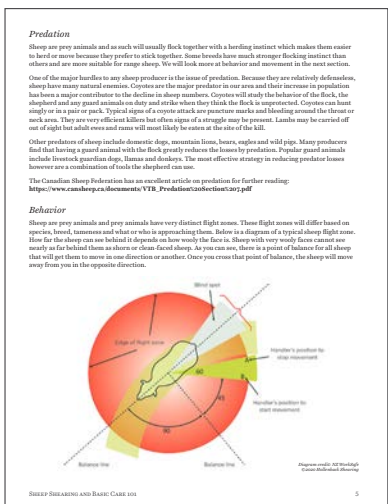
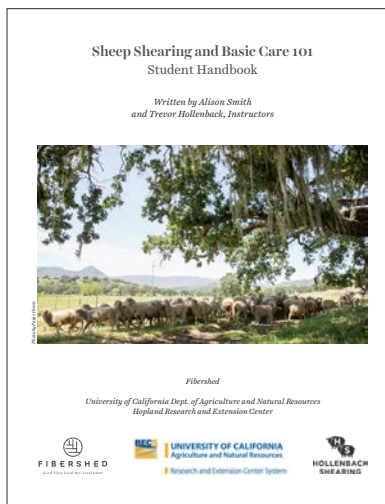
We are now preparing to advertise for the in person 2022 spring class which will run from April 10-16, 2022. Continued support from Fibershed will allow flexible pricing and scholarships where needed.

Quotes from participants express which elements of the course they especially valued:

*"Most helpful was the office hours for q&a focused on my farming practices. Overall, the entire course was excellent and I learned a lot each day."*

*"I am very grateful for the On Line Sheep Shearing and Health Class. It was very valuable to me being a small first generation sheep farm. I will use this information in my tool box and it will make me a better Shepherd. I have moved to wool sheep over the last few years, they all have names but are livestock and treated with care and respect until they go where they go."*

*"Learning best practice for sheep was my goal in taking this class and I more than accomplished that. So much information I couldn't contain it all. I am technology challenged and this was my first computer Zoom class. I feel I got the most I could out of the class with the computer skills I have. I managed to get Montana Wool Lab and sent samples in, I am happy to know my Wensleydale and other sheep have 24-37 micron averages!! I have been able to tell people that are interested in the wool much more information than before the class. This is just one example of what I learned."*



Cover and sample pages from the textbook for the course, Sheep Shearing and Basic Care 101 Student Handbook

### *Sheep Shearing and Care*

Improve your shearing technique and problem solve sheep health challenges with experts in this four-session online series. The class will offer online workshops considering key topics (shearing techniques, common problems, ergonomics, equipment, sheep handling, health checks during shearing, flock management, common health problems in sheep, nutrition, breeding, predators, targeted grazing, and planning your yearly calendar), during each class a panel will respond to your questions.

Included with each student's course fee is a single personalized 30-minute session ("office hours") with course instructors. Time slots for these sessions will be every 30 minutes (from 12:30PM-2:30PM) immediately following each class session.

**This class would suit:** Small flock owners, those who have some experience of shearing, those currently working as shearers, experienced shearers looking to perfect their technique.

**Class Dates:** March 2, 9, 16 and 23. 11am-12pm PST. A 30 minute personalized session ("office hours") will be available to all participants. Time slots for these sessions will be every 30 minutes (from 12:30PM-2:30PM) immediately following each class session.

#### INSTRUCTORS

**Rosie Busch, DVM:** Dr. Busch recently joined the UC Davis Veterinary Medicine Extension team in the Fall of 2019! Her passion is connecting California veterinarians, farmers and ranchers to evidence-based resources that are reliable and practical. Her research interests are focused in three major areas: 1) maternal health and reproduction; 2) youngstock health; and 3) production efficiency and quality.

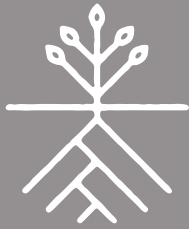
<https://www.vetmed.ucdavis.edu/faculty/roselle-busch>

**Alison Smith:** Alison is the shepherd of the flock of over 200 sheep at the UC Hopland Research and Extension Center, she also supports research and extension at the site.

**Trevor Hollenback:** Owner/operator of Hollenback Shearing, Trevor Hollenback has been professionally trained and employed as a shearer in the United States, New Zealand, Australia, and Austria. His primary focus in shearing is limiting stress to both the sheep and shearer.

**Rebecca Burgess:** Rebecca Burgess is the executive director of Fibershed, chair of the board for Carbon Cycle Institute, and the author of *Harvesting Color*. A vocationally trained weaver and natural dyer, she creates hands-on curricula that focus on restoration ecology and fiber systems. Burgess has built an extensive network of farmers and artisans in the Northern California Fibershed to pilot an innovative fiber systems model at the community scale.





## Climate Beneficial™ Agriculture Program

THE CLIMATE BENEFICIAL AGRICULTURE PROGRAM develops natural fiber and dye production systems that contribute to the stabilization of our climate. We work directly with land stewards to research and demonstrate agroecological practices and to produce peer-to-peer educational events. We organize funding streams for the implementation of land management practices that build soil carbon and increase productivity naturally.

### Climate Beneficial Agriculture

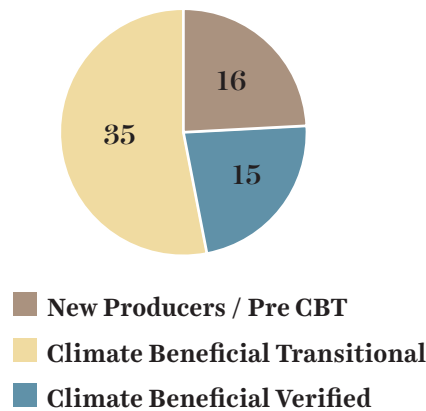
BY MIKE CONOVER

**F**IBERSHED'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 CO<sub>2</sub>e drawdown estimates (eg. is the cover crop leguminous or non-leguminous? Are they practicing prescribed grazing on irrigated pasture or non-irrigated rangeland? etc.). Between mid 2020 through 2021, producers in the Climate Beneficial Program collectively implemented a total of 122 carbon farming practices.

Practices designated for grazing and pasture lands, as well as agroforestry practices were the most commonly implemented practices this year. Prescribed grazing was the most widely utilized practice and was employed by 27 producers across 6,566 acres.

Since the Climate Beneficial Program's inception in 2016, we estimate 17,872 Mg CO<sub>2</sub>e carbon has been sequestered, with a 20 year projection of 78,880 Mg CO<sub>2</sub>e. As can be seen on the figure below, practices implemented on grazing and pasture lands have the highest projected drawdown capacity, with an estimated 71,414 Mg CO<sub>2</sub>e sequestered over the next 20 years.

#### Producers in the Program



#### In 2021 we welcomed 10 new producer-members into the Climate Beneficial Program:

Alpacas of Marin  
Cazadean Valley Ranch  
Cypress Grove Research Center  
Foggy Bottoms Boys  
Fruition Farms  
Kirabo Pastures  
Navarro Vineyards  
Pennyroyal Farm  
Roy Clemes  
Shannon Ranches

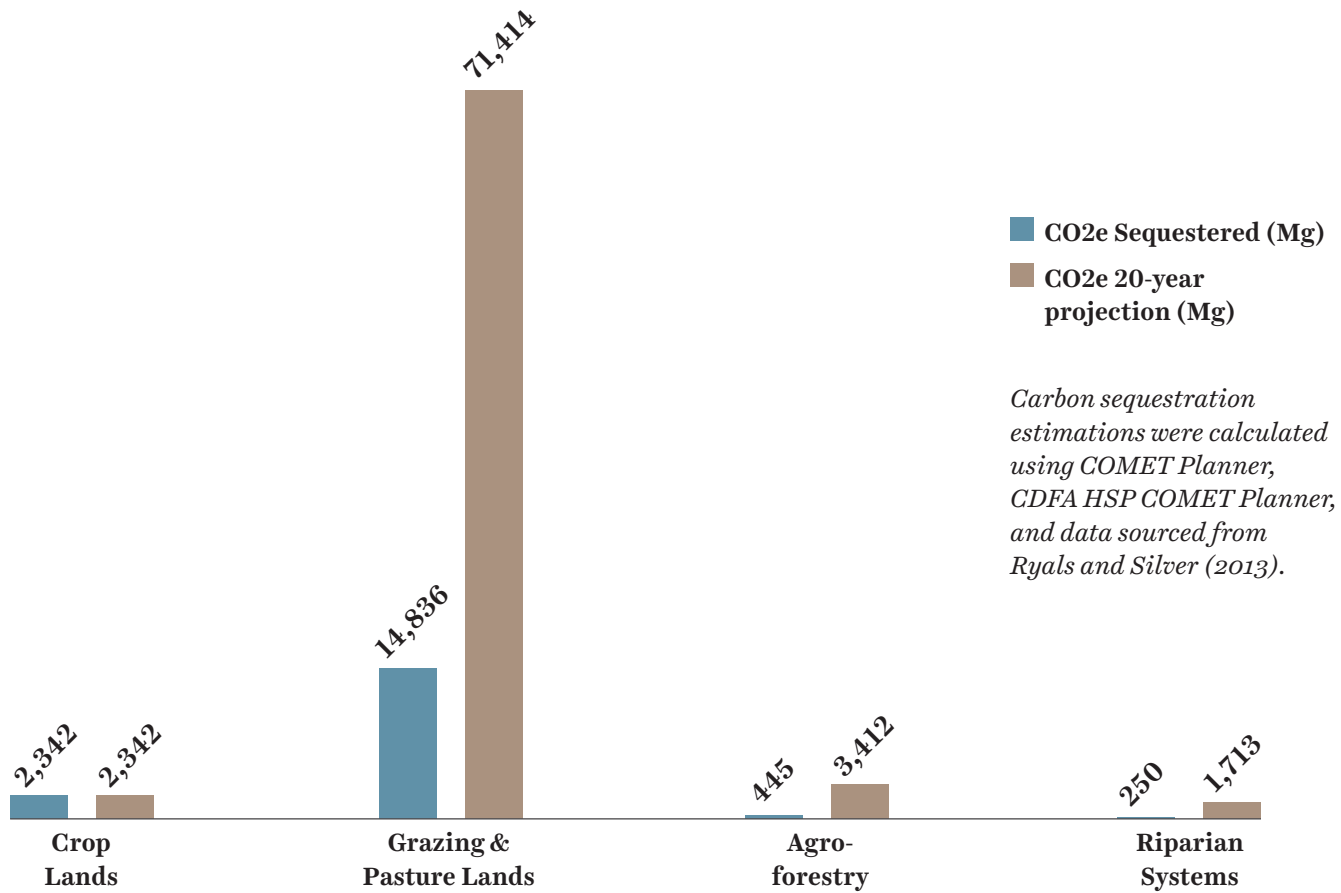
#### CLIMATE BENEFICIAL AGRICULTURE PROGRAM

	# of Producers	Total Acres
New / Pre CBT	16	3,120
Climate Beneficial Transitional	35	25,534
Climate Beneficial Verified	15	143,117
<b>Total</b>	<b>66</b>	<b>171,771</b>



*Shannon Ranches joined the Climate Beneficial Program this year and have been modeling a successful integrated crop-livestock system, where they incorporate sheep into their vineyard systems. The sheep graze cover crops between the vineyard rows, reduce fire fuel load, reduce human and mechanical labor, and improve soil health, among many other benefits. This photo shows their sheep grazing in the surrounding area of a vineyard and is also a great example of a silvopasture, where trees provide shade for the sheep, sequester carbon, and provide wildlife habitat. (Photo by Nathan DeHart)*

# Cumulative CO<sub>2</sub>e Drawdown by Category— Entirety of Climate Beneficial Program (2016-2021)



*Left to right: photos by Paige Green (3) and Guido Frosini*

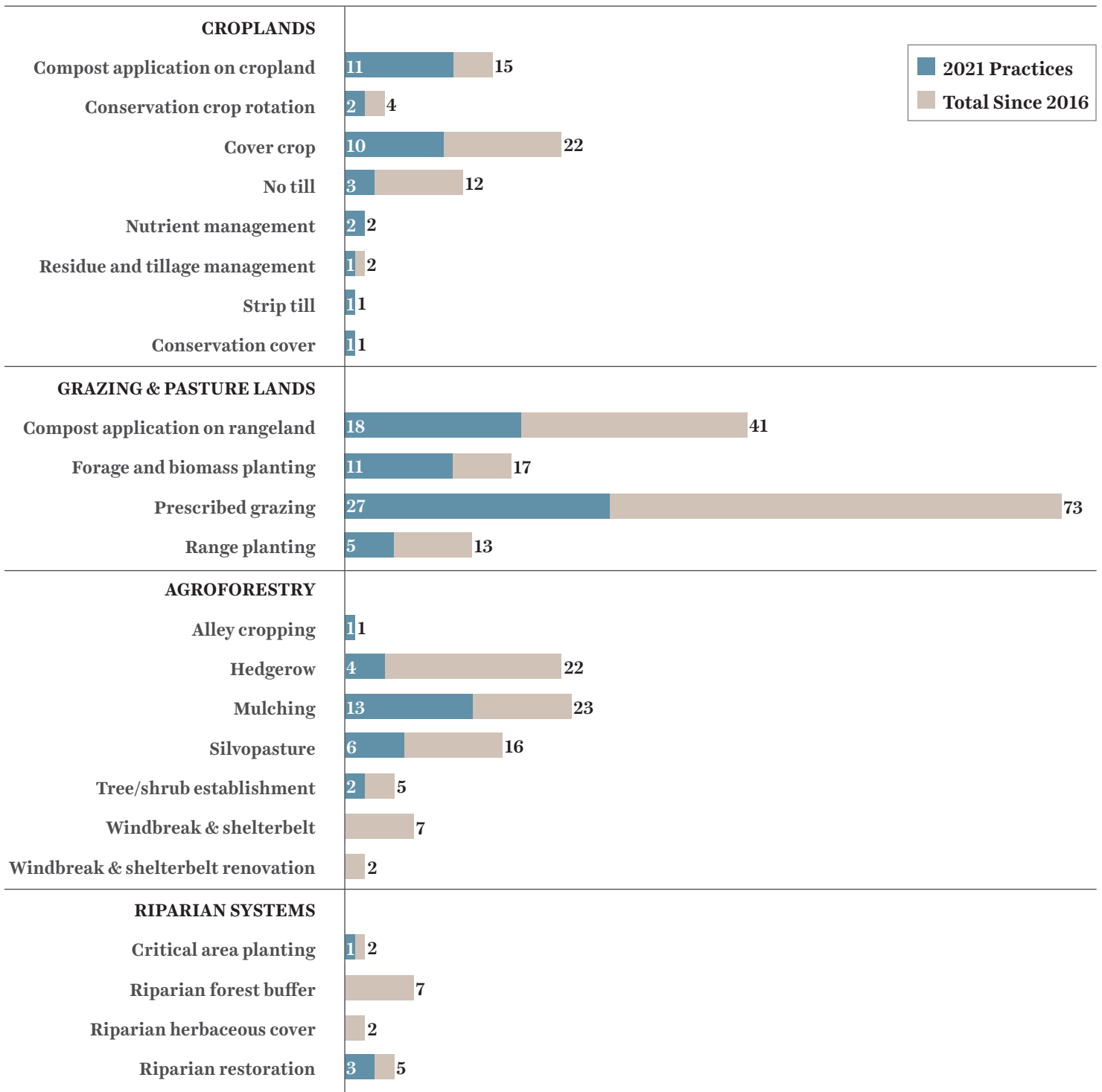
## WHAT IS Mg CO<sub>2</sub>e?

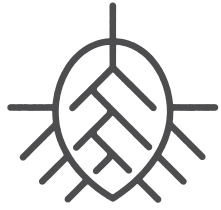
Mg refers to metric tons (also known as MT, “tonnes,” or “megagrams”) and is equal to 1000 kilograms or about 2,240.6 pounds. It is a common way of quantifying and measuring greenhouse gas emissions.

CO<sub>2</sub>e (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 “CO<sub>2</sub>e” allows the impact of all greenhouse gas emissions to be expressed in a common unit, where 1 Mg CO<sub>2</sub>e is the global warming equivalent of 1 metric ton of carbon dioxide.



## Instances of Carbon Farming Practices Implemented — 2021 and Cumulative





# Carbon Farming, Planning, and Implementation

BY MIKE CONOVER

## *The Carbon Farm Seed Fund*

**F**IBERSHED has offered grant funding to fund carbon farming projects for the past two years.

In the 2020-2021 round, we 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 CO<sub>2</sub>e

have already been sequestered with a projected 717 Mg to be sequestered over the next 20 years. Nine projects were completed and three were given extensions due either to extenuating circumstances or the severe conditions as a result of the summer drought.

Our 2021-2022 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 CO<sub>2</sub>e and a 20-year projection of 2608 Mg CO<sub>2</sub>e. 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 CO<sub>2</sub>e over the next 20 years.



*Top, Blue Oak Canyon Ranch was awarded funding to apply 64 tons of compost to their grazed rangelands (Photo by Lynn Moody). Above, Spreading compost at Chico Flax (Photo by Sandy Fisher)*

## 2021-2022 CARBON FARM SEED FUND PROJECT SPECIES LIST

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



## 2020-2021 CARBON FARM SEED FUND PROJECT SPECIES LIST

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

## CARBON FARM SEED FUND AWARD RECIPIENTS

	2020	2021
# of projects	12	17
Total acreage of project area	242 acres	544 acres
Amount awarded	\$50,696	\$66,875
Estimated Annual Carbon Drawdown	143 Mg CO <sub>2</sub> e	289 Mg CO <sub>2</sub> e
20-year Projection	717 Mg CO <sub>2</sub> e	4084 Mg CO <sub>2</sub> e
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

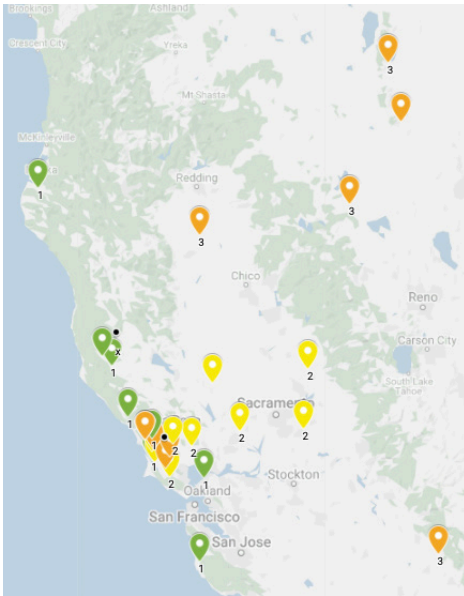


*Integrity Alpacas was a recipient of the 2020 Carbon Farm Seed Fund and used their award to establish a silvopasture with mulberry trees. (Photo by Paige Green)*

*“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



Soil sampling locations for the 2021-22 rain year, categorized by priority.

**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.

*Right, The Small Farm Carbon Farming Workbook will be used to guide producers through a design process to identify carbon capture opportunities on their land bases*

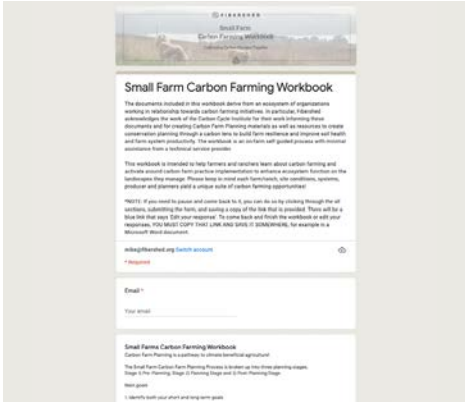
**SOIL SAMPLING TO MEASURE SOIL ORGANIC CARBON**

To measure baseline levels of soil organic carbon and for repeat testing to monitor the effects of management practices on carbon levels over time, we took soil samples at 4 producer sites—New Agrarian Collective, Jensen Ranch, Wild Oat Hollow, and Fiber Confections—and have 10 more scheduled for the 2021-22 rain season.

### Small Farm Carbon Farming Workbook

**I**N PARTNERSHIP with the Carbon Cycle Institute, we revised and updated the Small Farm Carbon Farming workbook, which will allow us to work collaboratively with producers enrolled in the Climate Beneficial program to identify opportunities for carbon capture on their land bases. This workbook process was created to make carbon farm planning accessible to a wider range of producers and is best suited for intensively managed (<50 acres) to mid-size (50-500 acres) farming and ranching operations.

The workbook guides producers through goals articulation, land assessment, inventorying existing practices, and identifying suitable practices for carbon drawdown. We changed the overall format of the workbook so that it is now available as a Google Form to make it both easier to use and to improve the efficiency of collecting information.



### Carbon Farming Cohorts

**F**IBERSHED 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 in 2021 we organized 7 virtual meetups for cohort members to discuss their operations, share ideas and knowledge, discuss opportunities for carbon farming projects, and meet with a business advisor, Olivia Tincani.

To catalyze carbon farming projects on their land bases, we awarded \$2000 each to 4 producer-members within the Mendocino Cohort, which funded a compost application, hedgerow planting, and fencing for prescribed grazing, among others.

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



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. This means two more communities are beginning to utilize carbon farming practices and are moving their entire neighborhood into creating a carbon farm plan.

We had four land walks on four different members' properties. Each land walk had a theme, which 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.

## *Carbon Cohort Business Training*

BY OLIVIA TINCANI

**I**N AN ongoing attempt to support the producers within the Mendocino Carbon Ranching Cohort, we have continued our bi-annual engagements to bring Grazier's Toolbox and Business Curriculum resources and into their cohort curriculum. Our sessions are focused on practical application of our tools and training concepts based on the long term investments made in building curriculum to service Fibershed producers functioning at every step on the supply chain.

