

SeedBroadcast



*agri-Culture
Journal*



Cultivating Diverse Varieties of Resilience #21

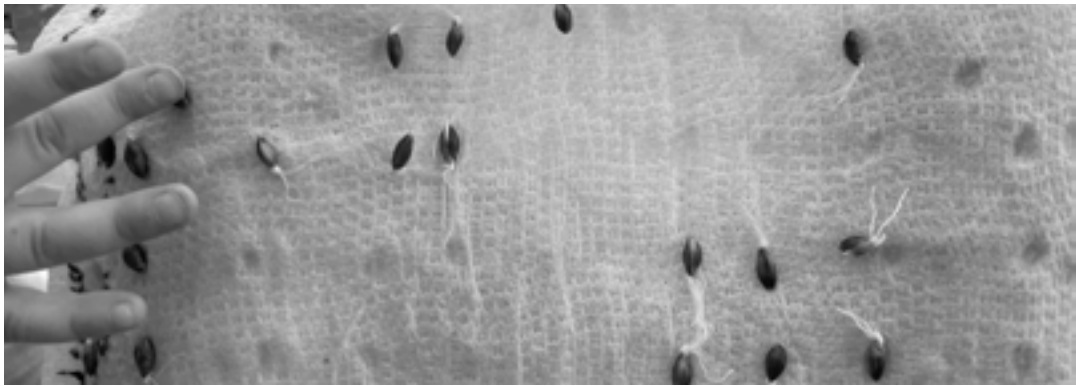


PHOTO CREDIT: SEEDBROADCAST

We would like to thank all who generously contributed to our **21st special edition** of the bi-annual **SeedBroadcast agri-Culture Journal**. The next edition will be in the Autumn of 2024. We invite you all to consider sending a submission. This could be a drawing, photograph, story, recipes for climate change, poem, action (what can we all do to keep the seeds alive), or an essay, with relevance to the essence of seeds, seed saving practices, climate change, and food sovereignty.

We are looking forward to hearing from you. Each of you holds a unique wisdom and it is this wisdom we hope to share.

Please include a short bio. Images should be at least 300 DPI 4" x 6" and include your mailing address as we will mail you a stack of printed copies to distribute in your own locale.

THE DEADLINE FOR SUBMISSIONS IS SEPTEMBER 30TH, 2024

Send submissions to seedbroadcast@gmail.com

You can keep up with our actions and encounters with other seed lovers at our website www.seedbroadcast.org.

We want to thank our fiscal sponsor LittleGlobe, our supporters Robert Rauschenberg Foundation Climate Change Solutions Fund, the Puffin Foundation, Native Seeds/SEARCH, Albuquerque Museum, Kates Fund for Women, our SeedBroadcasting cohorts - especially the farmers that have allowed us into their fields and lives.

To our partners in Seed: Climate Change Resilience:

Tse Daa K’aan Lifelong Learning Community in Hogback, New Mexico.
Beata Tsosie-Peña of Santa Clara Pueblo and the Española Healing Food Oasis
Ron and Debora Boyd of Mer-Girl Gardens, in La Villita, New Mexico
RAVEL Lab at the Univeristy of New Mexico
Sarah Montgomery of Garden’s Edge
Albuquerque Museum
Rowen White, Sierra Seed Coop
Native Seeds/SEARCH
UNM Art & Ecology
Richmond Grows Seed Lending Library

To our partners for Earth Optimism:

Experimental Farm Network
Ujamaa Cooperative Farming Alliance
Steam Onward
Share a Seed
Smithsonian Folk Life X Earth Optimism

To all those gracious humans that shared their poignant seed stories, Ana Ruiz Díaz, Toña Osher and Chris Wells for building our relationship to community actions and seed activists from Meso-America, David Gallegos, Kaitlin Bryson, Bonnetta Adeeb and Reana Kovalcik for partnering with us for Earth Optimism on the Mall in Washington DC, Rachel Bordeleau for graphic design, and distribution, Quinn Jonas for her curiosity and seed planting, Bill Mann, HawkMoth Farm, Rick Ferchaud for endless hoeing and digging, the many individuals for their continued support, and to the amazing anonymous donors that continue to support our work. And huge thank you to the soil, microbes, birds, sun, wind, rain and to our seeds that continue to inspire and give us hope. Thank you for joining with us in keeping these seeds and their stories alive.

“Our grandparents and their ancestors were seed savers by necessity. Their best plants were carefully selected to produce next year’s seeds, which were traded over the back fence with neighbors and faithfully passed down to each new generation of gardeners. Few of these family heirloom varieties have ever been available commercially until just recently. Many have been grown on the same farm by different generations of a family for 150 years or more. This often resulted in the seeds slowly developing resistances to local diseases and insects, and also gradually becoming well adapted to climates and soil conditions in family gardens throughout the United States.”

Suzanne Ashworth, Seed to Seed

SEED=FOOD=LIFE

*mid-15c., "tillage, cultivation of large areas of land to provide food," from Late Latin agricultura "cultivation of the land," a contraction of agri cultura "cultivation of land," from agri, genitive of ager "a field" (from PIE root *agro- "field") + cultura "cultivation" (see culture (n.)). In Old English, the idea could be expressed by eorðtilp.*

The acequias are running again, they are cleaned, neighbors helping neighbors, making sure the flow is unblocked so the waters can feed the planted fields. It’s a new growing season and so one never knows what is around the corner, will the water last the season, will the grasshoppers return like last year to eat their way through the crops, will the heat become so intense that the plants suffer? Each year brings a renewed learning.

We live in unprecedented times. We hold, in our hearts, chance and hope when putting those precious seeds in the soil. Perhaps it is the unknowing, the mystery that brings us to this natural cycle. To learn anew.

Turn return
The weathered rock
Wind whipping
Hair and feathers
Turning turning
Air and water
Revealing secrets well kept
in layers of sediment
holding traced memories
of dusted bones
broken bee wings
clover
corn
from years past
Turning over under
the riddles surface
caught in the currents
circling above
below
over and through
to land again
grounded
moist rooting
dig we dig

Soil soiled
do not get dirty
The palimpsest of worms
Scaping ground
Sun-bathed warmth
Fine grains slip between fingers
to seed the growth

Earth
we hold
Soil turns
Returns
Above and below

We at SeedBroadcast are continually learning from the incredible capacity of our seeds, are dedicated to what they teach us and in return offer our kinship to keep their nurturing stories alive and in good health. We believe and are acting on keeping the seeds alive.

Might you?

We too are seeds...

This journal is a special edition to celebrate the 10th year of the initial vision for this journal. It has been an incredible journey with submissions coming to us from all over the world. This edition comprises of poetry, essays, photographs, insights from a group of invited guests, most of whom have contributed to the journal in the past. It is a magical mix of thoughts, visions, musings from “Planting Seeds in my Husband’s Body” by Beverly Naidus to Christian Leahy’s poignant story “Heart of the Empire”.

How then does this word “agriculture” fit with our vision. Is it the right word, does it make one think only of food production? We hope not, as we are attempting to broaden the definition of this word. To make a distinction we hyphenate the word agri-Culture and emphasize the C in Culture. The saving and planting of our precious ancient seeds is vital to preserve the diversity, to ensure food security but also to regenerate the land that we have overused, and underappreciated. We extracted what we needed and have not given back. So, the importance of cover crops, the planting of native grasses and flowers, the health of the soil, all tie with our cultural ways of being. Agri-Culture.

SEEDBROADCAST

SEEDBROADCAST holds the belief that it is a worldly right to be able save our seeds and share their potential, to be able to grow our own food and share this abundance, and to cultivate grassroots wisdom and share in her radical creativity and resilience.

We seek to reveal the culture that has been lost in agriculture and believe that seeds are witnesses to our past and hold potential for our future. Seeds have their own story to tell and it is up to us to listen before it is too late.

SEEDBROADCAST encourages communities to keep local food and culture alive and vibrant through working together in creative and inspiring ways. We spend time with people on their farms, in their gardens, at seed exchanges and at community gatherings to dig deeper into the, often, unheard stories of local agriculture. Our traditional farmers, avid gardeners and local organic food growers, native plant aficionados are inspired by the seeds they sow and save, they take notice of what grows and what does not, they learn from the seasonal shifts, experiment with when to plant the first pea and when to harvest the seed for next year.

This vital knowledge base of plant and human connection is what we seek to cultivate, disperse and nurture.

We strive to live in reciprocity with all of our living breathing beings and to not only take but to sincerely give back.

What if we were to ask ourselves everyday “What can we gift?”

Our gift, to all who are willing to open their hearts to the necessity of listening, to those beings that have faced and are facing extinction and relocation and to learn from their fearless resilience.

We are moving one careful step at a time.

We are also honored to share that the incredible Rachel Bordeleau has joined SeedBroadcast. Rachel is an interdisciplinary artist and educator whose work centers on plant-human relationships and place-based entanglements. Her current practice is rooted in Albuquerque, NM where she completed her MFA in Art & Ecology and the University of New Mexico.

While 2023-2024 was been a year of action we will continue to take time to slow down and to reflect on how to best take meaningful action for change. We are continuing our conversations and networking with farmers, seed savers, backyard gardeners and activists, and teaching and mentoring as much as possible.

And we are always in the process of tending our own fields and gardens, learning as much as we possibly can from the seeds and soil and trying new ways to keep the seeds alive and vibrant.

This issue is dedicated with deep bow of gratitude to Brett Bakker, a passionate native seed saver, seed advocate and conservationist. He grew seeds for Native Seed/ SEARCH and assembled a bank of traditional southwestern seeds. He spent years visiting and building relationships with Native New Mexico farmers to learn, listen to stories and share seeds. You can listen to Brett's seed Story here. <https://soundcloud.com/seedbroadcast/brett-bakker-shares-a-seed-story-about-his-life-with-seeds>

Brett's passion for seed advocacy will be sorely missed. Brett you taught us so much.

PLEASE HELP US GROW! SUPPORT SEEDBROADCAST WITH A TAX-DEDUCTIBLE DONATION!

With the increasing demands for SEED Action now, we need your help to ensure that we continue to expand our collaborations and activations. Your support will keep the SeedBroadcast agri-Cultural Journal free and accessible, nurture seed stories and keep them alive and percolating and allow our partnerships with Native Seeds/SEARCH , and community activist organizations to deepen the focus on food and seed sovereignty and climate change resilience. These are times of rapid climate and environmental crisis that are causing devastation to our mother earth so we need to continue to sustain and deepen our efforts. Your donation will help us to build the capacity to dig deep, sprout tall, and shout out for more action to plant the seeds of our ancestors across the land.

TO MAKE A TAX DEDUCTIBLE DONATION TO SEEDBROADCAST GO TO:

Online donation:

<https://seedbroadcast.org/donate>
<http://www.littleglobe.org/portfolio/seedbroadcast/>

Or contact our fiscal sponsor Littleglobe for other payment options:

Phone: 505.980.6218
Email: info@littleglobe.org

- Your donation will support the on going activation of Seed: Climate Change Resilience and community engagement.
- Your donation will help us to keep activating local food and seed resiliency through community partnerships.
- Your donation will help keep the agri-Culture Journal free. Available online <https://seedbroadcast.org/projects/agriculture-journal> and at various locations around the nation.

SeedBroadcast has been and continues to be funded by in-kind donations of time, labor, and money from collective SeedBroadcasters.

SeedBroadcast has received generous grants from the Kindle Project Fund of the Common Counsel Foundation, McCune Charitable Foundation, the Robert Rauschenberg Foundation, the Puffin Foundation, Kates Fund for Women and anonymous donors that support our continued projects. All of these funds are essential for the successful operation of SeedBroadcast.

SeedBroadcast thanks you for your support and BELIEF in the power of Seeds, Stories, and acknowledging the vital aspects of culture that is held within traditional forms of agri-Culture!

21st Edition SeedBroadcast Journal

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TUMBLEWEED: A DIASPORE

ALYCE SANTORO

A diaspora is the botanical name for any part of a plant related to seeds and their dispersal. Apples, string beans, and garlic heads are diasporas. Anyone who has made a wish by blowing on a fuzzy halo of dandelion seeds has experienced a diaspora.

In the case of tumbleweeds, the entire plant is a diaspora wholly adapted for seed broadcast. *Salsola tragus* or Russian Thistle—locally called Cisaña, or thistle in Spanish—is not a thistle at all; rather, it is a member of the amaranth family. The plant spends the spring and summer forming a rounded tangle of barbed branches attached to the ground by a long taproot. At the end of its growing season, the top-heavy mass dries out and the stem becomes brittle. The bundle is then ready to break at the base and be carried along by wind, bouncing, rolling, and sailing across vast distances while slowly releasing thousands, if not hundreds of thousands, of seeds from the tiny wing-shaped vessels lining its branches.



Though it has become an icon of the desert regions of the southwestern United States*, prior to the 1870s, this species did not exist on the continent. The seed is thought to have been inadvertently mixed with flax brought to South Dakota by migrants from the Eurasian steppes. By 1900, tumbleweed could be found growing across the western states to California.

During drought and crop failure in the Great Plains in the 1930s, tenacious tumbleweed shoots became a primary source of nutriment for livestock, wildlife, and people. Early in its life cycle, the tender greens can be eaten raw or cooked, prepared like spinach. It can be pickled and preserved. The seeds can be ground into flour.

Harvesting tumbleweed for food is one approach to the attenuation of this extraordinarily prolific plant. Mature *Salsola* is too prickly for most creatures to comfortably consume, so picking at an early stage does not deprive anyone of a later delicacy. Its removal also provides space for other plants to thrive.

Large-scale methods to curtail the species have included the use of chemical herbicides, the release of specific moth species, grazing, and tilling. But the most effective and holistic method overall may be to enhance the health of soil. Mycorrhizae—fungi that help plants absorb nutrients by forming symbiotic associations with their roots—do not form affiliations with the roots of *Salsola*; instead, the mycorrhizae use them as food. As mycorrhizal presence in the soil increases, tumbleweed diminishes, and other vegetation has an opportunity to thrive.

SALSOSA 2, INDIA INK ON ONION SKIN PAPER, 8.5X11, 2024

LEFT: SALSOSA 1, INDIA INK ON MULBERRY PAPER, 9X12, 2024
BELOW: SALSOSA 3, INDIA INK ON ONION SKIN PAPER, 8.5X11, 2024



FORAGING TUMBLEWEED FOR BREAKFAST:
A RECIPE

- Select an uncontaminated area.
- Watch for young (2"-3") bright green shoots in spring.
- Pull several cups' worth of plants out by the thin root.
- Rinse well, then float the spiny seedlings in a bowl of water overnight.
- Prepare a cast iron pan containing a few tablespoons of olive oil.
- Drain greens, removing any roots, withered leaves, or larger stems.
- Heat pan, add greens, stir until wilted.
- Crack desired number of eggs into a small bowl and whisk with salt and pepper.
- Pour egg mixture into pan. Cover. Cook until set.
- Enjoy with toast and coffee.

REFERENCES:
USDA Plants Database: https://plants.usda.gov/DocumentLibrary/plant-guide/pdf/pg_satr12.pdf

Santa Fe Botanical Garden: <https://santafebotanicalgarden.org/plant-of-the-month-august-2023/>

New York Times review of book The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl by Timothy Egan: <https://www.nytimes.com/2005/12/25/books/review/the-antijoads.html>

*Names of places and plants are used with apology that common parlance lacks just acknowledgement of traditional inhabitants.

ALYCE SANTORO IS A MULTIMEDIA, INTERDISCIPLINARY ARTIST/
GARDENER WITH A BACKGROUND IN BIOLOGY, SCIENTIFIC
ILLUSTRATION, AND THE ENVIRONMENTAL HUMANITIES.

OCCUPY LOVE

JUDYTH HILL

Let the seeds fall
Golden peony and Chinese poppy, that rattling word gourd.
Let the seeds of Love cascade through you,
grow the heart of a fishmonger, a baker, a lily.

Occupy Love,
that space inside the skin of start.
Clap your hands three times,
make peace
with your sister, your neighbor, your memories.

Go and tell the bees.

Occupy Love. You are safe.
Let that be your story. Wake to a morning dizzy with cowbells,
purple rampion, forget-me-nots.
Breathe in this day, this glamour of now.
You are home.

Surrender and just be here
with every mistake and every chance and each breath,
until you are taken over, besieged,
a city, a country, a planet,
fallen to Love.

JUDYTH, A POET, MAESTRA, EDITOR, STORYISTA, AUTHORED THE INTERNATIONALLY ACCLAIMED POEM, WAGE PEACE, PUBLISHED WORLDWIDE, SET TO MUSIC, PERFORMED, AND RECORDED BY CHOIRS AND ORCHESTRAS. EDUCATED AT SARAH LAWRENCE COLLEGE; SHE STUDIED WITH ROBERT BLY, GALWAY KINNELL, AND DEEP-ECOLOGIST, DOLORES LACHAPELLE.

FOR APRICOTS



ON MY BACK PORCH IS A FOREST OF POTTED APRICOTS, GROWN FROM LAST YEAR'S PITS. THE PITS ARE FROM AN ELDER TREE, GENEROUS AND GNARLED. THE TREES ARE TINY AND SO IS MY GRANDSON. HE IS THE SIZE OF AN APRICOT, SIXTEEN WEEKS IN. THE TINY TREES ARE SO FULL OF POTENTIAL: WHO WILL EAT THEIR FRUIT WHEN THEY ARE OLD AND GNARLED? WHO WILL GATHER THEIR PITS IN A BASKET TO PLANT? MY GRANDSON IS A MYSTERY, WITH PARENTS IN LOVE WITH HIS PRESENCE AND PROMISE, THE GIFTS OF LIFE HE BRINGS. THIS MYSTERY OF HOPE → WE PLANT TREES IN TIMES OF SORROW, WAR AND UNCERTAINTY. WE COMMUNE WITH THE FUTURE, WE PLACE OUR BETS WITH GOODNESS. FOR NOW, THE BABY AND THE TREES ARE ALL DIVIDING CELLS AT AN ASTONISHING RATE. IN THE SECRET DARKNESS OF SEED SPACE, FUTURES ARE BORN OUT OF THE PAST AND PRESENT. WE WAIT. WE WATER. WE PRAY AND SING, FOR SACRED LIFE. FOR BABIES EVERYWHERE. FOR APRICOTS.

