

SeedBroadcast



*agri-Culture
Journal*

Cultivating Diverse Varieties of Resilience #12



12th Edition SeedBroadcast Journal

We would like to thank all who generously contributed to our 11th edition of the bi-annual **SeedBroadcast agri-Culture Journal**. We will be producing a **Special Edition** of the Journal in the **Summer of 2019** in tandem with the opening of **"Seed: Climate Change Resilience."** which opens June 22nd 2019 at the Albuquerque Museum. (see page 4) 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 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 MAY 27TH, 2019

Send submissions to seedbroadcast@gmail.com

You can keep up with our actions and encounters with other seed lovers at on our website www.seedbroadcast.org and follow our blog at <http://seedbroadcast.blogspot.com/>

We want to thank our fiscal sponsor Littlelobe, the McCune Charitable Foundation, Robert Rauschenberg Foundation Climate Change Solutions Fund, Native Seeds/SEARCH, Albuquerque Museum, our SeedBroadcasting cohorts especially the farmers that have allowed us into their fields and lives.

Aaron Lowden and the Southwest Conservation Corps Ancestral Lands in Acoma Pueblo, www.sccorps.org/join/ancestral-lands/.

Dr. Larry Emerson and Jennifer Nevarez of Tse Daa K'aaan Lifelong Learning Community in Hogback, New Mexico.

Beata Tsosie-Peña of Santa Clara Pueblo and the Española Food Oasis, www.facebook.com/Espa%C3%B1ola-Healing-Foods-Oasis-1697727540506515/?hc_location=ufi.

Ron Boyd of Mer-Girl Gardens, in La Villita, New Mexico www.facebook.com/Mer-Girl-Gardens-295388580481343/.

Land Arts of the American West, landarts.unm.edu.

Rocky Mountain Seed Alliance, rockymountainseeds.org, Sarah Montgomery of Garden's Edge www.gardensedge.org

Tiana Baca of Desert Oasis Teaching Garden.

Albuquerque Museum, cabq.gov/culturalservices/albuquerque-museum.

Fodder Project Collaborative Research Farm.

Rowen White, Sierra Seed Coop, sierraseeds.org,

Native Seeds/SEARCH, www.nativeseeds.org.

Rulan Tangen and Dancing Earth www.dancingearth.org,

Cristobal Wells, allspeciesprojects.com, Ana Ruiz Díaz and Toña Osher for building our relationship to community actions and seed activists from Meso-America,

Whitney Stewart for graphic design, Natalie Keys for transcribing, Paul Ross for distribution, Rick Ferchaud for endless weeding and digging, the many individuals for their continued support, and to the amazing anonymous donors that continue to support our work. We extend a huge welcome to all of our local and national partners and to our seeds that continue to inspire and give us hope.

SEED=FOOD=LIFE

First the farmer sows the seed,
Then he stands and takes his ease,
Stamps his foot and claps his hands
And turns him round to view the land.

15th Century Song

As we all know these times in which we are living can feel like the upside down times. Our world is spinning faster and faster so it is hard to keep up with all that comes our way. What we have known, or feel we know well, is constantly shifting and changing, sometimes for the better and often for the not so good of this planet. All can be over whelming and out of balance. However there are meaningful ways to ground ourselves back into this world, these ways might be different for all of us but we at SeedBroadcast have been following the way of the seed and are dedicated to what they teach us and in return offer our support to keep their nurturing stories alive and in good health.

We too are seeds...

SEEDBROADCAST holds the belief that it is a human 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 its creativity. We seek to reveal the culture that has been lost in agriculture and believe that seeds are witnesses to our past. They have their own story to tell and it is up to us to listen.

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 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.



PLEASE HELP US GROW!
Support SeedBroadcast with
a tax-deductible donation!

**TO MAKE A TAX DEDUCTIBLE
DONATION TO SEEDBROADCAST
GO TO:**

Online donation:

[seedbroadcast.org/SeedBroadcast/
SeedBroadcast_Donate.html](http://seedbroadcast.org/SeedBroadcast/SeedBroadcast_Donate.html)

**Or contact our fiscal sponsor
Littlelobe for other payment
options:**

Phone: 505.980.6218

Email: info@littlelobe.org

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. These are times of rapid climate and environmental changes 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.

- Your donation will support the Seed: Climate Change Resilience exhibition and community engagement in partnership with the Albuquerque Museum, Native Seeds/SEARCH and New Mexican farmers. Opens June 22nd 2019.
- 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 and distributed from hand to hand.

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 and anonymous donors that support our continued projects. We are also grateful to the individuals and institutions that have sponsored our participation in their public events helping to offset travel expenses. 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 putting the culture back into agri-Culture!

SeedBroadcast



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PHOTO CREDIT: SEEDBROADCAST.
MER-GIRL GARDENS

SEED: CLIMATE CHANGE RESILIENCE

"THE FACT THAT WE HAVE TO FIGHT FOR SOMETHING SO ESSENTIAL TO LIFE AS THE INTEGRITY OF SEEDS, SPEAKS TO THE REAL DRAMA OF THIS PRESENT TIME: THAT WE HAVE TO FIGHT TO PRESERVE WHAT IS MOST FUNDAMENTAL AND SACRED TO LIFE." LLEWELLYN VAUGHAN-LEE

As we all know these times in which we are living can feel like the upside down times. Our world is spinning faster and faster so it is hard to keep up with all that comes our way. What we have known, or feel we know well, is constantly shifting and changing, sometimes for the better and often for the not so good of this planet. All can be over whelming and out of balance. However there are meaningful ways to ground ourselves back into this world, these ways might be different for all of us but we at SeedBroadcast have been following the way of the seed and are dedicated to what they teach us and in return offer our support to keep their nurturing stories alive and in good health.

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ACOMA ANCESTRAL LANDS
FARM CORP PROGRAM

PHOTO CREDIT:
SEEDBROADCAST



Seed: Climate Change Resilience is a community engaged arts project exploring seed, arid-land agri-Culture, resiliency, and climate change. Created by SeedBroadcast, a New Mexico based arts and agri-Culture collective, in collaboration with numerous New Mexico farmers and seed stewards, this project features an interactive public exhibition at the Albuquerque Museum to inspire dialogue around seed, global warming, local food, healthy communities, and the revitalization of bioregional agri-Cultural practices.

EXHIBITION

June 22 - September 22, 2019

Albuquerque Museum
2000 Mountain Rd NW
Albuquerque, NM 87104
505-243-7255

Hours: Tuesday – Sunday from 9am-5pm

Free Days: 1st Wednesday of each month,
3rd Thursday from 5-930pm, every Sunday 9am-1pm

SPECIAL EVENTS

Saturday June 22nd 1–4pm

Opening Reception

SeedBroadcast will facilitate a blessing ceremony, acknowledgement and recognition of indigenous peoples and seeds of this land, and a reading of the SeedBroadcast *Seed Manifesto*. The afternoon will also include performative actions around seeds, story and climate change.

Thursday July 18 5:00–8:30

SEED POETRY SLAM

Albuquerque poet Laureate Michelle Otero and local poets will activate the exhibition space with their seeded words along with the screening of the film "Seed Travels" by Sarah Montgomery and Liz Gioetz.

July 26 and 27

GRAIN SCHOOL

Join Rocky Mountain Seed Alliance, in partnership with SeedBroadcast, the Garden's Edge, and Land Arts of the American West to learn expert techniques and hands-on skills to grow, harvest, mill, market, and bake with locally adapted grains.

July 27 1:00–2:30

SeedBroadcast will lead a seed story workshop.

www.RockyMountainSeeds.org to register

August 15 5:00–8:30

TBA

September 21 9:00–4:30

CLOSING EVENT

Amaranth Ceremony

Seed Saving Workshop

Seed Exchange

Panel Discussion with local farmers,

Native Seeds/Search special guests

and SeedBroadcast.

The Potato Project with Axle Contemporary

A community harvest, hand on workshops and updates on all of these events will be announced through the SeedBroadcast website:

www.seedbroadcast.org/SeedBroadcast/SeedBroadcast_Seed_Climate_Change_Resilience.html

SEED: CLIMATE CHANGE RESILIENCE PROJECT INFORMATION

In 2016, SeedBroadcast partnered with Native Seeds/SEARCH, Acoma Ancestral Lands Program, Espanola Healing Oasis/Tewa Women United, Mergirl Gardens, and Tse Daa K'aaan Lifelong Learning Community to creatively explore Seed Resilience and Climate Change. We began this project with support from NS/S + Robert Rauschenberg Foundation Climate Change Solutions Fund and have since continued with help from many organizations and individuals.

During the initial research process (2016-17), we worked with our farm partners over the course of an entire year, from spring through summer and autumn harvest. Using documentary photography and audio interviews we recorded a multimedia timeline of seasonal-environmental happenings. Through this process we learned about the reclamation of seed and the importance of traditional ecological knowledge (TEK), both, which cultivate bioregional agriculture and

support biodiversity across arid-land ecologies. These interwoven relationships between heritage seeds/crops, wildlife (plants, animals, and insects), watershed, people, and culture hold a significant place in the health and well-being of communities, both human and more, as they respond to the impacts of climate change.

Results from this research led to the production and public output of several creative endeavors including Seed Story workshops, broadcasting of Seed Stories, published essays, and collaborative prints. With encouragement from our partners we decided to create a series of artworks for exhibition in order to share this project more broadly.

The exhibition includes artwork created by SeedBroadcast in collaboration with partnering farmers and seed stewards. Works include large-scale photo collages, a multi-media installation of Seed Stories, an earthen-stenciled wall mural, photo-poem prints, a participatory Seed Story creation area, and a reading space showcasing the SeedBroadcast *agri-Culture Journal* archive. A free edition of the *agri-Culture Journal* as "tool kit" will be available for all museum visitors to take home. In addition to the exhibition, SeedBroadcast, along with partners, will present a series of public events and creative endeavors to animate questions and dialogue about seed, agri-Culture, resiliency, and climate change.

Our goals for this exhibition are to honor and amplify the innovative work of New Mexico farmers who are revitalizing traditional, climate appropriate agriculture, rematriating their seed relatives, and producing sustainable, environmentally sensitive food for their local community. Many of these farmers have been historically marginalized because of race, class, cosmological beliefs, and subsequent land-based practices which do not fit within the status quo-worldview of mechanization, bioengineering, pesticides, herbicides, monoculture, and corporate capitalism. Ironically, these dominant methods are damaging the environment and literally fueling climate change. Yet, New Mexico farmers and land-based communities hold tremendous knowledge about wholistic agricultural practices, resilient seeds, and arid-land ecology, all which engender cultural creativity in-line with land restoration, ecological health, and bioregional sustainability. This exhibition will honor these farmers, share their stories, and create a space for the public to learn more about these issues.

KEEP CHECKING IN. THERE IS SO MUCH MORE ABOUT TO EMERGE!

Partners:

Acoma Ancestral Lands Farm Corp Program

Espanola Healing Oasis/Tewa Women United

Mer-girl Gardens

Tse Daa K'aaan Lifelong Learning Community

UNM Land Arts of the American West

UNM Art & Ecology

Native Seeds/SEARCH

Rocky Mountain Seed Alliance

Desert Oasis Teaching Gardens

Gardens Edge, Seed Travels

Albuquerque Museum

And we would appreciate your help to bring this project to fruition.

Here's how :

- **We are seeking tax-deductible donations to support community engagement events, educational programming, and a special edition of the SeedBroadcast agri-culture Journal. See page 3.**

- **Share a Seed Story about a seed you admire and its extraordinary resilience.** These Seed Stories will be included in a sculptural installation in the *Seed: Climate Change Resilience* exhibition to honor these seeds and share their inspiration with others.

Please make sure that your story is approximately **100 to 200 words**. Let us know how we can reach you so we can make an audio recording of this story.

We will not be able to include longer stories. Also send us a few of the seeds that relate to your story and a handful of the earth in which they were grown. We will take care of them.

Send your story via email to: seedbroadcast@gmail.com.

Send seeds, earth and snail mail story to:

SeedBroadcast,

615 Cortez Street,

Santa Fe, New Mexico 87505



THE CALL

RAFAEL JESÚS GONZÁLEZ

What can I say to entice you
 to defend the earth?
 Remind you how the sun feels?
 The taste of salt, the smell of bay?
 A cricket's chirp on a summer night,
 the rainbow after rain?
 What it is to love?
 Shall I appeal to your joy
 or to your fear?
 Earth can be terrible
 in her storms and in her quakes
 but she is the measure of any paradise
 we will ever imagine.
 You and I will die all too soon
 but that life will not go on
 is beyond accepting.
 What can I say to make you love life
 enough to act and raise your voice in its defense?

RAFAEL WAS BORN IN THE BICULTURAL/ BILINGUAL SETTING OF
 ELPASO, TEXAS/JUÁREZ. HE ATTENDED THE UNIVERSITY OF TEXAS
 EL PASO, UNIVERSIDAD NACIONAL AUTÓNOMA DE MEXICO,
 AND THE UNIVERSITY OF OREGON. HE TAUGHT AT THE UNIVERSITY
 OF OREGON, WESTERN STATE COLLEGE OF COLORADO,
 CENTRAL WASHINGTON STATE UNIVERSITY, THE UNIVERSITY
 OF TEXAS EL PASO, AND THE LANEY COLLEGE, OAKLAND,
 WHERE HE FOUNDED THE MEXICAN AND LATIN AMERICAN
 STUDIES DEPT. IN 2017 RAFAEL WAS CHOSEN THE FIRST POET
 LAUREATE OF BERKELEY. HE CONTINUES THAT POSITION TODAY.

