COLORSCAPE

Natural Dyes from the Del Rio Trail

Anna Meier

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Colorscape - Natural Dyes from the Del Rio Trail
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LAND ACKNOWLEDGEMENT

I want to acknowledge that the unceded land through which the Del Rio trail wanders is the traditional home of the Nisenan and Miwok tribal nations. These sovereign people have been the caretakers of this land since time immemorial. Despite centuries of genocide and occupation, the Nisenan and Miwok continue as vibrant and resilient tribes and bands, both Federally recognized and unrecognized. I take this opportunity to acknowledge the generations that have gone before, as well as the present-day Nisenan and Miwok people, and honor their contributions and stewardship of this land.

INTRODUCTION

When I was a child, one of my close friends had a backyard that backed right up to the Del Rio trail. We would walk along the trail exploring, and it would feel like a completely different world from the suburban neighborhoods we lived in. Some of my best memories are of these days that we spent wandering aimlessly along the trail.

When I finished graduate school the first thing I wanted to do was to start natural dyeing again. I had been introduced to the process while an undergraduate in a fibers program, but I was focused on other things at the time and didn't give it too much thought. In my last year of graduate school I saw more and more people using locally foraged and home grown plants to dye with on social media, and I became very excited about getting back into the process.

When I returned to Sacramento after graduating, the first place I turned to was the Del Rio trail. I was already familiar with the plants along the trail, and I knew it would make a great place to forage for my first dye experiments. Five years later it's still one of my favorite spots to visit and collect from, and I've learned so much in the process of working with the land along the trail. When I came across a call for local artists to make art about the Del Rio trail, I was lucky enough to be one of the artists selected for the project. It felt like I was coming full circle, back to where I started my natural dye journey.

For my Del Rio Trail project, I decided to make a quilt using fabric that had been dyed with different plants, all of which were collected from along the trail. It has felt like such an honor to get the opportunity to showcase the colors of trail as I have come to know them. The truth is this quilt is just a fraction of the color possibilities from the trail, it's a little glimpse into the plants and the seasons of the trail from the past few months. The trail is a unique ecological place, it's not fully wild and yet it is not fully cultivated either. Many of the plants on the trail have either escaped or been transplanted from the gardens behind the fences that line the trail, either by humans or by squirrels and birds. The plants are a jumbled mix of ancestry, many representing the different cultures and backgrounds of the people who live or have lived along the trail.

One of my aims with this project, and specifically with this book, is to give you an insight into how these colors were achieved, and show you what is possible with plants that you may see or interact with everyday. This book is not a how-to guide on natural dyeing (I have just such a book available for free on my website www.annacarolynmeier.com if you would like to know more) rather it's a peek into the process behind this specific project,

and a way for you to connect the colors on this quilt to plants and places along the trail you may already be familiar with. My hope is to inspire others to connect with the natural world around them, and return to engaging with the earth in an ancient and intentional way.

THE CHANGING FACE OF THE TRAIL

Originally the land that the trail runs through was cared for by the Nisenan and Miwok people who lived there, then it was stolen by European settlers and turned into a busy railroad thoroughfare, packed with chugging trains, toxic smoke plumes, and chemicals that leached into the soil. It eventually transitioned into a sleepy little-known corridor that wandered through neighborhoods, largely unseen. The trail slowly became planted by animals (humans included) and wandering plants, a place where wildlife roamed and people walked their dogs. Now it is transitioning again into something else, a public path for pedestrians and bikes, and many of the plants and animals that call the trail home will be displaced during construction. At one point there was talk of bringing the trains back to the trail, and while I am so glad that the trail will become a walking and bike path rather than a place for trains, I also have some grief that the trail is changing again. It will no longer be the same secret wild place that weaves between the neighborhoods that I know and love so well. Making this quilt was a way to honor the trail as I know it now and as I knew it as a child, before it enters its next incarnation. However, I know that no matter how the trail changes the spirit of the land will still be there, wanting to work with us in respect and reciprocity; we have only to listen and respond.