CAROL PADBERG 5/31/24

CAROL PADBERG IS AN ARTIST, WRITER AND EDUCATOR. PADBERG WEAVES WITH OYSTER MUSHROOMS, USING YARN FROM HER SHEEP THAT IS COLORED BY PLANTS FROM HER DYE FIELDS. AS IS AN HERBALIST AND A 'GREEN WITCH' SHE CRAFTS REMEDIES FROM CULTIVATED AND FORAGED HERBS. HER ART PRACTICE INCLUDES MAKING REGENERATIVE TEXTILES USING ANCESTRAL SPINNING AND WEAVING TECHNOLOGIES, AND WALKING THE QUESTA SUPERFUND MINE AREA WHERE SHE WEAVES HER LETTERS TO THAT MOUNTAIN WITH DRONE IMAGERY OF REMEDIATION WORK. SHE IS CURRENTLY DEVELOPING THE MESS KIT FOR SETTLERS, AN ARTWORK THAT STRADDLES POETIC AND PRACTICAL INTERVENTIONS FOR DESCENDANTS OF SETTLERS. MESS KIT FOR SETTLERS IS DESIGNED AS AN INVITATION FOR PARTICIPANTS TO INTERROGATE SETTLER COLONIALISM AND UNDO ITS CONTINUED HARMS. IT WAS INCLUDED IN THE GEOHAPTICS: SENSING CLIMATE EXHIBITION AT 516 ARTS IN ALBUQUERQUE IN 2024. HER ART HAS BEEN THE SUBJECT OF EXHIBITIONS AT THE MINNEAPOLIS INSTITUTE OF THE ARTS, AND THE NEW BRITAIN MUSEUM OF AMERICAN ART. CAROL PADBERG'S INITIATIVES HAVE BEEN FEATURED AT THE WALKER ART CENTER, MOMA, AND THE CREATIVE TIME SUMMIT AT THE VENICE BIENNALE. HER RECENT WRITINGS CAN BE FOUND IN THE MULTISPECIES STORYTELLING IN INTERMEDIAL PRACTICES (PUNCTUM PRESS, 2022), ECOART IN ACTION: ACTIVITIES, CASE STUDIES AND PROVOCATIONS FOR CLASSROOMS AND COMMUNITIES (NYU PRESS, 2022) AND THE NEW FARMER'S ALMANAC (GREENHORNS PRESS, 2023). A MOTHER OF THREE ADULT CHILDREN, SHE LIVES AND SHEPHERDS ON UNCEDED TEWA LAND IN ALCALDE, NEW MEXICO.

HOLLIS MOORE (SHE/HER) IS THE SOUTHWEST SEED PARTNERSHIP COORDINATOR AT THE INSTITUTE FOR APPLIED ECOLOGY SW OFFICE WHERE SHE WORKS TO SUPPORT THE DEVELOPMENT OF ADAPTIVE NATIVE SEEDS FOR PARTNERS IN THE SOUTHWEST. HOLLIS HAS OVER EIGHT YEARS OF EXPERIENCE INTEGRATING THE INTERSECTIONS OF ART, ECOLOGICAL DESIGN, CONSERVATION, AND EDUCATION. SHE EARNED HER MASTER IN LANDSCAPE ARCHITECTURE (MLA) FROM THE UNIVERSITY OF NEW MEXICO IN 2022 WHERE SHE FOCUSED ON CENTERING PLANT-HUMAN RELATIONSHIPS THROUGH ECOCULTURAL RESTORATION STRATEGIES FOR ORPHANED WELL PADS IN THE PERMIAN BASIN. SHE ALSO HAS A MASTER IN FINE ART (MFA) FROM UNM IN PRINTMAKING AND ART & ECOLOGY AND A BA FROM COLORADO COLLEGE IN ART AND ANTHROPOLOGY. OUTSIDE OF WORK, HOLLIS SPENDS TIME COLLABORATING ON ENVIRONMENTAL ART PROJECTS AND LEARNING FROM HER GARDEN.

**FROM SEED TO SEED:
TRACING THE PLANT MATERIALS PRODUCTION CYCLE
WITH THE SOUTHWEST SEED PARTNERSHIP (SWSP)**
HOLLIS MOORE



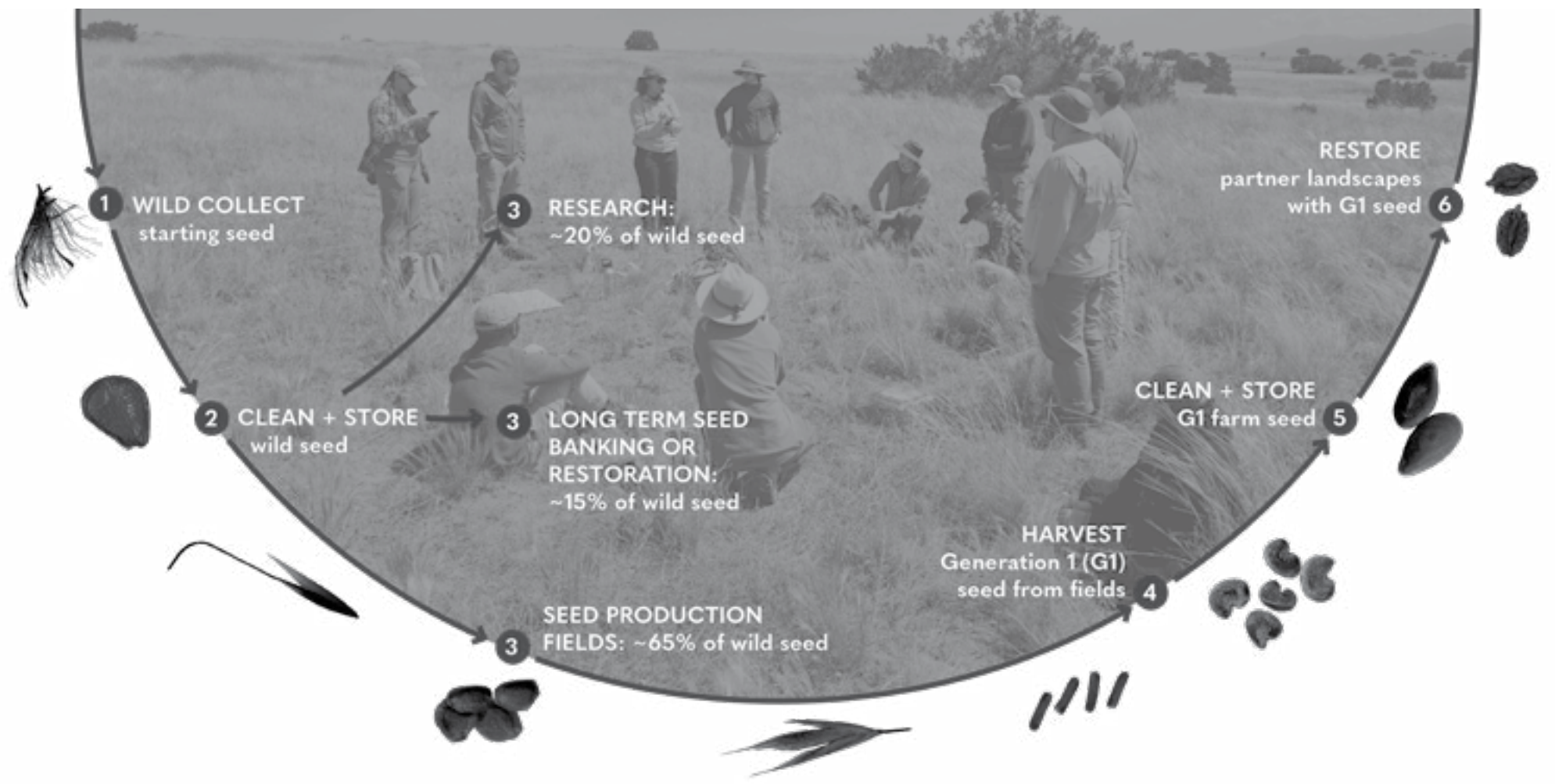
PRAIRIE CONEFLOWER FIELD IN BLOOM!

Have you ever considered where the native seed that you purchase comes from? What was the journey of the seed from harvest to your garden or a restoration site? What were the conditions of the seeds' source population? Had the plant population been stewarded and cared for over generations? What is at risk of a climate event like fire? Who collected the seed, cleaned the seed, farmed the seed, and stored the seed to maintain its viability? When finally planted, how familiar was the new landscape compared to the seeds' source, wild landscape?

The journey of seed from wildland collection to a restoration site takes several years and engages multiple collaborators stakeholders including land managers, researchers, seed collection crews, nurseries, farmers, and restoration practitioners. Folks working in native plants call this journey the plant materials production cycle. The Southwest Seed Partnership (SWSP), coordinated by the Institute for Applied Ecology, is working to support the emerging native seed industry in the Southwest through providing research, foundation seed, and funding to native plant producers, such as farmers and nurseries. The SWSP is a bridge between land managers who need appropriate native seed for restoration and native seed farmers in the region.

Let's take a look at a journey through the plants materials production cycle through the perspective of *Ratibida columnifera* (prairie coneflower), a native perennial forb reliably used in restoration. Prairie coneflower is recognized by people and pollinators alike by a sombrero-shaped flower head that blooms in drifts of yellow, red, and burgundy throughout the summer and into the fall. A common species, prairie coneflower populates dry and sunny prairies, plains, pastures, disturbed areas, and gardens. The forb readily propagates from seed, which the plant produces in the thousands!

A couple of populations of prairie coneflower from the High Plains ecoregion (Omernik Level III) entered the SWSP plant materials cycle through our partnership with the Bureau of Land Management (BLM) and the US Fish and Wildlife Service (USFWS) Partners Program in 2021. Our collaborative goal is to restore Lesser Prairie-Chicken habitat in southeastern New Mexico, where an estimated 90% of the iconic prairie birds' range has been destroyed or fragmented since the 1800's. In order to meet restoration goals, ecologists developed a target species list for seed collection. They identified prairie coneflower as a significant habitat plant for the Lesser Prairie-Chicken, as well as for pollinators. Also on the list were *Oenothera engelmannii* (Engelmann's evening primrose), *Eriogonum annuum* (annual buckwheat), *Sporobolus cryptandrus* (sand dropseed), *Andropogon hallii* (sand bluestem), and *Bouteloua curtipendula* (sideoats grama).



PLANT MATERIALS PRODUCTION CYCLE WITH THE
SOUTHWEST SEED PARTNERSHIP (SWSP)

Next, the SWSP was tasked with putting the local ecotype, wild-collected prairie coneflower seed into production in order to increase its quantity for restoration. Local ecotype plants contain genetics adapted to a particular region over the course of many generations. Unlike many other native plant species, prairie coneflower is readily available on the open market, but adaptive seed collected and produced within a local ecotype will greatly improve restoration success. This is why we hire seed crews to scout and monitor target species populations and then collect seed from within specific seed transfer zones. To collect seed responsibly, the SWSP requests permits from public land managers and sometimes private landowners. In this case, the seed crews were permitted to collect seed on BLM and state-owned land.

Prairie coneflower signals that it is ready to broadcast its seed, and therefore be harvested by seed crews, when the flower petals have fallen off, the seed is hard, the embryo inside fully developed, and seeds can be easily stripped. Seed collection crews collect seed following the Seeds of Success (SOS) protocol, where they carefully assess the size of a plant population and only collect from 20% of available seed at the time. BLM-funded seed collection crews gently hand-stripped mature prairie coneflower seeds into paper seed collection bags, dried out the seed, and shipped it to the Bend Seed Extractory or the SWSP seed studio to be cleaned.

Prairie coneflower is one of the easier seeds to clean with a pleasantly aromatic smell. The seed is a simple, single seeded fruit, called an achene, without a lot of chaff (protective seed coatings or awns) to clean off. Plant materials technicians and seed-cleaning volunteers sift the prairie coneflower through a sieve to

break up the large seed heads and remove debris, then run it through an air separator which blows air through a column to separate light debris and unfilled seed from the heavier filled seed. Once clean, the seed is tested for viability to better understand how readily it would germinate.

In a natural setting, prairie coneflower seeds drop off their parent plant where they lay dormant in cold, moist soils through the winter. Therefore, when they are cultivated, the seeds prefer to germinate after a period of cold, moist stratification. For this step in the cycle, the prairie coneflower seed was fortunate to move into the care of Katie Zickefoose, a talented nursery caretaker at Santa Ana Native Plants on the Pueblo of Santa Ana, where she stratified, germinated, and grew about 1,000 plugs of the prairie coneflower in the greenhouse, alongside thousands of other plants that she and her team produce for restoration.

Growing greenhouse plugs gives perennial forbs and grasses a head start when they are outplanted into agricultural fields. After a few months in the greenhouse, the prairie coneflower seedlings had a strong network of roots and were ready to move onto Elk Mountain Farms, located on Isleta Pueblo and run by Michael Lente, an experienced chile and grain farmer with a knack for experimenting. Michael and our SWSP staff planted hundreds of prairie coneflower starts in June of 2023 in flood-irrigated rows.

The coneflower field buzzed with pollinators throughout the summer, alongside a few other native plant fields at Elk Mountain Farm. By October the seed was ready for harvest. Our team spent a couple of days hand-harvesting what we call “Generation 1” seed, which refers to the number of the plant lineage was grown



WILD SEED COLLECTION OF PRAIRIE
CONEFLOWER

under agricultural conditions. We expect to harvest additional seed crops from this field in 2024 and 2025. Under the care of Michael, as well as help from SWSP staff and a Youth Conservation Corp (YCC) crew, the prairie coneflower will likely produce about 15 pounds of seed over three years, with approximately 735,000 seeds per pound! This quantity of seed would be difficult to collect from wild populations without negatively impacting them.

By the winter of 2025, four years after the Lesser Prairie-Chicken project planning and seed collection began, the prairie coneflower will be ready to be used for restoration. The SWSP will store the seed in a low humidity and temperature-controlled seed cooler where the seed will remain viable for up to 5-8 years. In the meantime, property owners, land managers, and ecologists will determine the best strategies for seed-based restoration. The seed may be rolled into seed pellets with a bundle of compost and clay and tossed across the landscape, drilled into soils, or grown as starts and planted as plugs where it will begin the next chapter of its journey.

Throughout the SWSP plant materials production cycle, the prairie coneflower will have passed through dozens of caring hands from diverse backgrounds and skills, all collaborating to support the conservation and vitality of native plants, wildlife, and humans alike. Thank you to all of our partners for making this project possible!

Interested in becoming a SWSP grower?

New native seed producers and nurseries are needed to meet restoration demands in the next several years. Native seed production can diversify farm income, attract pollinators that benefit other crops, build soil health, and reduce erosion. Since native plants are hardy and locally adapted, they do well in marginal farmland with fewer water and fertilizer inputs than traditional crops.

How the SWSP supports growers:

- Provide a bridge between buyers and growers of native seed.
- Provide starting seed or nursery plugs for fields.
- Establish multi-year production contracts, with low risks.
- Provide native seed workshops, training, and technical support throughout the contract.
- Work to ensure high seed quality by coordinating with NM and AZ seed certification.
- Assist growers with grant writing to expand capacity for their native plant nurseries and farms.
- Write grants to help facilitate tribal nurseries and new farmers.

SMALL-SCALE GROWER NEEDS FOR NEW MEXICO IN 2025

US FOREST SERVICE REGION 3

Needs five forb species on 0.25 acre fields for pollinator habitat restoration with a focus on working with underserved farmers.

US FISH AND WILDLIFE SERVICE

Needs three species on 0.1-0.25 acre fields, for Lesser Prairie Chicken habitat with a focus on working with rural and Tribal farmers. The species include:

- *Andropogon hallii*
- *Bouteloua curtipendula*
- *Sporobolus cryptandrus*

RESEARCH + DEVELOPMENT PLOTS

Experimental or tests plots on 0.125 to 0.25 acres.

Contact hollismoore@appliedeco.org for more information.