PHOTO CREDIT: SEEDBROADCAST

THE LAW OF SEEDS

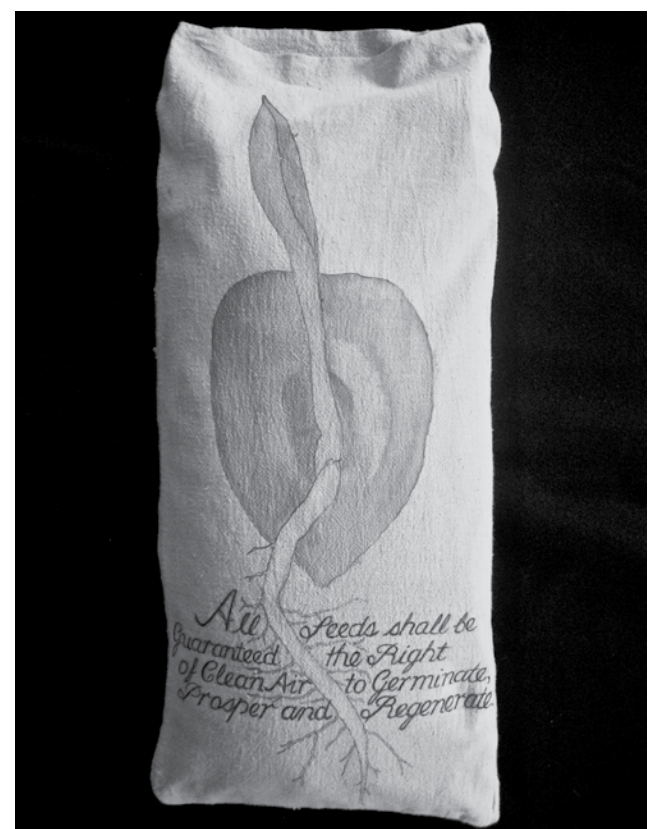
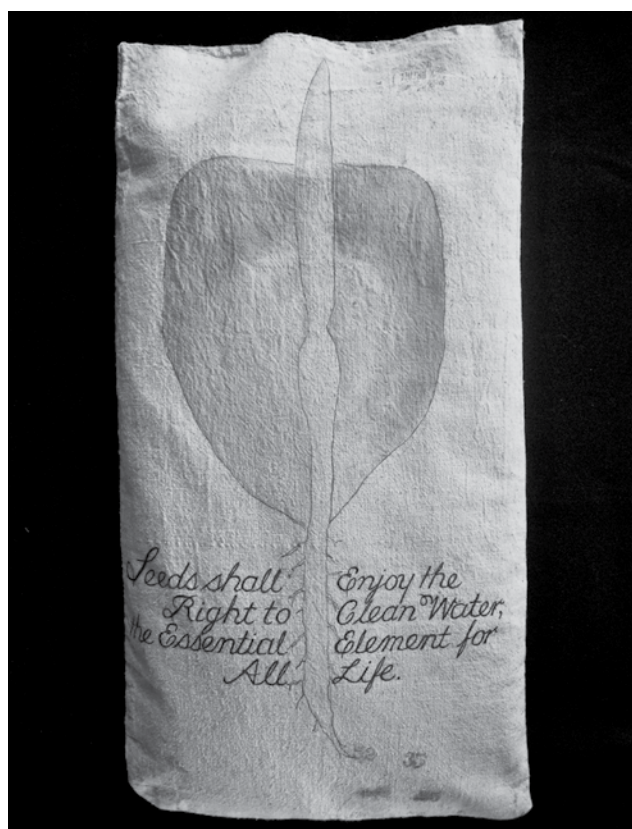
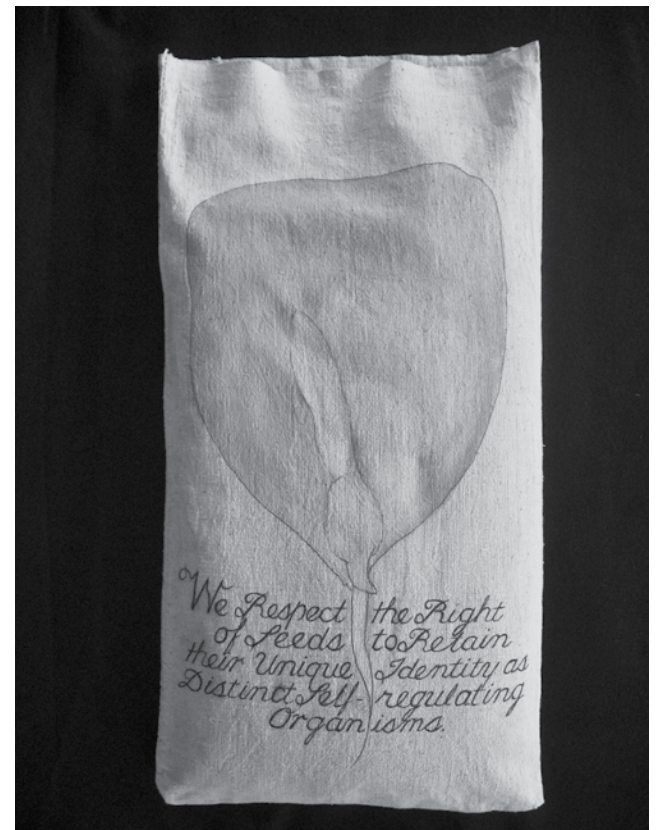
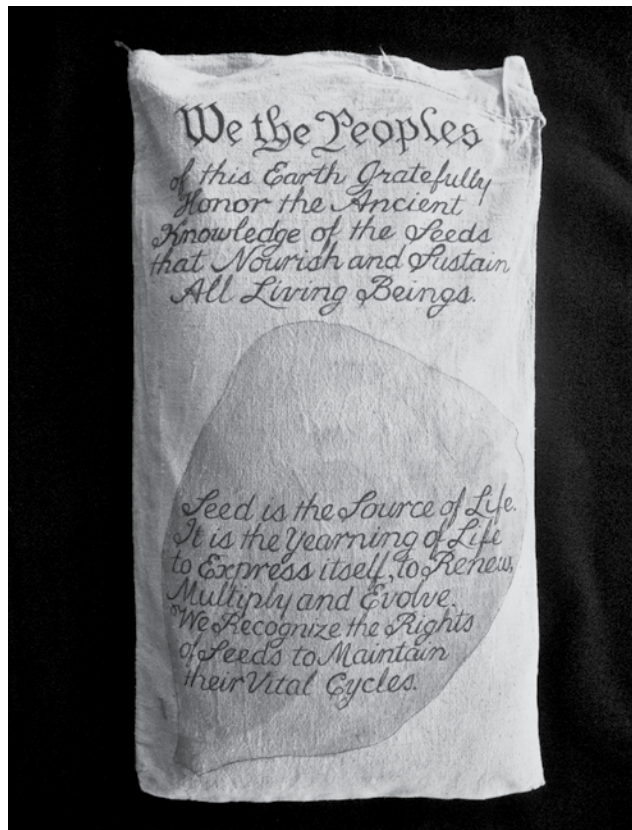
BETH GROSSMAN

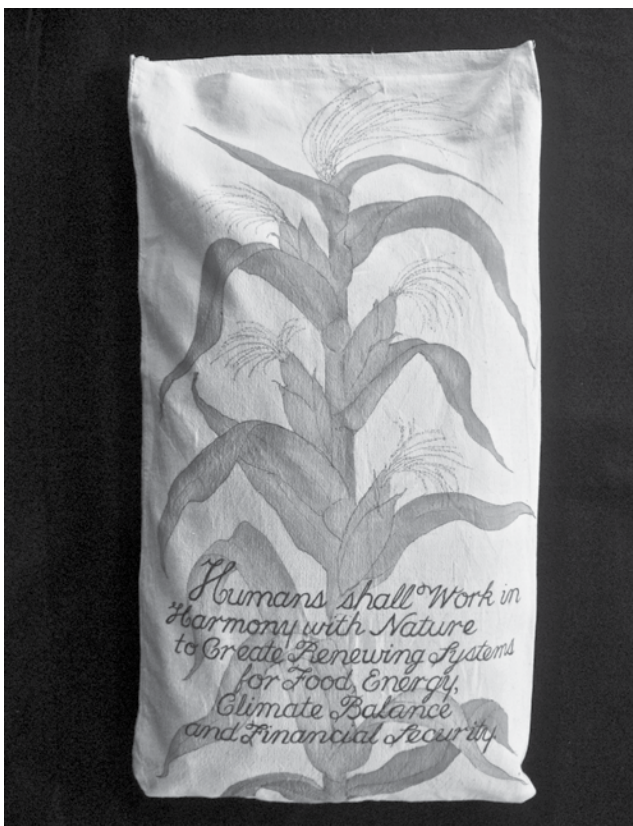
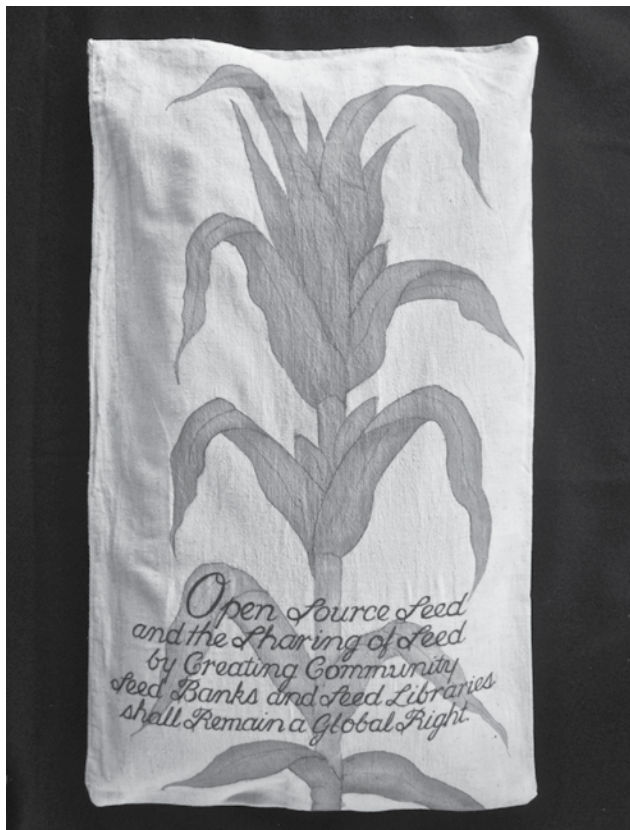
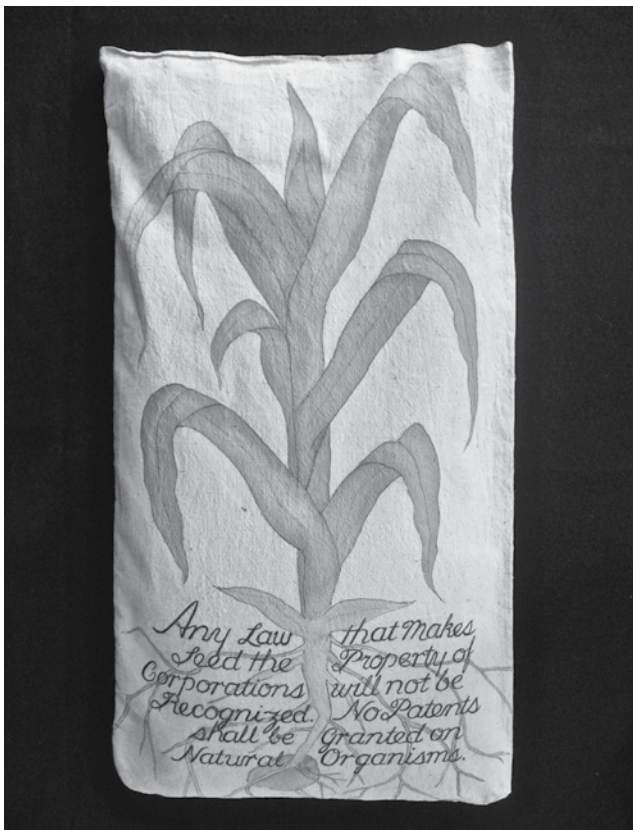
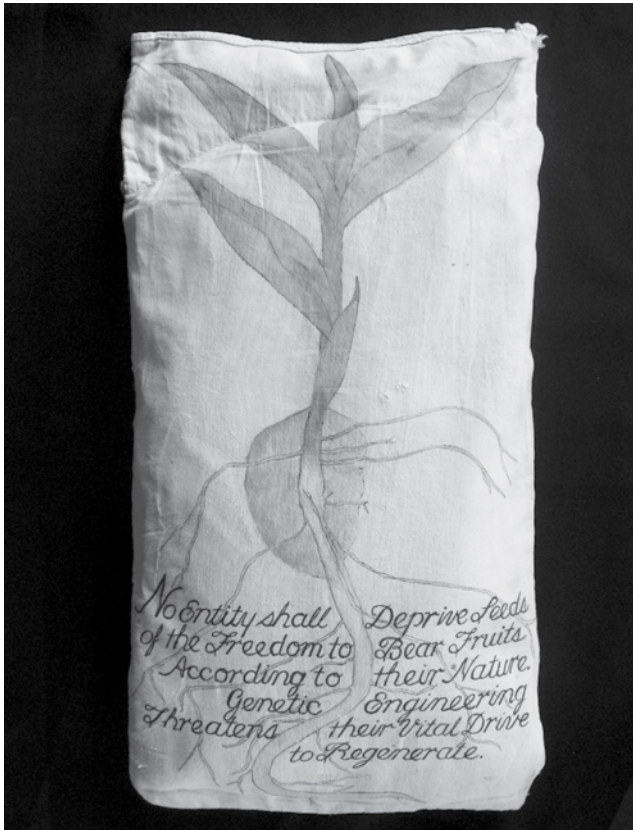
Genetically engineered seeds are having a significant impact on bio-diversity and food sources worldwide. As an artist and an activist, I am responding by making a series of artwork that can evoke an appreciation of seeds and germination as a source of life. My hope is to engage the public about corporate protectionism and seed patents that affect individual farmers and food consumers around the world.

Many countries in the European Union have already taken steps to ban genetic engineering. The United States government is one of the largest supporters of biotech corporations developing genetically engineered products. I want to ask the American public to consider this question, "If corporations have full legal rights under the United States Constitution, why not seeds?"