WORKING WITH NATURAL DYES

Natural dyes are a very unique medium, they require time and knowledge of the material that you are using. Everytime I dye with natural materials, even if I used the material many times before, I still learn something new. Working with natural materials can mean that the results are hard to replicate or mass produce, but that is what I love about the process. Each time I dye it's a completely unique and special interaction between myself and the earth. Working with natural materials is an ephemeral collaboration. I use my knowledge, intuition, and skill to harvest what is calling to me when the time feels right, but so many variables, such as how much sun the plant is receiving, the soil type, the air temperature, and many other factors contribute to the final product. The colors in this quilt are a representation of just a fraction of the rainbow present on the trail. If I had worked on this project during a different time of year, collected different plants, or even collected just on a different day, the results would be different. Not only is the quilt a map of some of the colors of the trail, it's also a record of the specific moments in time that produced those colors. When I look at this rainbow I don't just see color, I see soil, microbes, animals, sun, water, and my own two hands collecting.

Another unique part of working with natural dyes is the use of a mordant. Mordants are metallic salts that help the dyes bind to the fabric and keep them from washing out or fading quickly. I used a variety of mordants for this project depending on the dyestuff that I was working with, as different dyes work better with different mordants (see the FAQ section on page # for more information on mordants); however, I was able to forage for one mordant directly from the trail itself. Iron is incredibly useful for natural dyeing. It reacts to the tannins present in many natural dyes and darkens or "saddens" the color to create a whole other spectrum of colors. I used railroad spikes that were being removed from the trail during construction and soaked them in vinegar to create homemade iron mordant (ferrous acetate). Many of the colors on the quilt were achieved with the addition of this railroad spike elixir. You can read more about it in the individual dye sections ahead.

FORAGING FOR MATERIALS

Humans and plants have worked in reciprocity for millenia, but in our modern age there can be a lot of misconceptions when it comes to human relationships with the natural world. There is a myth that before human settlement plants flourished in a “pristine wilderness” unencumbered by human intervention. The truth is that animals, humans included, have used plants for food and shelter for as long as they have existed, and plants have benefited from that relationship using the many mechanisms of animals to spread their genetics far and wide. Plants benefit from being trimmed, dug up, eaten, and used in a variety of ways, as long as it is done mindfully. Many scientific studies and biogeographical research have shown that indigenous populations have carefully managed plant communities for millenia, and in turn those plant communities have flourished compared to when they grow wild. The key is to understand what plants need and what you need from those plants, and to use them in a responsible and respectful way that promotes future growth. Currently humans tend to manage plants in two ways, we either cultivate plants solely for human needs, usually in monocultures with heavy pesticide use, or we ignore them completely. I believe that by creating a reciprocal relationship with the plants around us, learning about them, understanding their needs, and using them respectfully, we can encourage and promote plant growth, while also benefiting from the relationship.

In order to be safe and respectful the guidelines I use when collecting are:
Take safety precautions when collecting, wear appropriate protective clothing, and be aware of insect and animal habitats that you may be disturbing, as well as pesticide use in the area you are collecting from.
Make sure you have permission before collecting from private property or lands.
Ask for permission from the plant and the earth. This can seem odd if you’ve never done it before, but the idea is to pause and check in with the energy of the organism before harvesting. If you feel uneasy or some form of internal resistance this is a NO, if you feel a gentle warmth or a pull towards the organism, this is a YES.
Collect leaves, branches, flowers, fruit, and bark that have fallen naturally from the plant as often as possible (I also frequently collect great material from yard waste piles or after storms)
When harvesting material directly from the plant use a method that does the least damage; use sharp scissors or yard trimmers, never scrape bark from live trees, or pull up whole plants. Take only 10 percent (this leaves plenty of plant matter for the plant’s health, pollinators, and other animals).
Make sure to give thanks! Plants and humans have been helping each other for hundreds of thousands of years, remember to thank our plant friends for the bounty they give. I personally like to leave an offering of some water, or a strand of hair.

FREQUENTLY ASKED QUESTIONS

Do all plants have dye in them?