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NOPALOGY

FRANCES WHITEHEAD

75 QUESTIONS FOR THE FUTURE

1. What is Nopal?
2. How is the Nopal different from other prickly pear cactus?
3. Are these differences primarily culinary?
4. Why is culinary Nopal named *Opuntia ficus-indica*?
5. Is *Opuntia ficus-indica* a species or a hybrid cultivar?
6. Why does Nopal have octoploid DNA?
7. What four species make up this hybridity?
8. Will the underlying species emerge when grown from seed?
9. Do Nopal grow true from seed?
10. Why is Nopal usually propagated vegetatively by cuttings?
11. Is Nopal seed viable?
12. Why does the Nopal produce so many seeds?
13. Why is it so hard to germinate Nopal seed?
14. Does the seed have germination inhibitors?
15. Does the germination reflect other evolutionary factors?
16. Is the germination effected by other species?
17. Is the germination effected by cultural practice?
18. Is the germination effected by temperature?
19. How far north does Nopal grow?
20. Could it be bred to survive in the temperate zone?
21. Why do we want cold-hardy Nopal?
22. Is Nopal an important future food?
23. Can Nopal contribute to global food security?
24. Is Nopal nutritious?
25. How does it produce nutrition from poor soil?
26. How does it grow in alkaline soil?
27. How does it grow with so little water?
28. How do we breed a cold-hardy Nopal?
29. Can we use a traditional breeding program?
30. Does low germination limit a breeding program?
31. Does hybridity limit a breeding program?
32. Do we have adequate genetic resources for breeding?
33. Who holds these resources?
34. How long will it take for a vegetative breeding program?
35. How long will it take for a breeding program using seeds?
36. Do we have time?
37. What can we learn from DNA analysis?
38. Is future food security worth risking a GM breeding program?
39. What are the technological futures of Nopal?
40. What is the past, present and future of Nopal?
41. What is the history of Nopal?
42. Where in Mexico was Nopal first grown?
43. What is the center of origin of *Opuntia*?
44. How long has Nopal been under cultivation?
45. What is the agri + culture of Nopal?
46. Are these cultural aspects primarily culinary?
47. Are these cultural aspects primarily place-based?
48. What does the Nopal mean in Mexico?
49. What can the Nopal mean outside Mexico?
50. Who knows how to grow Nopal?
51. Who first grew it?
52. Who grows it now?
53. Is this cultivation knowledge production?
54. What do the growers know?
55. What does the Nopal know?
56. Is this cultivation cultural production?
57. Does this culture reflect human activity?
58. Does this culture reflect multi-species cooperation?
59. Does this culture reflect plant consciousness?
60. Does this culture reflect plant knowledge?
61. What is known?
62. What is not known?
63. What is forgotten?
64. Why are the Nopal fruits called Tunas?
65. Why does Nopal produce such colorful fruit?
66. Why did the Nopal fruit evolve with betalain pigments?
67. What is the evolutionary advantage of these pigments?
68. What are the aesthetic potentials of these pigments?
69. How does the history of cochineal inform these aesthetics?
70. Why do cochineal insects prefer *Opuntia*?
71. What is the history + politics of cochineal carmine?
72. How do betalain pigments compare with carmine red?
73. Can betalain pigments replace toxic chemical pigments?
74. Can artists access betalain pigments?
75. With these pigments does the Nopal speak for itself?

PHOTO CREDIT: FRANCES WHITEHEAD, 2023



FRANCES WHITEHEAD IS A TRANSDISCIPLINARY ARTIST BRINGING THE METHODS, MINDSETS, AND STRATEGIES OF CONTEMPORARY ART PRACTICE TO IMAGINE POSSIBILITIES FOR THE FUTURE. DEPLOYING THE KNOWLEDGE OF ARTISTS AS CHANGE AGENTS, SHE ASKS, WHAT DO ARTISTS KNOW? WHITEHEAD'S EXPERIMENTAL MODALITIES ARE DRIVEN BY HER LIFELONG INVOLVEMENT WITH PLANTS, WHICH HAVE INFORMED HER WORK IN THE GREAT LAKES REGION. SHE HAS RECENTLY RELOCATED TO SANTA FE, NEW MEXICO, TO FOCUS ON XERIC PLANTS AND NEW ECOLOGIES FOR THE FUTURE.

REFLECTIONS ON PRE CONTACT AGRICULTURAL TECHNOLOGIES

ANDREA REYNOSA



THE BEST FERTILIZER IS THE FOOTPRINT OF THE GARDENER.

Grateful for these collaborative opportunities with New Mexican Arts and Traditional Cultural Communities.

First Suppers
Saint Joseph's Mission School San Fidel, New Mexico
2014 to Present

Food Justice Residency
Santa Fe Institute for the Arts
2014-15



ABOVE: CHINAMPA GARDEN PROJECT 2012
SAN GREGORIO DE ATLAPULCO, CDMX MEXICO
SKYDOG FARM, NARROWSBURG, NEW YORK



LEFT: WAFFLE GARDEN INVESTIGATIONS
FOOD JUSTICE RESIDENCY, SFAI
2014-15

BELOW: TEK PRESCRIBED BURNING (TRADITIONAL
ECOLOGICAL KNOWLEDGE)
HEADLANDS CENTER FOR THE ARTS RESIDENCY
BAY AREA PRECONTACT AGRICULTURAL INVESTIGATIONS
2016

PRESENTLY, ANDREA REYNOSA IS ESTABLISHING A FOOD FOREST ENVIRONMENT AT HER SKYDOG PERMACULTURE LAB'S PROPERTY IN HORTONVILLE, NEW YORK/ UPPER DELAWARE RIVER AND CONTINUES TO WORK ON FIRST SUPPERS WITH THE SAINT JOSEPH'S MISSION SCHOOL, THE STUDENT/PARENT BODY AND ITS PRINCIPAL, ANTONIO TRUJILLO LOCATED IN SAN FIDEL, NEW MEXICO.



ANA MACARTHUR'S TRANSDISCIPLINARY ENVIRONMENTAL ART PRACTICE HAS FUNCTIONED AS A CREATIVE CATALYST BY REVEALING NATURE'S PROCESSES AND CONNECTED METAPHORS THROUGH THE LENSES OF LIFE'S RELATIONSHIP TO LIGHT, ENVIRONMENTAL INTELLIGENCE, AND APPROPRIATE TECHNOLOGY. HAVING A HISTORY OF WORKING IN DIVERSE LIGHT-BASED MEDIA, PIONEERING WORK IN DICHROMATE HOLOGRAPHY FOR 20 YEARS, AND CO-FOUNDING A ONE-OF A KIND DICHROMATE HOLOGRAPHY LAB IN SANTA FE, NM HAVE DEEPLY PATTERNED HER EVOLUTION OF WORK WITH LIGHT AND SUSTAINABLE TECHNOLOGIES. MACARTHUR'S PRACTICE EXPANDS INTO THE BIOLOGICAL AND BIO-INSPIRED REALMS, INCLUDING EXTENSIVE FIELDWORK AND CURRICULUM BUILDING IN BIOMIMICRY FOR YOUTH STEAM EDUCATION, ALL MOTIVATED TO CATALYZE SIGNIFICANT ENVIRONMENTAL CHANGE. HER ART WORKS CAN BE FOUND IN MULTIPLE COLLECTIONS, INCLUDING THE MIT MUSEUM. SHE HAS EXHIBITED AND LECTURED NATIONALLY AND INTERNATIONALLY, AND RECEIVED MULTIPLE GRANTS FOR HER WORK. SHE HOLDS AN MFA WITH TRANSART INSTITUTE, UNIVERSITY OF PLYMOUTH, PLYMOUTH. UK.

HEXAPOUS

ANA MACARTHUR
2022



A poetic board game played to somatically integrate awareness of protection and increased propagation of the 'class insecta' and more specifically pollinators. Within actions of the player, empathy increases, thus clarifying human behaviors that either impinge upon or expand upon the diversity of this decreasing family of partially invisible organisms....some appearing in the full light of the sun, and others in its absence at night or under the light of the moon. The six players, given a set of instructions, move the marbles from tile to tile, reading text on the tiles at first in silence and then out loud. The spoken-out text, by the group of players in unison, blends actions suggested by the text that would lead to preservation. Color coded regions of the board reference an over-heated or a cooled atmosphere and the effects of a changing climate on these organism's well-being. The game is designed to be spontaneously set-up in a variety of contexts, by simply setting the tiles on a flat surface, yet with a specific order of tiles to each other. As the text is taken in, the participant reflects on pollination, food security, multi-species survival, and forest and biome health. MacArthur's time spent in the field in deep observation photographically capturing hidden insects revealed a magical world of entangled relationships that reinforces humans as supported by the tiniest obscure lifeforms.

Medium: digital prints of New Mexico insects, or, pressed New Mexico flora framed in plexiglass tiles, text, glass marbles, o-rings, cushions, chalk; 9ft diameter.

HEXAPOUS BOARD GAME INSTALLED IN CONTEXT FOR EXHIBITION, MIRIAM SAGAN'S POETRY YARD, ECOARTSPACE, SANTA FE, NEW MEXICO 9FT DIA.



ABOVE: GAME PLAYERS (DYLAN TENORIO, CHRISSIE ORR, DEREK CHAN) IN PROCESS OF PLAYING HEXAPOUS BY MOVING MARBLES THAT FOLLOW INSTRUCTIONS AND PROGRESSIVELY TO THE CENTER, AND WHILE READING TEXT ON TILES.

MIDDLE: INDIVIDUAL TILES OF EITHER PRESSED NEW MEXICO FAUNA OR DIGITAL PRINTS OF NEW MEXICO INSECTS, FRAMED IN PLEXIGLASS; EACH TILE'S TEXT GIVING CLUES TO SPECIES AND ECOSYSTEM PROTECTION.

BELOW: GAME PLAYERS (CHRISSIE ORR, DEREK CHAN, MARIE WILKINSON, MERIDEL RUBENSTEIN) IN PROCESS OF PLAYING HEXAPOUS BY MOVING MARBLES THAT FOLLOW INSTRUCTIONS AND PROGRESSIVELY TO THE CENTER, AND WHILE READING TEXT ON TILES.

SONG FOR OUR SACRED SEEDS

DIANE WILSON

Mitakuye Owasin
I sing for my relatives
With each breath
I am remembering
the words of my ancestors:

Love our seeds as we love our children
Wacekiye. The earth hears me

With each breath
I am remembering
the Oceti Sakowin came from the stars
we flew on rivers of light
came to rest on our Mother's skin
where she loved us with her gifts
of water, soil and light
she said to us:
be kind to each other
be grateful for these gifts
take no more than what you need
and the people will survive

With each breath
I am remembering
the brave girl who swam
to the bottom of Spirit Lake
a Sacred Being gave her corn
so that the Dakota would have food
we gave thanks to the Creator
and we survived

Love our seeds as we love our children
Wacekiye. The earth hears me

With each breath
I am remembering
how we cared for our corn
as we would care for a child
The corn liked to hear us sing
grew tall and plump with love
pleased with our prayers and tobacco
the harvest was abundant
We danced the green corn dance
in gratitude for these gifts
And the people grew strong
and survived.

Love our seeds as we love our children
Wacekiye. The earth hears me

With each breath
I am remembering
how the elders told us
that we would lose our homeland in the war
the buffalo would be slaughtered
and the world would be unsafe
for the Sacred

During this dark time
women will hide seeds in their pockets
and in the hems of their skirts
even from the cries of starving babies
but the people will survive
because the women make it so

Do not be afraid, the elders said,
A generation is coming
whose eyes are filled with light
children still connected to the stars
they will plant the corn
they will dance the Green Corn Dance
they will teach us how to love
our Mother once again
And the seeds will return
And the people will survive
because the children make it so

Love our seeds as we love our children
Wacekiye. The earth hears me

DIANE WILSON IS A DAKOTA AUTHOR, ENROLLED ON THE ROSEBUD RESERVATION, WHOSE NOVEL, THE SEED KEEPER, WAS AWARDED THE 2022 MINNESOTA BOOK AWARD FOR FICTION. HER WORK INCLUDES A MEMOIR, SPIRIT CAR: JOURNEY TO A DAKOTA PAST; A NON-FICTION BOOK, BELOVED CHILD: A DAKOTA WAY OF LIFE; A MIDDLE-GRADE BIOGRAPHY ELLA CARA DELORIA: DAKOTA LANGUAGE PROTECTOR; AND A CO-AUTHORED PICTURE BOOK, WHERE WE COME FROM. HER ESSAYS HAVE BEEN FEATURED IN MANY PUBLICATIONS, INCLUDING WE ARE MEANT TO RISE; KINSHIP: BELONGING IN A WORLD OF RELATIONS; AND A GOOD TIME FOR THE TRUTH. SHE IS THE FORMER EXECUTIVE DIRECTOR FOR THE NATIVE AMERICAN FOOD SOVEREIGNTY ALLIANCE AND DREAM OF WILD HEALTH, BOTH NATIVE-LED ORGANIZATIONS SUPPORTING FOOD SOVEREIGNTY.

RESEEDING THE FUTURE RUTH WALLEN

Redwood Canyon is a jewel in Sequoia Kings Canyon National Park. When I first visited in September 2020 it was home to the largest grove of old growth sequoias on the planet. The inviting trail followed a ridge line studded with sequoias and tall pines, firs, and cedars. After a couple miles the trail dipped below the ridgeline into stands of oaks, but a surprise awaited as it climbed again only to descend on the other side of the ridgeline into the magnificent Sugar Bowl, a dense stand of trees comprised almost entirely of sequoias.

Shaded from the hot sun by foliage far overhead, surrounded by huge reddish trunks, I left the trail investigating one group of trees after another, enchanted by this world of ancient beings, delighting in the lush forest fragrances, daring to inhale deeply despite the smoky air that accompanied my hike that day. Only later did I learn that the murky haze was not only from fires burning far to the northwest but also from a series of lightning strikes to the south. Less than two weeks later these flames converged into the SQF complex fire that scorched 175,000 acres and twenty-two sequoia groves, and unlike fires of the past, climbed to all the way to the crowns of tall trees, destroying ten to fourteen percent of



SEEDLINGS ALONG FREEMAN CREEK TRAIL, 2023, THREE YEARS AFTER FIRE 60"X40"

the total sequoia population. A year later, in 2021, another fire, the KNP complex tore through Redwood Canyon and along with the Castle fire burned even more of the forest. In two years thirteen to nineteen percent of all sequoias perished. When I returned in 2022 the empty parking lot was foreboding. However, the beginning of the trail was only lightly burned, the fire having behaved like fires of the past, as fires "should," burning the underbrush and charring bases of the tall trees. But descending into the Sugar Bowl, all was blackness. Despite having obtained a hiking permit on the promise of creating before and after photographs, it was impossible to find familiar landmarks, to match the present lifelessness to images of living trees. Looking upwards there was no green in sight. At best toasted needles gave some indication of the trees that had stood for hundreds of years. However, many were reduced to poles and a few stubs reaching sideways. Some terminated abruptly, the top of the tree incinerated. Losing the trail, I walked to the western edge of the ridgeline and stared in shock at a shattered sequoia, logs the size of boulders, and the rows of black columns leading downwards to the valley below.

The ground was covered with sequoia cones and some seedlings, although I didn't notice them in great abundance, perhaps

because my attention was focused upwards. Sequoias cones are serotinous, needing fire to reproduce. They remain on the trees for years, poised to release seeds adapted to germinate when fire reduces the forest litter to rich mineral ash. Suppression of fires has hindered sequoia reproduction. Now after intense fire, what would become of this forest? Would tiny seedlings bring a new generation?

News accounts described the heartbreak of National Park Service and USGS managers and scientists who had tended these grove for years. Two years had brought unimaginable loss. These fires were preceded by several years of drought leading to the death of almost 150 million trees in California, although the sequoias were largely unscathed. Would this place even be suitable for parkland in the future?

A couple of months after my visit, scientists measured seedling abundance and found densities far below those observed after fires in the past. A restoration plan was quickly developed to bring in seedlings on burro trains and plant by hand. An environmental assessment was followed by a finding of no significant impact.

Others protested. How dare officials declare that disturbing the natural course of life in a wilderness area does not represent a significant impact? While government officials pointed to past surveys that showed that the second-year seed set was much lower than the first, independent researchers found 40% more seedlings in the second year. Whatever the case, who knows how many seedlings are necessary for successful regeneration?

Replanting took place very quickly in summer of 2023, before I read the reams of data informing or contesting the decision. Government scientists had clearly acted from a sense of urgency, probably fear. Walking through a charred forest or reading predictions for the future, what sane person would not be afraid? In recorded history, there had never been fires of this magnitude. Seedlings germinating in 2021 were subject to the hottest, driest summer in over a hundred years; those germinating in 2022 to the third hottest summer.

Yet the outcome remains uncertain, an uncertainty that will only persist and grow in the future years of our lives, if not those of the trees. What is it that those who bear witness need know in these times? How can we nurture these seedlings? How can we stay present to the world in which they find themselves?

In this place of devastation, I propose creating a bench, a place to sit, to be present, to be with uncertainty and not knowing, to be with whatever thoughts or emotions might arise, or not. A place to sink into slowly, a place to remember to breathe, to remember that one is still breathing, that breath is an anchor to come back to. A place to feel that even in this blackness other beings are breathing—from the tiniest microorganisms who survived the flames or returned on the wind or water, to the lupines whose emerald-green leaves and bright purple flowers not only grace the ground but bring life to the soils, in the form of nitrogen, depleted in the flames but so necessary for life.



REDWOOD CANYON SUGAR BOWL 2022 68"X40"

wolverine were seldom sensed. The symphonies that sounded at dawn and dusk diminished as entire sections of the orchestra no longer reached their full crescendo, while others were reduced to peeps. The subtle hums and buzzes of midday or dark nights also quieted.

Did the air carry scents of the arrival of different humans, hints of alarm as metal hit wood and their peers were felled in agonizing deaths taking days or weeks only to be floated down the mountainside in lengthy flues that radically changed the valley below? As settlers built farms, filled marshlands, and drained Lake Tulare, once the largest lake west of the Mississippi, surely the trees felt temperatures rise. How much less moisture drifted upwards?

For how long have the trees sensed catastrophe coming?

Sitting on this bench, or as you read this imagining yourself sitting on this bench, I invite you to be with the ashes, with the death and loss so palpable in this place. The charred trees, dead but still upright, have stood here for centuries, if not millennia. Imagine these trees standing in place, in continuous presence, roots extending in a subterranean world largely beyond our perception, branches reaching upwards and outwards, creating worlds that few of us will ever see. Growing rapidly in their youth but then ever so slowly, their girth expanding every year, more so in times of ample moisture, less so in years of dryness, etching the history of the weather in rings, stretching upward and outward as the seasons changed with regularity, the short freezing days of winter cycling with those of summer sun. Some years brought more rain, some years more heat, but the lengthening and shortening of seasons flowed with rhythmic regularity.

Of course, life always contained surprises. The electric flashes accompanying summer storms could strike with peril. While mature trees were adapted to survive, some were unlucky.

But could any experience have prepared them for the magnitude of current losses? Or does this question need to be rephrased? Was it us humans who were not prepared for the shock and enormity of catastrophic loss, despite the ample warnings?