This Bill of Seed Rights calls upon our responsibility to protect the source of our food chain. National and international "seed laws" are crucial to preserve plant bio-diversity and the rights of individuals to save seeds, by keeping them in the public domain.

Inspired by the constitutions of Bolivia and Ecuador, which include Articles on the Rights of Nature, I compiled a Bill of Rights specifically for seeds. I scribed them with a quill pen on eleven vintage seed bags that are also painted with images of the stages of germinating corn from seed to mature plant. The public is invited to appreciate the wonders of seeds, the source of all life.





My art is a medium to introduce social issues, forge relationships and open a point of entry for challenging conversations among diverse stakeholders. The question, "How can art influence government?" keeps me occupied. I enlisted my Mayor Clarke Conway, of Brisbane, California, to adopt the Bill of Seed Rights Proclamation and to commemorate it with my exhibit at Brisbane City Hall. Foster City, California also adopted the Law of Seeds as a proclamation and read it into the public record. It does not become law, but publicly confirms and declares a city's intention to be stewards of the rights of seeds and nature. I welcome other cities in the United States and around the world to follow their example.

As the exhibit tours nationally, I encourage each city to bring citizens, farmers, local government and corporate interests to the table to discuss, develop and adopt seed laws. With these proclamations, I am asking the public to declare our commitment to work together and question the economic systems that drive us to make short-sighted decisions. This traveling exhibit is designed to be a focal point that calls citizens and local government to action. Please contact me if you are interested in bringing it to your community.

The Law of Seeds reminds us of our accountability to future generations to ensure that nature's seed cycles will carry on.



BETH GROSSMAN USES ART AND PARTICIPATORY PERFORMANCE AS A CREATIVE FORCE TO STIMULATE CONVERSATION AND FOCUS ATTENTION ON OUR PLACE IN NATURE AND HISTORY – ALL AIMED AT RAISING AWARENESS, BUILDING COMMUNITY AND ENCOURAGING CIVIC ENGAGEMENT. BASED IN THE SAN FRANCISCO BAY AREA, SHE HAS COLLABORATED INTERNATIONALLY WITH INDIVIDUALS, COMMUNITIES, LOCAL GOVERNMENTS, UNIVERSITIES, CORPORATIONS, NON-PROFITS AND MUSEUMS.

Bright daughter
 Swan on the pool
 a roving deer under God's stars.
 Voice that makes the bee-hives golden
 dew lick the dark grass,
 fire-spark at the anvil.
 Grass does bend under such a foot.
 She has budded slowly under the fur
 of snowy winter, read by the yellow candle,
 gathered sticks on the pagan hills.
 Swum through a hundred acres of
 whale-thought.

HEBRIDEAN. WHEN A FARM LAD COURTS A PRINCESS.



URNS OUT

MYA GREEN

— I don't feel
 here
 at all. You want to know
 it's not your fault. But since I'm being honest, I can't
 assure that. What coldness
 have you allowed, which kind
 of asylum?

Who taught you
 the hand-me-downs,
 kind of equity? You share in its

evaporating. Here, where the wind blows, there is
 no warm hand reaching down
 to pat the good daughter's imploding crown
 or to save her kidneys and digits
 — signals of heredity —
 or to move her from one state
 to be free in the next. Disillusionment
 is a big beast
 with a small heart, coward
 disguised as terror. Justice
 will come calling
 for all her children tonight.

MYA GREEN IS A POET, WRITER, EDITOR AND FACILITATOR WHO HAILS FROM TUSCALOOSA, ALABAMA. HER WORKS CENTERS AROUND SOCIOCULTURAL OBSERVATION, DISMANTLING SYSTEMS OF OPPRESSION, AND RE-ENVISIONING WAYS OF RELATING IN HEALTHFUL AND SUSTAINABLE CONTEXTS. YOU CAN FIND MORE OF HER WORK AT APOGEE JOURNAL, MADCAP REVIEW, AND BROWNGIRLLOVE.COM

A-MAIZE-ING MAIZE

THE HISTORY OF CORN

NAN FISCHER

Corn is one of America's favorite vegetables in the garden and on the plate. From the translucent Glass Gem to the colorful ornamental varieties, corn is grown in most back yards. Buttery corn on the cob is every child's memory. Popcorn and movies are inseparable. Corn chowder with oyster crackers warms us in winter. Corn bread, succotash, and tacos are a few other common ways we heartily consume corn.

Did you ever wonder where your heirloom corn came from?

Corn has its origins in a wild grass from Mexico called teosinte. Five genes keep them from being genetically identical, but teosinte is the closest relative of today's corn. All research and theories point to the domestication of one of the four species of teosinte, *Zea mays* spp *parviglumis*, about 9000 years ago in Oaxaca by the Mayan people.

The word 'maize' is derived from the word 'mahiz' from the now defunct Taino language of Mesoamerica. The Spanish later changed it to 'maiz'.

Teosinte still grows wild in Mexico and is considered a weed and a nuisance to maize farmers. It is almost unrecognizable from today's corn with its branching growth habit, and tiny 'ears' of less than 12 kernels, each with a hard shell around it.

It's hard to understand why this almost inedible plant was chosen to be cultivated as a foodstuff. There may have been anomalies in the field that looked more like today's corn ears with a potential for food. Teosinte seed heads shatter and fall to the ground making it hard to collect them, but perhaps a few seeds were found on a stalk. Or maybe the environmental conditions thousands of years ago were so different they produced a teosinte other than what we see today.

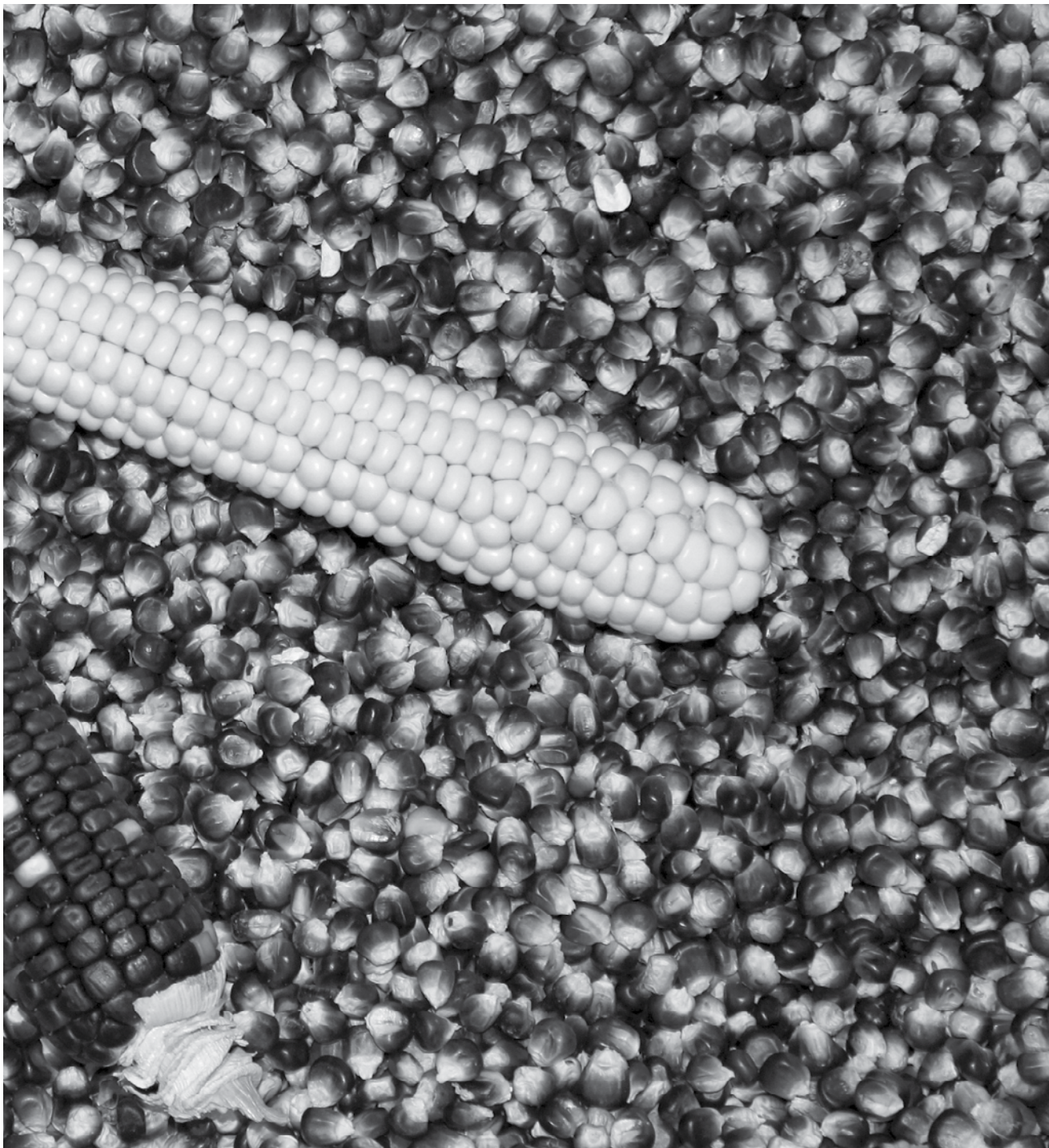
No matter how domestication began, over thousands of years the indigenous people of Mesoamerica bred a vast genetic diversity into maize that most crops never see. Maize was invented. Without human intervention, it would not be what it is today. Those ancient farmers were brilliant geneticists!

Besides being a revered food crop, maize was an integral part of Mesoamerican culture and spirituality. The 'grain of the gods' ranked almost as high as royalty, and rituals, dances, and festivals celebrated its planting and harvest. Maize was depicted in hieroglyphics, petroglyphs, and artwork. The Mayans believed they were created from maize, and according to Charles Mann in 1491, Oaxacans still call themselves *hombres de maiz*, or *men of maize*.

Farmers grew maize in a milpa with several other crops. Teosinte grew with squash and beans in the wild. Mesoamerican farmers imitated that in their milpas, and added other native crops such as peppers, tomatoes, avocados, jicama, and amaranth. The plants benefitted from the biological diversity, and the foods were nutritionally complementary providing fat, protein, and vitamins.

Maize and the concept of the milpa migrated around Mesoamerica, eventually down to Peru and Chile, and up into the desert southwest. Dozens of landraces were created as farmers adapted it to their unique growing environments. The colorful palette of reds, blues, yellows, black, greens, and pinks represented those various conditions. According to Gary Paul Nabhan in *Where Our Food Comes From*, landraces reflected the different languages and cultures of each region as well. Maize varieties were also cultivated for specific purposes, such as tortillas, popcorn, textiles, and beer. This is genetic diversity!





Large trading centers along busy trade routes saw the exchange of maize, stone, metal, feathers, shells, pottery, textiles, and culture. Maize arrived in the arid desert southwest around 2500 BC. The Hohokam in the Sonoran desert built an elaborate system of irrigation canals for farming. Farther north, the Anasazi in the Four Corners region and the Pueblos of northern New Mexico also benefitted from trade with Mesoamerica.

From the southwest, trade routes radiated out to the west coast and the Great Plains. The indigenous people of the Plains traded with tribes near the Great Lakes. The idea of the milpa died out as it moved north, because temperatures were too cold to grow some of the crops, such as avocados. But maize, which is very adaptable, was still being bred for local conditions, and grown with squash and beans, known collectively as The Three Sisters.

By 900 AD, maize was established along the eastern seaboard and in the southeast. As a reliable crop for people and livestock, it had become a main staple throughout the Americas. Maize is credited for the rise of civilization wherever it grew, because it was adaptable, nutritious, and easy to dry and store for lean times. In some areas, it was seriously cultivated only after wild game had been hunted to near extinction. Hunter-gatherers turned to agriculture and maize to survive.

As a vegetable, baby ears were the first harvest. 'Green corn' was a sweet treat, but never in abundance, as the ears needed to mature. The Green Corn Ceremony was held when these immature ears were ready to pick, to celebrate a good growing season. It was also a purging and time of rebirth, akin to starting a new year.

Mature ears were boiled or roasted whole. Kernels cut from the cob were roasted, boiled, baked, or fried, and frequently cooked with other vegetables. Succotash is an indigenous meal of maize and beans cooked with bear grease or maple syrup.



As a grain, maize was ground into masa for tortillas and tamales. The addition of lime or wood ash released niacin and calcium to make it more digestible and nutritionally complete. Fermented masa was made into an alcoholic beverage.

All parts of the plant were used. Husks were woven into mats, baskets, dolls, clothing, and masks. Cobs were dried and used for rattles and fuel for the fire. Tassels were boiled into a sweet drink, and the stalks of some varieties were eaten like sugar cane. Even corn smut, a common fungus, was eaten and is today considered a delicacy.

Maize was a foreign crop to the explorers from Spain and England. Columbus saw it for the first time when he arrived in Haiti. When the British landed on the east coast, they found maize fields that stretched for miles. They didn't have a name for it, so they called it 'corne', which was a broad term for grain.

The British brought their staples of wheat, barley, oats, and rye, but these crops did poorly in their new environment. Some settlements were almost wiped out by starvation. The survivors realized they needed to grow what had proven to sustain an entire continent – maize.

The native people taught the Europeans how to grow and cook maize. Their farms provided enough to eat fresh, put away for winter, trade for other goods, and ship back to Europe, where farmers adapted it to local growing conditions.

Corne spread east and south from there, and became a major staple in Africa, Eastern Europe, and China. Being adaptable, it grew where wheat or rice could not, and provided high energy and calories with its carbohydrates, fat, and sugar. Again, maize was responsible for burgeoning populations wherever it was introduced.

When the Europeans returned to settle the Americas, they brought their corne seed in their supplies. They adapted it to new locations as they headed west, creating today's heirlooms.

Golden Bantam was grown by William Chambers, a farmer in Massachusetts, and selected to be early and sweet. The story goes he would gleefully share his harvest with his neighbors, whose crops weren't near ready, but he would not share his seed. Burpee picked it up after his death in 1891, developed it, and offered it for sale in 1902.