The short answer is no, not all plants are suitable for dyeing. There are many plants that have dye molecules and tannins (also good for dyeing) in them but only some of these plants have them in concentrations that make it worth using them for dye processes. The most traditional dye plants that have a high concentration of color in them are indigo, weld, and madder root. The cochineal insect is also a reliable and traditional dyestuff. There are however lots of other plants besides these that work well as dyestuffs. They may not be as long-lasting or as saturated as the ones listed above, but they are still wonderful dyes to work with. There are lots of great books out on the subject that can guide you to dye plants that you might have around you, but always double check your resources, especially ones on the internet, as there is a lot of misinformation out there about natural dyes.

Are natural dyes more sustainable?

This is a complex subject that could have a whole book written about it. The best answer I have right now is yes and no. There are many, many ways to engage with this process, some are more sustainable than others. I recommend doing some research and engaging with parts of the process that feel right to you. Unfortunately I don't think there is a way to be hundred percent sustainable in our current culture, but there are definitely ways to engage with nature and natural dyeing that promote sustainable and earth-healing practices.

Are all natural dyes non-toxic?

Natural does not mean non-toxic, there are lots of plants that are poisonous, some that are used for dye, and it is very important to be aware of what you are growing, foraging, and/or using in your dye practice. If you don't know what you are collecting, use a field guide or plant ID app to help. Always make sure to use proper safety precautions, and never use any equipment that has been used for dyeing to make food. Once a pot is used for dyeing, it's a dyepot for life.

What is a mordant?

Mordants are an important part of natural dyeing. They are metallic salts such as iron or aluminum that are used to fix the dye to the fabric. Not all natural dyers use metallic and

mordants (for health or sustainability reasons) but using a mordant, especially on cellulose fibers will keep the dye from fading or washing out. Tannins, which occur naturally in many plants, can also be very helpful in helping fix dyes to the fiber. They are often used in conjunction with metallic mordants or on their own. Protein binders are an alternative to metallic mordants. Soaking the fibers in a protein rich solution such as soymilk can help the dye molecules bind better to the fabric. For this quilt I used Aluminum acetate with a chalk bath, a soy milk binder with oak gall tannin, and homemade ferrous acetate (made from a railroad spike) in different combinations to create the range of colors you see.

Will the dyes last over time, and can you wash them?
All dyes, even synthetic ones, are subject to fading over time, especially when washed or exposed to sunlight for long periods of time. Natural dyes, when properly fixed to the fabric and cared for gently, can last for a very long time. The best way to care for naturally dyed fibers is to hand wash them in a gentle pH neutral detergent, dry them in the shade, and keep them out of sunlight.

If you would like to learn more about working with natural dyes you can access my free how-to ebook at www.annacarolynmeier.com

THE DYES

The dyes I used for this project were all collected from the trail. In the following pages I'll briefly describe the process and the mordants and binders I used to achieve the colors you see on the quilt. For the quilt I used silk/rayon velvet and linen, but I also dyed a selection of samples with different fiber types and different mordants so that you can see the range of color possible for each dye.

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ALMOND BRANCHES

Prunus dulcis

There are a number of almond trees along the trail, and when I first started collecting for this project many of them had just been trimmed. I collected as many branches as I could before my infant son, strapped to my back, got a bit antsy. In general the more dye material you use the more saturated the color will be. I took them home to cut into smaller pieces, both so that they would fit in the dye pot, and also to increase the surface area of the material so that the water could extract the dye. The simmering dye smelled amazing, and resulted in a deep orange-colored dye. The tannins present in the branches also meant that when modified with iron the dye turned a steel gray.

Mordant or binder used: Soymilk + oak gall tannin for velvet and linen, soymilk + oak gall tannin + homemade iron mordant for velvet and linen


ACE

ROSEMARY

Salvia rosmarinus

There are a lot of plants that make excellent smelling dyepots, but Rosemary might be my favorite of them all. Both harvesting and simmering rosemary in the dyepot are lovely olfactory experiences, and a nice bonus in addition to the lovely colors it gives. Rosemary grows in a few different spots along the trail. Rosemary loves our warm summers and mild winters and so it has made an easy transition from people's gardens into the semi-wilderness of the trail. Over the years the plants have become very large and bushy, and provide a bevy of small blue flowers for bees to collect from. Rosemary usually dyes fibers a range of gold, yellow, and pale green but I've heard that some varieties will give purple under the right conditions. The rosemary I collected from the trail provided a light gold color, and when modified with iron the color became an olive green.