Was this fire a sudden shock that ruptured the certainty of the changing of seasons or was it almost inevitable, something the trees had been sensing for years, girding themselves for, as the world in which they had stood for so long became ever more rapidly unfamiliar? First it was humans who vanished and with them the fires they set that cleared underbrush and stimulated seed fall. Then the grizzly disappeared. The martens, fishers, and

What have they not been able to tell us? What are their remains, still towering above us, trying to tell us now?

So much has changed since time began moving quickly or was utterly stilled. Photos show ancestors posing in front of tall trees or standing proudly on the stumps of those that they felled. Could any of them have imagined that their summer playgrounds, that whole forests would be reduced to this?

Seeds fell to ground and germinated. Others have been planted. Now is a time to sit.

To sense. To learn to be present. To contemplate what seeds we sow.



REDWOOD CANYON SUGAR BOWL 2020 40"X50"

RUTH WALLEN IS AN ARTIST AND WRITER WHOSE WORK FOSTERS DIALOGUE AROUND ECOLOGICAL AND SOCIAL JUSTICE. HER INTERACTIVE INSTALLATIONS, NATURE WALKS, WEB SITES, ARTIST BOOKS, PERFORMATIVE LECTURES, AND WRITING HAVE BEEN WIDELY EXHIBITED. SHE IS EMERITUS CORE FACULTY AND FORMER CHAIR OF THE MFA IN INTERDISCIPLINARY ARTS PROGRAM AT GODDARD COLLEGE. HER CURRENT WORK BEARS WITNESS TO MASSIVE DIE-OFFS OF TREES, PROVIDES SPACE FOR COLLECTIVE MOURNING, AND ADVOCATES FOR HEALING OF THE LIFE WEB.

WWW.RUTHWALLEN.NET

GLOBE MALLOW

IREN SCHIO



I recently learned that Globe Mallow is a close relative to the European Hollyhock that grows so well in New Mexico.

Globe Mallow has been growing profusely on the land here in Abiquiu on it's own as long as I can remember. It's striking bright orange flowers bloom from Spring thru early Autumn, as small plants or big bushes.

The edible flowers taste refreshing and help alleviate thirst. A salve can be made with them to sooth and heal skin abrasions and burns.

A tea brewed with the leaves of the plant before it flowers can help with a sore throat and bronchial congestion.

Globe Mallow also attracts Hummingbirds and Butterflies. This beautiful plant does best in full sun and reseeds itself easily.

IREN SCHIO LIVES AND WORKS IN ABIQUIU, WHERE SHE LOVES TO HIKE, GARDEN AND PURSUE HER ART.

OLD WOMEN AND DANDELIONS

IREN SCHIO

Once upon a time, I noticed an old Woman in my suburban neighborhood in Santa Fe diligently digging up Dandelions from her front lawn daily.

Nearly forty years later, this old Woman, me, remembers her and is thankful, that she dug them up and did not use round-up.

In honor of her, my trusty rusty trowel and Dandelions, I dug one up in my rural driveway, after it bloomed, for this photo.

While researching Dandelions, I learned of the false Dandelion, called Catsear, because of the shape of its leaves and the fine hairs on them. They are poisonous to horses, but not people. You can recognize them because true Dandelions only have one stem per plant, while Catsear has many flower stems per plant.



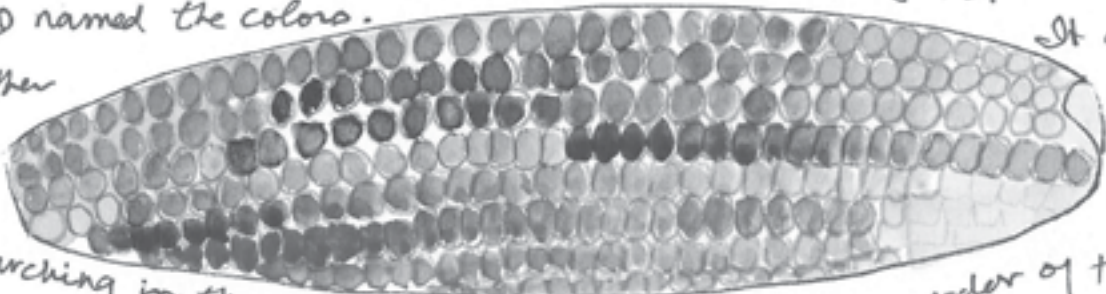
JADE BIRD: SINGING GRIEF

JOAN LOGGHE

The blue black corn my husband grew, planted last year + harvested by birds + a childhood friend. The blue black lustrous as satin, dull + shining in each kernel, far from the vivid luminescence, almost translucence of freshly picked. Gone, given way to a patina of milk gray + indigo, dusk gray, dust gray I would say if I named the colors.

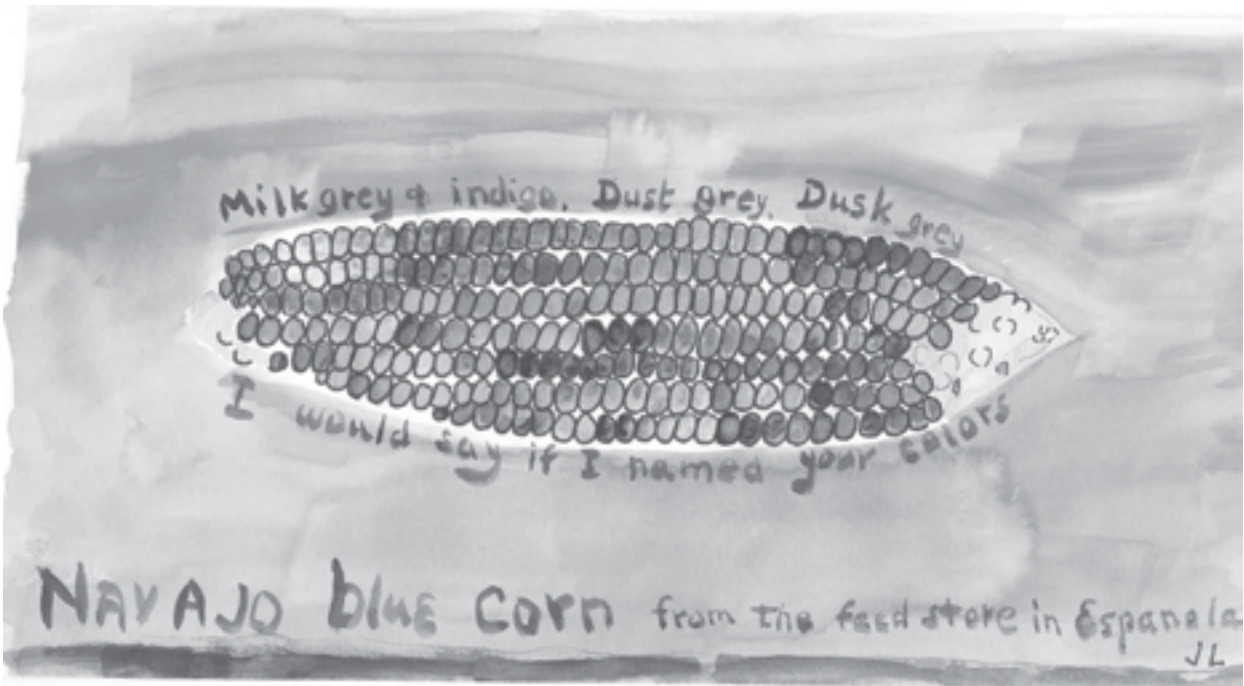
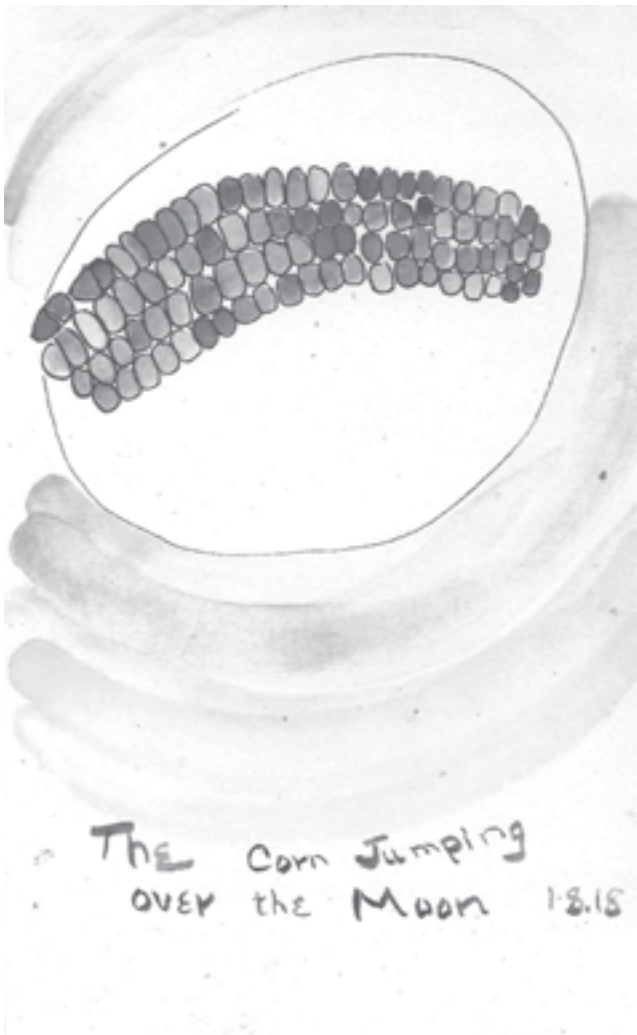
+ the grandfather kernels to plant alive forever.

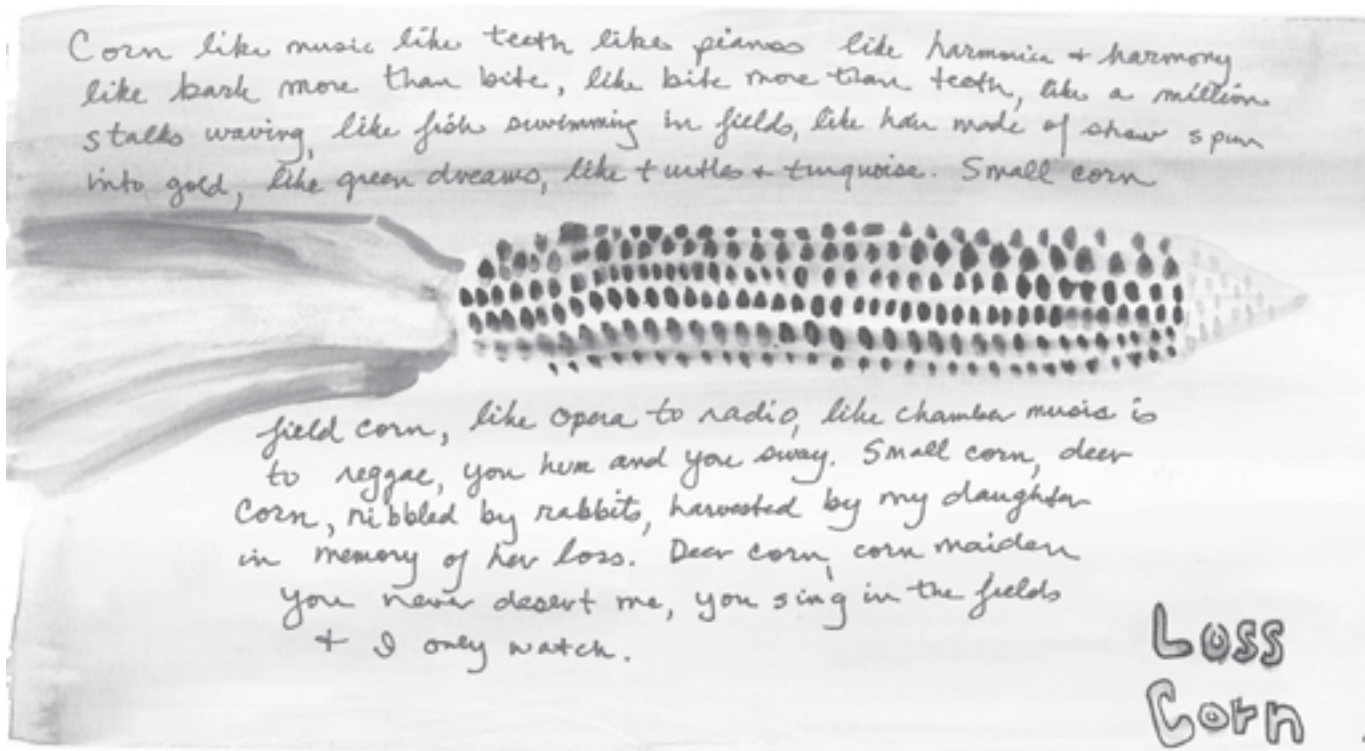
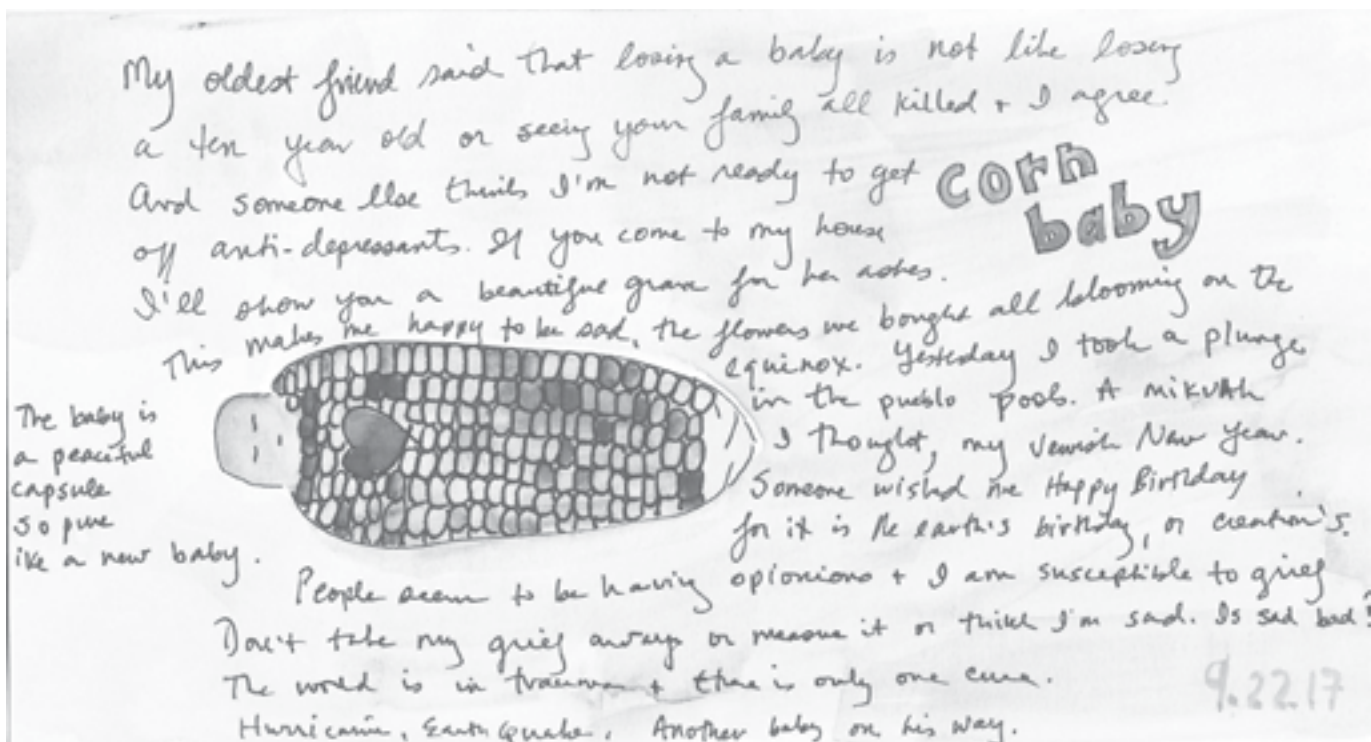
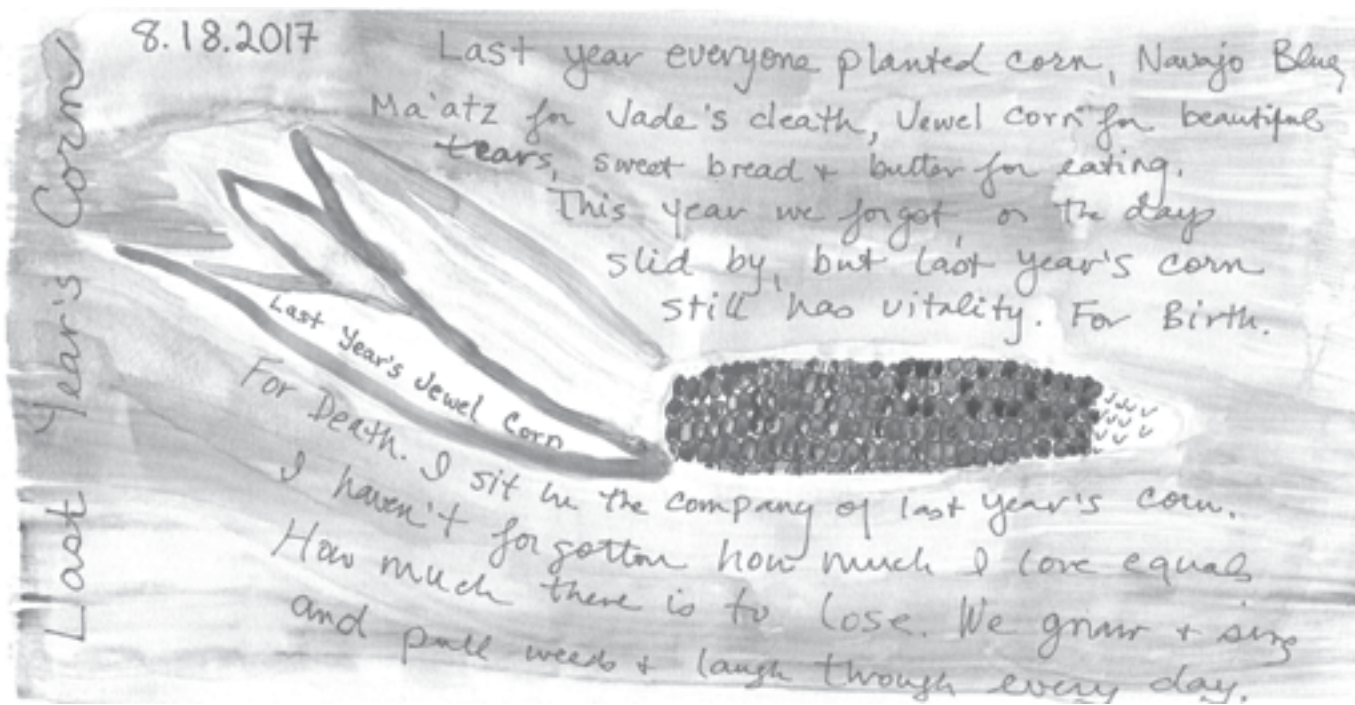
North Korea marching in threatening synchronized step. Rows + order of the cob, a village an audience at La Boheme reaching for their black handkerchiefs in the dark. Why is the word corny critical, when this community of seed is the holy carried forward, a single life lived variously, a multitude of yes + no, a capsule of blue, blue, this Navajo corn seed from the food store in Espanola. The precision of baby teeth biting into life. You, corn, had a secret swaddled under your husks, that only on picking and unwrapping, undressing you, is sacredly revealed.