This year's online gatherings focused on enterprise budgeting and concepts of breakeven; mixed revenue channel sales strategy; marketing planning; and marketing tactics/techniques specific to fiber and meat businesses. We also continue one-on-one technical assistance for producers engaging with our curriculum for those in need of assistance in integrating these learnings into their day-to-day operations.

### **MENDOCINO CARBON COHORT: BUSINESS CURRICULUM INTEGRATION**

- 2 cohort peer learning gatherings with 4-6 members present
- 4 existing Business Curriculum webinars and accompanying tools watched and revisited



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



# Fiber Systems Research & Community Collaborations

## *Irrigated Croplands Soil Carbon Research with The Center of Regenerative Agriculture and Resilient Systems*

BY REBECCA BURGESS

RESEARCH being conducted in Merced County's irrigated croplands by the Center for Regenerative Agriculture and Resilient Systems with Dr. Daley and her team with consultation and ground support from Cal Ag Solutions, has (within its first full year of implementation), inspired change in how cotton rotations are being farmed, both at Bowles Farming Company in Merced and at Stoneland Farm in Kings County.

Thanks to support from the Marciano Family Foundation, Fibershed was able to work with Bowles Farming Company and researchers to establish a 64-acre trial site. This site is the focus of the academic measurement and monitoring effort designed to evaluate the soil health outcomes of a series of stacked practices (outlined below). In the second year of this research-trial, growers have already begun adapting practices, purchasing new equipment to support adoption of reduced tillage and expanding the overall acreage where these practices are being implemented to a total of 476 acres of land. These croplands traditionally utilize cotton as a rotation crop for tomato, onion, garlic, wheat, corn, and occasionally

melons. By evaluating how land regenerating practices impact cotton crops, the work that the growers are doing in this acreage expansion is also impacting the soil where a long rotation of food crops are produced.

### PRACTICES DEPLOYED AT THE REGENERATIVE RESEARCH BLOCKS:

- Omission of Seed Treatments (fungicides)
- Utilization of fungal dominated compost inoculum seed treatment
- Multi-species cover cropping
- Strip Tillage and No-tillage
- Reductions in synthetic fertilization; testing includes application rates of 0%, 15%, 50%, and 80% of normal.

### FIRST YEAR TIMELINE FROM AUTUMN OF 2020 TO THE HARVEST OF 2021

- **October 30th:** 48 Composites soil samples were taken: 10-inch cores per replicate by Dr. Daley of the Center for Regenerative Agriculture and Resilient Systems
- **November 20th:** Cover Crop Seeds inoculated and planted by the Center for Regenerative Agriculture, Fibershed and Bowles Farming Company
- **November 23rd & 24th:** Cover Crop Planted by Cal Ag Solutions
- **March 27th:** Cover crop roll down by Dr. Daley
- April 5th: Soil Sampling and Water Infiltration was tested by Dr. Daley
- **April 17th:** Cotton Planted: 1" to 1.25" depth; 62,000 seeds per acre with 20 gallons of inoculant per acre added as a slurry by Cal Ag Solutions
- **October 18th:** Cotton harvested and baled
- **November 16th:** 48 Composite soil samples were taken: 10-inch cores per replicate by Christina Elizabeth Pease of the Center for Regenerative Agriculture and Resilient Systems

- **December 3rd:** multi-species cover crop seed drilled (seed mix contains fewer brassicas to support ease of termination in year 2).

### SOILS ARE MONITORED FOR THE FOLLOWING

#### *Soil carbon sequestration:*

- Soil Organic Carbon; Soil Organic Matter; PoxC; C:N ratios; Bulk Density (porosity); % Microbial Biomass.

#### *Soil Biological Assessments:*

- Soil respiration (CO<sub>2</sub> generated by cellular respiration by root tips and soil biology, and aerobic process supported by carbon and porosity);
- Aggregate stability (how well the biological community is creating glues that hold soil together);
- PLFA (biological diversity and fungal-bacterial ratio);
- Water: Water infiltration (establishes porosity), water holding capacity (soil sponge);
- Haney: Total N; Total Organic N; Nitrate N; Ammonium N; Total Inorganic N; Available N, P, K; % Microbial Active Carbon (determines how efficiently your soil microbes use carbon); Organic C:N; Total Carbon; Total organic C.

### LEARNING OUTCOMES:

Within the first 11 months of data collection in the treated/land regenerating plots, aggregate stability continued to improve, indicating improved soil biology to support soil structure.

Soil temperatures were reduced at the time of planting. The soil was almost eight degrees cooler in the 'regenerative' plots. The lowering of the soil's temperature was in part due to the residual biological matter left on the field from the cover crop. Lowering of salinity is a trend within the treated plots, but it is not statistically pronounced. There has been no change in respiration or soil organic matter





2-21

Row	Alt.	% Plant	% Soil	Plant/Meter	% Soil
10	78.8	95%	4	100%	
20	77.5	90%	4	100%	
30	77.5	90%	4	100%	
40	77.5	90%	4	100%	
50	78.3	100%	11	100%	

Soil	% Soil	Plant/Meter	% Soil
78.8 E	95%	4	100%
78.8 F	90%	4	100%
77.5 F	90%	4	100%
77.5 F	90%	4	100%
78.3 F	0%	11	0%
78.8 F	0%	4	0%
78.8 F	0%	8	0%



Row 1: February 17th Bowles, early March Cover crop in action at the Bowles Research site, Mature cover crop in late March, Aerial photo of the research plots (green) and conventional plots (bare soil); Row 2: March Roller Crimp, Roller Crimper at Bowles; Row 3: No-till cotton surrounded by residual dry matter from the cover crop, July research notes from the field at Bowles, Dr. Cindy Daley from the Center for Regenerative Agriculture and Resilient Systems and Rebecca Burgess of Fibershed measure and document the field trial at Bowles Farming Company; Row 4: Dr. Cindy Daley provides an overview of the scientific research at Bowles Farming Co., 2021 multi-species cover crop is planted, soil samples are taken at Stoneland Farming Co. in Kings County.



levels yet. Residual synthetic nitrogen was been taken up by the cover crop. Overall, we see enhanced soil biology and less synthetic nitrogen in the system. Nitrogen, Phosphorus, and Potassium levels were similar in both plots. We see a trend towards improved water infiltration, but we do not yet see a statistical difference.

The methods for cover crop termination in the treatment plot proved challenging. Roll down strategies for termination of the multi-species cover were ineffective (the cover crop bounced back after being crimped). The cover crop seed mix was adapted for year 2. Fewer brassicas and a lower overall percentage of brassicas were planted on December 3, 2021. The inclusion of sheep for an “eating of the cover crop event” is being hypothesized to be the best cover crop termination strategy and will be used in 2022. Everyone on the team agreed that biomass levels in the field could be utilized by sheep, which would allow soil temperatures to rise to levels needed for strong seed germination.

#### KEY REGENERATIVE ORGANIZING PRINCIPLES UPHELD:

- Reduce soil disturbance like tillage
- Keep the soil covered/ avoid bare soil
- Feed the soil (through compost, biological inoculants, green manure crops)
- Maintain a living root system to support fungi and microbes
- Diversify farming systems and crops
- Integrate crops, animals, and or trees
- Limit the use of synthetic fertilizers, pesticides, and herbicides
- Protect agricultural lands that have a high carbon content
- Protect forests and wetlands

## One-Acre Exchange

BY TYLER JENKINS

THE One-Acre Exchange Project provided public education opportunities that included a seed-access webinar focused on regulatory compliance and supply chain connections. The project began to assess local markets for hemp fiber through producing a fresh-from-the-farm fiber sample that was sent via snail mail to 54 artisans for feedback. Project collaborators also began working on a planning and feasibility study industry on the process for growing and distilling natural dye extracts.

In 2022, we will continue to plant and harvest organic hemp, and will focus on the development of a small processing line that can make two products from the harvest: hurd-free long staple fiber, and sorted hurd. We will also continue to develop our distribution network,

*“Our biggest accomplishment this year has been the development and deepening of our network. Farmers are furthering their collaborations with urban product makers, and are setting up pipelines for delivering products through these lines.”*

– TYLER JENKINS, PROJECT LEAD  
ONE ACRE EXCHANGE

making samples available to One Acre Exchange and Fibershed communities. We have built an incredible wellspring in North Carolina for this work, and we’re excited to build off of the success with sustained effort next year primarily on hemp production and processing design and connecting this with people, and we’ll be including an expansion of our work to determine the economic viability of natural extracts.



*Tenured organic farmer Jeffrey Griffin, of Griffin Family Farms, harvests and moves his 2021 hemp harvest for shipment. Hemp from this harvest was processed by Guy Carpenter and then sent to artisans across the United States and world for sample testing by the One-Acre Exchange team. (Photo by Tyler Jenkins)*



## Emergency Shelter Hemp Cabin Sleeper Update

BY REZOLANA INSTITUTE

**A**MERGING of two amazing partners and projects occurred this year, furthering the work to advance natural fiber systems as solutions to the housing crisis. Fibershed coordinated and established working agreements to further the St. Francis Homelessness Challenge's mission to make a California code-compliant, hemp-based homelessness shelter that meets the financial specifications for emergency housing.

Long-time Fibershed partner, Arnold Valdez of the Rezolana Institute has been working with Fibershed since 2015 on hemp farming and building research. We've documented in prior reports our support of the Rezolana Institute's research on hemp adobe for use in load bearing walls. Last year, Valdez perfected his homegrown housing for farm workers.

In 2021, St. Francis Homelessness Challenge and the Rezolana Institute brought their visions together and have since piloted a hemp emergency shelter on skids. The cabin includes rainwater-collecting gutters and is completely solar powered for off-grid living. The architectural plans for the shelters are open source. The goal of the organizations involved is to support communities and small businesses to decentralize the manufacture of the sleeper cabins.



*Top, a Hemp Sleeper Emergency Shelter prototype has been pioneered by Rezolana Institute's architect and award winning natural builder, Arnie Valdez (Photo courtesy of Hemp Build Magazine. Bottom, Rezolana Institute completed a hemp casita and public casita building workshop in 2020, leading the way for their contribution to this year's emergency shelter collaboration with the St. Francis Homelessness Challenge. (Photo by Koa Kalish)*



## Carbon Farming Demonstration Projects

BY HEATHER PODOLL

**F**IBERSHED is a co-sponsor of two, three-year Carbon Farming Demonstration Projects funded by the California Healthy Soils Program (HSP) in 2020. Both projects, a hedgerow in Northern California grasslands and an alley cropping trial in Central California croplands, integrate perennial woody vegetation into fiber production systems.

In the Buttonwillow Alley Cropping Project, hosted at the site of the Gonzales-Siemens Family Farm in Kern County, we are collaborating with White Buffalo Land Trust and the Gonzales-Siemens family. This site is addressing conditions of extreme salinity, a growing problem for cropping systems across the San Joaquin Valley.

- In May 2021, volunteers from the Northern and Southern California Fibersheds joined in a community work day to establish the alley cropping system with 900 mulberry trees planted at 8 foot intervals on berms between 26 foot alleys for crop production where cotton will be grown.
- Fibershed leads bi-monthly planning calls and provided the project with a loan of operational funding in advance of grant funding reimbursement through the Healthy Soils Program.
- To help buffer impacts of soil salinity and jump-start effectiveness of cover cropping and integrating deep-rooted trees as longer term strategies to improve soil health, 5 tons/acre gypsum and 8 tons/acre compost were applied in November (funded by Fibershed's Carbon Farm Seed Fund) prior to cover crop seeding.
- We are preparing for an educational field day to be held at the site in January 2022, with partnership from National Center for Appropriate Technology (NCAT) and UC Cooperative Extension Kern County.



*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, habitat biodiversity, natural dyes, and fodder plants for sheep. (Photo by Karen Rifkin)*

At University of California Cooperative Extension's Hopland Research and Extension Center (HREC) in Mendocino County, a 320-linear-foot demonstration hedgerow planted along the edge of a sheep pasture is sequestering carbon, incorporating biodiverse habitat for pollinators and birds, and producing native natural dye plants toyon, goldenrod, and coffeeberry along with fodder (nutritious leaves and branches) for sheep. Fibershed contributed the following educational outreach this year:

- Produced a professionally photographed online blog article about the project
- Joined radio show/podcast by HREC Education Director Hannah Bird to discuss benefits of hedgerows in sheep production systems
- Featured hedgerow presentation by HREC Director John Bailey at the 2021 Fibershed Symposium
- Hosted our fall 2021 Producer Program Meet-up at HREC, featuring a hedgerow tour and natural dye demonstration with hedgerow species



*At the Buttonwillow Alley Cropping Demonstration Project, volunteers joined members of the Gonzales-Siemens family to install rows of mulberry trees between alleys where cotton will grow. (Photo by Heather Podoll)*



## Integrated Crop Livestock Systems: Improving Adoption and Viability of Targeted Sheep Grazing in Vineyard Systems Through a New Remote Sensing Verification and Incentive Credit

BY REGEN NETWORK  
AND HEATHER PODOLL

**D**ESPITE growing evidence of the numerous soil health benefits of targeted prescribed grazing in vineyard systems, contracted managed grazing services face critical financial vulnerability, threatening the continuation and expansion of this practice. Fibershed and Regen Network Development, Inc (RND) have partnered on an initiative to facilitate grazers and vineyard owners to receive payment for ecosystem services derived from prescribed grazing, which can improve the viability of this practice.

To overcome the high costs of monitoring and verification often associated with accounting for greenhouse gas and other ecosystem impacts, this project is developing a practice-based methodology alongside an open-sourced RND methodology to verify grazing occurrences in vineyard systems. The project aims to pilot a new economic model to support contract grazers, who are facing significant financial barriers to continued operation due to changing overtime laws affecting shepherds in California beginning January 1, 2022. The incentive credit pilot will launch publicly in mid-2022.

### THE PROJECT HAS ACCOMPLISHED THE FOLLOWING TO DATE:

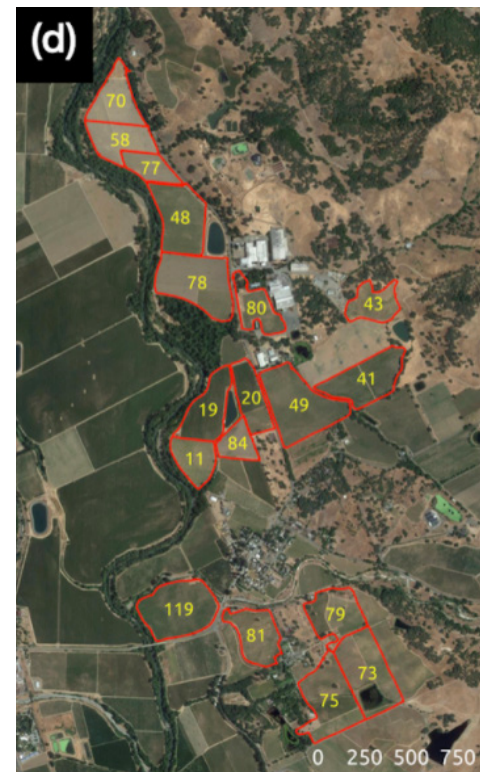
- Monitored grazing occurrences and correlated with satellite imagery over 3 vineyard sites spanning 3400 acres across Northern California
- Produced a Draft Monitoring Report for 2020-21

- Responding to concerns about smoke and cloud cover interference in imagery, RND conducted tests to determine that the radar imagery does not produce reliable grazing signals, while optical imagery consistently showed reliable results.
- RND developed a tool to automatically download and pre-process images from two satellite sources, Sentinel-2 and PlanetScope, reducing the time it takes to analyze and pre-process satellite imagery.
- RND developed protocols to automate the actual detection of grazing instances. The **RND Open-Science Github repository** contains a series of scripts (under the Fibershed folder) which take a stack of satellite images from different dates, and estimates if and when grazing was detected.
- Fibershed conducted interviews with grazers and vineyard owners to better understand their challenges, needs for support, and ability to engage with potential incentive protocols
- Fibershed completed baseline soil sampling at Shannon Ridge Vineyard
- RND and Fibershed have begun drafting project planning, methodology development, and project template structures

*This project is supported by a California Conservation Innovation Grant (CIG) from USDA's Natural Resources Conservation Service.*

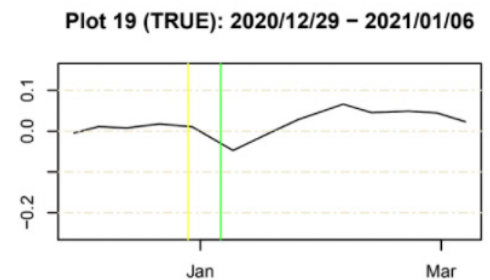


*Sheep grazing in a vineyard at Shannon Ridge Ranch in Lake County, one of the vineyards participating in the project (Photo by Nathan DeHart)*

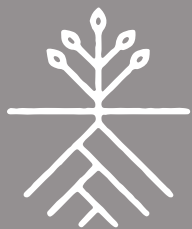


*Field plots assessed to match confirmed grazing occurrences with satellite imagery in 2021 Kaos South grazing region (courtesy of Regen Network)*

### KAOS SOUTH PARCEL RESULTS FROM 2021



*Example plot generated by RND's grazing detection protocols, indicating the start and end of grazing dates shown as vertical lines. The plot title includes the start and end of grazing dates and a confirmation (TRUE) or rejection (FALSE) of the grazing event.*



## Consumer Education & Advocacy Program

FIBERSHED WORKS TO CONNECT wearers to the source of their clothing, shifting the demand away from fast fashion and towards ecologically sensitive, locally grown and made products. A series of educational events, curriculum development, and digital communications offered to the public throughout the year develop soil-to-soil material awareness and build support throughout our communities. We amplify the impact of this work through advocacy and public policy engagement.



## Education, Events, Trainings & Design School Collaborations

### Fibershed Learning Center

BY LEXI FUJII

THE Fibershed Learning Center is a multi-use space to demonstrate and provide hands-on connections to natural fiber and dye systems, located in Point Reyes Station, California, on the traditional and ancestral territory of the Coast Miwok and within historic Black Mountain Ranch.

Fibershed has felt the need for some time to create a grounding force that serves in our effort to enliven our community's connection to regional and regenerative fiber and dyes. We are grateful to have an opportunity to hold space for activities and community resources. The Learning Center:

- Serves key hands-on textile education opportunities for the public;
- Supports a demonstration farm for growing materials and showcasing how earth pigments can be grown and processed, along with food and medicine;

- Hosts public presentations and intentionally designed gatherings that focus on bringing people together to learn and discuss the greatest and most concerning issues of our time;
- Offers direct opportunities to engage in climate and cultural solutions that we can work together to activate at the local level;
- Houses a natural dye and fiber seed library and a living library of our bioregional textile culture that will exist as a feature for students, designers, and makers; and
- Provides a multi-use space for core organizational functions, including our staff and board meetings and strategic planning.

#### SUMMARY OF THE YEAR:

- Produced 7 online classes, teaching skills in natural pigments, dyes and paints; native plant fibers for

cordage; sandal making. A total of 406 students attended from a variety of locations around the world, and videos continue to be available on a rental basis.

- Held a soft opening September 18, 2021, hosting 78 community members in 5 experiential workshops, teaching skills in basketry, natural dye and pigment processing, and sashiko mending.
- Hosted 3 hands-on classes throughout October and November 2021 covering seasonal natural dyeing, botany for beginners, and nature journaling.
- Engaged 3 local high school interns in weekly Learning Center activities and community outreach.
- Launched a soft opening of Fibershed's artisan studio in December 2021, available for Fibershed producers to use for various fiber and natural dye projects.

#### LEARNING CENTER NATIVE PLANTINGS

- Initiated the planting of an additional 2,500 native perennial grass starts and forbs, and have taken 300 native willow cuttings and placed them in the riparian corridor (where baby endangered steelhead were found in November!).
- Expanded our basketry garden for sedges (for basketry weft) and pruned our gray willow for optimal basketry use.
- Initiated a native hemp patch (dogbane), for twine production for the purpose of expanding our gathering areas for native and non-native basket and regalia makers.



*White root sedge (Carex barbarae) in the Learning Center basketry garden gathering area—one of the most difficult plants for basketweavers to obtain due to elimination of traditional gathering sites. (Photo by Dustin Kahn)*





## Learning Center Soft Opening

THE Fibershed Learning Center held an in-person soft opening on September 18, 2021, celebrating through diverse hands-on classes, as well as time to gather in appreciation of local design community graduates who generated beautiful textiles within Fibershed's Zero-Waste design challenge.

The day was opened by Ras K'Dee (Dry Creek Pomo, Musician, Producer, Founder/Director of The NEST Community Arts Center and Seventh Native American Generation) sharing traditional Pomo songs and prayer and an introduction to Pomo language exercises, followed by 5 hands-on workshops focused on textile repair, weaving with native plant fibers, and pigment making from plants grown in Fibershed's pigment garden. The opening event also included a Student Designer Showcase, displaying designs and prototype garments completed by graduates of the Fashion Design Program at the Fashion Institute of Design and Merchandising (FIDM), San Francisco. These emerging designers were honored for their participation in the Fibershed Design Challenge, using Zero Waste

design principles applied to garment construction using regionally sourced, Climate Beneficial wool fabric.

### CLASSES HOSTED AT THE LEARNING CENTER'S SOFT OPENING:

- **Making a Twined Basket of Tule** with master basket weaver Charlie Kennard and Charlene Valencia, an undergraduate student and tribal citizen of Graton Rancheria: Tule is a species of sedge that is native to freshwater marshes all over North America and used by native peoples for millennia to make houses, clothing, mats, baskets, tools, and toys. Each student made a lightweight basket of tule using several different weaves, suitable for gathering berries or holding small fruits, using techniques practiced by the Pomo and some tribes of western Oregon.
- **Indigo Extract Process—from leaf to pigment** with artist Judi Pettite: A step-by-step participatory workshop for artists and small-scale indigo pigment growers, that began with a garden tour and harvest of Japanese indigo (*Persicaria tinctoria*) in Fibershed's pigment garden, followed by techniques for backyard processing and pigment making and dyeing.