Mordant or binder used: Aluminum Acetate on linen and velvet, Aluminum Acetate + homemade iron mordant for velvet, soy milk + oak gall tannin + homemade iron mordant for linen

SOURGRASS FLOWERS

Oxalis stricta

Oxalis, also known as sourgrass, is a common sight in this area and the Del Rio trail is no exception. Oxalis spreads through underground rhizomes, colonizing areas quickly, and is often considered invasive because of its vigorous spreading habits. It's easy to spot in early spring when the bright yellow flowers pop up with a fluorescent punch. The dye from sourgrass flowers is also a vibrant yellow. No heat is needed to extract the dye, simply submerge the flowers in water and watch as the liquid becomes a saturated yellow. Sourgrass flowers are a common sight from February until early May but will disappear once the heat arrives.

Mordant or binder used: Aluminum Acetate for linen and velvet

GREEN PERSIMMONS

Diospyrus kaki

Green persimmon juice has long been used in Japan as a dye and waterproofing agent for cloth, paper, and wood. It's called kakishibu, kaki for persimmon and shibu which means bitter or astringent. The astringency is due to the high tannin content in the unripe persimmons, and it's what gives the dye its characteristic rusty orange color. Traditional kakishibu is fermented for over a year to develop the color before it is used. I began experimenting with making my own using persimmons from the trail last summer. Persimmons are best picked when they are still green right before they begin to turn color. That is usually sometime mid-July through August here. Hachiya persimmons (the one with the pointy bottoms) are usually used because they have the highest tannin content, but the tree that I harvested from on the trail was Fuyu (the kind with flat bottoms). I knew that the tannin content was still relatively high, and while the color of the final dye is a little different than the commercial kakishibu that I bought as a comparison, it's just as potent and beautiful. Because the dye is fixed by UV rays it requires no mordant; it is applied directly to the fabric either by dipping or painting, rather than simmering in a dye bath. The fabric is then exposed to sunlight and the dye naturally darkens over time.