It draws me into death at mass handling me and keep the boy Blue Soldiers of

7-25-2017
Joan Logghe







JOAN WORKS AT POETRY IN COMMUNITY FROM LA PUEBLA, NEW MEXICO WHERE SHE AND HER HUSBAND, MICHAEL, LIVE IN A FAMILY COMPOUND. THEY HAVE THREE CHILDREN, AND FIVE GRANDKIDS. JOAN SEES POETRY AS A VESSEL FOR BEAUTY AND HEALING. AWARDS INCLUDE A NATIONAL ENDOWMENT FOR THE ARTS FELLOWSHIP, WITTER BYNNER FOUNDATION FOR POETRY GRANTS, AND A MABEL DODGE LUJAN INTERNSHIP, AND A BARBARA DEMING/ MONEY FOR WOMEN GRANT.

THESE CORN DRAWINGS ARE PART OF AN UPCOMING BOOK, **JADE BIRD: SINGING GRIEF**, FROM WILD RISING PRESS.

TO CLOUDS

SARA WRIGHT

Gray and Green
March stood still
cumulus clouds
piled high
above me
mushroom sky
It was not
my intention
to seek you.
Chilled air
was fresh
and clean
my body
hummed
gray cedar
seeded
the moment
birth
hidden in
plain sight
no blood
rage
or torment
suffering
suffused
Listen!
Spirit is a
Bird with Wings
Body thirsts
in a desert
Now as Then
Diffused
stained
purple
fruits
filter
pure Light.



THE BUTTERFLY THAT DIDN'T GET AWAY: BUTTERFLY TAGGING

SARA WRIGHT

The timing couldn't have been worse. I entered the garden focused on photographing flowers, so I was totally unprepared to see the monarch fluttering around helplessly almost hitting the cement as it attempted to recover its ability to become airborne. Instinctively, I turned away before I realized that what I had just witnessed was the trauma that this butterfly was experiencing after just having been tagged.



This organization's hope was that some guide or kid in Mexico would find the tagged DEAD body of this monarch somewhere on the ground after the butterfly completed its journey from Maine to its winter stopover in Mexico.

I find this perspective bizarre because finding a dead monarch means that the butterfly will not winter over to finish his/her reproductive journey north in the spring. Not a success story for the monarch. What possible agenda lies behind these tagging operations that brag about monarchs that die in their wintering grounds is a mystery to me.

That the tagged butterfly I witnessed was suffering from distress was painfully obvious even as I heard the tagging woman say "get another, this one wasn't graceful enough".

Did I mention that the sequence was being filmed by one of the major television networks? Take two. I buried myself in the flowers, but my heart was pounding, and I was distracted, and this is how I managed to clash with butterfly tagging practices for a second time. I ran into a man with a stiff nylon net who was in the process of capturing another victim in its depths. Though he turned away I knew exactly what was happening having witnessed what occurs when a butterfly is caught in this manner. The insect becomes frantic. After being pursued and trapped the butterfly was now moments away from tagging distress. I glanced at the hapless creature pinned down by the wings. Groaning involuntarily, I sensed the trauma the poor butterfly was experiencing, and quickly exited the garden. Done for the day.

Although I was a member of this conservation organization this naturalist/ethologist couldn't sanction a practice which even encouraged and included allowing children to tag. Didn't anyone think about how the butterfly might experience this practice?

After expressing my opinion to those in charge, I deliberately avoided witnessing Monarch capture and tagging. This year only one monarch was tagged at the summer festival, or so I was told while I was busy volunteering at the bird table in mid – August. A few nylon bagged caterpillars were munching on a nearby milkweed clump. That day while participating in a bird walk on my break, I saw one monarch in the field.

When I returned to the garden about ten days later to check on the flowers (I love the pollinator garden), I was happy to see and photograph bees and wasps and the few monarchs that were fluttering around the Mexican Sunflowers. This time the caterpillars were gone, and a few chrysalises were zipped into the nylon bags to protect the inhabitants from parasites until eventual emergence, or death. I knew from personal experience that OE (disease) was only one of the problems and that some chrysalises would not hatch anyway. Hopefully the few that did would not hatch during a time when no one was present to release the butterfly before it damaged its wings.

Only about 10 percent of these insects make it to adulthood. I was also keenly aware that the monarch count had plummeted 22 percent just since last year. Depending on the source consulted 90 – 97 percent of these butterflies are missing in action; the species is approaching extinction despite laudable attempts to 'save' it.

The word extinction requires explanation. This is a process that occurs over an unspecified period, but once the existing population has declined beyond a certain point the dye has been cast. Sources vary but most agree that once 75 percent of the population has vanished, extinction is imminent.

Because I am a naturalist and aware of what is happening overall, I choose to focus my attention on letting nature choose how much milkweed to grow in my wildflower field and appreciating the monarchs I find in all stages of their lives while we still have them.

Spend some time watching a caterpillar eat through a milkweed leaf, turn himself into a 'J' to pupate. Look carefully at the exquisite chrysalis tipped in gold leaf; watch it darken and become translucent as the butterfly prepares to split the capsule. Sit with the emerging butterfly as her wings dry and she prepares for first flight. Last year I was present when the monarch I had been watching began pumping fluid into her wings and then fluttering and flapping them before sailing away into a cobalt blue sky... Nature's Grace. I won't forget.

Yesterday when I visited the garden to take pictures of flowers it never occurred to me that monarchs were going to be tagged while I was there, or that I would be unfortunate enough to witness the process by accident. Of course, they were being tagged because this is what this organization does, I realized on my way home. These are the monarchs that will be making the 2000-mile migration to Mexico. I was upset with myself. How naïve, how stupid I was not to make the connection between the time of year and tagging but then I realized that because I had taken every precaution not to be present for any part of this process and thus far had been successful why would it have occurred to me at all?

Today I learned that everyone is invited to witness butterfly tagging twice a week during the month of September. Efforts to publicize the 'rightness' of tagging are being stepped up.

Several people agreed with my assessment, namely that tagging creates trauma for the insect – and the idea that this practice may interfere with the butterfly's ability to survive the 2000-mile journey, winter over successfully and then fly north to reproduce in the spring.

To my knowledge no one else had openly expressed their personal views to those in charge of the organization. However, some folks have come to talk with me. Most of us know that trauma weakens any organism's immune system making it more vulnerable.

I also have friends who are biologists or scientists who agree that we have no way of knowing how tagging affects the butterfly or its ability to migrate successfully, and that even a small tag can create an imbalance in flight.

The underlying assumption (now hardened into 'truth') is that attaching an object to the hind wing of a butterfly that weighs less than half a gram with a tag that weighs 02 percent of the butterfly's weight is placed close enough to the butterfly's center so as not to disrupt flight. What I had just witnessed suggested otherwise.

When tagging began in 1992 scientists wanted to gain more insight monarch migration and decline. Monarchs caught the public's attention, becoming a cultural icon for 'save the species' groups. Monarch Watch and Xerces (there are many others) began their research. Data accumulated as hypotheses came and went. Thirty plus years later we have masses of detailed information, but we have failed to stop the monarch's steep decline.

As previously stated, the monarchs who hatch in September are the ones that make the long arduous journey to the central mountains of Mexico. The obvious threats of habitat loss – our disappearing forests, grasslands, clean water and air, the continued use of pesticides/herbicides, poisoned waters are compounded by the extremes that are being brought on by our changing climate. In Maine this tropical summer of floods and fog has given us a taste of what's to come. In southern climates it's fires and intolerable heat.

I do appreciate one aspect of this long -term research project. It has alerted some people to the plight of a disappearing butterfly and hopefully that will lead to folks seeing the 'bigger picture'. We desperately need humans to comprehend the enormity of our earth crisis and how it is affecting what's left of our wildlife, not to mention ourselves. Many people who have lawns are exchanging them for wildflower and pollinator gardens. These actions may assist other species to survive but unfortunately, I think it is too late for the monarchs.

While engaged in my research last year I learned from one reputable source that handling a butterfly removes butterfly powder. The loss of this precious wing 'dust' protects the butterfly from aerial predation.

Other researchers are quick to point out that they have learned a lot about the flyways the monarchs use, the problems associated with raising captive monarchs, diseases that affect the species, the fact that migratory behavior is remarkably sensitive to genetic and environmental changes, that even brief exposure to unnatural conditions even late in development may be enough to disrupt flight orientation (like bagging?).

Compiling data gained from gathering and quantifying information seems to be more about what humans want to learn about these insects in general than caring about the lives of actual butterflies.

From my point of view butterfly survival also requires asking what it means when a tagged monarch experiences trauma and then is found dead before it has completed its life cycle. Of course, there are a host of possibilities, but I find it disturbing that not one academic source addresses this issue.

I do not speak Monarch but as an ethologist (a person who studies animal behavior in the wild) I certainly pay close attention to behavior and butterfly tagging does create trauma for the insect; that much is obvious. Why no one mentions tagging as another reason our monarchs may be in steep decline is an important question that deserves attention.

Western science is supposed to be value free which of course is an illusion. However, the necessity of appearing to remain value free forces those who believe that a butterfly has feelings is dismissed as a person who is anthropomorphizing. Attributing trees and plants, animals, birds, frogs, lizards, and insects with feelings is projecting human qualities onto animals according to this way of thinking. In conservative science, the old story, non-human beings don't experience feelings of pain etc. have personal relationships or live lives that may or may not intersect with those of humans, let alone communicate with other species.

If an academic or person like me is radical enough to disagree with this perspective severe criticism and ostracizing, follow.

Conservative western science refuses to acknowledge that the new sciences tell us a very different story, one in which all nature is alive and sentient. In this scenario trees, animals, birds, insects etc. experience fear and other emotions that are unique to each species but share a commonality with humans because we are all part of the same whole. Anyone who has ever had a personal relationship with an animal or plant knows this whether s/ he admits this or not.

Advocating for sentience originally developed out of my naturalist's life experiences; research came later. I pay close attention to any encounters with non -human beings and draw conclusions from actual encounters as I did with the monarch (even when those conclusions conflict with prevailing theories or popular beliefs).

That human caught butterflies feel fright and anxiety is obvious to anyone who pays attention. The bottom line is that when it comes to tagging butterflies, we do not know what the consequences are.

Is it worth repeating that the tagged monarchs recovered in the mountains of central Mexico are all dead and their natural life cycle has been disrupted permanently?

Tagging creates trauma and stress that may be one more reason the monarch butterfly is in steep decline.



Postscript:

Andy Davis of Monarchscience.org is a research scientist at the School of Ecology in the University of Georgia. Andy has been studying monarchs, especially their amazing migration since 1997, and is the editor-in-chief of a scientific journal devoted specifically to animal migration. Andy is the author or coauthor of 35+ scientific studies on monarch biology.

Andy has this to say about tagging:

"We already know that the stressors monarchs face during migration are immense - like cars, loss of nectar, storms, etc. What if the weight of the tags, even if it is incredibly minor, is causing monarchs to burn slightly more energy during flight every day, so that they arrive in Mexico with not quite enough fat to survive the winter. Or, maybe the minor weight of the tag causes the monarchs to not flap as efficiently as it would have normally. Or, maybe the tags are leading to slightly, but chronically-elevated metabolic rates. Or, for all we know, there is a behavioral issue at play here - maybe the white tags cause the tagged monarchs to be shunned by their untagged friends, and the tagged monarchs are then prevented from joining the rest of the monarchs in the safe tree clusters. Who knows? The point is, we really don't have any data on the effect of tags to monarch physiology, flight mechanics, or behavior to say anything about this, but, given this new evidence (about increasing mortality at the winter sites), maybe it's time for scientists to take up this issue".

Andy Davis is a research scientist at the Odum School of Ecology in the University of Georgia. Andy has been studying monarchs, especially their amazing migration since 1997, and is the editor-in-chief of a scientific journal devoted specifically to animal migration. Andy is the author or coauthor of 35+ scientific studies on monarch biology.

SARA IS A WRITER, ETHOLOGIST AND NATURALIST WHO IS MAKING HER HOME BETWEEN ABIQUIU, NEW MEXICO AND MAINE. SHE HAS INDIGENOUS ROOTS, NATURE IS HER MUSE AND INSPIRATION. SHE WRITES FOR MANY PUBLICATIONS MOST OF WHICH FOCUS ON NATURE AND ECO-FEMINISM- THE BELIEF THAT WHAT IS HAPPENING TO THE EARTH IS ALSO HAPPENING TO WOMEN.

FULL CIRCLE

SUE OLDHAM

ONE MIGHT CALL ME A LONG-TIMER. I HAVE BEEN MARRIED TO THE SAME MAN FOR 50+ YEARS, HAVE LIVED IN THE SAME HOUSE IN OKLAHOMA CITY FOR 45+ YEARS, AND TAUGHT SCHOOL FOR 40+ YEARS. WE HAVE TWO SONS AND THREE GRANDCHILDREN. AFTER I RETIRED, I STARTED CARVING AND DOING WOODTURNING; EACH HOBBY HAS BECOME A PASSION.



Did my seed pot begin from an acorn?
Or was it once a whirligig?
Maybe a discarded pecan
Or a fuzzy ball?

Was the seed carefully planted?
Dropped by a bird?
Hidden by a squirrel?

Soil, water, growth, outreach.
Seed, stem, leaves, sapling

Glorious, sound,
rings enough to count.
Mature

Felled by disease?
Slowly defoliated, stressed?
Wasted by bagworms, caterpillars, borers
Beetles, leaf miners, or gypsy moths?
Did lightning strike
Or perhaps an axe?

Was it just a small limb
Or a large branch?
Total tree removal?

Noticed, imagined by a hobbyist
Or a professional turner?

Today a reservoir
For other seeds
Maybe an acorn
Or a whirligig
A pecan or a fuzzy ball?

DO YOU REMEMBER THIS? QUINN JONAS

A desk stands central.

A beautiful desk, my great grandmother's desk. The only body of hers that I remember knowing. She is warm brown and rough to the touch. She has a drop down work surface which can be locked when upright, but has never had a key – or I have never been responsible for keeping the key. I will never be responsible with any keys. She has sparse decorative shapes cut into her legs. She has three drawers, most of which stick, one of which is missing a wooden knob that has been replaced with a pink floral ceramic knob. Its elegance is out of place so it becomes inelegant, but purposeful and homey. Or rather her sort of elegance is one not based on delicacy or frill. She smells like decay in a sweet way, not rotten. In the top compartment there are smaller compartments of many shapes and sizes – some hidden, some not.

Two tiny child's hands reach toward the uppermost shelf, which looks like a tiny desert, a city of rocks. Fingers pass over stones of many places – twigs and sticks and coins and whittled birds and painted boxes. The fingers pick a yellow jeweled box and work the top off. In it lies little black flakes – shiny like slate – yucca seeds. Next the hands pick up a soft velvety pouch. A collection of tiny pits shimmy out, light and round.

Blue pouch – seeds whose hair quivers when breathed upon.
Red painted box – bumpy birds eye seed.
A loose little pile of smooth black seeds, lightless.
A gold painted walnut placed among gray river stones.

The tiny hands tip the latch and pull up and out the work desk. This is what she, the me of in my memory, sees: A yellow and pink floral fabric scrap, twisted and tied. Whale blue pouch. Red, yellow, then green velvet pouches. Red cotton bag, a white cotton bag, a white cotton bag with pink pull tabs, another white cotton bag, a cardboard jewelry box. A tiny, jeweled metal box. A box in the form of a bird.

The hands open a small center drawer. This is what she sees: Twenty tissues twisted and taped to hold their contents.

The hands of my memory go to work tipping out, unwinding, picking out, untwisting the tiny vessels. The containers and pouches are opened, their contents, seeds, are examined, placed back, and returned to their original compartment. This process happens one by one and in each pouch, I try to remember the seeds she sees. I don't recall names because names were rarely known to her. This was not about knowing what each seed was. Nonetheless, some names stand out to me now. Apricot stone, lychee pit, coyote squash seed...for the rest I lose names. I remember what the seeds looked like.