Growers today continue to improve corn strains out of curiosity, but also out of necessity.

For forty years, Dave Christensen of Montana has been breeding corn. He gathered up dozens of rare strains that were grown throughout the Rocky Mountains hundreds of years ago. He repeatedly selected seed from the hardiest plants that thrived in his harsh conditions and short season. Painted Mountain Corn is the result, and is surely on its way to being an heirloom.

Carl Barnes developed Glass Gem Corn by finding lost strains of his Cherokee ancestors. Over several years, he saved seed from the most colorful cobs. His selecting produced a wide variety of colors, each with a name, but Glass Gem has become the best known.

Of course, ancient maize varieties are still being grown. Some are available commercially, but many others can only be found on the farms of the indigenous people. Hopi corn comes in a wide variety of colors and uses. Green Oaxacan, Mandan Bride, Cherokee White Flour, and dozens more are still used for flour, sweet corn, and popcorn.

Native and heirloom strains are disappearing as hybrids and technology try to 'further improve' them. We can keep the old varieties alive by growing them, saving and sharing seed, and cultivating locally adapted landraces. It took 9000 years for maize to be what it is today. We need to respect that work and the genetic diversity by protecting the old strains.

Whatever your favorite heirloom corn, you can be sure it originated in Mexico as agriculture was taking hold. The next time you have melting butter dripping off a corn cob and down your chin, give thanks to ancient farmers for turning a 12-kernel seed head into the multi-colored, multi-purpose crop that maize is today.

NAN FISCHER IS A FREELANCE GARDEN WRITER AND THE FOUNDER OF THE TAOS NM SEED EXCHANGE.

PHOTO CREDIT: NAN FISCHER

PHOTO CREDIT: CONSORTIUM FOR THE PROTECTION OF RADICCHIO DI TREVISO.



RADICCHIO

PETER LEOPOLD FREEMAN

In late fall and winter, when snow has dusted the tops of the high hills and darkness comes knocking early at the door, I crave something stout and spunky for my salad. Something with heft and verve enough to put its shoulder into the fortifying business of the hearth-warmed table. Lettuce just doesn't quite cut it. It's all been melted by cold anyway. Arugula, mustards, and even spinach have met the same mushy fate, done in by the abundant frost. The earth is diligently occupied with turning its face from the sun, and in this hinge-time I hail Radicchio. It takes the throne. A family of greens with many siblings, all bitter-leafed and beautiful, radicchio has a crisp texture tougher than lettuce and more tender than cabbage. According to the varietal, it excels oiled and roasted solo, in salads, soups, pastas, risottos, and in various goulashes and fried rices. It's a delight to eat, unreservedly so. But to weed, tend, and harvest it is a jewel of the cooling days. It courts my heart in the field. It is a treasure to watch grow.

A species of Chicory (*cichorium intybus*), Radicchio is kin to endive, frisee, and escarole. Its name comes from the latin *radicula*, meaning 'little root' or 'rootlet'. And chicory root does have a history of being roasted and ground as an ersatz coffee and being used for winter livestock feed. Radicchio, however, is a subspecies of chicory called *foliosum*, meaning something like 'leafed' or 'well-leafed.' This well-leafedness points the interested observer towards the deliciously beautiful qualities of these beings, and especially so towards my favorite varietals— the princelings, the ladies, the royal such and such, whatever you would call them:

variegato di Castelfranco and *variegato di Lusia*. Don't mind the deliriously dignified and sexy nomenclature. Or even better, do mind it, and taste their names again and again on your tongue. But while paying verbal homage to their purling mother tongue, we'd do well to engage the eyes and take in the handiwork of their leaves. These are tulip-streaked with violet-maroon, loose and apple green on the outside with a pale and buttery core. Like the ink-marbled end pages of an antique book or the technicolor wallpaper of seaweed rich tide pools, *Castelfranco* and *Lusia* luxuriously splay themselves out as they mature, making a roseate pool out of which emerges the bloom-like head, succulent and unruly. A petal-dense shock of rose.

Edible or ornamental? Useful or decorative? Confound the difference. There's a story that a woman from Castelfranco Veneto made her way to the Teatro alla Scala in Milan, a famous house of opera. Though I find it hard to imagine the ample plant's head pinned on anyone's breast, word is she adorned herself with none other than a head of *castelfranco*. She spent the evening simply bathing in the ample compliments showering from the mouths of the august theater's habitués, all of whom were oblivious to its local origins, convinced as they were it was some inedible and exotic flower.

Castelfranco is actually so flower-like that it has garnered other names exactly on that basis. These are its honorifics, nicknames that bear the stamp of an affection and respect that could come only from the mouths of those who've long tended it. *Lattuga Orchidea*, *Fiore che si Mangia*, *Rosa d'inverno*, *Garofano*. Orchid Lettuce, Edible Flower, Winter Rose, Carnation. When my friend and former boss Marko told me about these I couldn't forget them. They marinated in my craw. The rumors I'd heard of people singing to plants, of praying to them or talking to them, all that left the realm of wannabee mysticism, new-age chicanery, or the antique and unknown traditions of ancestries foreign to me. These were pet names that conferred dignity, the fruits of intimacy. Here was a rough handed embroidery decorating and honoring the relationship between the tender and the tended. I

could get down with this. This was permission to sing to broccoli out of sheer fondness, the way I sing to my nephew or talk to a cat. It's both ordinary and exalted, a low-key alchemy that renders the persistence of the relationship into a thing of beauty. Whatever its value as currency, my gratitude goes to all who do this already or who will sometime in the coming. For the service and example. May you long continue.

JOY OF PEACHES

Plants are freaky and marvelous royalty, and as a consequence there is an undertow of regal protocol and weird poetry to even our most casual or exuberant noshings. In service to this understanding, and under the influence of a particularly juicy box of peaches last summer, I tried my hand at word-ripening something to feed back to that holy and pulp-rich delirium feast.

If you ever heard rumor of a peach tree, the
Bright daughter who grew up in the Sun's kitchen
The one who came west from Kunlun
Green bead at the foot of spice-laden mountains
Know that she is still working
She heard some rumor a while back
She heard the whispering earth's gold praise shout
And she answered boldly
Ringing bells on the branch
Hanging rose deep lanterns
Laying the feast table full
Wearing jewel fleshed crowns and
Growing blush bright candles she became
An altar heavy with glow

Today we have come to her shade-cooled hearth
We have come to her table in the sun-warm hall
We, her ruddy and glint-eyed guests, have come to lick the face
of her fruits
We are like Lords, like
Puppies electric with pleasure, Ready to make our
Shit run from the juicy feasting, mhmm We
Feel the sun rising in our chest
Our breast call the bells ringing so
We load prayers on our wet tongues to bring her
We bear them now prayer-laden toward her
We with sure and swift hearted feet calling at her gate, her throne

The doors to the feast-hall have been thrown open
The cool breeze brings down the fragrant breath of mountains
And sets the green flags dancing
With sun warm fingers we unwrap our tongue's cargo
And cast these gifts at our host's barked feet
As it was last summer, the feast is again ready
And once more follows this delirious choreography and call:
Fruit slips from the bowed branch and
Praise slips ripe from the tongue
Our hands rise to receive and beckon, saying

Come, friend, we are like a deer to these sugars
Come, friend, we are like a bird to a song
The gold earth wave breaks on my lips, my teeth, Yes
Ripe fruit, Sweet River, find this tongue

PETER LEOPOLD FREEMAN LIVES NEAR THE BLACK RIVER IN MOSS-RICH WESTERN WASHINGTON. HE GETS HIS PAYCHECK FROM A PUBLIC HIGH SCHOOL AND HAS BEEN LONG TIME INVOLVED WITH RESTORATION ECOLOGY, FARMING, AND SERVICE TO HIS FIRST LOVE, MUSIC.

Rye

A widely cultivated cereal grass, *Secale cereale*, having one-nerved glumes and two or three-flowered spikelets.



A GARDEN: THE BIRDS ARRIVE

JEANETTE HART-MANN

A Garden: The Birds Arrive is an earthwork and experimental garden at the Albuquerque Museum. This project was conceived, designed, and created by University of New Mexico, Land Arts of the American West artists and Art & Ecology students who call themselves 7th regen. This project was made possible through an invitation by SeedBroadcast to bring Land Arts of the American West and Art & Ecology students into a creative/collaborative opportunity in conjunction with the upcoming SeedBroadcast exhibition "Seed: Climate Change Resilience."

Development of this work was grounded in several places of exploration around seed, food, bioregional environmental issues, and climate change. Over the course of a week, students traveled to SeedBroadcast co-founder and LAAW faculty, Jeanette Hart-Mann's agroecology research farm in Anton Chico, NM to help process seed and make homemade tacos, they attended a lecture by visiting artist Christine Mackey about "Gardens as Art," they met with local farm partners Tiana Baca and Sarah Montgomery to learn about heritage grains, and they made several site visits to the then, vacant, gravel lot where the garden would grow. After this process gathering experiences and ideas, the artists worked through a series of design charrettes to generate key concepts, which would help guide the project. The intention was to foster a creative community space where multi-species relationships would flourish through acknowledging kinship, planting generosity, and cultivating acts of collective resilience.

During the excavation and through compacted layers of geology, gravel, soil, clay, and trash, the artists learned that the surrounding land and museum building used to be one of the largest vegetable truck farms in the region. And prior to this, the area was home to many indigenous people and later colonial settlers who farmed the river valley. Literally the ground under foot was buried in a history of many-species relations centered around food and agriculture that does not exist there anymore. Instead the surrounding land has been developed into city museums, parks, a diverse suburban community, industry, tourist shops, and restaurants. Many would call this a cultural hub of Albuquerque. Yet, if the co-mingling of food, land, people, and agriculture are central to place and central to expressions of who we are and how we relate to others, then there is something missing here. So, what would a garden do? Could digging in the dirt, planting seeds, and caring for more-than-human life create place, engender culture, and enrich our perceptual relationships with one another?

With this in mind, the artists decided to co-create a garden in the making. They designed concentric planting beds radiating from a central existing pioneer conifer and with the help of Tiana Baca and the Rocky Mountain Seed Alliance (RMSA), seeded these with Middle Eastern and SW Asian heritage grains einkorn, spelt, Sonoran Wheat, and Cache Valley Rye as winter cover crops. Mapping out the garden

as a yearlong cycle of ecological lives, these annual grasses will be teachers both above and below ground through early summer, then become seed once again at a time now unknown. The fact is that many of these heritage grains have been neglected for generations and are just now returning to farms and gardens through the seed saving efforts of small-scale farmers and advocates concerned with their potential loss. The resurgence in heritage grains is based on several factors, including the biodiversity they engender, their ability to survive in challenging environmental conditions, and the quality of nutrition they offer. Yet, the question remains, what will they do in this specific garden context? How will they grow. Will they thrive? Will they suffer? And when will they mature and focus their life force into seed? Over these "disappeared generations" we have lost the knowledge of these plants and so this is a mystery which no one knows. We can only know through rekindling this kinship, tending our relations, waiting, watching, and learning.

When mature, these grains will be harvested during a community event day and saved for threshing during the RMSA Grain School to be held at the Albuquerque Museum on July 26, 2019. This seed cleaning will be led by farmer and educator Tiana Baca of The Desert Oasis Teaching Gardens and presented as a community dance party where many feet make cleaning seed a joy.

After the winter grains are removed from the garden, Sarah Montgomery and her Guatemalan partners will plant, with greatest intention and ceremony, one of the oldest grains in the Americas, amaranth, as part of the Seed Travels project. This project is about forming and sharing deep relationships. As the Seed Travels project states, "Amaranth is a symbol of our unity and resistance. These seeds have connected us to many new friends and gardens. We have taught hundreds of people in New Mexico and California about this ancient grain. Through our Seed Travels project, we follow the movement of the Amaranth seed from Qachuu Aloom up into New Mexico and California."

On September 21, 2019, during the closing event for the SeedBroadcast exhibition, a community gathering will attend to the amaranth, harvesting greens and seed and celebrating the year-long life of this garden and many kinships formed. This project hopes to be a site for regenerating lost connections to seed, plants, land, and each other. It also hopes to induce creative resiliency and community engagement across species. The title, *A Garden: The Birds Arrive* is stenciled across the museum wall of the garden. It came from a statement that Tiana Baca made when she talked about how farming is a multi-species relationship. She said, "I wait for the birds to tell me when the grain is ready."

Following this brief introduction are individual gleanings from several of the artists who made this possible. Jessica Zeglin shares a drawing and interludes from the many voices at home in the garden, Erin Gould presents a poem and short essay about being dirt giddy, through prose and journal reflections Brionna Garcia writes about seed, and Sarah Canelas composes photographic snapshots of the artists as they built this project together.

Artists involved in this project included:

Sarah Canelas
Brionna Garcia
Erin Gould
Xena Gurule
Catherine Harris
Jeanette Hart-Mann
Ryan Henel
Kyle Holub
R. Erik Hoopman
nicholas b. jacobson
Sam Katz
Blaise Koller
Noni Miller
Kodi Wilhelm
Rowan Willow
Jessica Zeglin
Lucas Zuñiga

A Garden: The Birds Arrive will be on view from September 1, 2018 – September 22, 2019 at the Albuquerque Museum, in Albuquerque, New Mexico. Partners and collaborators for this project:

Land Arts of the American West // landarts.unm.edu
Rocky Mountain Seed Alliance // rockymountainseeds.org
Sarah Montgomery of Garden's Edge // www.gardensedge.org
Christine Mackey // christinemackey.info
Tiana Baca of Desert Oasis Teaching Garden
Albuquerque Museum // cabq.gov/culturalservices/albuquerque-museum
Art & Ecology Area at UNM // ae.unm.edu
7th regen
SeedBroadcast
Fodder Project Collaborative Research Farm
Sun, Wind, Rain
Soil Microbes, Seeds, and Birds

JEANETTE HART-MANN IS CO-FOUNDER AND COLLECTIVE COHORT OF SEEDBROADCAST. SHE GREW UP ON A MULTI-GENERATIONAL FAMILY FARM IN OHIO AND HAS LIVED IN NEW MEXICO SINCE 1998. SHE FARMS WITH HER FAMILY IN ANTON CHICO, NM WHERE THEY PRACTICE TRADITIONAL ACEQUIA FARMING INTERWOVEN WITH EXPERIMENTAL AGROECOLOGY METHODS AND A SEED SAVING PROGRAM FOR ARID-LAND CROP VARIETIES. SHE IS AN ARTIST, FARMER, AND SEED STEWARD, AND ALSO FACULTY AT THE UNIVERSITY OF NEW MEXICO IN ART & ECOLOGY WHERE SHE DIRECTS AND TEACHES THE LAND ARTS OF THE AMERICAN WEST PROGRAM.