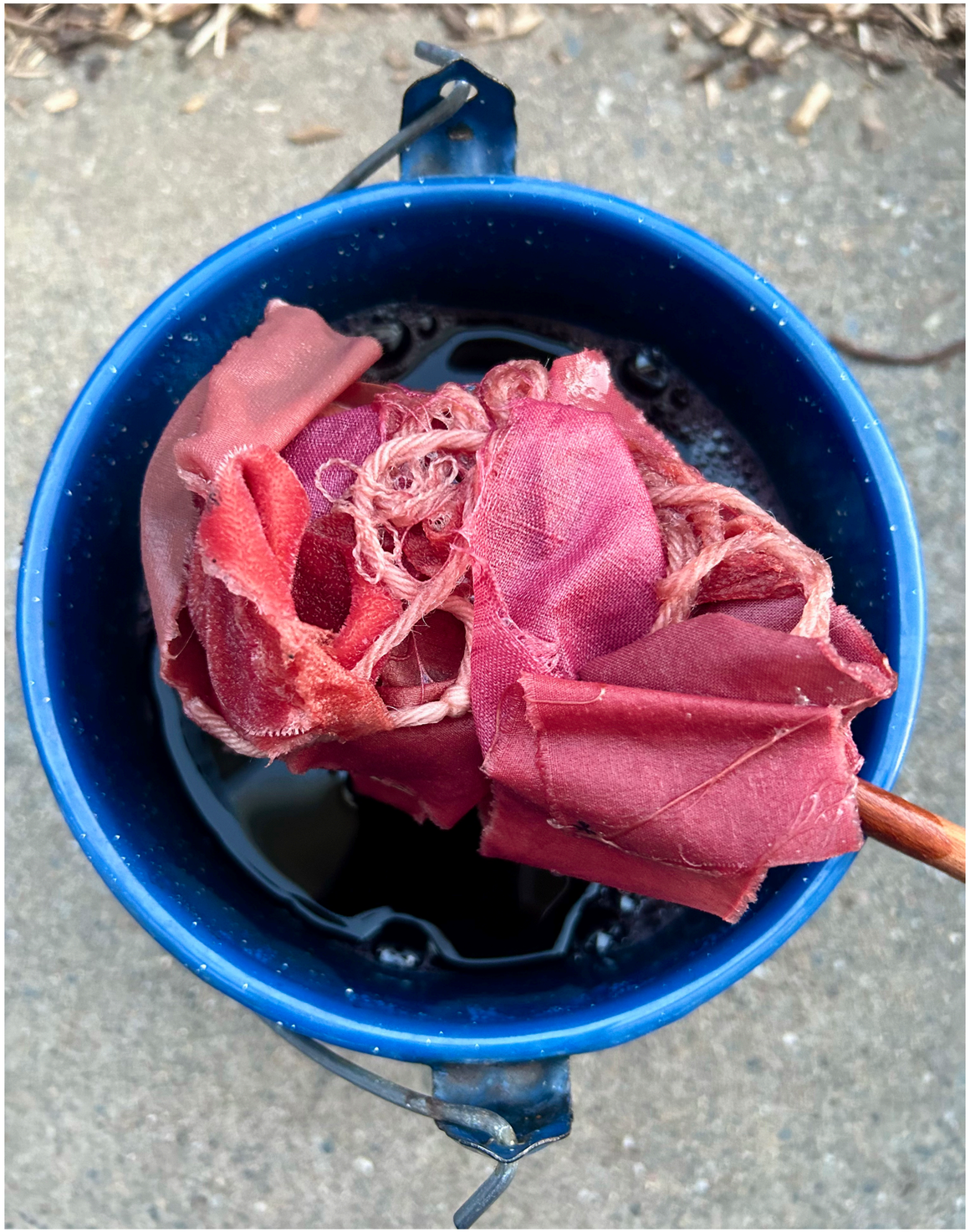
Mordant or binder used: None

RIVER RED GUM

Eucalyptus camaldulensis

River red gum has naturalized in many local areas and the Del Rio trail is no exception. There are a few different stands of it along the trail, most noticeably by the zoo and down towards Fruitridge blvd. There are over 700 species of eucalyptus trees and while all of them will give color in the dye pot each one has its own unique palette. River red usually gives greenish golds on its own, or when joined with iron will give a range of purple,gray, and brown. Every part of the eucalyptus can be used for dyeing, including the wood and the seed pods (often called gumnuts). For this dye I used a mix of leaves and blossoms.

Mordant or binder used: Aluminum Acetate for linen and velvet



REDWOOD CONES

Sequoia sempervirens

Next to green, purple is one of the trickier colors to get with a single natural dye source. Redwood cones from coast redwoods (Sequoia Sempervirens) are a great local source for a muted magenta-purple dye. Brown or green cones both work well for this dye. I collected most of the cones after the big storms we had this year, the brown cones I stored dry, and the green cones I froze until I was ready to use them. Through experimenting I found that this material works better with a cold bath extraction since using heat tends to dull the color. However, while working on this project I actually discovered that soaking the green cones in alcohol provided the most vibrant color since the alcohol acted as a solvent for the resin in the cones, and liberated many more dye molecules than water alone did.

Mordant or binder used: Soymilk + oak gall tannin for velvet and linen, soymilk + oak gall tannin + homemade iron mordant for velvet and linen


300
200
100
ML

SILVER DOLLAR EUCALYPTUS

Eucalyptus polyanthemos

While walking along the trail one muddy morning I came across a Eucalyptus polyanthemos tree. Up until that point I had only found river red eucalyptus on the trail so I was excited to find another species. I had to jump over a very muddy trench to reach her, but it was worth it! This species of eucalyptus is often referred to as silver dollar and the leaves are very common in wedding floristry. When heated, the leaves turn from a glaucous green to dark orange and release a dark orange dye. The dye is a brilliant rusty red on wool, a more muted orange on velvet and silk, and a dusty peach color on cellulose fibers. The dye also contains tannins so when iron is introduced it turns a dark gray. I used the leaves to make a liquid dye for this project, but they can also be placed directly on the fabric and heated to make an “eco-print” of the leaf itself.