Now, thinking of their shapes, their characteristics, they could be called:

wisdom tooth seed,
hearth pulse,
hen pulse,
skinning knife seed,
spark seed,
sand seed,
clay seed,
sickle cell seed,

glass bead seed dog seed scale seed down seed
longing seed morning seed moon seed neighbor seed
unknowing seed sure seed holding seed losing seed
gnawed seed salt seed mug seed dancing seed locket
seed kayak seed mind seed.

She may have called them:

wood nut,
moth seed,
coin nut,
bunny seed.
choke pit,
freeze pit,
forbio
large seed for rubbing,
small seed for wishing,
fairy seed,
flying seed,
home seed.

I push forward in memory. I try to follow her little hands for days and months and years, but I often lose them. They start to grow, and I see them touch seeds less, reaching instead for stones and then pencils and then they become my hands as they are now. I wonder what happened to those seeds. Seeds she collected. Seeds she wrapped up and placed in my great grandmothers' desk. Seeds that were precious to her. Seeds she wanted to protect. I wonder what happened to those seeds because I remember that she did not know to plant them. I did not know that in my attempt to retain their preciousness, I was in fact not protecting them, but possessing them, and then forgetting them. Without the seeds, I forget to think of my great grandmother when I open its drawers. When I was tiny handed, the desk was the body of my great grandmother, but the seeds held her life.

I AM QUINN JONAS AND CONSIDER MYSELF A STUDENT OF WRITERS AND SEED SAVERS AND SEEDS THEMSELVES. I HAVE HAD THE PLEASURE OF LEARNING IN NEW MEXICO, CALIFORNIA, MAINE, AND SOON, MINNESOTA... LEARNING FROM THE ECOLOGIES AND COMMUNITIES. IN EACH OF THOSE PREVIOUS PLACES I HAVE SUCKED SALT OFF STONES. I HAVE SPILLED INK ON MY BEDSHEETS, AND I HAVE ATTEMPTED TO DESCRIBE WHAT THE SKY FEELS LIKE. IN EACH OF THOSE PLACES I HAVE BURIED MY HANDS IN THE GROUND, I HAVE ENTERED A BODY OF WATER AND WATER HAS ENTERED MY BODY, AND I HAVE FALLEN ASLEEP IN THE SUN. RECENTLY I HAVE THOUGHT A LOT ABOUT BELONGING, ABOUT WHAT I HAVE ALWAYS CARRIED WITH ME. I'M HOPING THE SEEDS THAT ARE NEW TO ME AND WHICH ARE TRAVELING WITH ME WILL WANT TO GROW IN MINNESOTA. I WONDER WHAT THEY HAVE ALWAYS CARRIED WITH THEM.

THE QUICKENING 1 & 2: 2021-2026

DEIRDRE O'MAHONY

The Quickenings/Feedback is a project in two parts. It is both a sound and image work and its presentation that had created space for multiple voices to be heard, the human and the more than human, and a gathering of voices to communicate and articulate an alternative vision of food production and land-use that is in the interests of all forms of life on earth.

SOUND AND IMAGE

Part 1 of *The Quickenings* is a moving image and sound artwork developed over three years of research into farming, climate change and biodiversity collapse using a process O'Mahony called 'The Sustainment Experiments'. This included sculptural plantings, workshops and conversations, and culminated in two feasts held in Dublin and Kilkenny. An invitation to share a meal generated frank conversations, recorded with permission, between farmers, scientists and policy makers about food quality, production and farmer's priorities.

Eighteen hours of recordings were transcribed, then edited into a libretto with writer Joanna Walsh and curator Georgina Jackson. This libretto was then developed and shaped by musicians. Led by singer and composer Siobhán Kavanagh and sound artist Michelle Doyle, they were joined by three of Ireland's most exciting singers and musicians; Branwen, Ultan O' Brien and Eoghan Ó Ceannabháin. Each of the five has a very distinctive pitch, style, pace and vocabulary. Through spoken and sung words, they deftly communicate the reality of farming life and the centrality of soil to our lives, deliberating over sowing and harvesting, extreme weather, the volatile demands of the market, food production and consumer behaviours. Creating a cacophony of voices, of human and more than human, instrumental and sonic interventions mingle with songs and sounds of soil and animal life; breathing cows, the movements of insect and soil creatures, dung beetles.

Listeners encounter the complex and collective roots of existence unsettling oppositions between human and more than human. This awareness is deepened by moving imagery captured across rural Ireland from multiple perspectives showing the land and its many inhabitants affected by the unseasonal droughts and flooding brought on by accelerating climate change.



THE SUSTAINMENT EXPERIMENTS EAT FOOD POLICY FEAST,
OCTAGON ROOM, IRISH GEORGIAN SOCIETY DUBLIN.
PHOTO CREDIT: ROS KAVANAGH
COURTESY THE ARTIST AND KUNSTVEREIN AUGHIRM, 2023.



SUSTAINMENT EXPERIMENTS KNIFE ENGRAVED AS A
CONVERSATIONAL PROMPT.
PHOTO CREDIT: KASIA KAMINSKA 2022.

EXHIBITION AND PRESENTATION

The Quickening was presented in an installation at The Douglas Hyde Gallery for Contemporary Art alongside a series of sculptural works that expanded the ideas around the work. At the same time as the Douglas Hyde exhibition, a Walls & Halls screening tour of rural community spaces and farms in the South-East of Ireland brought the film back into the farming context in which it was made. A newspaper featuring an overview of 'The Sustainment Experiments', interviews with farmers, the libretto, and the artist's 'Letter to Lucy' with longtime correospondant, writer, activist and curator Lucy R. Lippard, accompanied the tour and exhibition and was freely available to those who attended.

The Walls & Halls tour was important. It brought the film out of a national institution, Trinity Collage, a university with a worldwide reputation, and into the heart of farming communities in the South East of Ireland. This sent a powerful message of solidarity to farmers, many of whom feel besieged from all sides, by advisors advocating policies they know to be unsustainable and urban publics increasingly anxious about climate change. Audiencing the work in this way brought different communities of interest together to view the film. After seeing *The Quickening* one farmer said:

"... being a farmer can be a bit depressing, as it seems like the whole world is blaming us for all the problems that we have. The reality is that the system is broken, and it's all of us together that have driven that to happen. This is one of the first things I have seen that addresses the issue in a way that non-farming people should be able to understand."¹

The response from farmers and the general public to the film highlighted the urgency and the necessity of creating a space for multiple voices to be heard, the human and the more than human. Sound has been a critical part of the work; amplifying voices, changing the way we hear information and stories; and how our understanding and behaviours can be shaped by thinking about the complexity and urgency of the present.

The idea of 'singing a message into being' for policymakers in the EU is a natural next step for the project in order to effect a transformative change at both cultural and agricultural policy level, in the way food is both produced and consumed.²

1 WhatsApp Message from farmer Michael Keegan, reproduced with permission. 27/04/2024, 21:05
2 Phrase used by sociologist Dr Anne Byrne on visiting the exhibition at the Douglas Hyde. WhatsApp message 1/4/2024



DEIRDRE O'MAHONY, *THE QUICKENING*, WALLS & HALLS TOUR 2024 RATHANNA COMMUNITY HALL, COUNTY CARLOW. PHOTO CREDIT: FREDDIE GREENALL. 2024

STAGE 2: GATHERING VOICES, THE QUICKENING TOUR & LIVE PERFORMANCE, 2024-2026

Drawing on networks developed over many years, The Quickenings will be screened on farms and in villages in the UK and Europe to allow intimate, listening encounters with farmers and rural dwellers. The rapid decline in the number of small and medium scale farms, and the general unhappiness of farmers is little understood by wider publics. As more and more are being driven out of business and off the land at an unprecedented level, the post-screening space will be used to encourage and activate radical, explicitly utopian thinking and generate solidarity for all life forms, across and beyond the EU. Currently, within the farming sector, anger with environmental regulation and agricultural policies and trade agreements is being exploited by the far right to gain support in State and EU elections across Europe.

Supported by a trans-disciplinary team of European and Irish academics, curators and cultural theorists using a process called ‘Mind Meitheal’¹– ‘Meitheal’ is the Irish word for collective labour in the rural countryside – the process will ‘shadow’² the engagement and ensure it is ethical, fair and rigorous and generate journal articles and a walking policy document for the EU Agriculture Commissioner. The first meeting will take place in autumn 2024 to inform and critique the proposed methodology, the second, review and assess the process midway, the third the editorial choices after the transcripts of recordings have been reviewed and key points identified.

Working with translators and an editor, the conversations will be transformed into a song cycle and, it is hoped, performed live at EU Parliament. It will also take place at festivals and within cultural institutions in countries visited. To reach the widest possible audience the It will also be made publicly available as a CD and Vinyl recording.

¹ Mind Meitheal - <https://deirdre-omahony.ie/portfolio/mind-meitheal-knowledge-exchange-process/>
² “Shadow curation” comes from Nuno Sacramento’s research used at Deveron Projects, Scotland. <https://www.deveron-projects.com/about/shadow-curator/>

DEIRDRE O'MAHONY, *DUNG BEETLE TAKE-OFF*, 2023, 3 MINUTES; 6 SECONDS, HD VIDEO.
PHOTO CREDIT: TOM FLANAGAN, EXHIBITION IMAGE BY LOUIS HAUGH COURTESY THE ARTIST AND THE DOUGLAS HYDE GALLERY



DEIRDRE O'MAHONY HAS AN IMPRESSIVE 30 YEAR TRACK RECORD IN MAKING WORK ACROSS SCULPTURE, PAINTING, INSTALLATION AND PARTICIPATORY PROJECTS. AT THE CENTRE OF THIS WORK IS HER INTEREST IN THE POLITICS OF LANDSCAPE, RURAL/URBAN RELATIONSHIPS, RURAL SUSTAINABILITY AND FOOD SECURITY. SHE HAS INVESTIGATED THE POLITICAL ECOLOGY OF RURAL PLACES THROUGH PUBLIC ENGAGEMENT, EXHIBITIONS, CRITICAL WRITING, AND CULTURAL PRODUCTION. FROM LARGE-SCALE PAINTINGS PRODUCED BY TRACING THE SHADOWS OF BOULDERS IN THE BURREN NATIONAL PARK, ERRATICS (1997) TO SETTING UP COMMUNITY SPACES AMONGST A CHARGED LOCAL CONFLICT X-PO (2007-) SHE DEFTLY CONSIDERS THE ROLE OF ART IN BRINGING TOGETHER DIVERSE COMMUNITIES, ALTERNATE FORMS OF KNOWLEDGE, EMBRACING ART AS A CRITICAL SPACE TO HELP US SEE THINGS DIFFERENTLY. HER SPUD (2009 – 2019) AND SUSTAINMENT EXPERIMENTS (2020–2023) PROJECTS FURTHER DEVELOPED IDEAS AS A MAJOR COMMISSIONED ARTWORK, THE QUICKENING SOUND AND MOVING IMAGE INSTALLATION AT THE DOUGLAS HYDE GALLERY IN 2024.

HEART OF THE EMPIRE

CHRISTIAN LEAHY

The monk, white hair streaming down her back, presses a 4 oz Ball jar into my hand. Inside, there were 9 seeds—three each of corn, squash, and beans—from the Olmec homelands.

Plant these in the Heart of the Empire, she instructs. Taking my other hand, she closes it over the tin lid and pats it a few times, as if to say, It's settled.

I lift the glass to the late August sky to eye up the seeds. One breeze chases another through the flower garden, momentarily trembling the light and humidity. A flash erupts from the seeds—a ruby gleam, an opal spark.

I thrill to the task: here was something that mattered.

It made sense to me; the task had its logic. If corn could build the Maya, Zapotec, and Totonac worlds, for instance—then corn, beans and squash together could surely tangle around our current empire and pull it to its knees. Bring it to ground in a riot of blossoms, fluttering corn silk, pollen-drunk bees.

The seeds wintered on my desk. Nights, I spread maps across the kitchen table, brushing away the pine needles that had collected in their folds during last summer's wanderings. My forefingers traced topo lines, sometimes bearing down hard upon the empty spaces between them in frustration. Maybe the pressure, my need, could open a secret window on to the precise whereabouts of the Heart of the Empire?

By April of that year, I had narrowed my search to the nearby Jemez Mountains to the west and the land surrounding the Los Alamos National Laboratory. I studied the "closed areas"—forbidden sections designated by the Lab and identified in white. There was Area G, the 63 acres in Technical Area 54, where plutonium is buried in open 55-gallon barrels.

The Heart of the Empire pulsed here, but I shivered at leaving the seeds alone in the shadow of the barrels, in poisoned soil.

The last frost date approached. I thought to plant them near a spring, and found one near Area X. Or was it Area Y? Area Z? —LANL's sharp delineation of the land into an alphabet of devastation. The spring seemed a reliable source of water, but still, I would not be able to tend the seeds there. I'd be leaving them to chance, trusting the summer monsoons to come every day and ladle their nourishment evenhandedly. Trusting the hooves of elk and the paws of coyotes to not press the seeds too deeply in the mud or crush the sprouts. Trusting the 9 seeds could grow in neglect.

Late spring yielded to mid-summer. Although I thought I was closing in on the Heart of the Empire, I hesitated. It felt important to be exact about its coordinates. I had some subconscious notion that precision was everything when it comes to GPSing the Heart of the Empire. I had, after all, been a child in the era of Star Wars, and darkly imagined the Heart of the Empire imploding like the Death Star into a shower of frijoles negros and maize—if I could only level a direct hit with these 3 Sisters and my love.

Solstice arrived. Disappointed, I conceded the seeds would not be planted this year. The risk was too great. The seeds had traveled far in distance and through time. An old trade route had been activated, an ancient migration and reciprocity set in motion by the task. Planting the seeds at Area G or X would be no less reckless than surrendering armfuls of Monarch butterflies and hummingbirds—pollinators of this year's Chimayo cherries and Velarde apples—to a security checkpoint at LANL in the expectation something good would come of it.

There had to be another possibility.

I write Diego, hoping he can tell me something more about the seeds—the fields where they'd turned their bright faces to the sun and the tender hands of the farmers who harvested them. Diego had been with the monk that afternoon when she given me the Ball jar and he had been with her in Mexico, too.

He confesses he doesn't know where the Heart of the Empire is either and says this is the only thing he can think to share with me that might be of support:

Where I live, people save the silk of the corn to make tea as an herbal remedy to clean the kidneys. To wash away our fear.

The task yawned into impossibility.

Where was the Heart of the Empire?

What was mine to do?

I tucked the jar behind a photograph frame. Out of view.

Schooled by myth, I knew a handful of seeds always come with their dangers and their unpredictable magic. I remembered Jack, trading the family's sacred cow for a handful of beans. Those seeds grew bright and green, thickly twisting up to the clouds, and brought a fearsome giant down.

Unlike Jack, I couldn't be careless with these seeds; I felt I had to "get it right." At the same time, I had the persistent sense that the task, in actuality, was simple. Easy. It was only that there was something I wasn't quite seeing yet, something crucial I could not scry or understand. Or maybe there was something, someone, I had to become first? Someone who could apprehend the worlds beyond Empire, beyond its last broken fences? Someone whose fear had been washed away in the medicine of corn silk?

Some nights, I would lay out the seeds on the empty pillow next to mine and listen to what they were willing to share of their dreams, of their memories. They clung to silence—revealing nothing of themselves to me.

For seven years the seeds remained in the jar. In that cycle, I would learn the Heart of the Empire is nowhere ...and everywhere. Could I not just plant the seeds in my own backyard garden in the city and be done with it? Could I not plant the seeds in the depths of my own heart or in the furrow of my navel? Then, maybe there could be some relief in the seeds taking root in my gut, the tendrils of the squash and beans twining around each rib. Up the bone trellis the squash could grow until—at last—its blossoms pushed my mouth open into a bright brass trumpet...to sound the aching notes of my grief.

I was failing at what mattered.

Nothing came of the seeds when I eventually planted them in my garden in Santa Fe. I don't remember any details about what happened: it was just a soul-dulling bust.

I wish I had the next generations in the cup of my palm today, but here's the thing: I'm still listening to those original seeds, keeping faith with them. Letting them change me. Cultivate and grow me. While the seeds were silent in the early years, over our sojourn together they would disclose something far more invaluable than the location of the Heart of the Empire.

It is this: the Heart of the World. The Heart of the World is here where we live. She hasn't been erased. She hasn't retracted in despair to subterranean realms to hide and protect herself like she has in other places. She throbs at the surface—blushing the earth beneath my feet and flowering the horizon with roses at sunset.

Daily, I tune to the reassuring murmur of her valves and her ventricles. Feel the steady flow of love, in and out. The generous circulation of life blood through the veins of the many canyons and arroyos, the arteries of the acequias and creeks.