A garden can be many things – a place to admire the beauty of leaves, flowers, and seed heads; a place to sustain nourishment for our families, neighborhoods, and communities; a place to tend to the memories and vitality of our centuries-long interrelationships with cultivated plants.

A garden can also be a place to listen. A place where we can set aside our daily cares and worries, turn off our inner voices, and wait to hear what other stories may arise.

Are those voices real or imagined? Does it matter?

Winter wheat and rye grasses slowly spreading their roots underground, speaking through microbial and mycelial networks to their kin: *yes, we think we can live here, let's give it a try.*

Mycorrhizal fungus: *hello, shall we be friends?*

Ants telling stories to other ants: *sisters, do you remember when those humans dug in the earth around our home? What a strange few days. We managed to avoid their pickaxes and shovels, until one of them stepped right on the colony, collapsing the nursery wing. Oh, we had to rebuild for weeks, it's true! But thankfully those foolish humans left food seed just lying on the ground, we ate well for days. Let's go out to forage now and see what else we can find!*

Birds: *I'll land here and take a look through the leaves, perhaps this is somewhere I can rest, or nest*

Cats: *oh, this looks like a good place to roll on the ground*

Soil: *it feels good to be in the sun again, such a toasty exchange*

Pine (gracefully peering over the others): *just don't mess up my roots! It took me decades to arrange them this way. But I do appreciate the new water source we have now, very tasty indeed.*

The voices of others will join these, too, as the weather changes and life cycles. Other plants, other humans; the sounds of harvesting and threshing of grain; new conversations, new questions asked of the sun, the air, and the soil.

Sound is produced by movement. Stories are produced by relationships, culture, memory. Listening deeply to a place allows us to focus on not what it looks like, but in what ways it is active. Imagining its stories allows us to consider the other lives that are happening here, and how they intersect with our own.

A garden can tend to many voices, a conversation that each of us can join.

JESSICA ZEGLIN IS AN ARTIST INTERESTED IN ENGAGING SKILLS OF LISTENING AND EMPATHY. SHE HOLDS A MASTER OF PUBLIC HEALTH AND A BACHELOR OF ARTS DEGREE FROM THE UNIVERSITY OF MINNESOTA AND IS A MASTER OF FINE ARTS STUDENT IN ART AND ECOLOGY AT THE UNIVERSITY OF NEW MEXICO.

DIRT GIDDY

ERIN GOULD

I told them that I was dirt giddy.
That, while working in the garden,
(or the neglected gravel pit that would hopefully become a garden)
I was filled with a joy that followed me home, into my bed, into my dreams.
Maybe I was simply
fried dried
to a crisp, parched from sun and heat and the carrying of pounds of rock
and soil.
Maybe that was all the giddiness was.
Or
maybe it was the earth
the soil under my fingernails, in my hair,
pushing into the mouths of my skin, my lungs, weighing down my eyelashes,
becoming me.
Maybe there is power in dirt.
Maybe moving it, trading breath and sweat and laughter
to make a garden,
a place that can grow and live
become,
is a form of worship.
Maybe dirt ecstasy would have been more accurate.
Maybe the physical care,
the grooming,
the transforming of an unseen, an unloved,
into a place of living,
maybe the becoming of a place into a place of becoming
with hands and arms and knees and boot protected feet and burning
noses and foreheads and shoulders
is a gift
not just for the soil and the air and the seeds and the pine tree and the
birds and the ants
but for ourselves.
While working in the garden,
I was filled with a something you might call
dirt giddiness.

In the evenings after the days spent actually in the garden, swinging pick-axes, shoveling gravel, moving compost, I felt a feeling that I called "dirt giddy". There is something about burying your hands in soil, in earth, feeling it, working it into your skin, into your pores, breathing it in, filling yourself with the living flesh of this place. It made me high. It made me joyous, effervescent; laughter leaked out of me for hours.

Doing this work with people I had just met, being in this state of dirt induced euphoria, brings you so close together so quickly. Maybe it was the soil, maybe it was the physical labor in the Albuquerque late summer sun, maybe it was the satisfaction that comes from having immediate, tangible results from your efforts when us scholarly folk are used to our works existing in the ether of language and thought and abstraction. I couldn't say why exactly, but working on the garden set a hard-packed foundation to relationships that became familial over the course of months of travel and cold and rain and collaboration and bearing witness.

We spent a lot of time in that garden, wedged between the back wall of the museum, the street, and the service entrance. What does it mean to bring life, the plants' and our own, into an unseen/ unloved/ unappreciated space?

In same way that we inevitably took the garden home with us, on our skin, in the tread of our boots, in our lungs, I like to think that the garden kept some of us there, too. Along with the seeds of rye and winter wheat, maybe we planted some of ourselves.

ERIN GOULD IS A MULTIMEDIA ARTIST WORKING WITH SCULPTURE, VIDEO, AND PERFORMANCE TO INVESTIGATE THE WEAKNESSES, FRAGILITY, AND PERCEPTUAL PLIABILITY OF THE HUMAN BODY; INTIMACY WITH THE MORE-THAN-HUMAN; AND DIFFERENT WAYS OF KNOWING AND CONNECTING WITH OTHERS. SHE HAS LIVED IN NEW MEXICO SINCE 2013, CURRENTLY WORKING TOWARD HER MFA AT UNM.

BREED SEED

BRIONNA GARCIA

I wait in a cold, dark chamber
Dormant, yet
I am a quintessential possibility of life
Waiting for a perfect moment,
Conditions that cradle,
an intervention to awaken
potential energy inside me.
Swelling.
an unlit spark
I wait.
Bathing in a warm substrate,
A snug embrace.
I am drenched in a soothing experience
Thirst amended by this lustrous force
For the first time, I feel my life giver
I burst.
Fed.
Oh aureate exposure,
I dance for you.
Every time you greet me with your opulence,
I crack free from my protective armor
Reaching a little more,
I become.
Sprout,
a temple.

JOURNAL ENTRIES OF SEED

The potential of a seed to grow is incredible. For it to open under the right conditions is astonishing. It opens to possibility; a potential beyond dormancy. The next generation unfolds to a new story, one held all within its tiny shell.

Seeds have evolved with our ancestors. We are the fruits of their loins. And the seeds are the fruit of their seeds loins. We are all connected to seed saving. Generations of seeds alongside generations of ancestors, we are passed heirlooms. We are given food security. Seed as heirlooms is profound. Seeds as teachers is essential. Seeds as food sovereignty is vital.

Something I thought was really important about the garden project TBA: The Birds Arrived, is the importance of food sovereignty. It's like the people in the past couple of decades have had an almost collective amnesia about growing their own food. But we are now making ourselves remember how we have food and where it comes from.

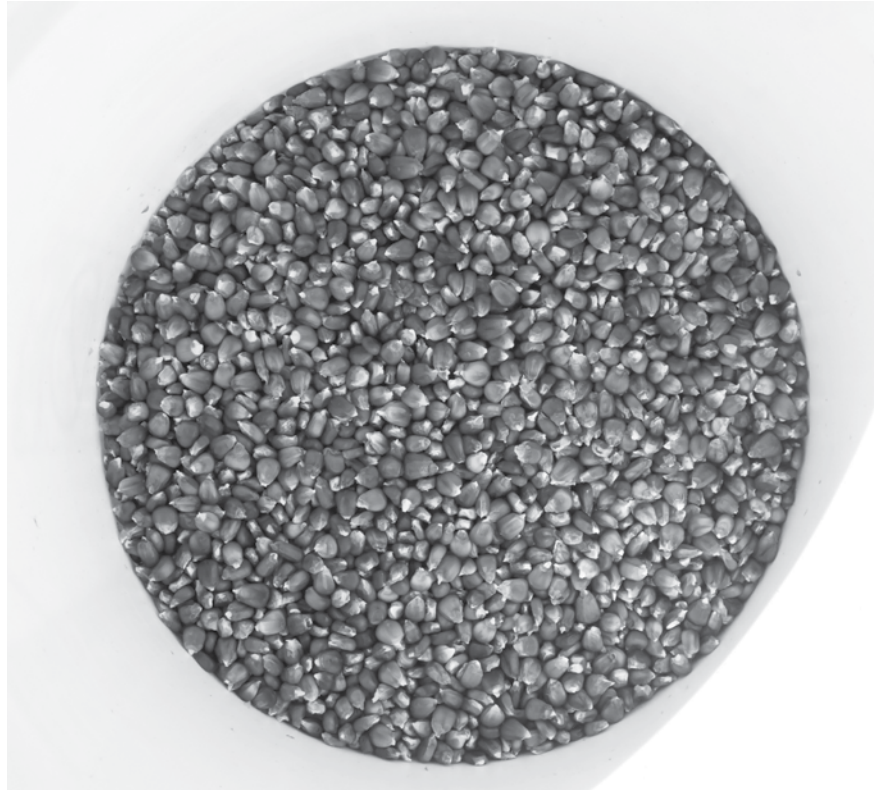
Why is it radical to grow our own food? It's not. It is so very human of us to grow our own food. Or rather, it grows itself and we sometimes provide conditions suitable for it to flourish and be nourished. Food sovereignty is important because we cannot commodify the Earth. Seeds are of the Earth. They are not to be colonized. They have the right to be free to grow, to feed and to go back to seed. Humans should be able to eat from the land without having to pay a pretty penny for a full belly. They are not to be privatized. How dare corporations think they capitalize on genetically altering our food. Animal chromosomes spliced into seeds, engineering high tolerances to pesticides and the creation of sterile seeds is homely. It is inhumane. I will resist the privatization and capitalization on our little life givers until I myself go back to the Earth from which I came.

What was powerful about the installation of the garden TBA at the ABQ Museum was the visual and ecological transformation of a barren plot with buried history beneath it transcended into an alive garden! This was significant because it inspired to help regenerate, restore, revitalize and remediate ecological and environmental degradation of our lovely home planet, Earth. Facilitating nature to work magic via life, is powerful. Being a witness to healing is important in order for healing to spread. We proved that an empty barren plot with potential contamination evolved to a regenerative polyculture. From layers of history imbedded in this rectangle of gravel, the plot became a menagerie of heirloom winter grain.

BRIONNA GARCIA IS CURRENTLY AN UNDERGRADUATE SENIOR AT THE UNIVERSITY OF NEW MEXICO WHERE SHE STUDIES ART AND ECOLOGY AND PAINTING. SHE COMES FROM A BACKGROUND OF CATTLE RANCHING AND HOMESTEADING IN NORTHERN NEW MEXICO AND ORGANIC FARMING IN CALIFORNIA. IN HER SPARE TIME, SHE GROWS HEIRLOOM VEGETABLES, GOURMET/MEDICINAL MUSHROOMS, AND MAKES LOTS OF KOMBUCHA.



SARAH CANELAS IS A RECENT ALUMNI OF THE LAND ARTS OF THE AMERICAN WEST AND COLLABORATED IN A GARDEN: THE BIRDS ARRIVE. DURING THE PROGRAM, HER WORK FOCUSED ON DOCUMENTING ENGAGEMENT WITH THE NATURE-CULTURE DIVIDE AND DEVELOPING DIALOGUE AROUND THE RESULTING RELATIONSHIPS. SHE CURRENTLY LIVES IN SANTA FE, NM.



SEEDS OF GRANDMOTHER'S TIME

CHASITY SALVADOR

"This is the Mother earth. if you take care of her, she will take care of you."

Grandma spoke as she raised the clay for us.

Holding it up like a book.

Gracefully swinging her brown, dotted hands, back and forth: carrying thousands of years of history

so much history that with every swift tsunamis awakened.

And forgotten Keresan words and accents flooded broken homes on the reservation,

and like an apocalypse: the homes suited up into armors of love.

Because grandma always had the love.

She always had the knowledge.

She held it in front of us.

She taught us like this:

Plant here, she'd say,

Plant these, we'd hear,

Release the water only slightly.

Raise the children only lovingly.

Raise them with different names to reflect where they are in that moment

Just like the stages of the corn

As it grows

Into it's deepest bloom

Piercing the air with love

Like babies do

When they unleash from the

Womb,

Because they change. People evolve, learn to love, give, nurture, and return back to their roots.

"Fed them, talk to them, love them," she advised.

"Corn mother. Pray to her," she sang,

So they prayed to her—men, children, mothers all of them,

To the mother of all—the earth.

To the mother of all—the young and old mothers of the community.

Grandma always had the love.

She always had the knowledge.

She held it in front of us.

For some grandmothers -the kitchenette is her property in the home,

For our Pueblo grandmothers---

The fields of seeds and children are her kitchen,

Her.



THE 7TH STREET GARDEN

**CHUCK FITZGERALD
AND ROBERTO SALAS**

This is a collaborative project including Puyallup High School science students, the community, and artists Roberto Salas and Chuck Fitzgerald. High School students planted pumpkin seeds and then did analysis on the growth with the use of different fertilizers.

Private funds were used to commission International artist Roberto Salas from El Paso, Texas to paint a mural behind the community garden. The goal is to continue this project and expand to planting multiple vegetables for a community garden in order to integrate art and science.