*Clockwise from top left: Ras K'Dee introducing Pomo language to attendees; participants in Charlie Kennard and Charlene Valencia's "Making a twined Basket of Tule" workshop; Judi Pettite and workshop participants dyeing with indigo grown in Fibershed's pigment garden; workshop participants touring Fibershed's pigment garden; Rimiko Berreman teaching shashiko mending; Fibershed Design Challenge Showcase (Photos by Paige Green)*

*"Thank you so much for the teaching opportunity—I had a great day! I met/saw a wonderful group of people and it was also a good learning experience. I keep in touch with a few students, and they are looking forward to attending the mending circle that Rebecca mentioned. Also, some of them are interested in volunteering at workdays."*

— RIMIKO BERREMAN  
SASHIKO MENDING TEACHER



- **Making a Lake Pigment from Natural Dyes** with artist Judi Pettite: A pigment is water insoluble and can be used for water- and oil-based paints. Making a dry pigment from a natural dye is a very old tradition that connected the guilds — dyers and painters and craftspeople in search of concentrated lightfast hues that were portable, storage friendly colors. This hands-on class covered natural dyes, extracts and lakes and their uses, along with the step-by-step process of making a lake pigment from *Coreopsis tinctoria*, grown in Fibershed's pigment garden.
- **Sashiko Mending** with artist Rimiko Berreman: More than half of garments produced these days end up in a landfill within one year, yet extending the life of a garment by just 3 months reduces its carbon & water footprints by 5-10%. Repairing, patching, and mending our clothing can be part of a cultural shift that values the people who labored to bring our clothes into being, and reduces the impact of textile waste on the environment. Students learned to mend with Sashiko, a type of traditional Japanese embroidery or stitching used for the decorative and/or functional reinforcement of cloth and clothing.

## *Learning Center Workshops—transitioning from Virtual to Hands-on*

BY DUSTIN KAHN

**D**UE TO restrictions imposed by the pandemic in 2021, the Learning Center has in part been fulfilling its educational mission by offering webinars in textile-related topics taught by members of Fibershed's producer and designer community. In the first half of 2021, there were five virtual classes—each 3 hours long and offering detailed instruction—as well as two virtual demonstrations—each 75 minutes in length. Subjects included natural pigments, dyes and



*A range of subjects were presented in the Learning Center webinars, including a presentation on native plant fibers by Redbird, a native Pomo, Wailaki, Wintu, and Paiute teacher. (Photo by Paige Green)*

paints; native plant fibers for cordage; and making your own sandals. A total of 406 students attended from a variety of locations around the world (Australia, Canada, Israel, Italy, Luxembourg, Mexico, Netherlands, Norway, Portugal, Slovakia, Switzerland, United Kingdom, and the United States). Proceeds from each event supported the class instructor and contributed to Fibershed for educational programming. A portion of the proceeds was also shared with a local and mission-aligned non-profit organization selected by the instructor.

All webinars produced in 2020 and 2021 are available to rent on Fibershed's Vimeo On Demand channel ([vimeo.com/fibershed/vod\\_pages](https://vimeo.com/fibershed/vod_pages)). Topics include natural dyes; indigo pigment extraction; making lakes, paints, inks, and pastels from indigo and other pigments; painting on fabric with natural pigments; indigo growing and vat making; flax growing and processing; native plant fibers; knitting with local yarns; weaving on a rigid heddle loom; professional sewing tips; and shoe making and repair.

We launched the first in-person workshops at the Learning Center at a soft opening event on September 18th, as described in the previous article.

This was followed by three more workshops in October and November: “Natural Palettes of Seasonal Color in West Marin” taught by author and artist Sasha Duerr, and two classes taught by botanist Ayesha Ercelawn, “Botany for Beginners” and “An Introduction to Nature Journaling.”

The 2022 in-person workshops currently being scheduled include topics such as knitting; sewing; making cordage from native plant fibers; Indonesian batik and cultural wisdom; flax processing; basketry; paper making; inks, paint and dyes from the California landscape; indigo extraction; indigo paint and pastels; weaving with bast fibers; cochineal dyeing in the Zapotec tradition; making a wool comforter; native regalia; hide tanning; and storytelling through textiles.

To learn more, visit [fibershed.org/learningcenter](https://fibershed.org/learningcenter).



*Author and artist Sasha Duerr taught about natural palettes of seasonal color on a stormy day in October. The classroom area offers shelter from the elements as well as fresh air and natural light from the outdoors. (Photo by Dustin Kahn)*



## Local Interns and Student Tours at the Learning Center

BY HEATHER PODOLL

WE HOSTED three student interns in 2021 at the Learning Center from a local public high school, one in the first half of the year and two in the second half of the year. These students have gained knowledge and skills in garden/landscape management using carbon farming practices; biodiverse natural dye plant cultivation and indigo pigment processing. They have learned about, read and discussed topics ranging across Fibershed's program areas and work, and are reflecting those learnings back into their peer community through individual projects: preparation of materials for the Fibershed Mending Bar and an article on basic mending tools and techniques (completed); organizing community volunteer days for teens (in-process); community mending and textile re-use events for teens (in-process); and public commentary on connections between ocean health, microplastics and textile systems (in-process).

In October we hosted a group of seven Climate Interns from the local San Geronimo Valley Community Center for a presentation in our textile library and a hand-on workshop using natural dyes to upcycle and renew used clothing. Based on what they learned in the workshop, these students then created an interactive educational booth at the Community Center's popular Holiday Fair focused on textile systems, Fibershed and local/regional fiber options, natural dyes and textile repair and re-use.



Top, Intern Maria Flores Miranda harvesting indigo in the Demonstration Garden; middle, San Geronimo Valley Community Center (SGVCC) Climate Interns visiting the Fibershed Learning Center; then, left and above, sharing what they learned about solutions for textile re-use, local natural fibers grown with carbon farming, and hands-on natural dyeing with their community at the SGVCC Holiday Faire (Photos by Heather Podoll)





#### PROCESSING INDIGO FROM THE GARDEN

Across three rounds of cutting beginning in July, we harvested just over 1,000 pounds of Japanese Indigo (*Persicaria tinctoria*) leaves and stems for pigment processing from a 1,600-square-foot section of our demonstration garden. Our newly designed processing system utilizes two 55-gallon drums for fermentation/extraction and a 110-gallon stainless steel tank with two carefully designed valves for oxidation, alkalizing, settling and draining. After filtering and drying the resulting sediment, we had a yield of 12.4 pounds of precious indigo pigment from this season's harvest. Some of the pigment has been transformed into watercolor paint for use by partnering community artists, while the majority of it will be used in workshops and community artisan collaborations at the Learning Center.

*Above, left to right: Indigo leaves soaking in the fermentation/extraction tank (Photo by Paige Green); indigo processing tanks at the Learning Center, and indigo pigment drying in the sun (Photos by Lexi Fujii)*



*Left, a community member at the opening looks at processed indigo pigment from the Learning Center's garden; above, the Learning Center's tactile library of locally-sourced fabric and natural dye samples (Photos by Paige Green)*



## 2021 Wool & Fine Fiber Symposium

BY ANNA ARCHER OF BARK MEDIA

THE tenth annual Wool and Fine Fiber Symposium was held virtually on November 13, 2021. The theme, “Weaving Voices Between People, Land, and Water,” featured a range of voices throughout the textile, local economy, wool and fine fiber world. Hosting the symposium on Zoom allowed us to connect with supporters, practitioners, and activists worldwide, including critical voices in the fast fashion industry that shared a global perspective with each other and our attendees. While we mourn the opportunity to gather in person due to COVID-19 precautions, we are deeply grateful to be able to bring together a diverse group of speakers that shared strategies to scaling climate-benefitting natural fiber, dye, and design systems.

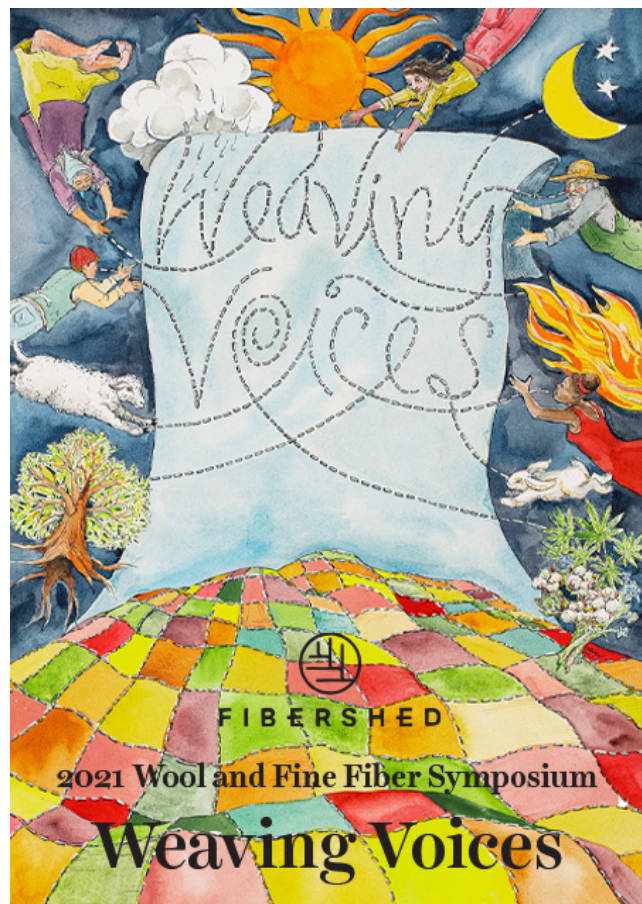
The day of presentations and conversations worked to build awareness, share experiences and approaches to drive transformations within our global textile systems. We sold 425 tickets to our 2021 Symposium, including 10 scholarship tickets to design students and 78 tickets for Fibershed producers and affiliate organizers. We summarized key Symposium takeaways in an email with our audience that 3,021 people opened.

We also featured a virtual marketplace for Fibershed producers. The Symposium Virtual Marketplace featured 36 farmers, ranchers, and designers from the Northern California Fibershed region offering yarn, roving, garments, accessories, soaps, bedding, sheepskins, home textiles, and more. Symposium attendees were invited to learn more about our marketplace producers, the products they offer from our region, and how they are working to build equitable, regenerative systems. The link to the virtual marketplace was the highest performing link in the follow-up email to our newsletter audience, with 99 clicks.

Simultaneous to the Symposium happening, our team was providing live updates for our social media audience. On the weekend of the Symposium, our Instagram account saw an 85.5% increase in accounts reached compared to the previous week. We reached a total of 9,948 accounts and more than 1,000 accounts engaged with our Symposium content, a 184% increase.

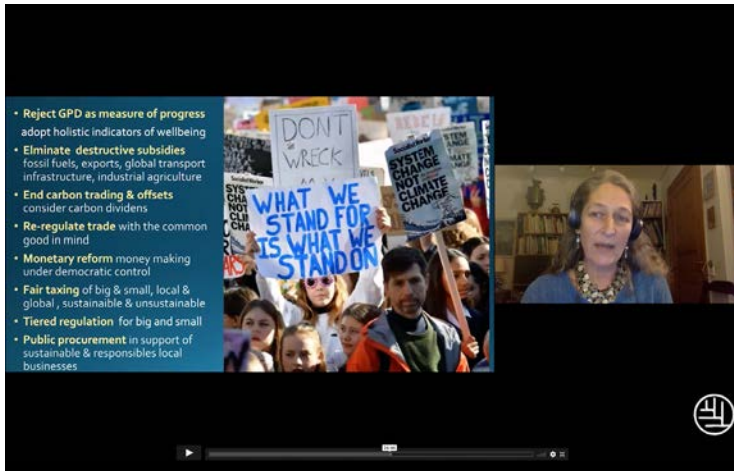
### SOME PROGRAM HIGHLIGHTS INCLUDE:

- A conversation with highly skilled women working at the front and tail end of the fast fashion supply chain, Santa Puac in Los Angeles, and Abena Cynthia Agyeibia in Accra, Ghana.
- Anja Lynbaek of Local Futures pointed to leverage points that have advantaged global economies over local, and how we can begin to shift those forces.
- In a moving conversation about the intersection of textiles, history and art, artist Karen Hampton shared how history and ancestry have inspired and shaped her use of textile skills to become a storyteller through her powerful textile art pieces, and how she weaves the origin and sourcing of textile material into the stories she conveys.
- We heard from fiber producers in the Northern California Fibershed region about critical land-tending work that accompanies their fiber production, including hedgerow installations, compost applications, and the Rainbow Fiber Collective.
- An expert panel of practitioners described the many benefits and potential of agroforestry practices to be integrated into fiber production systems, including projects in California that are exploring and researching how these systems can be best adapted in this region.
- We were also grateful for the insights of leaders from California and the western region who are working to improve the lasting resilience of water systems to support communities, healthy ecosystems, and agriculture.





*Conversation between Abena Cynthia Agyeibia of Kantamanto Market (top right) and Santa Puac of the Garment Worker Center (bottom right)*



*Presentation by Anja Lynbaeck of Local Futures*

## IN THEIR OWN WORDS, NOTEABLE QUOTES & LESSONS:

“If people in the world are being exploited, not treated fairly, it’s hard to uplift businesses that are trying to hold up artisanal values and care for soil and sea and people... we need each other...we need to work together so we can level this playing field, to rise this tide for all the boats in this harbor.”

– Rebecca Burgess | Fibershed

“I hope that through platforms like this, we will have space to tell people what is happening. If my trade is not surviving, the entire system will be broken. I hope we can empower everyone else for change.”

– Abena Cynthia Agyeibia | Kantamanto Market

“It needs to go back to the factories and the companies—they need to go back to making quality products that they can recycle and [the garments] can have more lifetimes.”

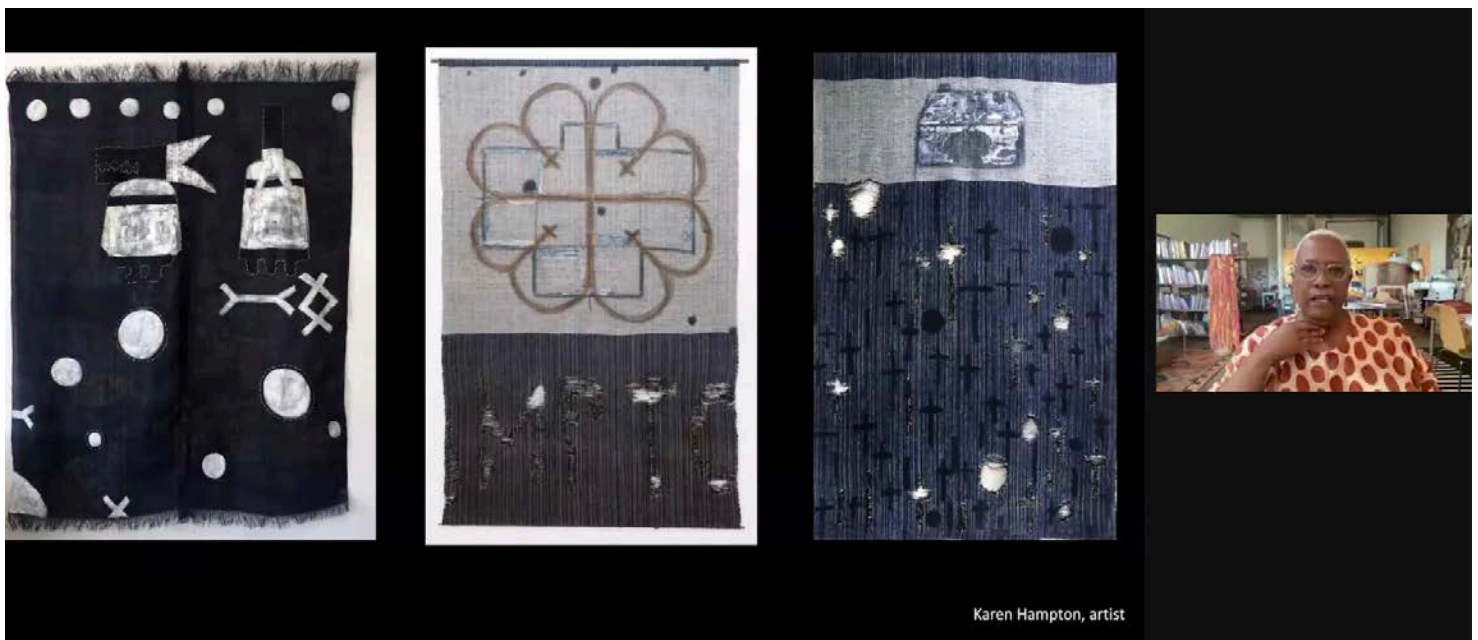
– Santa Puac | Garment Worker Center

“We need to look at policy shifts: changing regulations, subsidies, and taxes in support of place-based businesses operating within ecological limits. This is key for any change.”

– Anja Lynbaeck | Local Futures

“If Picasso could have beautiful women as his muse, I can have history as my muse. I love learning more about the history of myself and the cultures of black and brown people. I realized as I connected with these stories, it was so healing for me ... I was doing it to heal myself in those early days.”

– Karen Hampton | Textile Artist & Educator



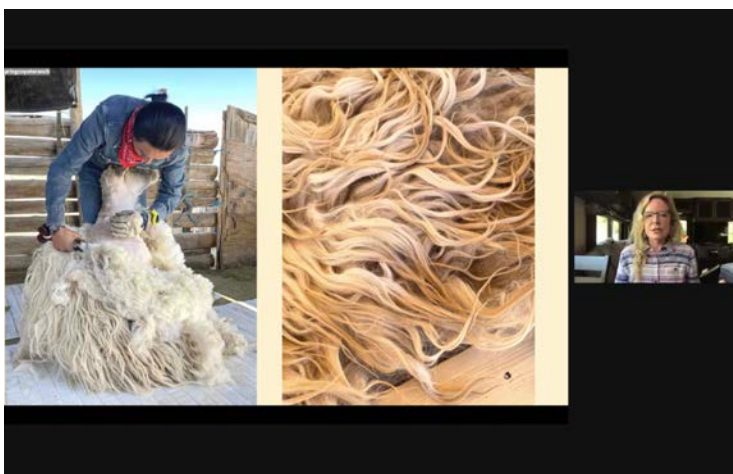
Karen Hampton, artist

*Presentation by Karen Hampton about the intersection of textiles, history and art*





*Agroforestry Panel with Sonja Brodt (bottom right), Liz Carlisle (top right), Guido Frosini (top left), and Jesse Smith (bottom left), facilitated by Mike Conover (top center)*



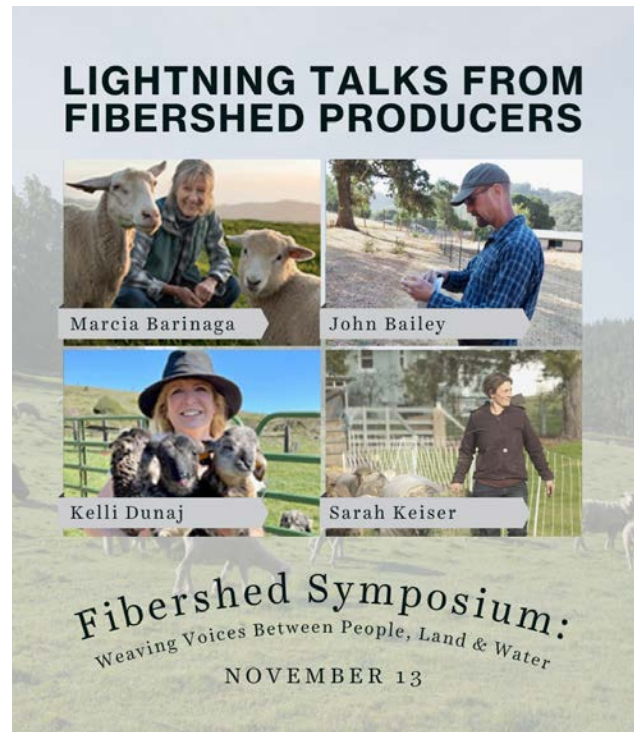
*Presentation by Kelli Dunaj on the Rainbow Fiber Coop as part of the Producer Lightning Talks*



*Water Systems Panel with Andrew Fisher (top right), Regina Hirsch (bottom left), Dennis Hutson (bottom right), and Brad Lancaster (top left)*

*“As always, this was a wonderful, inspiring, eye-opening, hope-instilling seven hours. Thank you!”*

– MARTHA KELLERHALS  
SYMPOSIUM ATTENDEE



*Producer Lightning Talks with Northern California Fibershed producer members Marcia Barinaga, John Bailey, Kelli Dunaj, and Sarah Keiser*

## Design School Collaborations

BY HEATHER PODOLL

CALIFORNIA COLLEGE  
OF THE ARTS (CCA)

A COLLECTION of felted art by CCA students working with Fibershed and local wool materials was captured in a beautiful art e-book, *Local Fiber* (<https://fibershed.org/wp-content/uploads/2021/12/LocalFiber-CCA.pdf>), finalized and circulated to participating students by CCA graduates Cassidy Kenney and Jade Muir. The felting program at CCA has grown with technical and material support from Fibershed, including providing 40 pounds of Climate Beneficial Wool from Ferndale Farms, Jensen Ranch and Stemple Creek Ranch. A grant received by CCA this year for a needle felting machine is expanding the capacity and opportunities for students to utilize this local fiber material.

CCA graduate Emma Bjorklund was selected for the highly competitive national Council of Fashion Designers of America's Future Fashion Graduate Showcase 2021. Emma's thesis collection, influenced by CCA course "Global Carbon, Local Fiber," taught by Fibershed's Rebecca Burgess, used fabrics from Huston Textile Company in Northern California. Her collection contends with the natural tension of women's work wear within the reality of historical extraction and oppression, while honoring locally sourced earth-based materials and regional manufacturing.