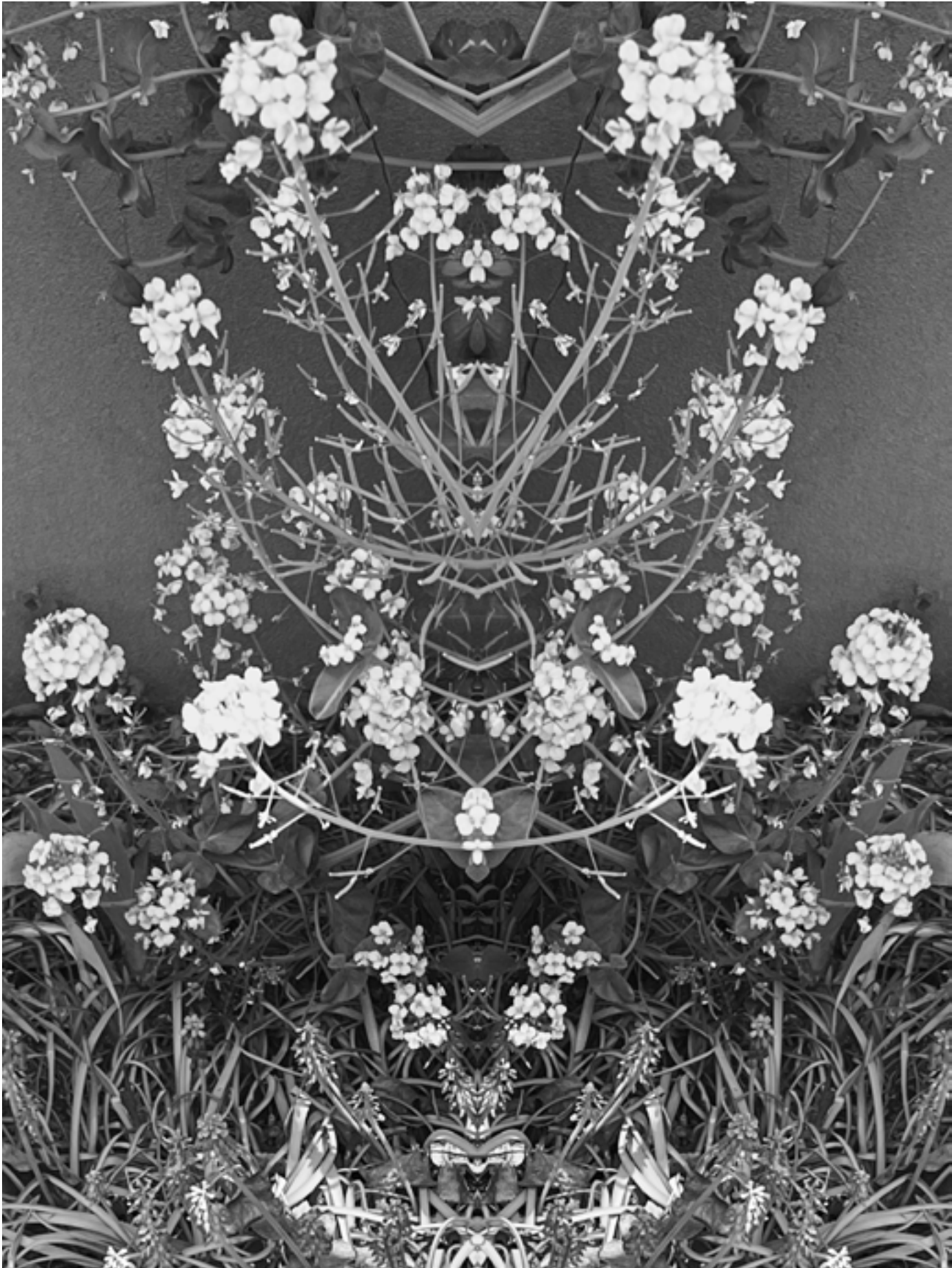
In my longing to feed and care for the Heart of the World, something in me remembers how to dream. Something stirs and gestates in my umbilicus, in the earth of me. My attention turns away from the Heart of the Empire and I join those who—to paraphrase Arundhati Roy—deprive Empire of oxygen.

Was this what the Zen monk intended all along?

I imagine if I could scatter the seeds across the pillow next to me once again, I now could hear the lullaby they hum through the nights:

There is more than one world. There are many, many worlds outside of Empire. Here. Now. We are the proof.

CHRISTIAN LEAHY LIVES AND DREAMS IN EL PRADO, NM. SHE IS A BOOK MIDWIFE, DEVELOPMENTAL EDITOR, AND WRITER OF LITTLE STORIES OF WONDER.



SECOND NATURE, APRIL 14, 2024, TAT SOI 1

SECOND NATURE NANCY SUTOR

Agua Fria Village historically was made up of farms orchards and pastures. In spite of the water in the river and acequias being diverted to the growing city of Santa Fe the village still is host to farms and gardens. It is my dream that the water is restored to the Santa Fe River year-round and could be even more of a food corridor and thriving ecological community.

Plants feed us give us shelter, shade, feed us, heal us. They teach us about the passage of time and the cycle of the seasons. Botanists and other scientific observers are finding intelligence and wisdom of plants that elders and indigenous knowledge always knew and gives one hope for the future.

Second Nature is an ongoing series of photographs exploring the complex magic existing in my world of plants.

These are plants from my garden and the landscape subtly abstracted using a mirror image technique revealing patterns and stories, creatures and entities, spirits and angels. We at heart are acquainted with this.

The original images are color photographs, the black and white versions give a noirish, somehow more like a newspaper, a story to be read.

The spirit of seasonal cycles, growth and decay is there, compost, fertility of the soil, sprouts, plants, food, herbs, trees and back to compost. Both transience and permanence. To me working in the garden and working in the studio are one and the same.

SeedBroadcast is an important collective entity, broadcasting stories, pollinating networks, cultivating food and seed resilience and celebrating nature and culture in beautiful and sustainable ways. I am grateful to be included here.



SECOND NATURE, APRIL 15, 2024, TAT SOI 2



SECOND NATURE, APRIL 16, 2024, TAT SOI 3



SECOND NATURE, APRIL 16, 2024, TAT SOI 4

NANCY SUTOR LIVES IN AGUA FRIA VILLAGE, LAND THAT HAS BEEN AGRICULTURAL FOR CENTURIES AND WAS CALLED CA-TEE-KA BY TEWA AND TANO INDIANS LIVING ALONG THE RIO GRANDE AND MEANS "COLD" WATER".

I AM AN ARTIST, CURATOR, EDUCATOR, GARDENER, COMMUNITY MEMBER AND TREE HUGGER. I GROW THINGS AND MAKE CONNECTIONS.

NANCYSUTOR.COM
NANCYSUTOR /FACEBOOK
NANCYSUTORARTIST/INSTAGRAM

PLANTING SEEDS IN MY HUSBAND'S BODY

BEVERLY NAIDUS

“Soul is soil.”
Sophie Strand, The Flowering Wand: Rewilding the Sacred Masculine

There's a little mound of dark brown dirt at the back of my garden. It's a special pile of dirt because it's been weeded clean of grass and other vegetation; it seems to be luxuriating in its presence as soil as it waits to be useful in other places. Occasionally, I scoop up several clumps and transfer it to a bed being prepared for seeds or starts, or I transport a container somewhere for ceremony. It was originally a cubic-yard of nutrient-rich soil, but over the past 10 months it has greatly diminished in size as it's been distributed to many gardens, near and far. As I dug into the pile last week, I was thrilled to discover veins of mycelium running through its rich brown thickness.

Somehow seeing this riot of fungal energy made this modest heap a bit holier. Interbeing was and is very visible.

Adjacent to the mound is a line of columnar apple trees in bloom standing like gentle sentries. They were planted in ceremony, less than a year ago. Those trees face the renovated garage that officially became a Zendo in 2022 to house our newly formed sangha, a meditation group in the lineage of Thich Nhat Hanh. The sangha allowed my beloved late partner, Bob, to offer his experience and wisdom to others while traveling on his cancer journey. Bob was a long-time practitioner of Zen, an ordained lay monk, and was trained in several lineages, but he always was careful to say that he was a Buddhist with a small “b.” Our sangha also came together to support the healing of our community as we emerged from the trauma of the pandemic. Bob and I had both done several retreats with Thich Nhat Hanh and we had trained with Joanna Macy, so we understood how crucial it was to bring this restorative energy into our community in times of deep trouble.

Some of the members of the sangha came to sit with us because they had collaborated on our community art project, The Tacoma Story Hive. The two of us co-facilitated this pandemic public art project with interested neighbors. I had been building interactive installations for decades, as both a strategy to heal trauma and to connect with others to take actions. Joanna Macy's “despair and empowerment” work had long been part of my inspiration. Our sculptural hive invited passersby to write or read stories about how people were navigating this time, what challenges they were facing, what skills and resources they were developing, and what their dreams were for the world we could co-create. The hive has been animated for 3 years now. Folks in the community love reading the stories of others as well as leaving their own. <https://www.tacomastoryhive.com/>

When my late husband and I wrote our wills back in 2015, we researched green burials. We found a “conservation” project near the Columbia River where they planted trees over one's shrouded body. We agreed that this process would work for us and planned to visit the site. There seemed to be no rush at the time.

Sadly, in April 2023, Bob had arrived at the end of an 18-month cancer journey that had started during the pandemic. While he was in the hospital for emergency care, I learned about a new and legal industry in Washington State: you can now have your body composted. Given that Bob had been a devoted ecological justice activist, working with his organization SEEDS (Social Ecology Education and Demonstration School) on soil remediation projects on Vashon Island, the idea of turning his body into nutrient-rich soil felt deeply in alignment with his life's purpose. He believed that the carbon sequestration that came from healthy soil was an important way to address part of the climate emergency.

I made plans with the local Earth funeral home before Bob came home for hospice care.



BEVERLY NAIDUS'S ART PRACTICE STRADDLES THE SOCIALLY ENGAGED MARGINS OF VARIOUS ART WORLDS, COLLABORATIONS WITH OTHER ARTISTS AND ACTIVIST GROUPS, AND COMMUNITY-BASED CREATIVE ENDEAVORS. MUCH OF HER WORK DEALS WITH ECOLOGICAL AND SOCIAL ISSUES THAT HAVE IMPACTED HER LIFE AND THOSE AROUND HER. ASIDE FROM ATTEMPTING TO HEAL PERSONAL AND COLLECTIVE TRAUMA THROUGH HER WORK, SHE CHALLENGES THOSE WHO INTERACT WITH HER PROJECTS TO REIMAGINE A POST-COLLAPSE WORLD THAT MOVES BEYOND DYSTOPIA. SHE HAS RECEIVED RECOGNITION AND FUNDING FOR HER INTERACTIVE PUBLIC INSTALLATIONS, PHOTO/TEXT PIECES, ARTIST'S BOOKS, AND PUBLISHED ESSAYS. HER WORK HAS BEEN SHOWN INTERNATIONALLY IN MUSEUMS, ALTERNATIVE SPACES, AND AS PUBLIC INTERVENTIONS. SHE HAS TAUGHT ART FOR SOCIAL CHANGE AND HEALING IN MANY CONTEXTS INCLUDING SEVERAL NYC ART MUSEUMS, THE INSTITUTE FOR SOCIAL ECOLOGY, GODDARD COLLEGE, HAMPSHIRE COLLEGE, CARLETON COLLEGE, CSULB, UW TACOMA. SHE HAS LED WORKSHOPS IN EUROPE, MEXICO, CANADA, THE US, AND CHINA. HER BOOK, ARTS FOR CHANGE: TEACHING OUTSIDE THE FRAME, HAS BEEN VERY INFLUENTIAL AND IS STILL IN PRINT. SHE FACILITATES THE FB GROUP, ARTS FOR CHANGE WITH OVER 6100 MEMBERS. HER BLOG ON SUBSTACK CALLED “GRAVITY HUMMING” [HTTPS://BEVERLYNAIDUS.SUBSTACK.COM/](https://beverlynaidus.substack.com/) IS WHERE SHE IS DRAFTING HER UPCOMING BOOK ON CREATIVE EMERGENT STRATEGIES AS WELL AS ESSAYS THAT WILL BECOME A FRACTURED MEMOIR.

On his first day home, I shared with him the possibility of human composting. He looked at me with an expression of dismay on his face, and said, “compost?” I knew then that the cancer had affected his mental capacities, and he was picturing his body becoming a slimy pile. After talking with my death doula friend, she suggested that I frame this discussion by saying that his body would become nutrient-rich soil.

The following day, Bob could no longer speak, and his arms and legs had become paralyzed. The cancer, an aggressive form of melanoma, had likely entered his brain stem, rendering him unable to communicate and move. It was devastating to witness this brilliant mind caught in that realm of muteness and paralysis. While I engaged with his loving gaze, I explained how his body would become nutrient rich soil and trusted that he would bless this decision.

Bob took his last breath at 10 am, April 28th. Members of our sangha had been taking shifts with him so that I could get a little sleep. I told one of them that Bob had left his body and he contacted the sangha and friends to join us.

I was left alone to wash and oil Bob’s body and offer it the gentle tenderness it deserved. I clothed him his brown Vietnamese Zen robe, draped him with the “rakusu” he was given when he was ordained as a lay monk, his prayer beads, and the beaded collar he’d been gifted at a pow-wow several decades earlier. The sangha gathered pink magnolia petals from our blooming backyard tree and adorned him as he lay in state.

Bob’s soil was ready exactly 49 days after his transition to ancestor. My neighbor and I drove to the funeral home in her pickup. A forklift placed the white vinyl bag holding a cubic yard of soil in the truck. When another neighbor’s help, we lifted the bag out of the truck and left it sitting solemnly facing the Zendo and the garden. I was a bit intimidated by its presence at first, but eventually was able to put a gloved hand into what felt like soft loam. After lowering a pail and shovel into the bag, I gathered some of the soil to use in my garden beds. With trowel in hand, I moved gently, hovering over each raised bed, spooning a bit of the sacred soil into each. My path through the garden was

an improvisational dance with spirit. I carried saved seeds in a basket, planting them with intention.

In June, seven columnar apple trees were delivered to the garden. Each was planted in some of Bob’s soil as part of his life’s celebration event. The ceremony was full of poetry, ritual, music, and lots of storytelling; the seeds planted by Bob’s life were visibly sprouting in the friends who attended. It gave everyone some joy to connect through our grief.

On the first-year anniversary of Bob’s transition to ancestor, I went on retreat at Breitenbush Hot Springs, a sacred place that has most recently suffered from devastating fires. The community is rebuilding the site with love and care, as are the multiple species of revived organisms clamoring for space on the wounded land. In the company of two lovely friends, we offered some of Bob’s mycelium-rich soil to be part the regeneration. Now, some of his scattered atoms have a beautiful river & mountain view, where they can meditate for all of time.

Planting seeds in our loved ones’ composted bodies may become a more common practice for the ecologically minded. When we do “walking meditation” or solo work in the garden, there’s some comfort knowing that we

will all become dirt someday. This embodied version of interbeing very tangibly represents the circle of life that feeds all our descendants.

In “The Work that Reconnects,” a network and way of thinking/being shaped by Joanna Macy and others, there are interactive practices to help people move through this time of “Great Unraveling” and enormous despair, both personal and collective. The movement we get to participate in, if we feel compelled to be part of positive possibilities amid dire circumstances, is called “The Great Turning.” As a participant in that work, I often refer to the teachings of Thich Nhat Hanh. He discusses the process of watering wholesome seeds in our store consciousness and choosing not to water the seeds that might cause more suffering. This year of deep loss, compounded by the multiple horrors taking place globally and very raw scar tissue evident in the collective, has encouraged me to find practices to steady myself and to share those with others.

Catastrophizing is a pattern that aggravates suffering. Finding the emotional tools to promote nurturing possibilities, as grief visits us, is crucial in this time. The pain of loss visits all of us, but we can grow from it and plant new seeds, even when heartbreak seems impossible to tolerate.



BOB’S APPLE TREES

ORANGE ALERT

SARA WRIGHT

Once
crimson
bittersweet
salmon
berries
ushered in
cool nights
northwest winds
cobalt skies
atom splitting
stars
now
blankets
of fog
blind dawn's
explosive disk
each daybreak
a warning
above and below
pond water
smolders
fire
shivers
no one
listens.

Omens.



SARA IS A WRITER, ETHOLOGIST AND NATURALIST WHO IS MAKING HER HOME BETWEEN ABIQUIU, NEW MEXICO AND MAINE. SHE HAS INDIGENOUS ROOTS, NATURE IS HER MUSE AND INSPIRATION. SHE WRITES FOR MANY PUBLICATIONS MOST OF WHICH FOCUS ON NATURE AND ECO-FEMINISM- THE BELIEF THAT WHAT IS HAPPENING TO THE EARTH IS ALSO HAPPENING TO WOMEN.

MESOCOSM:

FLOATING AN ONGOING PROCESS

CHRISTINE MACKEY

The following text is a condensed outline utilizing a glossary form to lay out the ongoing process of this long-term project Mesocosm.

MESOCOSM is from the Greek for medium (meso) and (cosm) world. These medium worlds consist of living components, which include plants, animals, bacteria, and non-human components like water, rocks, and sand. In a scientific context - MESOCOSM is a "bounded and partially enclosed outdoor experiment to bridge the gap between the laboratory and the real world in environmental science", (Odum, 1984; Crossland and La Point, 1992; Bruckner et al., 1995). This 'middle' term outlines the parameters of this project and its iterative parts. Taken at its most basic - this involves the growing out of an experimental ecosystem that potentially mimics a real-world scenario. The main creative challenge was that this system has the material capacity to change and adapt according to the conditions of the landscape, the sites and its embodied biological structure.



WEAVING THE BASKETS
PHOTO CREDIT: CHRISTINE MACKEY

AGERE 'to set into motion'

The lineage to this project came through a long-term engagement in working with plants and the saving and public distribution of seeds that I develop and nurture in various forms and public engagements. For EcoShowBoat an interest in working with the capacity of plants as indicators of climate change, how they can harvest pollutants from soil and water systems, and heal and nurture damaged planetary systems motivated my practice into new forms of cultivation with and for the plants. In practical terms the current state of Irish water systems drove the research. The Environmental Protection Agency has stated that nearly half of Irish Rivers are polluted by nitrogen and that there was a decline in water quality in 230 rivers recorded in 2020 with sewage and afforestation and re-planting on peat soils in acid-sensitive catchments, been also detrimental factors to water and its wildlife.

ARCHEIN 'to begin'

Some basic research on the history of floating islands and artificial wetlands and how artists have contemporized these forms anew steered the project towards developing multimodal structures that could potentially float and morph into living permanent structures. These ranged from 'chinampas' artificial floating islands invented by the Aztec civilization to Crannogs in Ireland, Scotland, and Wales built on lakes and estuaries, to an edible farm on a reclaimed barge by artist Mary Mattingly.