CHUCK'S WORK IS OFTEN AN EXPRESSION OF SHAPES AND FORMS THAT HE DISCOVERS IN NATURE. THE SCULPTURES HE CREATES EVOLVE FROM ENERGY COMING FROM A CERTAIN TIME AND PLACE AND THE TENSIONS BETWEEN LINE, SHAPE AND FORM. HE IS IN A CONSTANT STATE OF SEARCHING AND EXPLORATION TO CONTINUE HIS ART WORK AS TIME ALLOWS, ALWAYS EXPERIMENTING WITH EVERYTHING LIFE HAS TO OFFER.

ROBERTO USES A MULTIDISCIPLINARY APPROACH TO EXPLORE DIVERSE CULTURAL ICONOGRAPHY AND EXPRESS AND INTERPRET IT BY CREATING LARGE SCALE PUBLIC ART PIECES. HIS LOVE FOR TRAVEL AND FOR EXPLORING CULTURES AROUND THE WORLD HAS INSPIRED ROBERTO TO CREATE ART WITHIN DIVERSE CULTURAL POCKETS, AS IN THE ARCTIC CIRCLE, IN THE DEEP SOUTH OF LOUISIANA, IN BALI, INDONESIA, CHINA, AND IN MEXICAN VILLAGES.

CHUCK@NORTHWEST-DESIGNS.COM

They belong to her, as her whole persona.
The corn field was Her. And She was the cornfield. If you cultivated wrong and with ill intentions, you disappointed her.

If you entered without permission of those fields, even with fertile and kind intentions.
You invaded her space.

These were the first ideas of consent.

Her/She

She had knowledge.
She had prayer.
She had power.

Pantries of corn, squash, and beans, she was the grandmother of those three sisters too.
And when May came,
Grandmother perked up and grew into her deepest bloom,

And the knowledge released,
Rushing into the minds of our youthful and clean hands, like the water
Brushing every home of planted seeds after it is gently released from the acequia,

Could fed thousands.

Grandma always had the knowledge.
She held it right in front of us.

She gave that knowledge to her daughters, to whom gave it to her daughters.

Before you knew it you had armies of daughters--
With some missing.
We honor that they still have the knowledge.
Knowledge from their grandmothers.

The daughters, who will become grandmothers--
Have the knowledge to save us, this world.

Grandma spoke as she raised clay for us.

"This is mother earth. If you take care of her, she will take care of us."

If we knew best; we would conclude that she was telling a story about herself.

CHASITY SALVADOR IS PROUDLY FROM THE PUEBLO OF ACOMA. AS A RECENT GRADUATE OF STANFORD UNIVERSITY WHERE SHE STUDIED COMPARATIVE STUDIES IN RACE AND ETHNICITY, SHE SPENDS HER ENERGY ADVOCATING, WRITING, AND CREATING SPACES FOR INDIGENOUS WOMEN. AS THE EXECUTIVE ASSISTANT AT THE RENOWNED ORGANIZATION, TEWA WOMEN UNITED, SHE FOCUSES HER ACADEMIC, PROFESSIONAL, AND PERSONAL CAREERS ON LEARNING ABOUT AND PRACTICING HEALING OF INDIGENOUS WOMEN, WOMEN OF COLOR, THOSE MOST VULNERABLE, THE MOTHER EARTH, AND FAMILIES. IN HER FREE TIME, SHE ENJOYS SPENDING TIME WITH FAMILY, HIKING IN HER ANCESTRAL HOMELANDS, LEARNING DIFFERENT TYPES OF AGRICULTURE, ESPECIALLY TRADITIONAL WAYS OF FARMING AND LEARNING ABOUT THE PRESERVATION OF TRADITIONAL FOODS AND CULTURAL TEACHINGS ABOUT WOMANHOOD OF VARIES INDIGENOUS COMMUNITIES ACROSS THE WORLD AND MOST IMPORTANTLY IN HER BELOVED HOME COMMUNITY.

SEEDS RE GENERATION

RULAN TANGEN, DANCING EARTH

" our SEEDS production feels important because of all the stories that were given to us by the elders, so it's really our communities who became the soil and seeds for this to grow"



Lupita Salazar

SEEDS RE GENERATION is cultural-ecological Indigenous contemporary dance production created by Dancing Earth, that emerges from 8 years of living experiential research. We have been so blessed to be invited to bring it to the Kennedy Center this April, as the culminating activity of Dancing Earth's Founding Artistic Director's tenure as 2018 Kennedy Center Citizen Artist fellowship, for Service, Justice, Freedom, Courage, and Gratitude. These are all qualities we identify with seeds, and with the life force of our SEEDS RE GENERATION performance, so Dancing Earth's director reflects on tracking the patterns from which this work has evolved.

2006 - 2013. WHERE THE WATER LEADS US

Prior to SEEDS, we were involved in multi-year dance project about water, "Walking At The Edge Of Water" that included culture carriers from 28 First Nations across the globe, each insisting on their participation because of the importance of protecting the water of our bodies and of our planet. This water work marked Dancing Earth being respected and trusted by elders and knowledge carriers, to bring art to fulfill purpose as a portal for change, reflecting the origins of song and dance at the center of transformational ritual since the beginning of time. Now, we take responsibility to create the new songs and dances that reflect the challenges of our time: hydro-fracking, GMOs, and to embody an altered-reality of harmony and connection of humans with all life forms of the cosmos. Dancing into being the change we wish to see in the world!

During this journey, when we were invited visit several different Native communities to discuss water, we were often taken to visit community gardens, farm land, or in Anishnaabeg territory the 'Ayaandagon ' garden of medicine plants, and 'gitigaan' gardens that don't have recognizable forms but were intentionally made that way to be indistinguishable from the contextual landscape. Again and again, in hearing stories of water, we were guided to visit the 'other relatives who need water'. In some cases communities had ancient planting and farming traditions. In other instances, such as with Cahuilla group in Southern California, they spoke of their original way being foraging over vast stretches of land, but when they were reduced to reservations, they decided to bring along those plant families who had nurtured the people since the beginning of time, so that the plant relatives could be cared for in the changing times.

2014. CREATION SEASONS OF SEEDS

This year was a year where Dancing Earth found itself with a major drop in funding; so we danced outdoors, as we could not rent studio spaces, with our teachers becoming the rocks and cactus beneath our feet, the wide skies above, the wind and the twisted trees — a practice that evolved into our signature 'land dance'.



DANCING EARTH SHANE MONTOYA, ANNE PESATA, TREY PICKETT BY PAULO T PHOTOGRAPHY, COSTUMES BY CHERYL ODOM)

PHOTOS AND VIDEOS OF OUR OUTDOOR DANCES BECAME STUNNING ART PIECES, WITH INCREDIBLE VIDEO ARTIST MARION WASSERMAN CAPTURING KALEIDOSCOPIC CANYON AND CORNFIELD FOOTAGE THAT ULTIMATELY BECAME STAGE DESIGN IN THE EVENTUAL PERFORMANCE.



IMAGE FROM MARION WASSERMAN VIDEO ART , CREATED IN COLLABORATION WITH CORNFIELDS OF ROXANNE SWENTZEL.

We were sometimes literally hungry and one of the students from our Summer Institute offered vegetables that she had grown on her land and introduced us to her friends who had stands at the Farmers Markets, who were incomparably gracious, gifting us with produce so that we ate better than we ever had! We tried to reciprocate by offering dances of gratitude but were chased off as we didn't have appropriate licenses and permissions, we were so sorry to disappoint the farmers who we recognized as the people of true 'riches' for they had everything needed to sustain themselves. The student, Lupita, was then invited to join the company as a full member, for it was her movements or planting and harvesting that were the most important motions that we could fathom. Without funding, this year of creation was the first time we could not pay artists a dignified living wage and had to ask them to accept vegetables and seeds for payment. One of them, Anne Pesata of Jicarilla Apache, said she didn't have much to offer the creation process focused on plants and seeds because her people were historically hunters. I asked her, aren't your family known for basket weaving? Yes. And your baskets are made of ??? This gave birth to one of Dancing Earth's most beloved dances, the Basketweavers solo, with a spoken monologue

by Anne about her life as a fifth-generation weaver, and the rigor of selecting and preparing plant materials and shaping them into exquisitely precise forms. These two women, Lupita and Anne, helped move the company into consistent practices that amplified our eco- sustainability: bringing our own forks, spoons, bowls, containers, and water bottles to rehearsals, performances, and touring, and adding seed exchanges, planting, seed ball making, and basket workshops to our offerings.

In the summer of 2014, with 21 global indigenous cultural ambassadors from as many First Nations, sleeping in tents and trucks and eating potluck meals offered by community friends, we explored seed choreography as metaphor and as actual, for cultural revitalization, with us as resilient seeds of our ancestors, culminating in takeover of the Skylight space downtown, with "Origi-Nation : roots and seeds" a magical evening of performance that happened on floor, aisles, balconies, stairwells, like wild weeds busting through cracks in the collective consciousness.

We were invited to Four Corners area for six weeks, where we created a community production based on four seasons of seed growth , with a creative crew of 60 including college students, elders, costume and set makers using recycled and repurposed materials, yoga instructor, farmers, chef who utilizes foraged Native foods. An incredible year, moving to scarcity of resources to abundance of creative output in a constant cycle of renewal and reciprocity, of giving and receiving.

2015 – 2018. SEEDS TAKE ROOT

Between 2015 – 2018 the work evolved into a series of trios, then a work for 4, then 6, 10 —almost Fibonacci in growth . Every time we were invited to perform —ḡḡ in Bioneers conference, major theaters and galleries in Guahan, Arizona, Arkansas, Toronto, Durango and a park in Oakland, we brought the seeds of our work and let it blossom further, connecting with local host First Nations at each location and adding to our body of knowledge. Back home in Santa Fe, we grounded with our Southwest cultural leaders, of Tewa, Dine, Abaachi, Zuni, Havasupai who shared stories with us that were recorded into our soundtrack. Our Havasupai and Zuni elders were invited to perform onstage with us for the opening nights in Arizona and Colorado, bringing their gestures and words.

Everywhere we went, we were offered local food to keep us strong, we asked questions about these foods, these seeds, and continued to learn how closely seeds and culture are related.

In 2018 one of the cultural ambassadors Yvonne Chartrand who had come down from Canada for Origi-Nation had learned from her seed/root research that her grandmother had been a knowledge keeper of Metis cultural plant medicines. As an award-winning choreographer and director



IMAGE OF UQUALLA, BY TIM TRUMBLE, ONSTAGE AT ASU GAMMAGE, WITH CONSTELLATION IMAGE BY ANTHONY CH-WL-TAS COLLINS OF AKIMEL O'ODHAM).

PHOTO CREDIT: DANIEL QUAT



of V'ni Dansi company, she received a grant for international collaboration and selected Dancing Earth to come to Canada to learn about Michif cultural plant medicine knowledge, to be translated into a dance production for the Talking Stick festival. We heard stories and songs, multiple Michif language dialects, made offerings, picked and harvested, to be able to embody 28 powerful medicines — some of the most powerful being 'like weeds, they are everywhere and people come and try to get rid of them but like us, they are resilient'. Misaskwatemin, Ithkapaskwa, and many we recognized—Wisakipipakos reminded us of osha, Nipisiy was willow, Okacakan-askos the ancient horsetail.

2019 SPROUTING EVERYWHERE

In February and March, our seeds blossom into solos at the Rocky Mountain Alliance Seed Summit in Santa Fe and other seed events and art events in Nebraska, Berkeley, Vancouver. As our SEEDS performances continue to evolve, they have included dancers walking into audience to hand some of the lucky attendees a single egg carton filled with tiny live sunflower spout, or inviting people to write their dreams into small pieces of handmade paper embedded with wildflower seeds, made by UNM students of sustainability using pages of old homework, later these papers are planted in a garden to blossom into dream manifestations. Similarly, we have sat at farmers markets inviting children to roll clay, earth and wildflower seeds into 'nature-bombs' that get tossed into unlikely places, returning later to be greeted by a profusion of wildflowers attracting pollinating bees and butterflies! Hundreds of children have experienced our Three Sisters workshops, sharing movements inspired by the botanical growth patterns of plants (as shared with us by local farmer Mykel Diaz: we squat to the ground with arms low to become squash with wide leaves shading the earth, stand tall and strong as corn with V shaped arm movements as leaves, and spiral side to side as the bean vine wrapping around corn) —imagining healthy Native foods in rhythmic twists, sways, drops, and pops for a new generation.

We have seen cultural changes in these few years, our water work being recognized as a

pre-visioner of Standing Rock, while Native food chefs have become national celebrities, and community gardens spring up on reservations, and environmental activist leader Winona LaDuke attending a show, overwhelming us with her enthusiastic support, later to say publicly, when there seems to be no hope you must bring in the arts to change hearts.

On April 20 right around Earth Day we welcome our New Mexico community to see SEEDS RE GENERATION for the first and last time, with an informal and humble showing at Wise Fool on Siler, before we head out to bring it on tour to the Kennedy Center. After this spring, SEEDS will be morphing into a new cycle of work about Indigenous -centered Futurism, which we will share as a work in progress on July 12 in Santa Fe. We invite our intersecting circles to experience dance as a life affirming contemporary ritual, dreams that become reality, seeds that blossom into nourishing life — please join us, as the roots beneath our feet and the light of the sun and moon we reach up our hearts to meet !

DANCING EARTH INDIGENOUS CONTEMPORARY DANCE CREATIONS RESPECTFULLY BASED IN OGAA PO'OGEH — OCCUPIED TEWA TERRITORY KNOWN AS SANTA FE, NEW MEXICO AND YELAMU — OCCUPIED OHLONE TERRITORY KNOWN AS SAN FRANCISCO, CALIFORNIA.