FASHION INSTITUTE OF  
DESIGN AND MERCHANDISING  
(FIDM – SAN FRANCISCO)

We completed a fourth year of the Fibershed Design Challenge among fashion design students at the Fashion Institute of Design and Merchandising. Esther Gaor, Isabelle Leong, Vivica Rafael, Jonnieann Soper and Cortney Sumpter were honored for their zero-waste garment designs inspired by locally sourced, Climate Beneficial



*Above, Emma Bjorklund's Design Collection, Intertwine, using locally sourced denim fabric from Huston Textile Co., honored in the 2021 CFDA Future Fashion Graduate Showcase (Photo by Emma Bjorklund); right, Local Fiber e-book featuring felted art by CCA students utilizing Fibershed-sourced wool materials (Cover image courtesy of Cassidy Kenney and Jade Muir)*



*Zero Waste blouse and pleated skirt by Esther Gaor (Photo above by Paige Green, at right, courtesy of Esther Gaor)*

*"The Fibershed Design Challenge gave me the opportunity to explore my ability to create zero waste patterns and promote sustainability. I plan to use the knowledge I gained from this experience and one day create my own sustainable fashion brand."*

– ESTHER GAOR, 2021 FIDM FASHION  
DESIGN GRADUATE AND FIBERSHED  
DESIGN CHALLENGE AWARDEE





wool fabric. Each student was awarded yardage woven by Huston Textile Company in Sacramento County, CA, made from Climate Beneficial wool raised at Bare Ranch in Modoc County. The resulting garments were displayed in a gallery showcase at the Fibershed Learning Center Opening in September, with FIDM faculty and designer presentations at the close of the day.



*Clockwise from top: FIDM Fashion Design Graduates Isabelle Leong, Jonnieann Soper, Cortney Sumpter, and Vivica Rafael, with garments they designed and constructed using Fibershed certified Climate Beneficial wool fabric at the Learning Center Opening September 18, 2021. (Photos by Paige Green, except photo of Vivica Rafael by Lynette Niebrugge)*

#### BAY AREA JUNIOR COLLEGES: SANTA ROSA JUNIOR COLLEGE FASHION STUDIES PROGRAM AND COLLEGE OF ALAMEDA APPAREL DESIGN AND MERCHANDISING (ADAM)

In ongoing relationships with the excellent fashion design programs at two local junior colleges in the San Francisco Bay area, Fibershed provided eight workshop scholarships to our Learning Center Opening for fashion students from Santa Rosa Junior College and College of Alameda.

Executive Director Rebecca Burgess delivered two presentations at College of Alameda's ADAM Program this year, and Fibershed staff will provide presentations to both schools next year. We also gave free tickets to the 2021 Fibershed Symposium for students in these programs, and are developing plans for student designer fellowships in the Learning Center studio in collaboration with both partners.

*"Thank you ...for the opportunities given to our fashion design students. They were **THRILLED** at what they learned and experienced, including the inspiring opening ceremonies. The gift you afforded those who otherwise could not attend was invaluable."*

—DEREK PIAZZA, PROFESSOR OF  
APPAREL DESIGN AND MERCHANDISING  
AT COLLEGE OF ALAMEDA



# (re)valued



*Fibreshed Field School student work by Ash Logan (Photo by Ash Logan)*

*“Fibershed is a real-world example of what an alternative economy can look like. Their work on creating mutualistic systems of production and regeneration through living soil and carbon farming practices, which reimagine how we could have an entirely different, even healing, kind of vibrant local material economy, is very inspiring and an accessible concrete way to reframe social and economic practices within living systems.”*

– CRAIG BADKE, ASSISTANT PROFESSOR  
EMILY CARR UNIVERSITY

FIBRESHED FIELD SCHOOL AT  
EMILY CARR UNIVERSITY OF ART  
AND DESIGN (VANCOUVER, CANADA)

Fibershed’s Executive Director Rebecca Burgess continued to help guide development of the Fibreshed Field School at Emily Carr University, an interdisciplinary experiential learning program focused on research, innovation and entrepreneurship in the regional textile industry. In 2021, content from the Fibreshed Field School curriculum was incorporated into 2 undergraduate courses, 6 senior capstone projects, 3 graduate research projects, and a Design Collective launched by 4 program graduates along with other designers and artists.

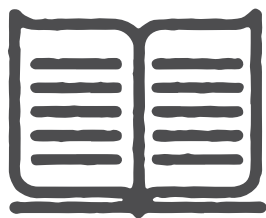
*“This kind of programming should be mandatory as a foundation year course and beyond. Building that kind of knowledge sooner through education seems critical. If there is value and need for Fibreshed, why isn’t it part of the curriculum at all levels of education?”*

– FIBRESHED FIELD SCHOOL STUDENT



*Cover photo for the newly published Fibre Stories: Fibreshed as the seed, the Field School as the fertile soil, sharing the work of Fibreshed Field School participants and researchers (Courtesy of Emily Carr University and Shumka Center for Creative Entrepreneurship)*





## Communications

BY LINDSEY SIEGLE & ANNA ARCHER  
OF BARK MEDIA

THROUGHOUT the year, Fibershed's community of contributors creates original content to keep our current audience attuned to our activities and to educate and attract new friends and followers. This year, we adopted a more aggressive communications strategy in partnership with an aligned marketing agency, allowing us to increase the reach of our messaging and prepare for the more rapid growth of our audience in the coming year.

Following are some of our communications milestones from 2021:

### *Bark Media Strategic Partnership*

WHILE Fibershed has been producing content regularly for years, we've long suspected that our messaging could reach more people with a dedicated marketing strategy. We seized upon that potential in the second half of this year, as we formalized a contract with content marketing agency Bark Media.

Bark Media creates and executes storytelling and marketing strategies for impact-based organizations, and their knowledge in the regenerative agricultural space makes them an aligned content partner. This year, we were able to complete the following together:

- Identifying, naming, and assigning characteristics to audience "personas": representations of various Fibershed audience members with whom we would like to communicate ongoing.

- Creating unique storytelling and marketing strategies for each identified persona, which will help us verify that we are reaching our community effectively, where they already are.
- Updating our email templates with a more attractive layout and design, more true to the Fibershed brand, including a new action-oriented email template.
- Identifying opportunities for growing our email audience, which will help us surpass some of the frustrations that

social media algorithms present and speak more directly to our community members.

- Starting to "clean up" our content archive: making format, copyedit, and design updates that should make even some of our older content findable and shareable.

We look forward to the ongoing assessment of this work with the hopes that an agile strategy will help us identify the best way to amplify our messaging while staying true to our voice and values.

### *Original Storytelling*

FIBERSHED creates and publishes articles throughout the year that address progress within our mission and tell the stories of the incredible folks within our community.

Following are details about our original storytelling in 2021:

- *The Rhythm of Care at Rockstar Alpacas*: A producer feature on Rockstar Alpacas, where the tradition is to name every alpaca after a musical theme – a notable song, artist, or band.

- *Carbon Farming and Co-Benefits at PT Ranch*: The story of how the Taylor family has been able to raise about 150 animals, year-round, by managed grazing on the grass alone, along with some feed such as pellets of grain for the poultry.

- *Engaging Art & Nature with Spiritplay Toys*: We talk to Robyn Lynn Smith about how she makes around 100 toys per year from local wool.

- *Fibershed Solutions to Microplastic Problems*: Why textiles need to be at the core of California's action on microplastics.

#### Fibershed Solutions to Microplastic Problems: Why textiles need to be at the core of California's action on microplastics

Posted on April 15, 2021 by Fibershed



- *3 Ways the Fashion Revolution Can Support Healthy Soil & Healthy Seas:* A wrap-up of key takeaways from the latest Fibershed Symposium.
- *Spinning the Structure of Life with Paleotechnics:* The story of Tamara Wilder, an incredible land steward who creates natural fibers.

#### Spinning the Structure of Life with Paleotechnics

Posted on May 27, 2021 by Fibershed



- *How Do Our Clothes Impact the SF Bay & Ocean Health? Experiential Learning with Materevolve:* What happened when Fibershed set sail on the San Francisco Bay with a small group of textile industry experts and ocean health advocates to discuss how fibers and fashion are impacting two of our planet's largest carbon pools: soil and sea.
- *With Sincere Sheep, Change Begins One Skein at a Time:* A producer feature on Sincere Sheep, which crafts beautifully dyed wool.
- *Handcrafted at Ace 'N The Hole Ranch:* The story of Ace and Pam Vandennack, who crafted a farm, a fiber business, and a life for themselves in the verdant green hills of far Northern California.

#### Degrowth: An Economic Framework that Values Ecosystem Capacity, Human Dignity, and Self Sufficiency

Posted on November 15, 2021 by Fibershed



#### Raising Happy Animals at Integrity Alpacas

Posted on August 18, 2021 by Fibershed



- *Raising Happy Animals at Integrity Alpacas:* We talk to Charlene Schmid, a producer who shares her love of alpacas with her community.
- *Approaching Life (and Wool) One Step at a Time at 5 Creek Farm:* The story of 5 Creek Farm, which has been home to numerous types of fiber-producing sheep.
- *Hopland Research and Extension Center's Hedgerow:* About a new hedgerow project at the Hopland Research and Extension Center with goals that include creating an environment for pollinator species and for wildlife, increasing biodiversity and sequestering carbon.
- *Climate Change and Agriculture:* An explainer for how food & fiber work together for climate.
- *How These 8 Farms Are Raising Alpacas Sustainably:* A piece that collects our best alpaca content from the Fibershed archive.
- *Our Statement on the COP26 Volunteer Uniforms:* Fibershed's statement on why the COP26 volunteer uniforms weren't as environmentally friendly as often stated.
- *Degrowth: An Economic Framework that Values Ecosystem Capacity, Human Dignity, and Self Sufficiency:* Why organizing our economy around rapid consumption and growth isn't the smartest pathway forward.
- *Intuitive Weaving at Henderson Studios:* The story of Jennie Henderson, a prolific textile artist on the wild northern coast of California whose work is completely unplanned and intuitive.

#### 'Sustainable' Fashion Forgot Where It Came From

Posted on September 22, 2021 by N.



Written by Veronica Kassatly (This is just a quick primer. Anyone looking for more in depth analysis will find it in "The Great Green Washing Machine Part 1: Back to the Roots of Sustainability.") Defining Sustainability: Back to the Roots In fashion, sustainability appears to have become an elitist, even imperialistic concept in which the [...]

- *Why Questioning the Sustainability of Wool Is Misguided:* A look at one example of the harmful impact of partial and misleading sustainability claims in the global north related to wool.
- *Bread and Sweaters:* How Grain and Grazing Benefits Food and Fiber Systems

#### Bread and Sweaters: How Grain and Grazing Benefits Food and Fiber Systems

Posted on December 1, 2021 by Fibershed





## Messaging Reach

OUR communication and storytelling strategy only works if we're able to attract audience members to learn more about us. In order to spread the word about our work, we rely on multiple promotional vehicles: email, social media, web search, networking, and more. Strategic communication of our mission and messages has helped us grow our audience this year, reaching new people and increasing the world-changing potential of Fibershed.

### WEBSITE AUDIENCE:

Website traffic and engagement are clear indications of how our audience is growing and changing over time, as well as how effective our communications efforts have been. Much of our outgoing communications efforts drive people back to our website, where they can learn and get involved.

This year, Fibershed's website pages were viewed about 400,000 times. That marks a 14% increase in views over 2020, while total users visiting our website increased by more than 40%. The final few months of the year, with our marketing strategy in place, were especially productive, with traffic increasing by 40% quarter-over-quarter.

The most popular destinations on Fibershed's website this year were the homepage, producer directory, and events pages. The most popular articles this year were:

- Shearing and Welfare: Why are Sheep Sheared?
- A New Breed of Fiber Mill: BastCore Hemp Processing
- 'Sustainable' Fashion Forgot Where It Came From

Into the next year, we look forward to monitoring shifts in our website traffic so that we can better understand what resonates with our online audience.



### EMAIL AUDIENCE:

Growing our email audience is one of our key communications goals, as direct email is one of the best channels to ensure our messaging reaches our most engaged audience members.

This year, Fibershed's total email audience grew by 3,585 contacts, bringing our total email audience size to 9,550. These are folks who engage

with Fibershed by becoming part of our affiliate network, attending an event, or simply signing up for emails because they want to learn more about what we do.

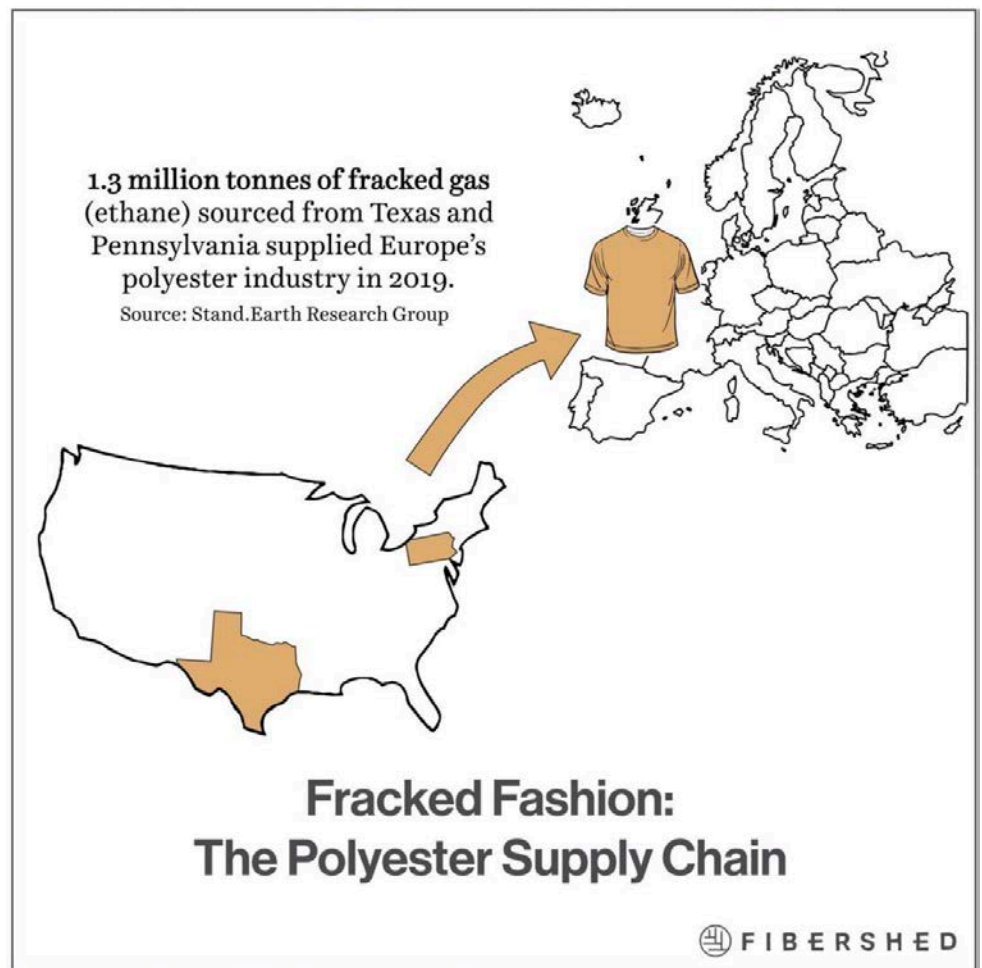
### SOCIAL MEDIA AUDIENCE:

Fibershed communicates regularly with its social media audience on various platforms, providing strategic insights and stories. We are careful to share our own work and information regularly while also uplifting the campaigns and stories of our community members.

Total Fibershed audience members on each social media platform:

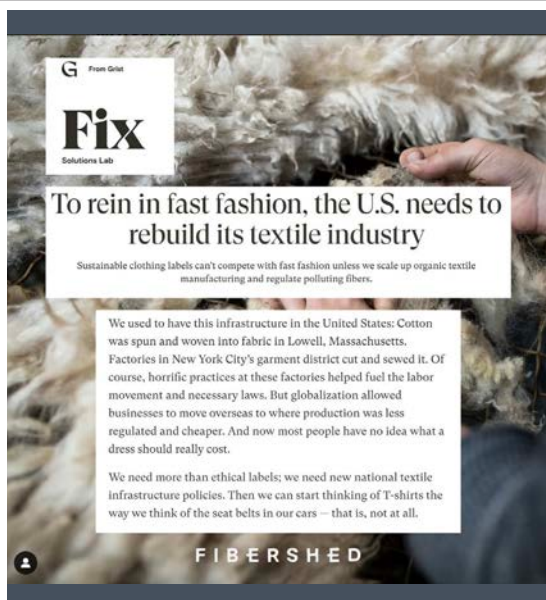
- Facebook: 16,000
- Instagram: 39,000
- Twitter: 3,000
- LinkedIn: 1,200

Across these channels, we were able to post or share around 600 total messages in 2021, and social media was responsible for about 10% of Fibershed's total website traffic.





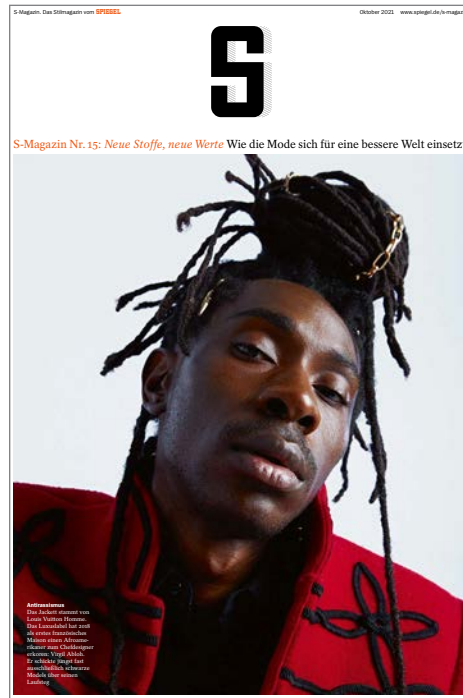
Which carbon pool provides your clothing?





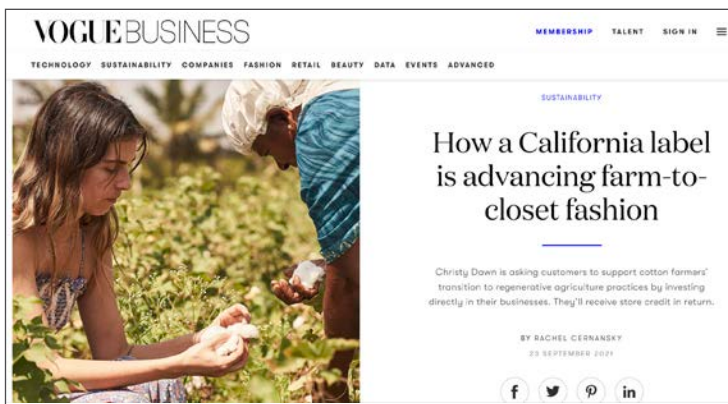
## Selected Press List

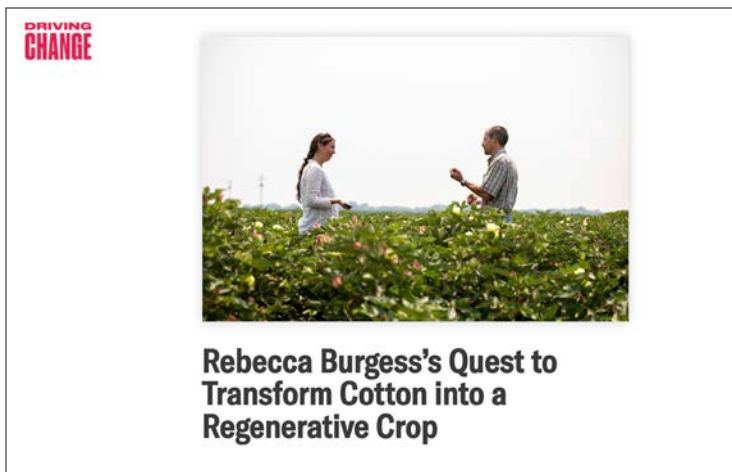
- S-Magazin (Germany): Neue Trampelpfade (New Trails) – October 2021
- Agri-Pulse: Farm-to-fashion offers local destination for California wool – September 2021
- Vogue Business: How a California Label is Advancing Farm to Closet Fashion – September 2021
- Civil Eats TV: Women in Wool – September 2021
- Driving Change: Rebecca Burgess's Quest to Transform Cotton into a Regenerative Crop – September 2021
- Vogue: Regenerative Agriculture Comes to the Luxury Market With Co's California-Grown, American-Made Capsule, Natural World – September 2021
- Welp Magazine: 20 Best Textiles Podcasts of 2021 – June 2021
- Navajo Times: Saving shepherds: Co-op aims to help wool growers stay in business – June 2021
- Grist: To rein in fast fashion, the U.S. needs to rebuild its textile industry – May 2021
- Denier: A conversation with Rebecca Burgess – May 2021
- TATTER: Soil Revolution: Understanding Textile's Position in the Soil Cycle – May 2021



- Idea Stream: A Slow Fashion Challenge Aims To Grow Cleveland's Local Textile Industry – May 2021
- Fast Company: Why Patagonia, Gucci, and Timberland are making a big bet on farming – April 2021
- Sustainable Brands: Trending: The North Face, Timberland, Vans Scaling Regenerative Supply Chains – Sustainable Brands – April 2021
- Vogue Business: The Future of Fashion, The Innovators – Season 2 Episode 4 – April 2021
- The Good Dirt podcast: The Regenerative Role of Local Fibersheds, with Rebecca Burgess – April 2021