Mordant or binder used: soymilk + oak gall tannin for velvet and linen

OAK GALLS

Quercus lobata

Oak galls are found all over the world in a staggering amount of sizes and shapes. The ones I collected from the trail are valley oak galls, prized by natural dyers for their high tannin content. Tannins are used frequently in natural dye processes to help cellulose fibers like cotton and linen (which are trickier to dye than protein fibers like wool) take up more color. Powdered oak galls are sold by most dye suppliers, but if you are lucky to live in a region with lots of oak galls it's easy to process some yourself. Oak galls are little wasp nurseries made when a female wasp stings an oak tree eliciting a hormonal response from the tree to produce extra tissue (the gall), the wasp then lays her eggs inside the gall where they incubate until the larvae hatches and burrows out. Valley oak galls are best collected in late summer and early fall, once the wasps have hatched and the galls have dried out and fallen off the tree. They will look white, pink, or bronze. Once the galls have turned gray or black, most of the tannins have been leached out by the winter rains, and are not great for dyeing with. I used the oak galls collected from the trail in almost all of the dyes in this quilt. I made a concentrated tannin solution from the powdered galls to combine with a soymilk binder, for both the velvet and the linen used in this project. Oak galls are also one of the best materials for making black dye. The high tannin content means it is very reactive to iron. On their own the dye from the galls is a light beige to dark brown color, but with the addition of iron it shifts to black, dark gray, or even a deep purple. After I crushed and simmered the galls to extract the dye, I added my homemade iron mordant made from railroad spikes and heated the dye again. The iron reacted to the tannins and created a rich charcoal-colored dye.

Mordant or binder used: soymilk + oak gall tannin + homemade iron mordant for velvet and linen

QUILTING

Just like natural dyeing, quilting is a slow and intentional process. First the layout is designed, then the pieces are cut. The pieces are sewn together to create larger blocks of fabric, and then those are sewn together to create the quilt top. This is called “piecing” and depending on how complex the design is, the process can be a lot like putting together a puzzle. Once the top is pieced, it is layered with batting and the backing fabric to create a sort of quilt sandwich, the batting acts as the filling, and the top and the bottom fabric act as the bread. In the case of this quilt I pieced the top using a mix of natural colored linen and naturally dyed velvet, and I also pieced the back using a mix of natural colored linen and naturally dyed linen.

Once the sandwich was made it was time for the actual “quilting”. Quilts can be machine quilted or hand quilted. I used a sewing machine to piece the quilt, but I love the look of hand quilting so I decided to hand sew vertical rows of stitches using cotton sashiko thread. Once the quilting was done, I used a straight two-edge binding in natural colored linen to finish the quilt. The quilt is fully functional as a throw quilt, but it is also designed to be a wall hanging where either side can be shown. I wanted to create a visually interesting piece that represents the colors of a specific place, in a specific moment in time, and the quilt was really the perfect medium to do that with.









PFAFF

ACKNOWLEDGEMENTS

I first and foremost want to acknowledge the land of the trail, and the plant and animal communities that agreed to work with me as collaborators on this project. Without them it would not exist, and I'm so grateful and honored for the opportunity to work with them. I also want to thank my family; my husband, Matt, who has patiently made many trips to the trail with me over the years, my son, Oliver, who happily (for the most part) let me collect with him in tow, and my parents, Chris and Dan, for watching my son while I did the majority of the quilting for this project, as well as for inspiring me to work with nature in the first place. Special thanks also to my best friend, Io, for coming in in the clutch when I ran out of linen, and saving me from having to redesign the entire quilt at the eleventh hour, you are my ride or die.

ABOUT

Anna Meier is an artist and earth witch living and working on unceded Nisenan land (Sacramento CA). She received her BFA in fibers from the Oregon College of Art and Craft, and her MFA in sculpture from the University of Miami.

Anna's practice focuses primarily on working with and teaching ancestral art practices like natural dyes to encourage humanity to learn how to respectfully co-create with nature.

For more information and to download a free PDF version of this book check out:
www.annacarolynmeier.com