RULAN'S WORK EXPLORES MOVEMENT AS AN EVOLVING LANGUAGE OF INTER-TRIBALISM ROOTED IN DIVERSE INDIGENOUS COSMOLOGIES, IN FUNCTIONAL RITUAL FOR TRANSFORMATION AND HEALING. AS FOUNDING ARTISTIC DIRECTOR/CHOREOGRAPHER OF DANCING EARTH, SHE HAS PASSIONATELY CULTIVATED SUCCESSIVE GENERATIONS OF INDIGENOUS CONTEMPORARY PERFORMING ARTISTS. SHE IS RECIPIENT OF 2018 KENNEDY CENTER CITIZEN ARTIST AWARD FOR SERVICE, JUSTICE, FREEDOM, COURAGE, AND GRATITUDE - AND IS GRATEFUL FOR ALL THAT ROOTS HER FOR THE DREAMING AND DOING OF DANCING EARTH: MOVING, SHAKING AND STOMPING THE WORLD INTO RENEWAL.

WWW.DANCINGEARTH.ORG



PLANTING THE PUEBLO FIELD

DOUGLAS CONWELL

Take five acres of high desert land, add sunshine with a generous dash of smiles and the energy of children and elders-- what do you get? A laboratory of passion and purpose supporting soil restoration, water conservation and ancestral foodways at Jemez Pueblo. In May 2018, staff, family and friends of Flower Hill Institute were joined in the farm project by volunteers from Earth Walks service learning program based in Santa Fe, NM and staff of Bodhi Manda Zen Center in nearby Jemez Springs. The public is invited to join hands for a similar event June 20-22.

Flower Hill is a native-owned, community-directed nonprofit. It seeks to preserve and enhancing cultural resources, prepare youth to inherit leadership, improve economic self-sufficiency and climate change resiliency. Among other initiatives, the Institute sponsors a series of summer youth camps focused on traditional knowledge and the interface with science, technology, engineering and math (STEM). The Institute also advocates for Puebloan voice of authority over the protection cultural resources in the greater Chaco landscape. Recognizing that most Tribal communities in the west are deemed food deserts, the Institute has worked closely with Engineers Without Borders to create an affordable greenhouse kit to help provide access to fresh foods locally.

"Farming with nature—the root of organic farming—lies at the heart of practices used by native farmers in the Southwest for millennia," said Roger Fragua, director of the Institute. "Traditional farming can teach us a great deal about how to build a resilient and regenerative agriculture." Raising crops in the high desert environment is unpredictable, yet every year the fields are planted with high hopes. In that spirit, a group of enthusiastic volunteers of all ages loaded up shovels, hoes and rakes and headed for the Institute farm.

Before any work began, a prayer was offered for the land and for the guidance of ancestral wisdom. Then they happily launched into a whirlwind of activity, clearing weeds, digging furrows, planting heritage seeds and finally flooding the fields with life giving water. One Earth Walks elder who was physically unable to labor in the fields sat under an umbrella with her own self-described job: dispensing blessings. Then the final reward: sweet thirst-quenching watermelon. One more treat: the Jemez Pueblo Children's Butterfly Dance group performed for friends and family on the Zen Center grounds at the end of the day.

Bodhi Manda in Jemez Springs supports the Pueblo in whatever way possible. Hosting the Earth Walks group for the event is one of those ways. Several of the Zen center summer staff, part of the Worldwide Opportunities on Organic Farms (WOOF) program helped at the Institute farm. Another Bodhi staff member collaborated with Roger in sustainable growing practices with traditional foods. At the close of the weekend, a circle of 25 participants and staff shared individual insights from a deeply moving experience.

Earth Walks has sponsored cross cultural service learning programs and events for over 20 years. It's guiding philosophy is the conviction that we are alive on a sacred, living earth. Each person's life journey—known by some as their "earth walk"—is an opportunity to remember the indigenous wisdom found in all cultures and inherent within ourselves. That wisdom is needed now more than ever before. Earth Walks explores this knowledge through arts, health and earth based-traditions, journeys on the land, seminars community hands-on service projects.

To join the June 20-22 Earth Walks activity with Flower Hill Institute, contact earthwalks@earthwalks.org or go to <https://earthwalks.org/>

DOUGLAS CONWELL OF EARTH WALKS, HAS SERVED AS DIRECTOR OF INFORMATION FOR THE NEW MEXICO DEPARTMENT OF ENVIRONMENT AND DIRECTOR OF COMMUNITY RELATIONS FOR THE WHEELWRIGHT MUSEUM OF THE AMERICAN INDIAN IN SANTA FE. HE HAS WORKED FOR THE PUBLIC SCHOOLS AS VIOLENCE PREVENTION SPECIALIST AND COORDINATOR OF A SERVICE-LEARNING PROGRAM. DOUGLAS HAS LIVED IN THE SOUTHWEST ALL HIS LIFE AND BELIEVES THAT IT IS IMPORTANT TO "RETURN THE GIFT" THROUGH VOLUNTEER WORK. HE LEADS SEMINARS IN "GEOMANCY: THE HEALING POWER OF PLACE," AND HAS TAUGHT COLLEGE LEVEL COURSES IN THE CULTURAL AND FAITH TRADITIONS OF NORTHERN NEW MEXICO AT GHOST RANCH RETREAT CENTER NEAR ABIQUIU, NM. HIS WRITINGS ARE FOUND IN "THE SPIRIT THAT WANTS ME: A NEW MEXICO ANTHOLOGY," AS WELL AS OTHER PUBLICATIONS.

REMEMBERING AND RETURNING

KUWA JASIRI TYOMBE
INDOMELA, THE GREAT

In a world of plenty, I live with little knowledge of my Ancestry. faint memories show up in my dreams and my fears. In my search for ancient wisdom seldom is my story. Our survival is blanketed by false narratives and greed. Surrender. In a way that amplifies my truth. Our legacy of perseverance built the literal, structural foundations of Amerikkka, yet we receive little, more often none of the praise and acknowledgement.

Somehow with oppression being the part of my story I know most and continue to explore. I also receive messages of life before colonization. Nature, Dreams, Ancestral memory deep within me. The message is Seeds. Seeds will bring you back to me.

So I harvested Columbine Seeds. The first variety I was able to identify the Plant Name while collecting. And my journey began.

Wild and fast. We load up the vehicle with more of us than recommended for comfort. This is how we develop closeness, skin to skin contact, listening, silence. Hot springs, forest roads, and accountability processes grew our community, along with the plants. We each have our passion. Mushrooms, Daisies, Latin, Thunder. Mine is Seeds. Lots of scouting, searching and returning. I learn about the forest, the cycles, the inhabitants.

So my Ancestral message of this moment is: You can always return.

Big joy! Fills me to embody this truth. So I decide to make an Ancestral garden. Full of Afrikan varieties, Louisiana heirlooms that will grow where I live on Indigenous Nucchu Territory. From Southern Exposure Seed Exchange I am getting Aunt Lou Tomatoes that went from slavery to freedom on the Underground Railroad. Some of my Ancestry is complicated and new to my realm of reality. Dreams of Cubans, and Seminoles. My hope is to plant some Seminole Squash Seeds and Black Beauty Zucchini. Commune with the plants and embody that my Black Is Beautiful, that Black Lives Matter. Some herbs and spices so I can cook cultural dishes.

So the story goes. Ancestral Afrikans, who braided Seeds in their hair before being forced to board transatlantic slave ships, believing against the odds in a future of sovereignty on



Land. This is the dedication in Farming While Black By: Jeah Penniman, a recognition of my people.

Varieties that went through continental transit in the braided afros are Whippoorwill Peas which also went through a name change to reflect the treatment of the moment, Whip Poor Will. Afrikan Runner Peanut, a Seed with a name that is true to the virtue of West Afrikans as people who run great distances. Part of the purpose of the garden is to tend my wounds, both present and ancestral, we deserve this.

As the Program Director of the grassroots group Authentic Creations, we focus on agriCultural sustainability. Native Diné Food Sovereignty is one of our largest programs. We aide Elders resisting forced relocation in Spring gardening. We return Native varieties of Seeds. From Baker Creek Heirloom Seeds, Diné (Navajo) Winter Watermelon. From Plants Of The Southwest, we get lots of Native wildflower, and grass varieties. In the Fall, we bring pounds of phytoremediation Seeds to scatter over the landscape and the recently shutdown Peabody Coal Mines.

Deep breathe. We have many allies in this world and Plants are one of them. I ask them to aide us in this journey of returning.

KUWA JASIRI (FIRST NAME) USES THAT ONE/ THIS ONE PRONOUNS AND JUST ORDERED A REFURBISHED COMPUTER IN ALIGNMENT WITH A ZERO WASTE ETHOS. THAT ONE WRITES ZINES THAT FEATURE HOME HARVESTED SEEDS AND MAKES HERBAL MEDICINE. CURRENTLY ENROLLED AT HERBAL FREEDOM SCHOOL, THIS ONE IS EXPLORING THEIR HERITAGE WITH ANCESTRAL PLANT, SEA HIBISCUS. KEEP UP WITH THIS ONE AT ARTISTICAPOTHECARY.WORDPRESS.COM

ILLUSTRATION CREDIT:
APOTHECARY LOVE

THE GERMINATION AND EMERGENCE OF THE BUFFALO SEED COMPANY

Local seeds for local food production in Kansas City and the Midwest

MATTHEW & NANCY KOST

This is the story of the germination and emergence of The Buffalo Seed Company, a company that Nancy and Matthew developed to provide the greater Kansas City area and Midwest with locally adapting, open pollinated (sometimes Heirloom), non-GMO horticulture and crop seeds to increase the resiliency and sustainability of local food systems in the region.

GERMINATION

The company started germinating when Matthew and Nancy began growing plants for seed in the mighty state of Ohio. Everything started in the community garden on top of a hill near the Ohio Agriculture Research and Development Center (OARDC) in Wooster. They planted a milpa where maize, beans, and squash were symbiotically intertwined as their wild ancestors were in wild ecosystems. While these three species were the foundation, they also integrated amaranth, tomatoes, sunflowers, and other species in complex polyculture designs. After several years on that hill, they began to acquire unique seeds from: farmers at a community staple in Wooster called Local Roots; Luke Lee a dear friend Matthew met at the Borlaug Summer Institute on Global Food Security at Purdue University; the maize breeder at OARDC at the time, Dr. Richard Pratt; an heirloom crop farmer, Tony West; and from volunteer plants in the community garden. Once Nancy completed her Master of Science in plant breeding, she collaborated with a dear friend and phenomenal minimal till/no irrigation farmer, Bill Boyer, at Boii Gardens. Bill took Nancy and Matthew in and taught them his system of using straw manure from a local horse stable to grow some earthy food without water. While they were market farming, seeds were naturally being saved from everything they produced and their seed collection grew.

One fall evening while sitting on the porch of 'the cabin' at the Anderson farm in Shreve, Ohio, where they lived and assisted in the breeding of Polypay sheep with the Lambshire Polypays operation, a journey was planned. Matthew was near completion of his doctorate work on sunflower evolution in Kansas and landrace maize adaptation in Chiapas, Mexico. He asked Nancy for her hand in marriage and she said 'if you want to be with me, then you will travel through Latin America and meet my family in Bolivia'. The situation was amplified by the fact that Nancy's visa was set to expire and neither wanted there to be any confusion about the reason for the marriage. Matthew did not hesitate on his answer, yes. Later that fall they took their Crown Royal bag full of cash from farming at Boii Gardens, packed the 1995 Toyota Tacoma with their belongings, a large portion which was their seeds, and journeyed 12 hours to Shawnee, Kansas, to enjoy the Holidays with the Kost family. The seeds stayed in Shawnee when they took off in a bus to Denver, Colorado, to catch a flight to Costa Rica where they began what would become a nine month period where they backpacked through Costa Rica, Panama, Columbia, Ecuador, Peru, and Bolivia. Along the journey they visited several of Nancy's colleagues from EARTH University who returned to their communities to integrate resilient and sustainable business and farming practices. While in Cusco, Peru, they were blessed to find out that they soon would be introducing their son Thomas into the world.

The apex moment of the journey was Bolivia, the heart of South America. They spent time in Potosi and Oruro, Bolivia, with Nancy's family and Matthew was introduced to the deep connection that the Quechua and Aymara speaking cultures of the area had with the ecology and evolutionary forces of the earth, Pachamama. While the culture was strong, resilient, and connected, the increased demand for Quinoa in North America and Europe was leading to a destruction of the llama, potato, quinoa system balance that the people relied on. Focus was on one type of quinoa as it brought good money, llama and potato production, and the diversity stewarded by the cultures in the region was disappearing. In addition, the use of tractors in the semiarid soils, was leading to destruction of the fragile ecosystems. The market for quinoa was starting to become saturated when they were there and a number of farmers started reverting back to their traditional ways. Matthew was unable to find work in Bolivia and ended up assuming a position with Bioversity International working on promoting the *in-situ* conservation of amaranth and quinoa diversity throughout Peru. Nancy cooked outstanding cuisine with the tremendous amount of crop diversity in the central market in Sucre, Bolivia, to keep them strong and healthy as Thomas's birth inched closer.



TOP: MATTHEW HARVESTING TOMATOES AT BROTHER JIM'S WHILE THOMAS SUPERVISES

BOTTOM: DRIED RE-PIONEER MAIZE LANDRACE DISPLAYING COB DIVERSITY

Once Thomas was born, they decided to return to the US so Matthew could take a position as Conservation Director at Native Seeds/SEARCH. They flew back to Kansas before driving across the country with a one month old Thomas, a few belongings, and their seeds, to Tucson, Arizona, in the dead of summer. The desert Southwest spoke to them, the seeds, the cultures, the climate, the rain. Overseeing the *ex-situ* and *in-situ* conservation of the Native Seeds/SEARCH collection of over 2000 desert adapted crops varieties, many of which had been grown in the region for thousands of years, made apparent the extent of the decline of the relationships between plants and humans in North America—so much crop diversity, but now primarily found in cold storage. The harsh realities of the impact that industrial agriculture, cheap food, and deep scars of cultural injustice had on our dance with nature and each other was obvious. As always, there was a silver lining, the seed and food sovereignty movements were picking up steam in the greater Southwest and great efforts were being made to place the seeds back into the hands of the cultures that stewarded the diversity for thousands of years, as well as farmers and gardeners who realized its significance. These efforts were moving in sync with a powerful local food movement being driven by local farmers and some damn good chefs. Nancy was accessing new ingredients and cultures and fused her Bolivian American cooking with the flair of the southwest. They connected with individuals, communities, and tribes throughout the region, learned from Morgan Parsons, Chris Honahnie, and Raymond Antone how to grow locally adapted crops in the high desert of Patagonia, Arizona, and learned all aspects of seed production, cleaning, storage, and sales. They were gifted seeds that were added to the growing cosmopolitan seed collection they were stewarding.