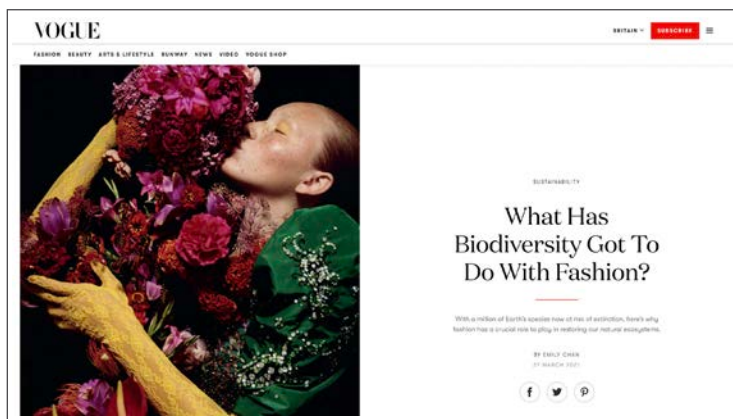
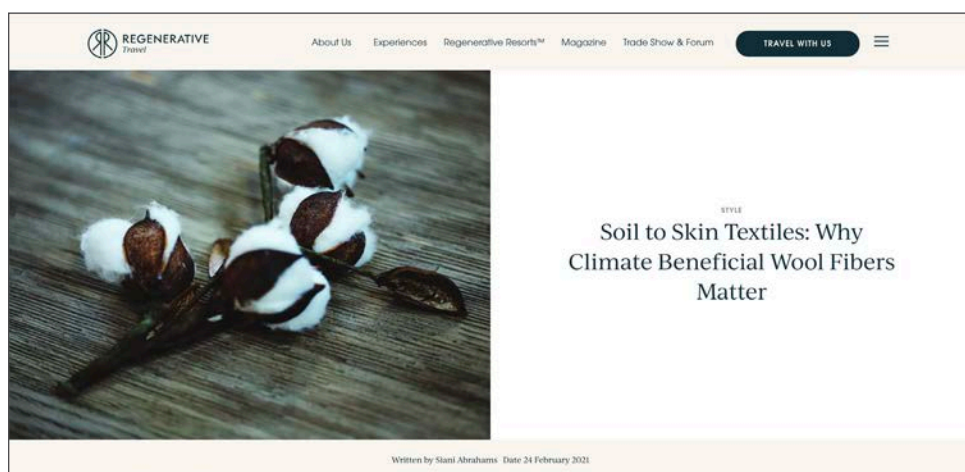
- FIDM: Fashion Design Students Participate in Fibershed Zero Waste Design Challenge – April 2021
- GQ: Do You Know the Name of the Sheep That Made Your New Sweater? – April 2021
- The New York Times: Why Is Fashion Talking About Regenerative Farming? – April 2021
- Point Reyes Light: Historic sale for Black Mountain – April 2021
- One Earth: Cloth, Climate, Carbon, and Capital: Fibers in the Agricultural System – April 2021
- Financial Times: The new buzzword in fashion – March 2021
- Ethical Unicorn: Regenerative Agriculture: The Future Of Sustainable Fashion & How Fibershed Are Paving The Way – March 2021
- Vogue: What Has Biodiversity Got To Do With Fashion? – March 2021
- No Kill Magazine: Fashion Influencers: Women Reinventing the Future of Fashion – March 2021
- Provenance Capital Group: Investing in Regional Supply Chains Is Key to Building Regenerative and Climate-Positive Systems – March 2021
- Napa Valley Register: The art of natural dyes – March 2021
- Financial Times: Tracing a garment: Industry Looks to Shine Light on its Blind Spots – March 2021
- Vogue Business: Brands Are Adopting Regenerative Agriculture. Is That a Good Thing? – March 2021
- Regenerative Travel: Soil to Skin Textiles: Why Climate Beneficial Wool Fibers Matter – February 2021
- WWD: These Brand-Activists, Nonprofits Are Tackling Fashion Policy Head-on – February 2021





- Vogue Business: How to create positive impact with natural materials – February 2021
- Fashionista: Designers, Brands and Journalists Unite to Ask President Biden to Appoint a 'Fashion Czar' – February 2021
- KWMR Radio: The Farm and Foodshed Report – February 2021
- Treehugger: Fibershed Wants to Know What Californians Have in Their Closets – January 2021

- Environmental Health News: From butterfly wings to shrimp claws: Mimicking nature on the nanoscale – February 2021
- Treehugger: The 6 Best Dryer Balls of 2021: Save time, energy, and money while reducing the chemicals in your laundry – February 2021
- WWD: Allbirds, ThredUp, More Ask Biden to Appoint 'Fashion Czar' February 2021



- Vogue: 7 major sustainability trends to watch out for in 2021 – January 2021
- Vogue: Greg Lauren Fall 2021 Menswear – January 2021
- Sourcing Journal: Can Regenerative Farming Combat Climate Change? Experts Weigh In – January 2021
- Treehugger: 6 Little Resolutions for a Better New Year – January 2021
- Treehugger: What Really Matters in the Fashion Industry? – January 2021
- Resilience: Bottom-up Biodiversity – January 2021



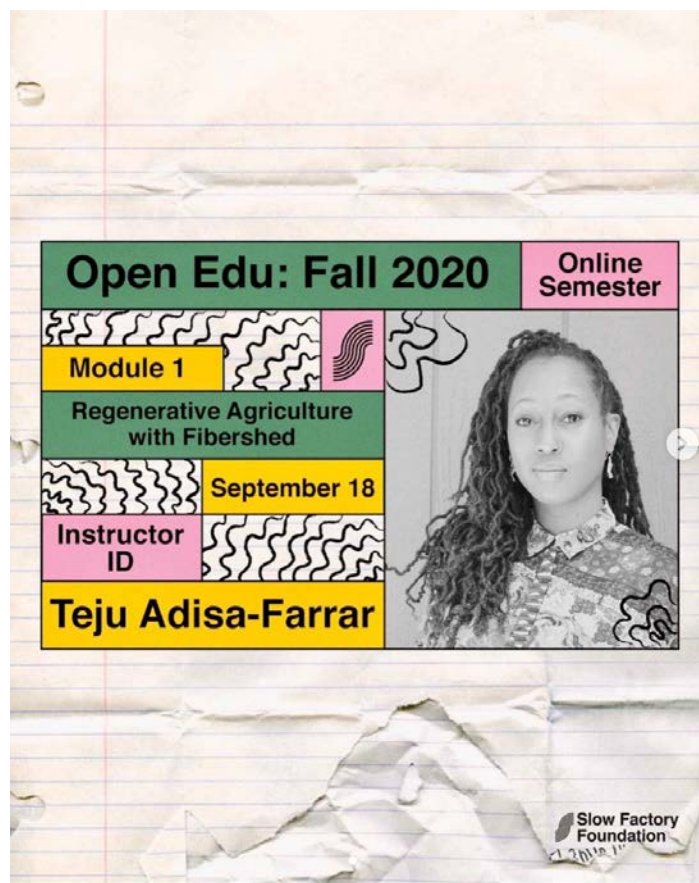


## *The Soil-to-Soil Podcast*

**F**IBERSHED has planned, coordinated, and agreed on a new and longer Soil-to-Soil podcast series in collaboration with the newly minted media company, **Whetstone**. Our team has worked with members of the Whetstone family in 2018 and 2019, (prior to their formal launch as a media company) to edit our interviews and recordings to help us publish what was a beautiful introduction to the Soil-to-Soil textile podcast concept.

When the opportunity came to grow with Whetstone as they moved to produce their own podcast series, we were thrilled and honored to be asked to continue our collaboration in a deeper and more team-like framework. We took 2021 as a year to plan and develop our work with Whetstone, and will be moving into production in early 2022.

Soil-to-Soil will join the ranks of Whetstone's other media productions and receive greater technical, planning and production support to do so. For those of you unfamiliar with Whetstone, it is a company founded and led by **Stephen Satterfield** — seen in the critically acclaimed Netflix docuseries, *High on the Hog*. Stephen is joined by an incredible team of producers, organizers and technicians that will help Fibershed to expand our message, and we couldn't be more honored and grateful to do so.



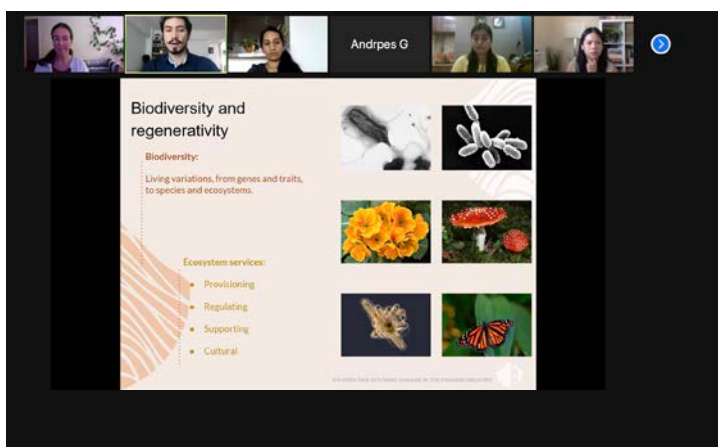
## *Slow Factory Open Education*

**F**IBERSHED sponsored two Slow Factory Open Education classes, in which over 600 people participated. The Open Education initiative focuses on educating professionals in the fashion industry about the intersections between environmental justice and fashion. The first course Fibershed partnered with the Slow Factory on was called Regenerative Agriculture, taught by Teju Adisa-Farrar — featuring Fibershed Producer member's Oshadi Collective and Seed2Shirt. In that course participants were familiarized with Fibershed's work on climate beneficial, regenerative agriculture and got the opportunity to support the two aforementioned initiatives that are part of Fibershed's robust Producer Network.

The second course Fibershed sponsored was called The History of Cotton, taught by Teju Adisa-Farrar and Sha'Mira Deanne Covington; both of whom were part of the Black Fiber Systems panel for the 2020 Fibershed Symposium. In this course, Teju and Sha'Mira overviewed some of the origins of cotton and its relationship to colonialism, commercialization and the ongoing struggle of Black, Brown and Indigenous Peoples around the world. In the growing sustainability movement, several brands have latched onto organic cotton while leaving many questions about its history, farming and processing unanswered. This course addressed some of these issues and shared some hopeful insights about organic cotton futures. The courses Fibershed sponsored provided knowledge and insight into the challenges of our current fiber systems and the opportunities to transform them.

## Fibershed Presentations Given in 2021

- BSR Brand Coalition
- Climate Farmers & Trace Collective
- UCANR Cotton Presentation
- National Center for Appropriate Technology Annual Conference Presentation
- Parsons Sustainable Textile Program
- Emily Carr University
- Regenerative Society Foundation & Quantis Webinar: The Fashion Journey Towards Sustainability: the Fashion Pact, Circularity & Regeneration
- Earth Gleaners
- Sustainable and Regenerative Agriculture Panel – The Urban Garden Initiative
- Sustainable Fashion Forum – Panel: Farm to Fashion Building Supply Chains from the Ground Up
- So. Cal Weavers Guild presentation
- Southern California Horticultural Society
- Regenerative Farming & Regenerative Fiber/CommonSpace
- MaterEvolve Healthy Soils & Sea Microplastics Education Event
- Stopwaste Earth Week Textiles Panel
- Soil Talks by Danone
- Ecofashion Webinar Series
- Natural Fiber Systems For National Alpaca Growers Association
- Circular Systems for the United Nations
- dieDAS summer Fellowship 2021
- University of Oregon
- Las Aranas Guild
- Interior Design Materials and Introduction to Textiles class
- Illinois Prairie Weavers Guild
- UC Berkeley – Politics of What We Wear
- MALT Ethnobotany Panel



*Clockwise from top left: dieDas Fellowship centered the Fibershed philosophy and approach within a systems based course that convened a multi-disciplinary community of architects and designers from across the globe; launch of the Op2b Framework for Scaling Regenerative Agriculture at 2021's IUCN Congress, where Fibershed provided an address and participated in a robust discussion on the participation of business within net negative climate strategies; United Nations biodiversity and circular economics policy discussion that focused on soil-to-soil textiles creation, where Fibershed presented and provided our framework.*



## Advocacy and Policy Engagement

BY HEATHER PODOLL

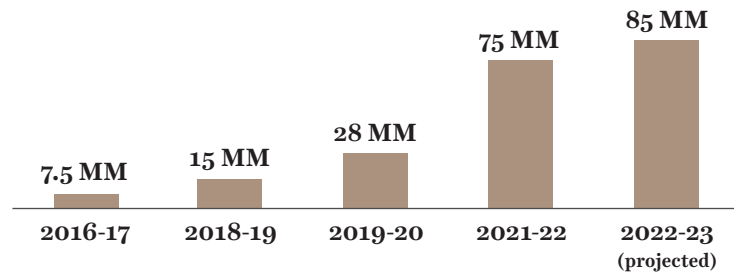
TOGETHER with colleagues in the California Food and Farming Network and CalCAN's Healthy Soils Network, Fibershed continues to advocate for a transition to more resilient, equitable and just farming, food and fiber systems. Based on needs and opportunities we see on the ground in our community, we have submitted input through formal comment letters, meetings with policymakers and given public testimony calling for increased state funding of carbon farming practices, on-farm technical assistance, and supportive infrastructure that land stewards need to make shifts in their practices.

Foremost among state programs supporting carbon farming, the 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. This year, the HSP program received \$75 million in the state budget, its highest level of funding since launching. To date, Fibershed producer members have been awarded \$1,101,174 through HSP to implement carbon farming practices. Fibershed staff are actively supporting all our producer members to learn about and access funds available through HSP.

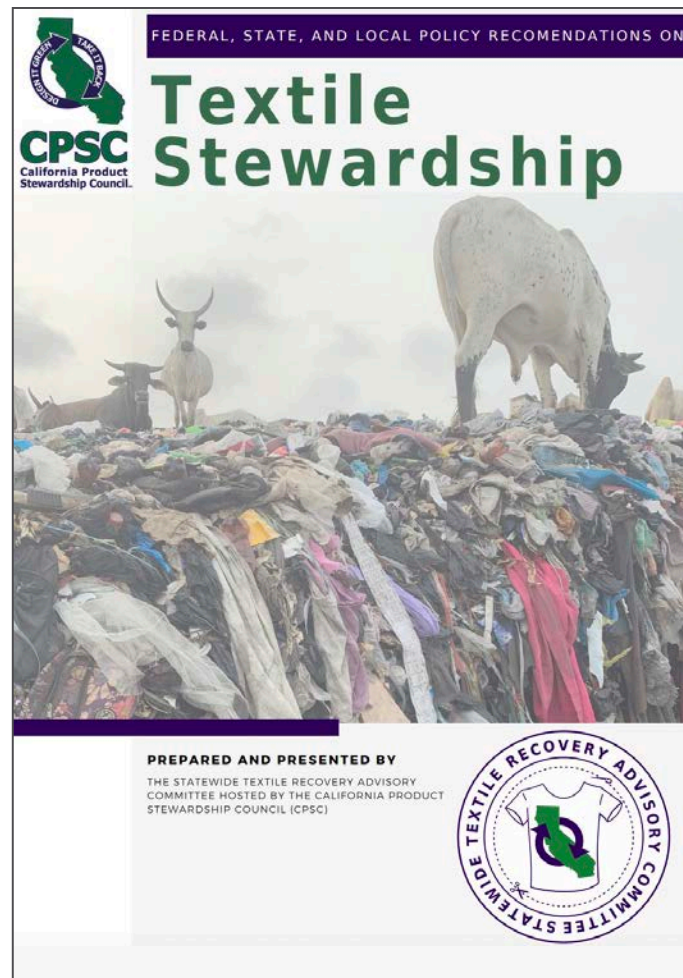
We recognize that carbon farming and land stewardship practices won't achieve widespread adoption among fiber producers until systemic economic drivers within the textile system begin to shift. Therefore in 2021 we deepened our engagement and our partnerships pushing for systemic textile system change at the regional, state and international levels:

- Joined as sponsors of the California Product Stewardship Council; we served on their Statewide Textile Recovery Advisory Committee, producing a report on textile policy opportunities released December 2021

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



*Our Movement is Having an Impact: The growth of the California Healthy Soils Program reflects the remarkable attention and value that carbon farming projects and practices have garnered in the state.*



*The California Product Stewardship Council (CPSC) is steering policy reform for greater producer/brand responsibility to change the infrastructure and flow of textile materials, including holistic design of products through 'end of life' processes. Fibershed became a sponsor of the California Product Stewardship Council (CPSC) this year and served on their Statewide Textile Advisory Committee. The report pictured here was released in December to catalyze legislative and regional policy action to address critical issues in the state's textile waste stream. (Image courtesy of CPSC; report cover photo courtesy of the OR Foundation)*



- Founding member of International Make the Label Count Campaign, launched in October 2021: we are providing weekly outreach to Fibershed and social media community about labeling policy impacts on textile systems
- Submitted several rounds of public comment and technical feedback to the European Union's Sustainable Textiles Initiative
- Provided written and oral public comments, and held meetings with core staff at the California Ocean Protection Council working on the Statewide Microplastics Strategy, encouraging holistic textile-oriented microplastic source reduction policies in the strategies they will present to the legislature
- Delivered written and oral comments to the California Natural Resources Agency on their 30x30 Biodiversity Initiative, highlighting how aligning public investments and incentives with carbon farming-based textile systems can help achieve state goals for climate mitigation, biodiversity and ecosystem health

*The Make the Label Count Campaign represents an international coalition of leading organizations and NGOs supporting the natural fiber industry around the world. We are informing consumers and policymakers how misleading claims of 'sustainability' for plastic fiber products is disrupting or eliminating healthy natural fiber production and cultural processes for tending landscapes. (Image courtesy of MTLC)*



*CPSC is launching pilot projects in the greater Bay Area and in Los Angeles, including this call for designers promoted through Fibershed's communication channels (Image courtesy of CPSC)*



## Microplastic Fiber Expedition

IN THE Spring of 2021, Fibershed, Materevolve, and Call of Sea worked together to lead an experiential learning journey on the San Francisco Bay focused on education specific to microplastic fiber pollution. The day was facilitated by textile engineer



Krystle Wood Moody and marine scientist Carolyn Box and was attended by oceanic-focused policy and decision makers, textile industry stakeholders, independent designers and design school professors. Fibershed staff provided educational curriculum to attendees dedicated to the following topics:

- How Fibershed's Regional Fiber Manufacturing Initiative is modeling the technical and financial resources needed to make use of the abundant natural fiber already existing in our region, led by Nicholas Wenner
- The localized impacts to our marine ecosystems of our global fiber system, sharing preliminary data from the Closet Survey for Climate & Ocean Health with Kirstin Miller
- Carbon cycle fundamentals and how a soil-to-soil framework can reshape the climate and ocean impact of textiles and fashion, led by Rebecca Burgess



*Fibershed staff and consultants presented educational data on how regional, natural fiber systems provide solutions to microplastic pollution and climate crises aboard the Matthew Turner sailboat as part of an event organized by Materevolve. (Photos by Paige Green)*







# Fibershed Affiliate Program

BY LEXI FUJII

THE Fibershed Affiliate Program connects a network of place-based organizing efforts to explore and develop regional fiber and dye systems. Through administrative, financial, and networking support to 52 Fibershed Affiliates, Fibershed helps to uplift grassroots, community-led change around the world. We provide membership administration that is flexible to support the realities and needs of local cultures, economies, and interests. Our Fibershed Affiliate membership is free of charge and continues to offer members a suite of resources including annual micro-grants, monthly virtual hangouts, access to a library of video webinars for project, program, and organizing support, a customized logo, an individual page in the Affiliate Directory, and a customizable web template and web development support.

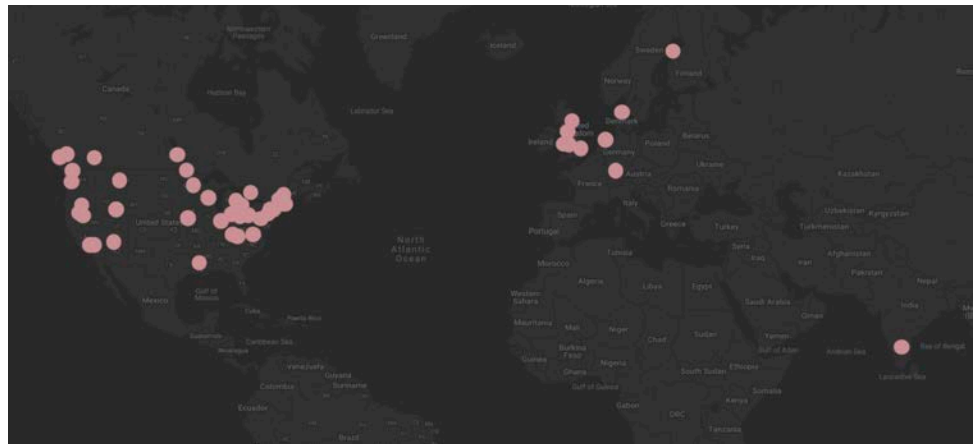
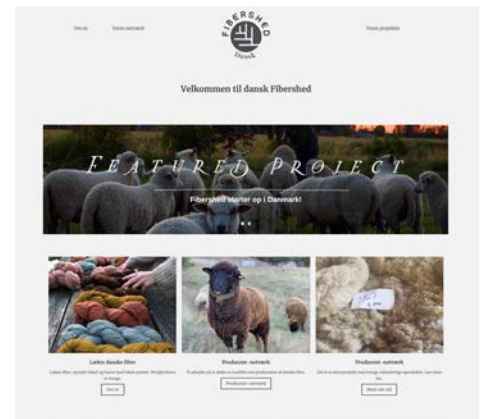
## SUMMARY OF THE YEAR:

- Organized and facilitated 12 monthly virtual hangouts for Affiliate organizers to connect and deepen their locally-based efforts.
- Provided administrative support and branding assets, including custom logos, the Affiliate web template, and a limited amount of free website troubleshooting support, along with amplifying the work on our social media platforms of our 52 national and global affiliates organizers.