QUAERO 'to seek out'

Researching current scientific developments on floating wetlands and various forms revealed the majority made from POLYETHYLENE (PE) and POLYVINYL FOAM eventually degrade and leak pollutants into the water systems.

MATER ‘to work out stuff’

The challenge was what material alternative to plastic might be used? Daily walks around Glenade Lake, Co. Leitrim drew my attention to an abundance of mainly willow and reeds. Reading Joe Hogan's book 'Basketmaking' in Ireland outlines different types of folk structures woven in Ireland. Here the potato skib or ciseog became a form to be creatively repurposed within the constraints of this project. These traditional baskets are used to strain and serve potatoes or in some cases in place of a table as a communal serving plate for all to gather and eat from. I attended a series of workshops with Ciaran Hogan, learning the basics of willow weaving to construct a series of large-scale circular forms – I refer to them as the mother baskets. These baskets emerged from the repetitive movement of the weaving process whereby the surface is built up rather than transformed. Visualizing close parallels to other living artefacts like for example the shell of a gastropod. Tim Ingold writes about these growth forms and the process of weaving as a field of forces in conversation with the reciprocal forces of the material and its environment. He equates this skill of weaving as one of continuum and 'continually and endlessly coming into being around us as we weave ... Only if we are capable of weaving, only then can we make'¹.

¹ Ingold, Tim. P.342-348.The Perception of the Environment. Essay on Livelihood, dwelling and skill.

SOCIUS ‘to invite in’

Through the Creative Leitrim Arts program, I engaged willow weaver Helena Golden and several members of the Corryeolus Women's group where we wove a series of smaller daughter baskets that structurally could be linked to the mother. The time we spent together as we wove in a close learning context gave rise to each circular form to emerge through our conversations led by the material of willow. These individually and temporary containers woven of interweaving fibers bend to the reciprocal sensitivities between material and weaver through an ongoing open dialogue whose form is not predetermined. In this case, it becomes an open structure of play, chance and basic skill. In opening this project to a community -ownership dissipates, and new ideas and forms emerge between us as creative beings, our unique cultures and our collective concern for local habitats.

CÓLÓ

'to cultivate a space' These temporary islands are currently afloat on Blackrock Pond where they will attract and provide an alternative habitat for multiple land and water species. These structures can work in several ways: as bio-remediators to purify water or as nesting stations for other species to rest in and take root. They can become safe shelters for other species due to habitat loss and changes in flora and fauna. Drawing attention to how vulnerable our world is. Composing of complex and unique habitats specific to communities and places and how we human's impact negatively on these systems but with creative potential can act on anew.



LAUNCHING THE BASKETS
PHOTO CREDIT: CHRISTINE MACKEY



ON THE LAKE
PHOTO CREDIT: CHRISTINE MACKEY

CHRISTINE IS AN INDEPENDENT RESEARCH-BASED VISUAL ARTIST ATTENDING TO COMPLEX ENVIRONMENTAL ISSUES ITERATED THROUGH A RANGE OF SITE-SPECIFIC + SOCIALLY ENGAGED CONTEXTS. RESIDENCIES INCLUDE: JEOLLANAM-DO CULTURAL FOUNDATION, KOREA, DRAWINTERNATIONAL, FRANCE; INTERFACE, GALWAY, UTOPIANA, GENEVA, WATERLANDS HORIZON UCD (2023). AWARDED ARTS COUNCIL VISUAL BURSARY AWARD + CULTURE MOVES EUROPE (2023). GROUP EXHIBITION + PUBLIC ENGAGEMENTS WITH INTERFACE FOR EARTHRISING IMMA (2023). AWARDED FULBRIGHT SCHOLARSHIP PURSUING INDEPENDENT RESEARCH IN THE STATES (2018) AND GRADUATED IN 2018 WITH A PRACTICE-BASED PHD, BELFAST.

PHOTOGRAPHER SHARON STEWART RESIDES IN THE MORA VALLEY VILLAGE OF CHACÓN WHERE SHE HAS BUILT SOIL AND RELATIONSHIPS OVER THE PAST 30 YEARS. SHE EXTENSIVELY PHOTOGRAPHS THE ECONOMIC, SOCIAL, FAMILIAL, AND RELIGIOUS INFLUENCES THAT DEFINE CULTURAL LANDSCAPE OF NORTHERN NEW MEXICO INCLUDING A LONG FORM EXPLORATION OF ACEQUIA CULTURE AND MORE RECENTLY, THE CONTINUING AFTEREFFECTS OF THE 2022 HERMIT'S PEAK + CALF CANYON FIRE.

[HTTPS://WWW.SHARONSTEWARTPHOTOGRAPHY.NET](https://www.sharonstewartphotography.net)

BACK TO THE GARDEN

SHARON STEWART



NASCENT GARDEN
PHOTO CREDIT: SHARON STEWART



FARM TOOLS, EL GUIQUE, NM
PHOTO CREDIT: SHARON STEWART



HEART OF HAND
PHOTO CREDIT: SHARON STEWART



SOAKING PEAS
PHOTO CREDIT: SHARON STEWART



PLANTING PEAS
PHOTO CREDIT: SHARON STEWART



LETTUCE STARTS
PHOTO CREDIT: SHARON STEWART



SNOW PEAS
PHOTO CREDIT: SHARON STEWART

SEEDING RADICLE FUTURES

JEANETTE HART-MANN



FIELD LAB AT HAWKMOTH FARM AGROECOLOGY CENTER, ANTON CHICO, NM, AUGUST 2023.
PHOTO CREDIT: JAS ROBERTS

Radicle is the emergence of vegetal worlds as seeds sprout and transform into plants, which again through a myriad of relationships with lives above ground and under settle into seeds once more. What might be mistaken as a never-ending cycle of replication from seed to plant, from seed to plant, from seed to plant... ad infinitum - is instead a generative process of becoming across generations which queers life as we think we know it.

Each of these lives is unique and ecological - creative beings standing on the shoulders of ancestors and bearing forth to root into the earth, spread forth into the sky, and live forth as many creative kin. They sustain all life on earth – the connective catalyst of all ecosystem processes - as food, oxygen, carbon cycles, habitat – you name it – everything. In our age of extreme climate chaos, they are on the front-lines learning to adapt, survive, thrive, and pass on their knowledge and lives for a future that is coming and a future that is here.

They are also teachers guiding the “village clowns and prophets,” as Dr. Virginia Nazarea (Heirloom Seeds and Their Keepers, 2005) endearing calls backyard polyculture seed savers and others on the margins of “real farming” who grow giddy with the radicle force, beauty, and messiness of open-pollinated seeds and plants. People and plants joyfully playing together at the radicle centers of our futures.

I believe artists also fall somewhere in this category of village clown/prophet when immersed in the world of seeds and responding as seeds themselves - germinating creative responses which celebrate and dream into these queer vegetal worlds. And that's why my collaborative teachers are seeds.

Seeding Radicle Futures is an experimental field-based Art & Ecology course that gathers around the radicle and engenders the village clown, or is this case artists, to learn about the life of seeds and how they are rooted in the world around us. Based out of the University of New Mexico's Department of Art, Seeding Radicle Futures is a semester-long class offered through RAVEL Lab, which is directed and taught by myself (Jeanette Hart-Mann) and Kaitlin Bryson. RAVEL Lab supports the intersection of place-based biophilic research with ecological arts practice, radical pedagogy, community engagement, public-facing events, and publication.



DANDELION RESEARCH, 2023
PHOTO CREDIT: AVA SALAZAR

AMARANTH SEED CLEANING AND FINGER DRAWING AT
SEED SCHOOL, TRES HERMANAS FARM, ALBUQUERQUE, NEW
MEXICO. OCTOBER 2023.
PHOTO CREDIT: JEANETTE HART-MANN



HELPING TO CLEAN BLAUWSCHOKKERS PEAS AT THE PIMA
COUNTY SEED LIBRARY, TUCSON, ARIZONA. OCTOBER 2023
PHOTO CREDIT: RACHEL BORDELEAU

In the Fall of 2023, we spent the semester meeting bioregional aridland plants, seeds, and farmers, learning from artists working with seeds and plants, visiting with seed librarians at The Pima County Seed Library in Tucson, AZ and scientists at the National Laboratory for Genetic Resource Preservation (Seed Bank) in Fort Collins, CO, and generally hanging out with some pretty seedy folks. Our Field Labs took us from HawkMoth Farm Agroecology Center in Anton Chico, NM to Bean Tree Farm in Tucson, AZ and to Tres Hermanas Farm in Albuquerque, NM where we organized and hosted a public Seed School with Bill McDorman and Lee-Ann Hill. We also attended a lecture at CU Boulder with crop wild relative guru Colin Khoury who asked us, "If we are what we eat then where are we from?"

During these wanderings participating artists began their creative research projects rooted in a particular plant or seed they chose based on an inner feeling, an intuition that this plant was kin. These included dandelions, prickly pear, datura, amaranth, elm, and red yucca. Connecting the cultural, social, botanical, biological, and ecological contexts, emerging artworks pointed to an interesting perspective that not only people can be the "village clown." Often plants too find their way into a margin, whether as a weedy, deadly, or merely ornamental sidekick to an anthropocentrically dominated worldview.



ADIA JAMILLE, HOSTS A WORKSHOP
ON BOTANICAL PRINTING AND SHARES
HER RESEARCH, TUCSON, ARIZONA,
OCTOBER 2023.
PHOTO CREDIT: JEANETTE HART-MANN.

This research not only uncovered incredibly interesting and often obscure information about these plants, it also led to the creation of artwork that each artist experimentally made, whether out in the field, in a lab, kitchen, or studio. At the end of the semester, we hosted an exhibition of installations, photographs, sculptures, textiles, biomaterials, videos and participatory works titled, of fields and spirits. A statement collectively generated by the artist said, "...we consider what possibilities might unfold when we confront the tensions and complications in these plant-human stories."

Thanks and much gratitude to all the seeds, plants, and people who shared their lives and work play with us! Thanks to community partners and teachers: Barbara Rose at Bean Tree Farm, Bill McDorman, Lee-Ann Hill, Justine Hernandez at Pima County Seed Library, Adia Jamille and Ernesto Olguin at Oro House, Maegan Lopez at Mission Garden, Andrea Carter at Native Seeds/SEARCH, the Hart-Mann family at HawkMoth Farm and Agroecology Center, Jennifer Kendall at USDA NLGRP, CU Boulder Ecology Colloquium, Erika Osborne and Francesca Cortufo at Colorado State University, and Nancy Zastudil.



ELEVATOR AT THE NATIONAL
LABORATORY FOR GENETIC
RESOURCE PRESERVATION,
FORT COLLINS, COLORADO,
OCTOBER 2023.
PHOTO CREDIT: JEANETTE
HART-MANN



COLD STORAGE SEED BANK AT THE NATIONAL LABORATORY FOR GENETIC RESOURCE PRESERVATION,
FORT COLLINS, COLORADO, OCTOBER 2023.
PHOTO CREDIT: JEANETTE HART-MANN

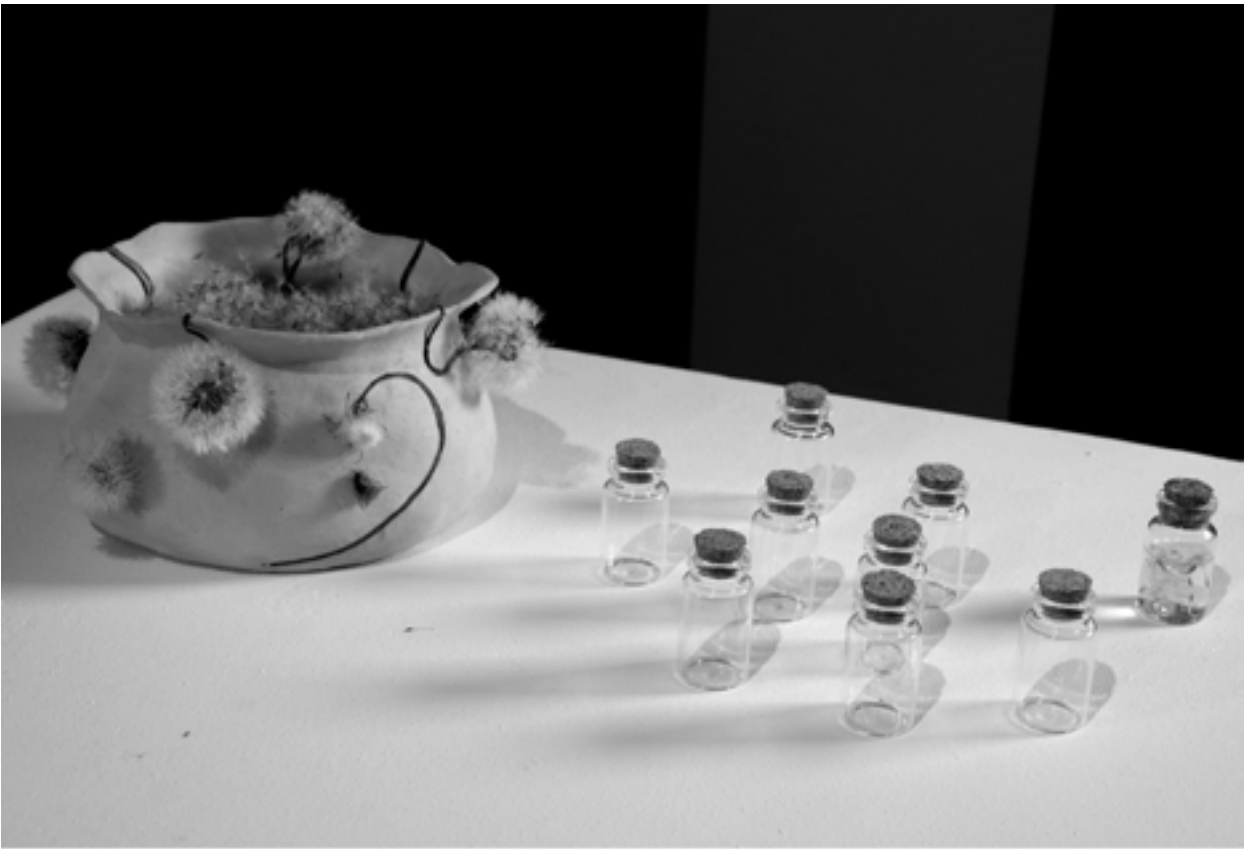


EXHIBITION OVERVIEW FEATURING FROM LEFT:
ROOTED IN RESISTANCE BY JAS ROBERTSON AND HOPI RED DYE AMARANTH,
WHISPERED WISHES VIALS, A GIFT FOR YOU BY AVA RAQUEL SALAZAR, AND
AND THROUGH THESE RELATIONSHIPS I AM NOT "BECOMING," I AM RETURNING BY ROXANNE MARQUEZ.
MASLEY GALLERY, ALBUQUERQUE, NEW MEXICO. DECEMBER 2023.
PHOTO CREDIT: JEANETTE HART-MANN

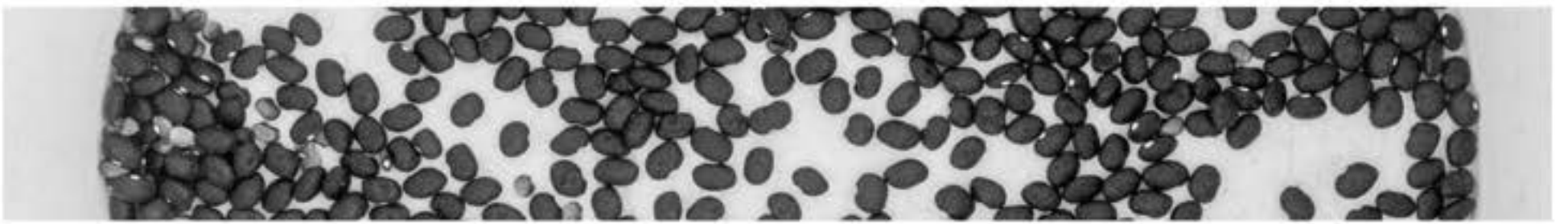
JEANETTE HART-MANN IS A FARMER, ARTIST, SEED STEWARD, AND TEACHER WHOSE RESEARCH AND PRACTICE IS ROOTED IN EMBODIED ECOLOGICAL KNOWLEDGE, SEEDS, AGROECOLOGY, AND MORE-THAN-HUMAN RELATIONSHIPS. SHE IS ASSOCIATE PROFESSOR OF ART & ECOLOGY AT THE UNIVERSITY OF NEW MEXICO WHERE SHE DIRECTS RAVELAB. HART-MANN IS CO-FOUNDER AND CO-DIRECTOR OF SEEDBROADCAST AND FARMS WITH HER FAMILY AT HAWKMOTH FARM IN ANTON CHICO, NEW MEXICO.



YOU, ME, FRANK AND THE REST OF US, BY RACHEL BORDELEAU, INTERACTIVE VIDEO AND PROJECTION INSTALLATION. MASLEY GALLERY, ALBUQUERQUE, NEW MEXICO. DECEMBER 2023. PHOTO CREDIT: JEANETTE HART-MANN



WHISPERED WISHES VIALS, A GIFT FOR YOU BY AVA RAQUEL SALAZAR. MASLEY GALLERY, ALBUQUERQUE, NEW MEXICO. DECEMBER 2023. PHOTO CREDIT: JEANETTE HART-MANN



“With the modernization and commodification of agriculture, seeds have become ‘things’—a commodity. Moreover, in these processes of translating seeds from animate beings into items of commercial value, the very existences of both seeds and farmers are cheapened, displaced, and dispossessed.

Very few people care whether seeds, farmers, and their symbiotic relationship will continue. With the advent of climate change as both global discourse and locally experienced phenomena, yet another layer of dispossession and cheapening of nature is happening.”

Sunil D Santha

“Losing touch with mother seed: Insights from action research with small-scale farmers in Tamil Nadu, India”