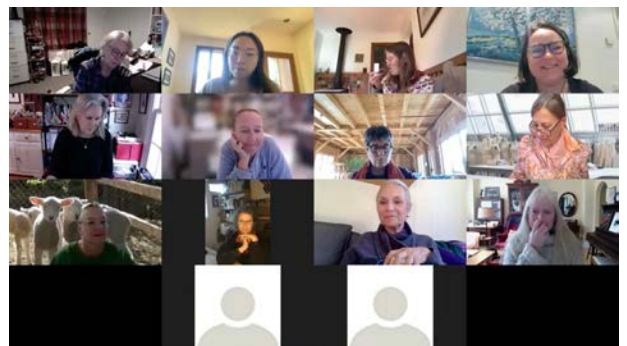
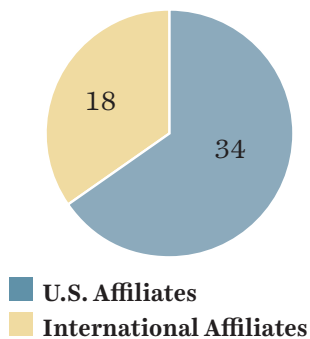
- Welcomed and onboarded 13 new Fibershed Affiliate organizers:
  - Dansk Fibershed
  - De la Tierra a la Tierra
  - Fibershed Quebec
  - Fibershed Nederland
  - Finland Fibershed
  - Heartland Threads Fibershed
  - Kootenay Fibershed
  - Miami Valley Fibershed
  - Northern New England Fibershed
  - PA Fibershed
  - Pemberton Valley, Canada
  - Southern Indiana Fibershed
  - Wales Fibershed

*Right, Fibershed offers a free web template and web development services through Facta Studio, which Affiliates can use and customize to communicate their local fiber systems projects and efforts, as shown in Dansk Fibershed's website. Below, Fibershed Affiliates are organizing around the country and the globe, as seen in this map.*

- Wrapped up the 2020 Fibershed Affiliate Micro-grants with educational webinars.
- Oversaw the 2021 Fibershed Affiliate Micro-grant process, with member outreach and process management, review and assessment of 12 proposals, funding distribution and support for 12 projects.
- Hired a Membership Coordinator to oversee Fibershed Affiliate Network membership administration and network development.



## Fibershed Affiliates



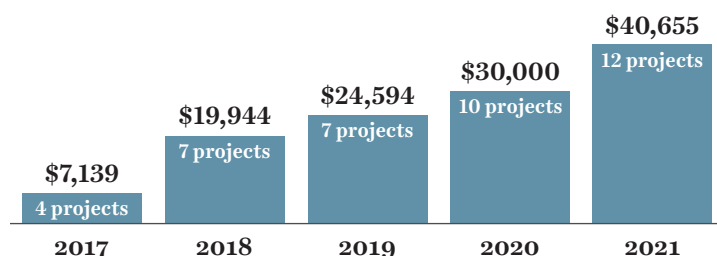
*Above, Fibershed Affiliates gather throughout the year in virtual hangouts, as shown in this October Hangout*



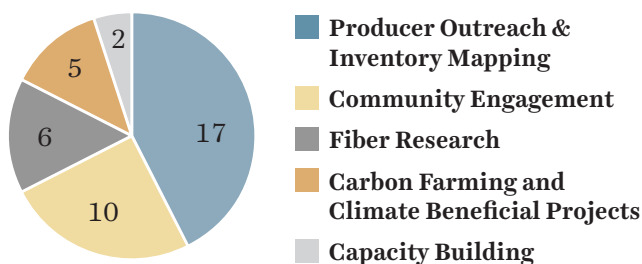
## Fibershed Affiliate Micro-Grants:

**F**OUR YEARS AGO we launched our micro-grants program to offer a springboard of support to Fibershed Affiliate members to develop and execute initiatives in their home communities. Since 2017, we have awarded over \$122,000 to Fibershed Affiliate micro-grant participants, funding 40 diverse projects across the globe — with interest and need growing every year. Fibershed Affiliates continue to inspire and amaze us with the depth and range of interests and creative projects that seek to strengthen and expand regional fiber and dye systems.

Affiliate Micro-Grant Awards (2017-2021)



Type of Projects Awarded (2017-2021)



*“We are so appreciative of the support from Fibershed which has enabled us to move forward with our mission and gain traction in the community.”*

– MEAGAN, ACADIANA FIBERSHED

*“These regenerative garments are more than just outfits: they’re a manifestation of relating to our earth with care and an example of a paradigm shift in understanding where our everyday materials originate. While the future of clothing is not likely to be on a handmade scale, we’re looking forward to an economy based on care, not extraction.”*

– SARAH POTTLE, RUST BELT FIBERSHED

## 2020 MICRO-GRANT WRAP-UP

Each spring, we organize virtual community events for the prior cycle of micro-grant recipients to share their learnings and outcomes. Our 2020 micro-grant participants presented on their completed projects in April 2021, captured in 4 webinars:

- 1: Western Massachusetts Fibershed** (“Extending Our Woolen Cloth Project and Building a Western Mass Supply Chain Directory”), **Chesapeake Fibershed** (“Mapping of Chesapeake Fibershed Resources and Community Outreach”), **NY Textile Lab Fibershed** (“Carbon Farm Network Action Plan”) (<https://vimeo.com/542426602>, password: Affiliates)
- 2: Upper Canada Fibershed** (“Anti-Oppressive Strategic Plan for a Regenerative Organization”), **Southeast England Fibershed** (“Natural Dye Research Project”) (<https://vimeo.com/542427411>, password: Affiliates)
- 3: Great Lakes Fibershed** (“The Great Lakes Fibershed Community Directory & Online Resource Hub”), **Blue Ridge Mountains Fibershed** (“A Regional Marketplace and Product Development Survey: From Seed + Fleece to Final Product”)
- 4: Acadiana Fibershed** (“Deepening Our Reach”), **Rust Belt Fibershed** (“One Year, One Outfit Cohort”), **Piedmont Fibershed** (“BIPoC Fiberways: Where Culture Meets the Land”) (<https://vimeo.com/542431706>, password: Affiliates)



*In 2020, we awarded Rust Belt Fibershed a micro-grant in support of their ‘One Year, One Outfit’ community challenge. This initiative invited participants to take one year to design, source, and create one outfit within a cohort of other makers to experience the joys and creative challenges of slow fashion.*

## 2021 Micro-Grant Update

In 2021, we administered a summer proposal sequence that resulted in 12 micro-grant applications — all 12 projects were approved, awarding a total of \$40,655 to the following projects. Here are mid-season updates:



*Acadian Brown Cotton*

ACADIANA FIBERSHED:

INFORM TO ENGAGE

[acadianbrownncotton.com](http://acadianbrownncotton.com)

The history of the Acadian Brown Cotton tradition and the care and skill required to cultivate, clean, spin, and weave this fiber into living artifacts is captured in their documentary, “Coton Jaune: A Cajun Love Story.” In this spirit, their Fibershed is launching an outreach initiative with the ultimate goal of gaining necessary funding for yarn spinning machinery and operations. Acadiana Fibershed’s “Inform to Engage” video series will connect viewers to the community, processes, and values unique to Acadian Brown Cotton — from planting to harvesting using regenerative techniques to the traditional methods of processing, spinning, and weaving.

UPDATE: “We have rehired the videographer who worked on our documentary film, “Coton Jaune: A Cajun Love Story”, for this project. Our video series project timeline has been adjusted to fit our videographer’s availability and to allow our team to focus on recovery efforts, as several of our farmer’s crops have failed because of the devastating 2021 hurricane season. We now expect this project to extend into next year’s planting

season. Since the acceptance of our micro-grant proposal, we have made significant progress toward our goal to become a non-profit organization. We have filed articles of incorporation with the Louisiana Secretary of State and have elected 7 members to serve on our board of directors.” – *Meagan Phipps*

BLUE RIDGE MOUNTAIN FIBERSHED:  
SOURCE + SWATCH BOOK

[localcloth.org](http://localcloth.org)

The Blue Ridge Mountain Fibershed has renewed and expanded their relationships with local farmers and are focused on bringing their farmers’ goods to local artists. Creating a Blue Ridge Mountain Swatch + Source Book will help grow and connect their region’s fiber economy, allowing makers and customers to have a wider view of all the farmers in the fibershed and their products.

UPDATE: “The Blue Ridge Mountain Fibershed is steadily working on a locally made sourcebook that honors and highlights Western North Carolina area fiber farmers. Local bookbinder, papermaker, and fibershed member, Alyssa Sacora of the Patchwork Underground, grows fiber plants and processes her own paper and will be creating our sourcebook shell. We have also gathered a group of local fiber artists who have agreed to knit, naturally dye, and felt samples for the book swatches, along with starting to collect fiber from the 25 local farms who will be featured. From kudzu and



*Local fiber samples from the Blue Ridge Mountain Fibershed community*

okra fiber, to heritage and fine wool breeds, we are excited to share what our region has to offer with the Fibershed community this February.”

– *Nica Rabinowitz*



*Chesapeake Fibershed*

CHESAPEAKE FIBERSHED:

SUSTAINABLE CLOTH:

FARM TO HOME AND CLOSET

[chesapeakefibershed.com](http://chesapeakefibershed.com)

The Chesapeake Fibershed launched its first fiber challenge — Sustainable Cloth: Farm to Home and Closet. Acknowledging their tie to the Chesapeake Bay Watershed, the challenge invites individuals or teams to create wearable or household items using local fiber, local dye and local labor. The challenge is designed to bring visibility to the benefits of locally-made clothing and household goods, and its potential impact on our daily lives and region, while also helping to build connections amongst existing fiber chain participants from producer to consumer, and from artisanal to industrial scale.

UPDATE: “The Chesapeake Fibershed has created our online registration platform and resource page, strategized and implemented a marketing plan, conducted two virtual introductory meetings for participants, and currently has 38 challenge participants. Our focus has been on local fiber producers and artisans, as well as area schools with agriculture and/or fashion programs. All participants are excited to be a part of the challenge!”

– *Marian Bruno*



**FIBERSHED DACH:**  
**ONLINE PLATFORM FOR FIBERSHED**  
**DACH AND COMMUNITY OUTREACH**

**[fibershed-dach.org](https://fibershed-dach.org)**  
*Short film: [vimeo.com/638976354](https://vimeo.com/638976354)*

Fibershed DACH is working to create an online platform that will connect and unify those interested in the fibershed movement; strengthen engagement and inclusivity of the different actors within their fibershed; highlight producers and manufacturers in our region; encourage community involvement; and will contain a map of the fiber resources in the region to help identify resources and illuminate the scope of local needs.

UPDATE: “We were able to set up the website and the Instagram account and are now focusing on creating content. We have mapped a lot of our area; Our group is growing and we started a slack account for communication channels. We have bi-monthly meetings with our group, and we still need to decide, and figure out who can help in what way.”

– Susan Zimmermann



*Fibershed DACH's newly created website*

**GREAT BASIN FIBERSHED:**  
**HEMP TO HAND**

The Great Basin Fibershed's “Hemp By Hand” event is a two-day workshop to hand process freshly harvested industrial hemp stalks and turn into textile quality slivers, basketry fibers, and rope leads. The workshop will bring together local growers, local fiber artists, interested artisans, and community members who want to learn to process this environmentally-friendly fiber.



*Great Basin Fibershed's Hemp to Hand event*

UPDATE: The Great Basin Fibershed held their Hemp By Hand workshop in October, 2021. “All agreed that the workshop was informative, educational, and ‘food for thought.’ Many wanted to pursue hemp as a fiber... several participants took plants/fiber home with them to experiment with more processing. We believe the workshop was ‘ground-breaking’ and successful, as the workshop successfully introduced the hemp fiber plant to local spinners, weavers, knitters, and basket-makers. For many, hemp is an unknown plant, cloaked in anecdotal beliefs about its origins and uses. Our workshop showed that hemp is a viable fiber plant and a legitimate and worthwhile endeavor. The workshop also opened the door to further exploration of hemp. We successfully established a working relationship with an industrial hemp grower, and we plan to continue to build that relationship to create viable hemp fiber for our region. The workshop is a strong example of ‘nothing beats experience.’ We can read about processing hemp all we want, but until we get our hands on it, it is only an abstraction. This workshop sets the stage for more hemp education and experience, be it dyeing the yarn, refining the fiber, or creating local Fibershed products.”

– Darla Garey-Sage



**HEARTLAND THREADS FIBERSHED:**  
**VISIBILITY AND PRODUCER DIRECTORY**  
**[heartlandthreads.org](https://heartlandthreads.org)**

To increase greater awareness of the Heartland Threads Fibershed, they seek to create marketing and educational materials, along with building an online directory to connect producers and artisans within their region. The grant project aims to increase the visibility of Heartland Threads and will help to collect and distribute data about producers and makers in the fibershed.

UPDATE: Due to a serious injury by the Heartland Threads Fibershed organizer, the project is on hold for a couple of months as she takes the time to heal. Ongoing efforts to promote their fibershed continue in the meantime.



*Heartland Threads Fibershed*



Window display at a local bookstore to market Montana Fibershed and their upcoming Farm-to-Fashion event

#### MONTANA FIBERSHED: FARM-TO-FASHION EVENT

[montanafibershed.org/fashion-show](http://montanafibershed.org/fashion-show)

The Montana Fibershed is hosting an all-day Farm-to-Fashion Event in Bozeman, Montana at the Emerson Center for the Arts and Culture. This public will feature a Montana Fibershed Marketplace — connecting the public to Montana fiber producers, mill owners, spinners, dyers, and makers of cloth and related products — along with a expert panel discussion and fashion show featuring local-produced garments.

UPDATE: “Due to the COVID-variant running rampant in our area, we decided to postpone this event until April 2022. In the meantime, we had already arranged to have a window display at the local bookstore as a way to advertise our event and promote the Montana Fibershed.” – *Barbara French*

#### NEW YORK TEXTILE LAB FIBERSHED: CARBON FARM MARKETING KIT

[newyorktextilelab.com](http://newyorktextilelab.com)

Last year the New York Textile Lab Fibershed launched a streamlined process for farms to transition to carbon farming practices through their Carbon Farm Network program. Since launching their Carbon Farm Network, they’ve been able to grow the number of farms transitioning to climate beneficial practices and increase their machine-grade yarn development that serves an emerging population of NYC designers who are interested in sourcing climate beneficial materials from their bioregion. To aid the designers and farmers in their network, the New York Textile Lab Fibershed is creating a Carbon Farm Marketing Kit. The kit will have marketing tools to help attract new customers, educate existing customers, form new partnerships, and sell their climate beneficial fibers, yarn, and textile products.

UPDATE: “We’re busy working on the Marketing Kit. So far, we’ve conducted a survey with designers to find out what marketing materials they are interested in using. The information gathered from this survey informed research for hang tags and cloth labels. Our Design Assistant, Haley Moore is currently developing hang tag and cloth label iterations that we will share with designers and producers in our network through a second survey. In addition, we are scheduled to meet with The Pace University Food and Beverage Law Clinic lay out a plan to formally organize our Carbon Farm Network and move forward with creating POS agreements.” – *Laura Sansone*



Pennsylvania Fibershed’s meeting with local wool growers to better understand the state’s wool supply chain

#### PENNSYLVANIA FIBERSHED: MAPPING PROJECT

[alltogethernowpa.org/regional-economies/clothing-textiles](http://alltogethernowpa.org/regional-economies/clothing-textiles)

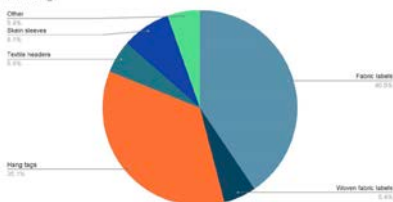
The Pennsylvania Fibershed’s project will take an inventory of the existing resources in Pennsylvania state by mapping farms, businesses and non-profits engaged in producing textiles and clothing, as well as identifying gaps in local supply chains.

UPDATE: “So far we have many updates to our spreadsheet with lists of producers along our supply chain. We are working on organizing all of the data to update our map which we are on track to complete. We have close to 40 fiber farmers in the area we are reaching out to so far as well as many more farmers interested in growing hemp. After talking with some farmers we decided to focus on wool for this time of year and can focus on contacting hemp and flax farmers once winter has set in as this should yield more of a response. I have also learned that there are 6 main wool pools for the state of PA. We are in the process of figuring out where this wool goes and had a meeting with wool growers this week to find out more.”

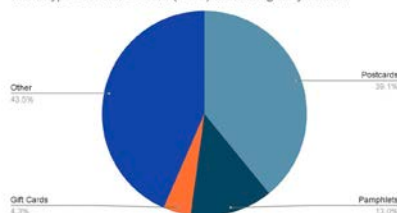
– *Rachel Mednick*

#### Some results from New York Textile Lab’s survey to designers

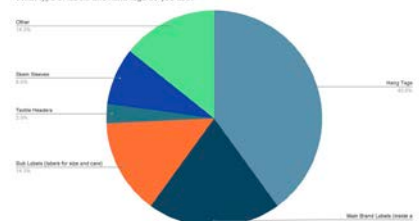
What type of circular materials are you interested in using for labels and POS Marketing?



What type of Point of Sale (POS) Marketing do you use?

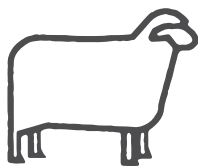


What type of labels and hang tags do you use?









## Partner Projects

### *Rainbow Fiber Co-Operative*

BY KELLI DUNAJ

Rainbow Fiber Co-Operative is a new partner project for Fibershed that had an exciting year in 2021. The Co-Operative is focused on developing a self-sustaining wool supply chain for traditional Diné (Navajo) shepherds of Dibé dits'ozí (Navajo-Churro sheep). Many of the ancestral flocks that remain on the Navajo Nation today trace their roots back through several generations. These flocks have survived three catastrophic events: the “Long Walk” era of mass internment between 1863 to 1866, the forced stock reductions in 1934, and the Navajo-Hopi Land Settlement Act of 1974, whereby many Navajo families and their flocks of sheep found themselves “on the wrong side of the fence.” During these devastating periods, a few families were able to resist and hide with their flocks of sheep in remote locations across the Navajo Nation, evading capture and slaughter. The Co-Op is purchasing wool from descendants of these families at a fair price, paying for the wool to be milled into Navajo-style weaving yarn, and offering it for sale to customers across the U.S. via an e-commerce marketplace. All sales revenue goes back into covering operational expenses for the Co-Op. In the event of a profit, that would be distributed fairly amongst the Diné wool producer members.

Historically, most of the Navajo-Churro wool products available for sale online have been from non-Diné shepherds. Diné shepherds have been told their wool is worthless or paid pennies per pound at mass wool buys. One of the Co-Op's producers recently spoke about attending a mass buy at a trading post,



*Kelly Skacy, Diné shepherdess in Coppermine Arizona, turning her sheep out to graze (Photo by Heath Herring)*

and witnessing the elders dressed in their finest traditional outfits and jewelry. The elders presented their carefully packed burlap bags of wool to the buyers, only to have the bags slashed open and the wool rejected or the price offered barely covering the cost of the wool bag itself (\$20). Navajo-Churro shepherds were told to “improve their flocks with fine woolled rams” and in essence, quit wasting their time on the sheep of their heritage. The producer felt a mix of humiliation and rage. There are many similar stories.

After a successful fundraising campaign the Co-Op executed their first wool buy on the Navajo Nation in July of this year. The effort resulted in approximately \$10k in direct payments for wool going out to Diné shepherds and covered approximately \$12k in mill processing fees on 1,100 pounds of raw skirted wool. The Co-Op also paid out approximately \$10k in wages to Diné artists and shepherds offering services to benefit the Co-Op (such as wool skirting, dyeing, project management, and other expertise). These action steps have materially impacted a growing network of producers and staff, supporting their efforts to protect a critical cultural resource and lifeway in Navajo-Churro sheep and shepherding. In addition to these material impacts, the project celebrates

*“Navajo-Churro sheep are worth more to me and my family than money. It's a legacy being passed down from generation to generation. It's my grandparents and where their heart always was. My parents and where home will always be. The sheep will always hold onto this land for us and they will always take care of us. So I have to take care of them.”*

– KELLY SKACY, DINÉ SHEPHERD



*Kelli Dunaj (Marshall, California) and Kelly Skacy (Coppermine, Arizona) skirt Navajo-Churro wool in preparation for transporting to the wool mill. (Photo by Nikyle Begay)*





Left, a sweet young Navajo-Churro ewe in Hard Rocks, Arizona (Photo by Nikyle Begay); below, a Diné holds on to a lock of wool from her beloved ancestral flock of Navajo-Churro sheep (Photo by Heath Herring)

*“‘Sheep Is Life’ is the culture of my people. We’re taught that when we care for the sheep, they’ll care for us, providing sustenance, warmth, and life lessons.”*

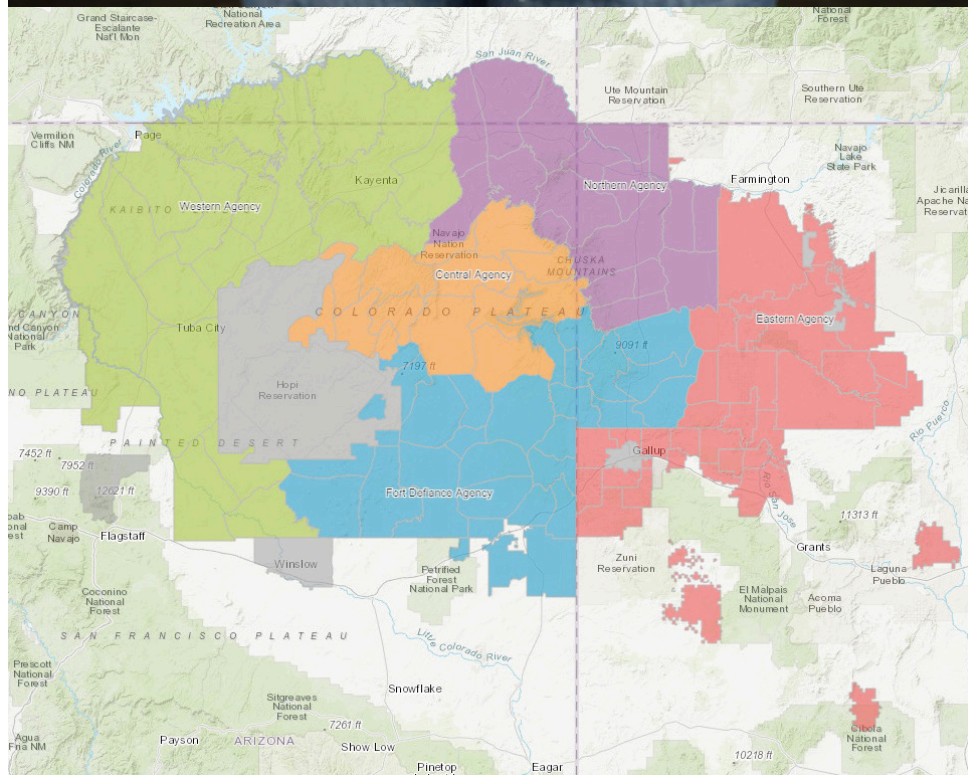
– NIKYLE BEGAY, CO-OP FOUNDER  
DINÉ SHEPHERD AND FIBER ARTIST

*“When we tend to the sheep, we protect Mother Earth. We graze them around, caring for the land as we go.”*

– MARJORIE CURLEY  
DINÉ SHEPHERD

the capacity of Diné producers to organize and manifest a compelling commercial yarn assortment driven by Diné leadership and creative vision.

The online yarn shop at <https://rainbowfibercoop.org> went live in late November, and was received with an encouraging level of excitement. The Co-Op’s limited edition weaving yarn collection nearly sold out within 2 weeks. Customers across the fiber arts world clearly responded to the message that traditional sheepherding culture has value and is worthy of preservation and protection. Based on the overwhelmingly positive response the Co-Op already has plans in place to expand their wool purchase and number of families served in 2022. They are also growing their dye program, and planning to provide more on-site educational activities like shearings and wool classing and skirting events. The 2022 yarn collection will consist of an unprecedented 14 natural colors representing more than a dozen families and various regional ecosystems and weaving styles.



Map of the Navajo Nation. Communities the Coop is serving include: Two Grey Hills, Fort Defiance, Coppermine, Wheatfields, Hard Rock, Big Mountain, Hopi Partition Lands, Forest Lake, and Black Mesa. (Map from <https://navajoprofile.wind.enavajo.org>)





*Left, the floor of Mora Valley Spinning Mill in Mora, New Mexico. Bags of Navajo-Churro wool from all of the country await processing. Below, Spinner Daryll Encinias of Mora Valley Spinning Mill in Mora, New Mexico explaining how the giant drum carder works. Daryll is a specialist in Navajo-Churro wool processing. (Photos by Kelli Dunaj)*



*“As a child, my grandmother would tell me, ‘Always care for the sheep and in return they’ll care for you.’ Growing up and raising my own flock of Navajo-Churro, I’ve come to understand what she meant. Shepherding in my culture is more than turning out the flock, feeding hay, and providing fresh drinking water. It is a never-ending lesson on responsibility, durability, and maintaining a strong will.*

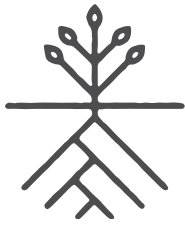
*“With the events of the past year, I began to take these teachings to heart in a new way. I felt moved to do something, not just to support my own flock, but to do something on behalf of my fellow Diné shepherds.”*

– NIKYLE BEGAY, CO-OP FOUNDER  
DINÉ SHEPHERD AND FIBER ARTIST



*Navajo-Churro shepherds Kelli Dunaj (Marshall, California), Irene Bennalley (Two Grey Hills, New Mexico), and Nikyle Begay (Ganado, Arizona) meet to discuss the wool buy at Irene’s sheep corral. (Photo by Jay Begay)*





## Metrics

### *Regional Textile Economies & Culture Program*

#### PRODUCER NETWORK

- 177 producer members in 51 counties working 178,931 acres of land.
- Hired a new staff member to coordinate and strengthen the network
- Added 13 new fiber producers and 10 new artisans to the Northern California Producer Program.
- Hosted 1 virtual meetup and 1 in-person meetup for the first time since February 2020.
- Published 10 professionally photographed stories on local farmers, mills, and artisans from our Fibershed producer program.
- Drafted, printed, and distributed 2 in-print Fibershed producer

newsletters and sent 12 monthly e-newsletters with resources, updates and information gathered specifically for our producer audience.

- Completed 1 of 2 group trainings for the Grazier's Toolbox with 3 producers, totaling 8 hours of training for individual and group Technical Assistance sessions.
- Completed 9 business technical assistance sessions for Fibershed producers.

#### REGIONAL FIBER MANUFACTURING INITIATIVE

- Selected a manufacturing cohort consisting of four entrepreneurs and emerging small businesses to provide consultations, research and data generation in engineering, financial modeling, equity, legal and democratic workplace design
- Developed and implemented our first wool mill spinning equipment grant via our new recoverable grants program
- Generated a Western Textile Economies vision statement for the Build Back Better Initiative that was shared with multiple Economic Development Districts in CA, OR, WA to educate regional workforce

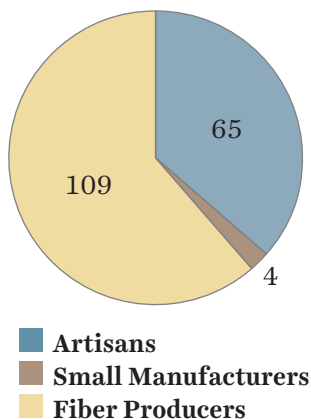
development approaches towards inclusion of natural fiber and dye systems and manufacturing

- Sponsored and administered the launch of the Rainbow Fiber Coop, a project in service to Navajo shepherds from multiple regions including Two Grey Hills, Fort Defiance, Coppermine, Wheatfields, Hard Rock, Big Mountain, Hopi Partition Lands, Forest Lake and Black Mesa

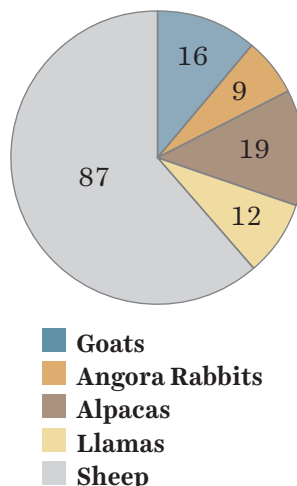
#### SUPPLY NETWORK SUPPORT

- Provided key educational services to 8 regional headquartered textile brands to work together to generate a pre-competitive yarn with 100% transparency back to the field where the cotton was grown
- Developed a two-way agreement setting process that provides growers price commitments and price premiums prior to planting season and provides textile brands assurance that soil building, synthetic chemistry reducing practices are implemented
- Provided 6 educational sessions for brands on agricultural topics specific to labor, labor history, water infrastructure, groundwater recharge, human right to water,

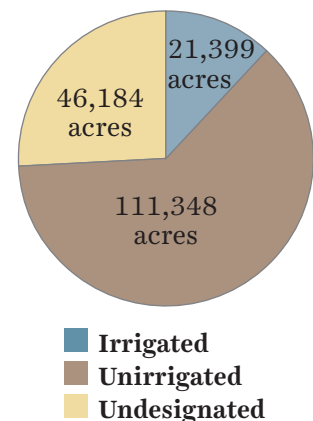
**Fibershed Producer Membership by Type**



**Number of Producer Members Raising Types of Animals**



**Producer Member Acreage (178,931 acres total)**



**171,771 of these acres are in Fibershed's Climate Beneficial™ Program**

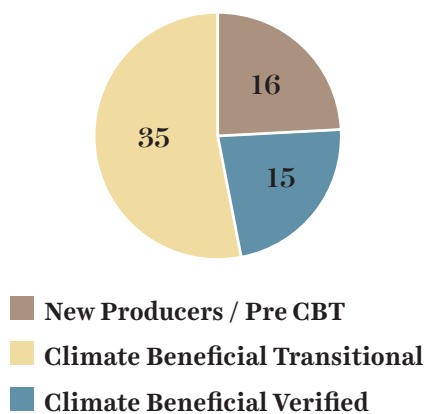
fisheries, climate modeling, regional projections on snowpack, soil health research, carbon sequestration mechanisms, and cotton quality and milling options

- Provided holistic grazing and rangeland soils regeneration education to 10 textile brands
- Provided Animal Husbandry for Wool Quality education and 6 scholarships to the Hopland Research and Extension Center shearing school

## Climate Beneficial™ Agriculture Program

- 66 producer-members currently enrolled in the Climate Beneficial Program, collectively stewarding 171,771 acres of farm and ranch land
- 122 carbon farming practices implemented in 2020-21 rain year
- 17,872 Mg CO<sub>2</sub>e sequestered to date with 20 year projection of 78,880 Mg CO<sub>2</sub>e
- Enrolled 10 new producers in the Climate Beneficial Program: Alpacas of Marin, Cazadean Valley Ranch, Cypress Grove Research Center, Fruition Farms, Kirabo Pastures, Navarro Vineyards, Pennyroyal Farm, Foggy Bottoms Boys, Roy Clemes, and Shannon Ranches
- Soil testing done for 4 producers, with 10 more scheduled for the 2021-22 rain season
- Hired 1 staff member as Climate Beneficial Technician to oversee the program
- 122 carbon farming practices collectively implemented and documented between mid 2020-21 among producers. Carbon drawdown estimates calculated for each practice
- 4 new farms and ranches added to our measurement and monitoring of soil-organic carbon-network

## Producers in the Program



- Small Farm Carbon Farm Planning workbook completed and made available as a Google Form;
- \$50,696 awarded to 12 producers collectively managing 242 acres for 2020 Carbon Farm Seed Fund
- \$66,875 awarded to 17 producers collectively managing 544 acres for 2021 Carbon Farm Seed Fund
- \$8,000 awarded to 4 producers in the Mendocino Cohort to fund carbon farming practices
- Hosted 7 virtual meetups for the Mendocino carbon farming cohort
- 10 Fibershed producers engaged in conversations with Fibershed staff regarding interest in receiving support for carbon farming practices through the Healthy Soils Program
- 20,000 sheep were grazed on 84,000 acres of land in our Climate Beneficial Wool Program leading to a 33% increase in the amount of wool in the program
- More than tripled the acreage in the California Cotton & Climate Coalition (116 acres) in total
- Coordinated and supported 6 new neighborhood grazing cooperatives for fire fuel load reduction; impacting 963 acres with 352 goats and sheep

## CLIMATE BENEFICIAL AGRICULTURE PROGRAM

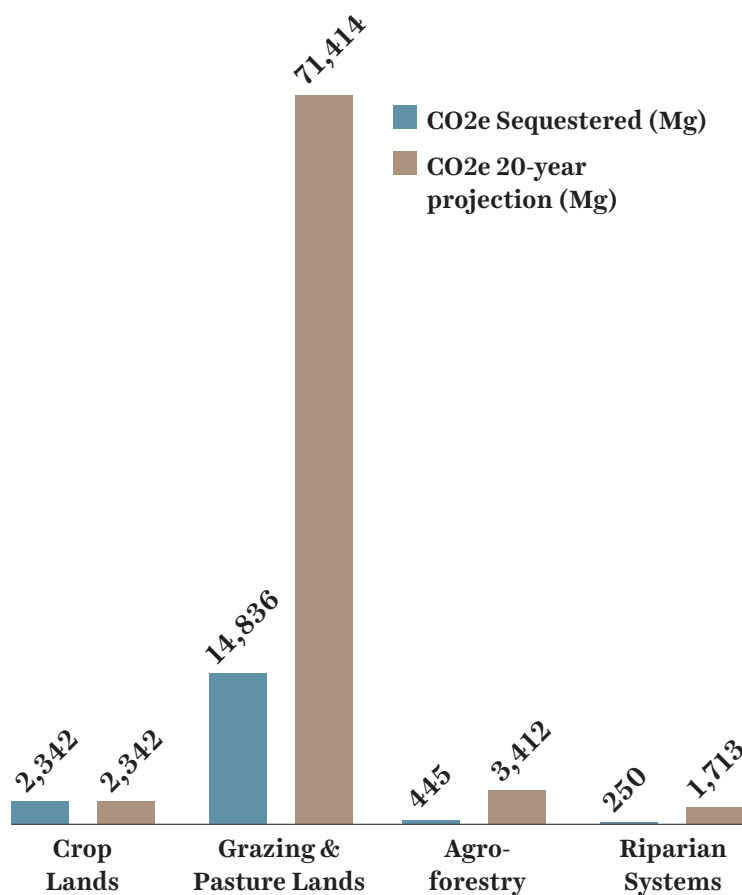
	# of Producers	Total Acres
New / Pre CBT	16	3,120
Climate Beneficial Transitional	35	25,534
Climate Beneficial Verified	15	143,117
<b>Total</b>	<b>66</b>	<b>171,771</b>

## FIBER SYSTEMS RESEARCH

- Completed first year of cover cropping, synthetic chemistry reduction, and no-till practices on 64 acre trial site in conjunction with academic research on irrigated croplands in large scale farming operations with the Center for Regenerative Agriculture and Resilient Systems
- Monitored grazing over 3 vineyard sites spanning 3400 acres across Northern California using ArcGis, and correlated ground activities with satellite imagery for Conservation Innovation Grant (CIG)
- Soil sampling conducted at Shannon Ridge as part of CIG project
- Conducted an initial phase of research to evaluate the climate benefit of renewable energy powered regional fiber systems manufacturing compared to current international manufacturing: For cotton, wool, linen we modeled an average of a 75% reduction in greenhouse gases for regional textile manufacturing compared to current energy matrix that define international textile manufacturing systems



### Cumulative CO2e Drawdown by Category— Entirety of Climate Benficial Program (2016-2021)



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

### CARBON FARM SEED FUND AWARD RECIPIENTS

	2020	2021
<b>Number of projects</b>	12	17
<b>Total acreage of project area</b>	242 acres	544 acres
<b>Amount awarded</b>	\$50,696	\$66,875
<b>Estimated Annual Drawdown</b>	143 Mg CO2e	289 Mg CO2e
<b>20-year Projection</b>	717 Mg CO2e	4084 Mg CO2e

Graph of data on “Instances of Carbon Farming Practices Implemented — 2021 and Cumulative” can be seen on page 70.

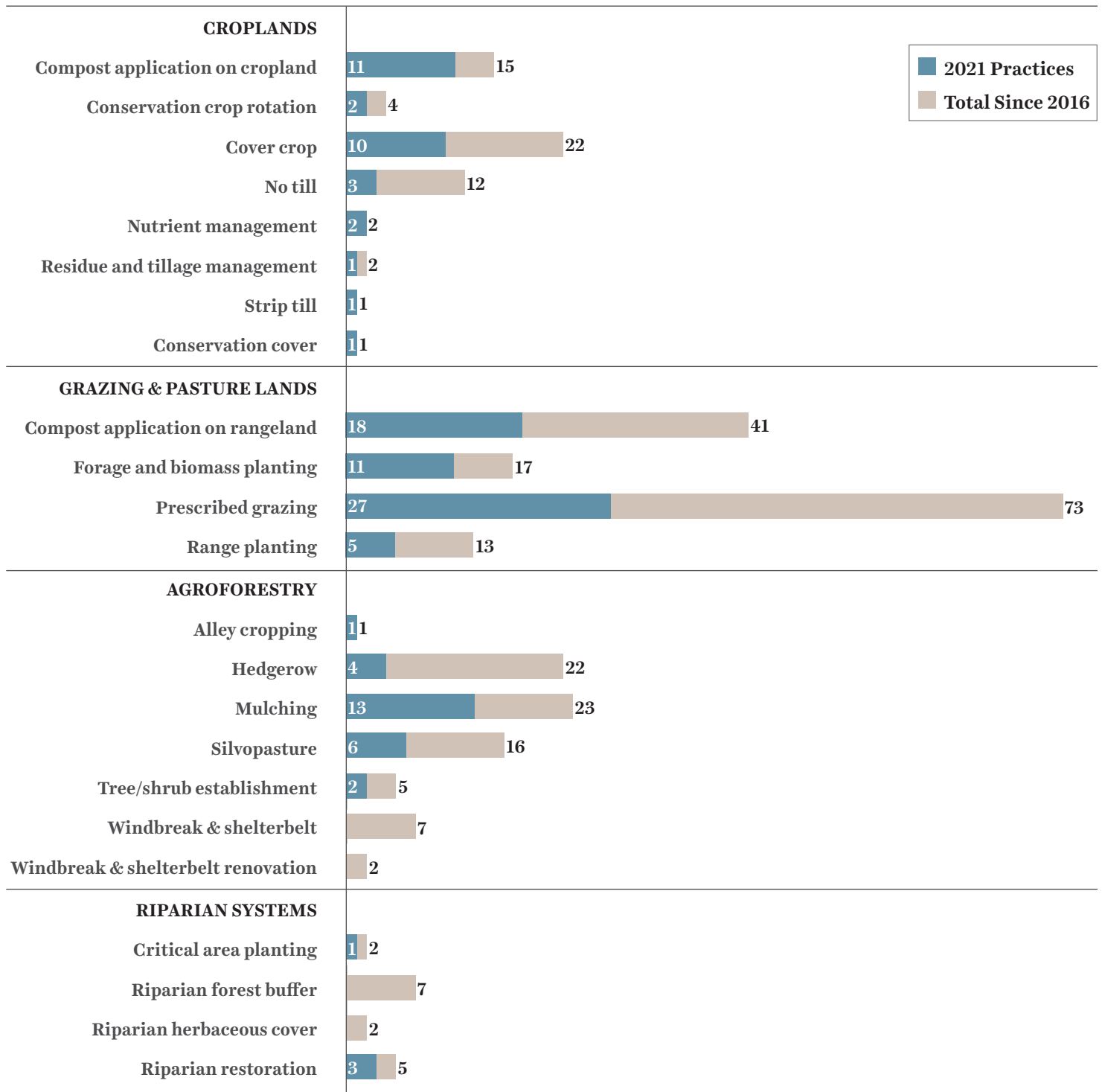
## Consumer Education & Advocacy Program

### EDUCATION, EVENTS, TRAININGS & DESIGN SCHOOL COLLABORATIONS

#### FIBERSHED LEARNING CENTER

- Produced 7 online classes, teaching skills in natural pigments, dyes and paints; native plant fibers for cordage; sandal making. A total of 406 students attended from a variety of locations around the world, and videos continue to be available on a rental basis.
- Held a soft opening September 18, 2021, hosting 78 community members in 5 experiential workshops, teaching skills in basketry, natural dye and pigment processing, and sashiko mending.
- 5 FIDM design school graduates honored for achievements in the Fibershed Zero-Waste Design Challenge
- Hosted 3 hands-on classes throughout October and November 2021 covering seasonal natural dying, botany for beginners, and nature journaling.
- Engaged 3 local high school interns in weekly Learning Center activities and community outreach.
- Processed over 1,000 pounds of Japanese indigo from our pigment and dye demonstration garden, yielding 12.4 pounds of indigo pigment for workshops and collaborations
- Planted 2,500 native perennial grass starts and forbs, and have taken 300 native willow cuttings and placed them in the riparian corridor (where baby endangered steelhead were found in November!).

## Instances of Carbon Farming Practices Implemented — 2021 and Cumulative





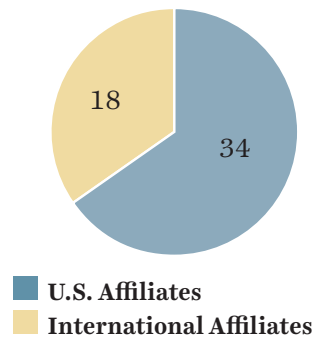
## COMMUNICATIONS & ADVOCACY

- Website use increased by 35% from the beginning of 2021 to the final quarter (one of the strongest indicators of success for our communications work)
- Hired BARK media, a professional media team, to implement & strengthen our communications work
- Subscribers on our email newsletter list doubled in 2021.
- 19 articles published with our original content; a 16% increase from the prior year
- 425 people participated our live virtual Annual Symposium and 9,948 individual accounts reached with Symposium content on social media; a 184% increase in engagement on social media
- 30+ Presentations by Fibershed staff reached a direct audience of over 3,000 people
- 10 California agricultural and textile-focused policy coalition letters sent to state agencies and legislature
- 3 comment and technical input submissions to European Union textile policy formation
- 5 written and 3 oral formal comment sets provided to California state agencies specific to textile policy and fiber farming systems (CalRecycle; California Natural Resources Agency; Ocean Protection Council)

## AFFILIATE PROGRAM

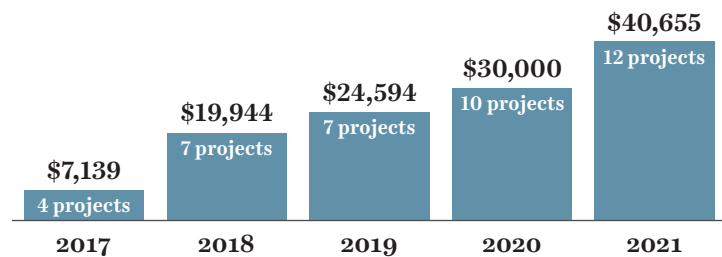
- Organized and facilitated 12 monthly virtual hangouts for Affiliate organizers to connect and deepen their grassroots community organizing efforts.

**Fibershed Affiliates**

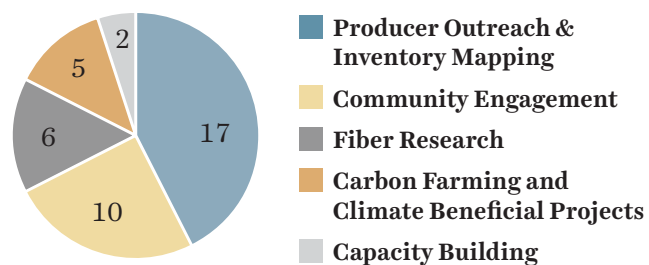


- Provided administrative support, including custom logo development, web support, and website troubleshooting to our network
- Tracked and amplified the work of 52 national and international organizers on our social media platforms
- Welcomed and onboarded 13 new Fibershed Affiliate organizers.
- Completed the 2020 Fibershed Affiliate Micro-grants cycle with co-learning focused educational webinars.
- Coordinated and managed the Affiliate micro-grant process for 12 projects

**Affiliate Micro-Grant Awards (2017-2021)**



**Type of Projects Awarded (2017-2021)**



## *Organizational Strategic Planning*

BY OLIVIA TINCANI

**L**AST YEAR we embarked upon a journey to create an internal compass for Fibershed as an organization in a more formal way than has ever been attempted in the organization's history. Utilizing the SOAR methodology, a results-based, positive thinking version of an extended SWOT review, the leadership team re-envisioned its mission, core values, program "themes of action," strategic objectives, and benchmark measures of success. This parlayed into a succinct strategic plan for the next 2-3 years with a broad horizon for radical industry and institutional transformation. The strategic planning was conducted across 4 extensive virtual gatherings and much follow-up work.

Our next step will be to engage in a similar (in-person) exercise with the entire staff in January 2022, setting the stage for annual strategic planning with full transparency and engagement with all Fibershed stakeholders. Using the 2-3 year vision as its guiding light, this short term strategic plan will be rooted in the people who will command the work itself, inspiring accountability and participation in all core members. A direct outcome of the visioning process is a set of discrete objectives to act as the blueprint for all activities that will lead into a detailed action plan for both organization and program leaders, a framework that shapes the day-to-day work of powering the organizational engine. The team will become familiar with the strategic planning practice in order to self-facilitate the process on an annual basis moving forward, resulting in less reliance on outside consultants year over year. Internal

and external dissemination of this plan will help communicate to and guide management of the organization and its programs, an important foundational tool for the growing team as well as external stakeholders.

The overarching goal of this annual planning process is to shift fundraising efforts to earlier in the year based on a solid team-powered pathway towards success, with all team members accountable for deliverables from action planning throughout the year in quarterly reviews. With this process the organization will have a more effective approach to defining program objectives for each year moving forward, and solidifying funding in advance of the commencement of each year's initiatives.



# Financial Statement

January 1 - December 31, 2021

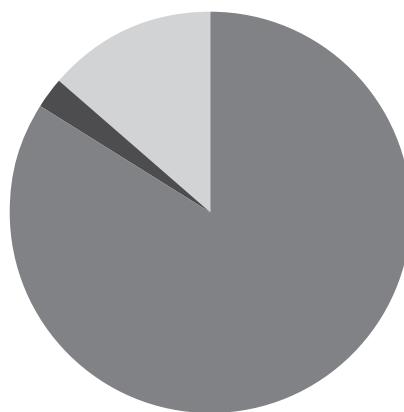
## REVENUE & EXPENSES

### Revenue

Grants	\$1,504,383
Event/Earned Revenue	\$43,127
Contributions	\$243,303
<b>Total Revenue</b>	<b>\$1,790,814</b>

### Expenses

Programs/Outside Services	\$1,015,205
Personnel	\$353,914
Admin/General Operations	\$87,460
<b>Total Expenses</b>	<b>\$1,456,580</b>



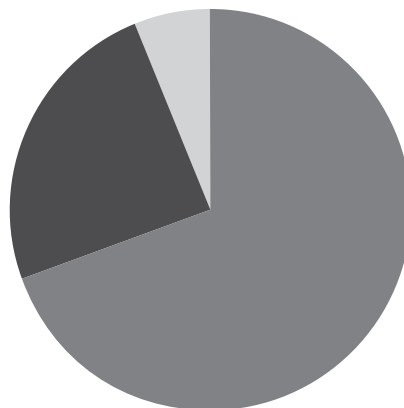
### REVENUE

- 84% Grants
- 2.4% Event/Earned Revenue
- 13.6% Contributions

## ASSETS & LIABILITIES

Current Assets	\$1,288,386
<b>Total Assets</b>	<b>\$1,288,386</b>

Liabilities	\$127,863
Equity	\$1,160,523
<b>Total Liabilities &amp; Equity</b>	<b>\$1,288,386</b>



### EXPENSES

- 69.7% Programs/Outside Services
- 24.3% Personnel
- 6% Admin/General Operations

Fibershed is exempt from federal tax under section 501(c)(3) of the Internal Revenue Code. EIN# 45-3055196.

# Donors, Members & Supporters

Our donors consist of individuals, organizations and foundations that have the ability to allocate generously to Fibershed's projects and general operating expenses. These donations, which are tax-deductible, make up the largest portion of Fibershed's annual budget.

## *Donors*

11th Hour Project  
Anonymous Donor advised fund  
at The Chicago Community Foundation  
Bainum Family Foundation  
Bryan and Bonnie Fandrich  
Cynthia Edstrom and Steven Moore Charitable Fund  
Deborah and Edward Heyman Donor Advised Fund  
Elizabeth R. & William J. Patterson Foundation  
First Nations Development Institute  
Globetrotter Foundation  
Greater Washington Community Charitable  
Isabella Salzmänn  
John Gregory & Leslie Markoff  
Lillian Riesenfeld  
Lydia B. Stokes Foundation  
Marciano Family Foundation  
Mary C. Becker  
Matt Katsaros  
Mr. Nicholas J. & Susan S. Pritzker  
Pledgeling Foundation  
Raymond James Charitable  
Regenerative Agriculture Foundation  
Sorci Family Foundation  
The Women of Tres Chicas  
Uplands Family Foundation

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*We are deeply grateful for everyone's participation, whether it be as a donor, a member, a supporter or a volunteer. (If we have omitted anyone accidentally, please accept our apologies.)*

## *Fibershed Producer Program Members*

Audrey Adams	Timothy Easterbrook
Leslie Adkins	Lani Estill
Peggy Agnew	Sarah Fifield
Layla Aguilar	Laurie Findlay
Erin Alders	Barbara Fiorica
Ian Anderson	Sandy Fisher
Pia Andersson	Nancy Fleenor-Thompson
Vicki Arns	Beverly Fleming
Judith Ashley	Hazel Flett
Daniel Auclair	Sue Fox
Tony Azevedo	Sally Fox
Jenn Ban	Virginia Franklin
Marcia Barinaga	Carol Frechette
Sophia Bates	Guido Frosini
Gowan Batist	Deb Galway
Lisa Beatty	Linda Gamble
Hannah Bird	Pat Gentry
Carolyn Boyd	Martin Geraghty
Megan Bre Camp	Matthew Gilbert
Lorran Bronnar	Dawn Graham
Cory Gunter Brown	Jessica Green-Switzer
Sarah Brunner	Johanna Greenberg
Brittany Cole Bush	Katie Grutter
Martha Cant	Sandra Guidi
Jacqueline Canterbury	Jill Hackett
Noel Carlson	Elaine Hamblin
Susan Chappell	Sonya Hammons
Alison Charter-Smith	Italia Hannaway
Bonnie Chase	Korina Hargreaves
Gynna Clemes	Heidi Harris
Zoe Clisham	Sharon Harston
Rhoby Cook	Andrea Haws
Kelley Corten	Marie Hoff
Ciara Crain	Diane Hoshler
Ronen Crow	Ryan Huston
Emily Cunetto	Jaime Irwin
Sarah Danu	Marnie Jackson
Dee Taron Davis	Jim Jensen
Marlie de Swart	Grace Johnson
Molly de Vries	Marcee Jones
Diane Dias	Kelsey Karol
Margaret Drew	Matt Katsaros
Lorri Duckworth	Sarah Keiser
Kelli Dunaj	Karen Kelly



Leigh Kenny  
 Ruthie King  
 Lora Kinkade  
 John Koene  
 Helen Krayenhoff  
 Cynthia Kuhlman  
 Elizabeth Larson  
 Catherine Lawson  
 Jennie Lee Henderson  
 Heidi Lemon  
 Michael Lennox  
 A. Mark Liiv  
 Amy Lofting  
 Lis Lucas  
 Mimi Luebbermann  
 Robin Lynde  
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 Elizabeth Welborn  
 Lydia Wendt  
 Misty West Gay  
 Tamara Wilder  
 Stephany Wilkes  
 Craig Wilkinson  
 Leah Williams  
 Lindsey Wondolleck  
 Marc Woods  
 Courtney Zimmerman

## *Supporters (2020 & 2021)*

Our supporter program is a way to engage the general public with our work. Supporters receive various benefits depending on their level of support, and they are welcomed into the Fibershed community through early invitation to our events, workshops and symposia.

Andrea Alstone	Anna Sophie Lee
Barbara E Ball	Carol Lewis
Kimberly Berg	Henry Lichtenstein
Amy Boone	Barbara MacDonald
Joy Brace	Sarah McNeil
Heidi Carey	Calley Morrison
Alison Chambers	Renee Obrecht-Como
Lauren Chang	Jennifer Ondrejka
Genise Choy	Aya Osada
Kim Clark	Tameka Peoples
Robin Comer	Marie Rounsavell
Cynthia Corbin	Lee Serrie
Jeanne DagenaisLesperance	Elizabeth Schwerer
Cynthia Daley	Pamela Scott
Meredith DeLucia	Dorothy Taylor
Heidi Erm	Gayla Tennison
Lynn Fowler	Marisol Valles
Jamie Facciola	Paula VanLare
Jenny Fong	Dorothy Vickroy
Kahla Gentry	Megan von Feldt
Sandra Guidi	William Wallage
Allison Jervis	Mary Wegelin
Kerry Keefe	Christina Wheeler
Katharine Kilmurray	Jennifer Whitty

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## *Carbon Farm Fund Donors*

Deborah Borzelleri	Hannah Moskowitz
Augusta Butlin	Kelly Notaras
The Conscious Comfort LLC	Virginia Petite
Kim Fulbright	Teri Power
Sarah Hayes	Cameron Russell
Sohel Islam	Barbara Ryan
Belinda Jacobs	Nancy Scolari
Harry Keally	Gregg Small
Kerry Keefe	Layne Steinhelper
John Leen	Dawn True
Christine Marlow	Megan von Feldt
Robin Mitchell	Eugenia Yu

# Project Partners



TEJU ADISA-FARRAR

Teju Adisa-Farrar is a Jamaican-American writer, poet and urban geographer based in Oakland, California. Her focus is on environmental and cultural equity from a social geographies perspective. Having lived in 7 different countries,

Teju has been involved in advocacy and human rights domestically and abroad for over a decade working on issues spanning political, racial and environmental justice. Her super power is connecting the dots between issues, globally. Teju supports artists, activists, initiatives, organizations and subaltern communities who are mapping/making alternative resilient futures.



NIKYLE BEGAY

Nikyle Begay (they/them) is a Diné shepherd, fiber artist, and teacher based in Ganado, Arizona on the Navajo Nation. Nikyle is the Director of Rainbow Fiber Co-Op and brings a wealth of knowledge and expertise to the project. Nikyle has experience

working in technology and the nonprofit sector, as well as an extensive background in sheep flock management, wool production, traditional wool processing, and the weaving arts. You can find them on Instagram @navajoshepherd.



FANNY CORPET

Fanny is the Director of Advisory Services for Provenance Capital Group, and an experienced corporate finance professional who is passionate about nature and regenerative agriculture. Throughout her career, Fanny has been an investor, a

consultant, an entrepreneur, and more recently a finance executive, helping ambitious entrepreneurs realize their potential. In 2020, Fanny decided to rethink her career to be more in alignment with her values. She graduated from the Pachamama Game Changer Intensive program in August, the Kiss the Ground Soil Advocacy in December, and then joined the team at PCG to pursue her interests at the intersection of finance and regenerative agriculture. Fanny graduated from Universite Paris Dauphine and holds a Master in Finance from Universite Paris I Pantheon Sorbonne.



KELLI DUNAJ

Kelli Dunaj (she/her) is a California-based Navajo-Churro shepherd and fiber producer located in Marshall, about 2 hours north of San Francisco. Kelli is the Coordinator for Rainbow Fiber Co-Op and brings her experience in retail operations to the table in

addition to her love and respect for Navajo-Churro sheep and Diné sheep culture. Kelli runs a successful direct-to-customer lamb business, and markets sheepskins, weaving yarns, and roving online. You can find her on Instagram @springcoyoteranch.



TYLER JENKINS

Tyler Jenkins is a farmer and organizer who lives and works in North Carolina. He has spent the last decade in various public and private sector jobs in the fields of agriculture, public health, and economic development including local food

businesses, non-profits, and local government, combining research with on the ground design and implementation. He has been privileged to work to design innovative approaches in organizing communities, creating strategy, building partnership networks, recommending policy, educating, supporting businesses, developing markets, and organizing multiple cooperative enterprises and workplaces experimenting with democratic organization and principles.



SARAH KEISER

Sarah Keiser started the Penngrove Grazing Project, a community-based, sustainable, land stewarding concept working to empower rural residential neighborhoods with the skills and support to stay safe from wildfires and increase community resiliency.

After the success of this project, she supported many rural residential neighborhoods in the development of their own Community Grazing Cooperatives. As we continue to see large, annual wildfires in California and throughout the west, Sarah expanded her model into the Intersectional Land Stewardship model for Fuel Load Reduction, Community Grazing Cooperatives and Cultural Burning for Healthy, Fire-Safe, and Climate Smart Land Stewardship.





NATASHA MEHTA

Natasha Mehta is a strategist, researcher, and designer dedicated to creating responsible textile supply chains. Her work explores the intersections of slow design, equitable climate resilience, and the complex dynamics of global

production systems. Building on five years of corporate design experience, she now works with brands and nonprofits to develop everything from regenerative packaging to new methods of factory governance. She has a Master of Development Practice (MDP) from UC Berkeley and BS in Industrial Design from the University of Cincinnati.



ADRIAN RODRIGUES

Adrian Rodriguez is a Co-Founder and a Managing Director of Provenance Capital Group, where he helps develop blended capital structures that catalyze resilient biological systems and businesses. Before Provenance, Adrian co-founded the boutique consulting firm

Hyphae Partners. Additionally, he worked at Patagonia within its Venture Capital arm Tin Shed Ventures, helping author a standard for Regenerative Organic Agriculture and exploring Regenerative Organic Land Funds. He is an experienced asset allocator, fundraiser, and business model innovator. Adrian is a graduate of Berkeley Haas' full-time MBA program. He received a B.A. in English from Williams College, studied English literature at Exeter College, Oxford University, and holds the Chartered Financial Analyst designation.



FRANÇOIS-JÉRÔME (FJ) SELOSSE

FJ is a Co-Founder and Managing Director of Provenance Capital Group, where he works to enable the deployment of mission-aligned capital towards regenerative businesses and projects. Prior to PCG, he co-founded Hyphae Partners, a boutique consulting

firm. As a former Fellow at the Environmental Defense Fund and a member of the sustainability team at TPG Capital, he has helped private companies design and implement numerous sustainability strategies. He is an experienced investor and business strategy expert. FJ is a graduate of Berkeley Haas' full-time MBA program where he focused on researching and designing blended financial structures that catalyze and align development, conservation, and agricultural stakeholders. He also holds a M.S. in Financial Engineering from NYU, and a B.A. in Economics and Statistics from the Ecole Polytechnique in France. FJ is also a 2020 Integrated Capital Fellow through RSF Social Finance.



OLIVIA TINCANI

Olivia Tincani is a food and agriculture business consultant and educator with almost 20 years of experience in the field. Her work focuses on farmer/rancher training, entrepreneurial empowerment, business, financial and strategic planning, curriculum

design and development, pasture-based supply chains, and technical assistance. Her deep experience in her own food and farming entrepreneurial endeavors infuses her work with ambition, empathy, and creative spirit. She is currently designing and executing training programs for the Southwest Grassfed Livestock Alliance and the Intertribal Agriculture Council alongside her work for Fibershed and is co-director of the Grazing School of the West. Olivia splits time between Sonoma County (CA) and her husband's farm and winery in the Valtènesi region of Italy, keeping her hands in the dirt and her skin in the game.



ARNOLD VALDEZ

Arnold Valdez, Principle of Valdez & Associates and Rezolana Farm, San Luis, Colorado, obtained a Master of Architecture Design at the University of New Mexico in 1992, receiving the John Gaw Meem Award for his thesis on Hispano vernacular architecture.

In 1999-2000 Valdez was the recipient of Loeb Fellowship of Advanced Environmental Studies at Harvard University Graduate School of Design. In 2008 Valdez was recognized as a George Pearl Fellow for his work and participation in the UNM Historic Preservation and Regionalism Graduate Certificate Program. As an Adjunct Associate Professor at the University of New Mexico School of Architecture and Planning he taught courses in alternative materials and methods of construction, cultural landscape planning, Preservation Technologies and Adaptive Reuse.



NICHOLAS WENNER

Nicholas Wenner works as an engineer to design production and manufacturing systems for regenerative industries. Past Fibershed projects include designing indigo dye production systems with the True Blue project, leading R&D for locally-produced

hemp/wool blended textiles, and developing visualizations of regenerative cycles for natural fibers with the Fiber Visions project. Previously, Nicholas led R&D engineering for MycoWorks to create a leather-inspired material from fungi, authoring 8 patents. He earned a B.S. in Earth Systems and a M.S. in Mechanical Engineering with a focus on manufacturing from Stanford University, where he taught design and manufacturing at the Product Realization Lab.

# Fibershed Staff



REBECCA BURGESS

Rebecca Burgess is the Executive Director of Fibershed. She has two decades of experience working at the intersection of ecology, fiber systems, and regional economic development. She is the author of the best-selling book *Harvesting Color, a bioregional look into the natural dye traditions of North America*, and *Fibershed: Growing a Movement of Farmers, Fashion Activists, and Makers for a New Textile Economy* released in 2019. She has taught at Westminster College, Harvard University, and California College of the Arts. She also holds a new board position at the Livestock Conservancy and is serving on the leadership council of the Center for Regenerative Agriculture and Resilient Systems at Chico State University.



LEXI FUJII

Lexi Fujii is the Membership & Learning Center Coordinator for Fibershed. She supports Fibershed's producer and affiliate networks, and coordinates Fibershed's Learning Center in Point Reyes Station. Lexi holds a BS in Sustainable Agriculture & Food Systems from UC Davis, where she fell in love with the whole agricultural system. She has worked on small-scale production farms and has taught sustainable farming and environmental education; along with working at her local agricultural land trust. Lexi's work at Fibershed is rooted in community and connectivity — both in uplifting our regional Fibershed producers, supporting our affiliate Fibershed groups, and coordinating a space for folks to (re) connect with fiber and place.



MIKE CONOVER

Mike Conover is Fibershed's Climate Beneficial™ Technician. He collaborates with land stewards within our Climate Beneficial Agriculture program, supporting them with carbon farm plan implementation and CB verification. Mike is thrilled to contribute to this community of producers and makers. He holds an M.S. in Ecological Design from the Conway School and has spent the past decade studying and practicing regenerative agriculture and sustainable land-planning. He sees regenerative agriculture as an essential strategy to address global climate change, rebuild healthy soils, and create a more resilient regional economy around food and fiber.



HEATHER PODOLL

Heather Podoll is the Partnership & Advocacy Coordinator for Fibershed. She manages communication and outreach relating to public grants and other core Fibershed projects. Heather holds an M.S. in Agricultural Ecology from UC Davis. She has spent the past 20 years involved with research, practice, promotion, and teaching of sustainable and organic agricultural systems, working with a range of nonprofit, philanthropic and educational organizations. As an avid knitter, she is delighted to bring together her background in ecological research and agricultural systems with a holistic and local perspective on fiber arts and textile systems.



# Board of Directors



REBECCA BURGESS, M.ED, CHAIR

Indigo farmer, author, and community organizer. Her work is focused on natural dye processes and regenerative agriculture, textile education and public speaking. She is the executive director of Fibershed.



KAT ANDERSON, PH.D

Ph.D. in Wildland Resource Science from UC Berkeley and author of the book *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*. The book was recently chosen by the celebrated permaculture designer Ben Falk, as one of the most important books to read in order to permanently solve food security. Kat has worked with Native Americans for over 25 years, learning how indigenous people judiciously gather and steward native plants and ecosystems in the wild. Her interests are to learn, celebrate, and restore the similar plant uses, gathering and tending practices, and ethical stances towards nature that are in multiple local cultures here and around the world.



MARLIE DE SWART

Marlie is a fiber skills educator and small business owner, as well as a fiber and ceramic artist. She has been involved in creating fiber works from local sources since childhood. She grew up in Holland, graduated from the Sorbonne in Paris and Occidental College in Southern California, and met her husband while attending Art Center College of Design. Currently Marlie has a local fiber arts cooperative store, Black Mountain Artisans, in Point Reyes Station. She recently published a book of her knitting designs called *Knitting Woolscapes, Designs Inspired by Coastal Marin Wool*.



DUSTIN KAHN, SECRETARY

Dustin has been a graphic designer for over 40 years, primarily in publication and website design. She also grows dye plants and is a natural dye instructor, having studied natural dyes since 2009, with a special interest in indigo. Dustin is currently organizing workshops at the Fibershed Learning Center.



NICK L. TIPON

Nick is a member and elder of the Federated Indians of Graton Rancheria. A retired high school teacher, he has served as Chair of the Tribal Education Committee and the Sacred Sites Protection Committee of Graton Rancheria. He was a Board member of the California Mission Foundation. He is currently a Board member of the Historical Society of Santa Rosa, Fibershed, and is a consultant for the National Smithsonian Museum of Natural History, the Richmond History Museum and the Field Museum of History in Chicago, Illinois. He is an active faculty member of the STRAW (Students Teachers Restoring A Watershed).

Among Nick's current interests is investigating the effects of the colonialism during the "contact period" on his ancestors, by the Russians, English and Spanish. He is investigating the impacts of climate change on sacred Tribal resources and lands from a cultural perspective and TEK (Traditional Environmental Knowledge) perspective. He was recently a presenter at the California Adaption Forum on these topics.



**FIBERSHED**

Local Fiber, Local Dye, Local Labor