In the spring of 2016 Matthew and Nancy returned to Kansas City with Thomas and seeds in tow to strengthen the core of their network, their family, and began discussing the possibility of infusing a locally adapted seed system into local food systems in the Midwest. What became apparent was that there were not enough smallholder farmers in the area growing local food and that the area was in the early phases of valuing such food. Within three months Cultivate Kansas City hired Matthew as the Program Director and Nancy launched Pachamama Edible Landscape. Cultivate Kansas City is a local non-profit focused on strengthening the local food system in greater Kansas City. This was their gateway back into Kansas City and, importantly, their integration into the local food system. They met farmers, gardeners, chefs, artists, and musicians deeply passionate about everything local—the city was undergoing a renaissance. Nancy, a phenomenal grower, made sure seeds were in the ground from the moment they arrived and made sure they were in the ground every season since, seeds being saved; she also

fused her culinary approach with Kansas City dishes and ingredients. In October of 2017, they welcomed their strong and sweet daughter, Silveria, into the world. In early February 2018, Matthew launched KostAgEco, LLC an agro-ecological food system consulting business. During this time, they planned their first seed grow out. Nancy started seeds in their backyard while they struggled to identify a piece of land to farm.

EMERGENCE

Enter Brother Jim. Around half an hour west of Kansas City, a longtime Kansan friend, Brother Jim, provided Nancy and Matthew a chunk of land to grow on. As spring began, they tilled the land, purchased local rye straw, and started watching the spring rains. When the soil was moist and rain was in store they connected plant seedling and seeds into the soil for them to start their dance called life. They tucked them in with straw, blessed the field, and trusted the earth. Unfortunately, the straw had a bit of rye seed in it that sprouted and required attention early season. Afterward, weeding was minimal due to the suppressive action of the straw; minimal organic chicken manure, no chemicals, and no irrigation were used. Silveria and Thomas joyfully helped out, well at least from their point of view. Artificial selection was not performed on any of the varieties rather natural selection shaped the varieties to the environment. For a number of varieties, they observed this process—for a given variety some plants died or had reduced yields when compared to others, the populations were adapting. Seeds saved from such a variety are more in sync with local conditions, which can lead to a reduction in required inputs. This is important as two major components of resilient and sustainable agricultural systems are the reduction of inputs and increased diversity.

RESILIENT AND ADAPTING SEEDS

Stories of the following three The Buffalo Seed Company varieties demonstrate the ways diversity equates to resiliency and how the process of natural selection shaped the varieties to Midwest conditions, specifically the greater Kansas City area, in 2018. These observations provide insight into the foundation underlying The Buffalo Seed Company—The Buffalo Seed Company supplies growers in the Midwest with locally adapting horticulture and crop seeds to increase the resiliency and sustainability of our local food systems.

Re-Pioneer is an original maize landrace that Matthew and John Wright developed from 20 old school dent and flint open-pollinated varieties from Ohio. Maize outcrosses through wind pollination and pollen can travel far—in a single location it would take 20 years to regenerate pure seed from these 20 varieties without hand pollinating. Instead, they took a hand full of each variety and mixed them in a bag, literally. The newly formed landrace

ORANGE ZINNIAS FROM THE BIG FLOWER MIX VARIETY GROWING IN LOCAL RYE GRASS STRAW TO REDUCE PLANT COMPETITION AND ELIMINATE WATERING



contained substantial diversity, it is adaptable. The variety was planted in Ohio for two seasons and allowed to evolve. Seed produced the first year was F1 hybrid and the second year seed that was harvested was F2—the F2 generation is where evolution intensifies as diversity is exposed. This F2 seed has been planted and is adapting in Ohio, New Mexico, Florida, and Kansas. The planting in Kansas, at Brother Jims, took place by placing three kernels per hole spaced a few feet apart right before a rain. Germination was near perfect and it was apparent as the maize grew that there was a good amount of variance in the landrace—some plants grew over eight feet tall while others were only around four feet. When the plants were around a foot tall, *Cherokee Black Pole Beans* were planted at their base and a symbiotic relation was formed.

The symbiotic relation was interrupted as Japanese beetles began devouring the maize silks as they started emerging from the ears to be pollinated. There was both variance in flowering time and some silks had high concentrations of protective pigments that repulsed the beetles. For those that silked at the wrong time and/or had no pigments, the silks were chewed off and no pollination or grain formation occurred. Approximately a quarter of the *Re-Pioneer* landrace experienced yield reduction because of this. For a portion of the plants that appeared to avoid the negative impact of grazing, fungal infection set in where the beetles opened the ears and seed loss occurred for a portion of the plants. Finally, raccoons started stealing cobs right before harvest on plants that had cobs close to the ground; they were unable to reach cobs located higher on the plants. This ultimately eliminated seed production from a portion of the plants. The overall result was that the landrace adapted to Japanese beetles, fungal infection, and four legged herbivores in the region. Seeds collected from the surviving plants are likely to avoid these pressures better than the previous generation. While overall yields may be reduced in diverse varieties, they are resilient because they can adapt to change; as they adapt yields can increase.

Sudanese Eggplant, a brilliant eggplant that is exceptional in the Sudanese dish *Salata Aswad*, was shared with Matthew by Luke Lee. Nancy started seedlings in their backyard and they transplanted them into the soil at Brother Jim's when the soil was damp and the rains were on their way. While the rains came to nourish the seedlings, a portion died off in subsequent days following lack of water. This could have been due to those plants not having the genetic capacity to deal with drought, but they could not rule out the influence of microclimatic conditions. Later in the season when the eggplants began to form they observed an interesting environmental influence on fruit shape that was induced by light availability. A portion of the plants were grown in full sun and others were in partial shade. The former formed long dark purple fruits that were more slender and elongated and the latter were short and stout, primarily dark green with purple streaks and ridges separating sections of the fruit. This is an example of phenotypic plasticity, the process of a plant changing its form in different environmental conditions. As diversity within a variety provides resilience, so can phenotypic plasticity as it allows plants to alter their form to an environment that may be unfavorable. Nancy and Matthew observed this in regard to fruit shape, but the same can occur throughout the plant.

All Welcome is a tomato population resilient to change due to high levels of population diversity. The name says it all; this is the 'melting pot' of the Ohio, and now Kansas, tomato world. Generally, there is more diversity between tomato varieties than within varieties because they primarily self-fertilize. *All Welcome* was an intentional combining of many populations to make it more resilient both when being grown and when sold at the market. While only a few plants died or showed reduced seed production during the 2018 growing season, variance in the growth, flowering time, resistance to drought, and insect damage was observed. As was the case for the *Re-Pioneer* maize landrace, diversity will allow the population to make it through year-to-year perturbations that may well negatively impact a uniform population. When this variety goes to the market people have mixed reactions. Some want one of each and some focus on specific types; we humans are but another selective pressure in this dance of life.

HARVEST, SEED CLEANING, GERMINATING, PACKING, AND SELLING

The 2018 growing season was plentiful even though some of the crops did not yield. They grew several maize varieties. In addition to the space provided by Brother Jim, they had two additional planting locations to keep outcrossing species such as maize isolated so the varieties stayed pure. All maize varieties yielded well, a few were hit by the Japanese beetles and secondary fungal infections, and one, *Black Aztec*, could have used more rain. The diverse array of tomato varieties they grew all did great, some better than others, but they all produced in abundance. The cotton did excellent even though the rains caused some rotting as it came at the wrong time. The flowers were unbelievable in 2018, but some could have used extra time to mature and the wet and cold at the end of the season severely impacted the seed production on several. A Jamaican pumpkin variety that they love was hit by mold and some Jamaican peppers were growing nice, but were killed by an early cold snap late in the season. They were amazed at the minimal amount of labor they put into production this season. The mulching was essential to the no irrigation system and did a fabulous job of suppressing the weeds—thanks Bill Boyer.

Just when they thought they were done for the season, just kidding, the real work began. Toward the end of the season they harvested weekly and started processing the seeds, which continued well into the winter. The tomatoes and eggplants were processed immediately to keep them from rotting, the maize was harvested, opened up by Matthew and Thomas and hung to dry, the chiltepins were harvested when ripe and allowed to dry, the basil, flowers, beans, dill and amaranth seeds dried on the plants and were then harvested and processed, and the cotton was



TOP TO BOTTOM:
THE *SUDANESE EGGPLANT* WHEN GROWN IN A SEMI-SHADED ENVIRONMENT
MASON JAR FULL OF 2018 PRODUCED *TWO TONE CHERRY RED* TOMATO SEEDS
DIVERSE TABLE SPREAD OF *ALL WELCOME* TOMATOES

harvested throughout the season when the bolls opened. Nancy cleaned the amaranth and some of the flowers through the traditional winnowing method that she learned when she cleaning quinoa growing up in the Altiplano. Seed cleaning is a family affair and can be considered tedious, but it was a great time for them to reconnect, bond, and keep their hands busy so their minds could rest. Nancy took the lead on doing the germination tests while Matthew developed the website and began marketing the seeds. Hannah Kost, their sister in law, brought her craft skills to the table and hand folded each envelop. In mid-January, when they thought everything was ready to start selling, they launched the website, sent emails to farming listservs, and established their presence on social media. When the first order came in, they realized that they forgot to order the stamps and labels for the seed packets. Nancy quickly generated the labels and Matthew started drawing the company logo on each label and continued this process until the stamp arrived a week later.

Since, then they have spent a substantial amount of time marketing the seeds to both gardeners and farmers on a shoestring budget and are convinced that their passion will be well received by the local food communities in the Midwest. In the fall they planted over 30 garlic varieties sourced from locations throughout the Midwest and around the world that match Midwest climates and are ready to plant a number of other horticulture and crop varieties from around the world that will be happy in Midwest soils and mouths. They are on a mission to make the new local one where local seeds are the foundation. 'Locally grown seeds for local food production' is their motto and they are spreading it around to educate and carve out their little niche in a complex and centralized industry, seeds. They are confident that their seeds being produced and sold locally will give them an advantage in the Midwest. They are actively seeking investment in the company so they can scale up quickly. In addition to the 'local seeds for local food production' approach, they have a number of other innovative approaches they will release in the future around preparing Midwest agriculture for future climates using traditional horticulture and crop landraces and varieties, solidarity based networking with smallholder farmers globally, and promoting social and economic equity both within the urban cores of the US and rural areas globally. You can assist Matthew, Nancy, Thomas, and Silveria on this journey of reconnecting humanity to the earth by: (i) sharing the word by mouth and social media; (ii) purchasing seeds; and (iii) letting them know if there is any form of expertise they may benefit from such as business development or art. Much love from us here in the heart of the US, Kansas City.



IN THE ORNAMENTAL PLANT GERMPLASM CENTER (OPGC) AT THE OHIO STATE UNIVERSITY IN COLUMBUS, OHIO, TWO KINDRED SPIRITS, NANCY HUARACHI-MOREJON AND MATTHEW KOST, CROSSED PATH FOR THE FIRST TIME IN 2011. NANCY, FROM THE SOUTHERN ALTIPLANO OF BOLIVIA, WAS STUDYING AND BREEDING SOME OF THE MOST BEAUTIFUL VIOLAS EYES HAVE SEEN. MATTHEW, FROM NORTHEASTERN KANSAS, WAS CLEANING SUNFLOWER SEED FROM A LARGE EVOLUTIONARY ECOLOGY FIELD STUDY LOOKING AT RISK ASSOCIATED WITH THE RELEASE OF TRANSGENIC SUNFLOWER INTO THE CROP CENTER OF ORIGIN AND DIVERSIFICATION OF SUNFLOWER, THE UNITED STATES. WHILE THEY WERE FROM DIFFERENT CULTURES, WITH DIFFERENT EXPERIENCES, BACKGROUNDS, AND PURPOSES, THEY WERE UNITED BY A LOVE AND PASSION FOR DIVERSITY, SEEDS, AND ONE ANOTHER. THEY HAVE LIVED IN OHIO, BOLIVIA, ARIZONA, AND KANSAS DURING THEIR EIGHT AMAZING YEARS TOGETHER AND HAVE JOURNEYED THROUGH EIGHT COUNTRIES IN THE AMERICAS. NANCY HAS: (I) A DEEP UNDERSTANDING OF FARMING, SEED STEWARDSHIP, ECOLOGY, AND COMMUNITY FROM HER UPBRINGING IN THE ALTIPLANO OF BOLIVIA, STUDIES IN COSTA RICA AT EARTH UNIVERSITY, AND FARMING EXPERIENCES IN SEVERAL US STATES; AND (II) ADVANCED KNOWLEDGE OF CROP BREEDING INCLUDING EXPERIENCE USING CROP WILD RELATIVES. MATTHEW HAS: (I) A STRONG BACKGROUND IN EVOLUTION, ECOLOGY, MOLECULAR BIOLOGY, QUANTITATIVE GENETICS, *EX-SITU* AND *IN-SITU* CROP SEED CONSERVATION, FOOD SYSTEM AND BUSINESS DEVELOPMENT; AND (II) EXPERIENCE FARMING IN A NUMBER OF DIFFERENT ENVIRONMENTS. IT WAS CLEAR THAT SEEDS, CULTURE, FAMILY, COMMUNITY, AND EARTH WERE GOING BE THEIR FOUNDATION, AND IT HAS BEEN.

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DROUGHT

TABATHA BENNETT

And all the tears of generations will never be enough to get that
river to flow again.

Monsoons have come and washed away the once perpetual path,
Traces left in the way stones are exposed,
Dry Earth with deep veins the color of skin kissed for years
by the sun.

You can catch a glimpse and smile at what once was,
When it's raining while the sun shines,
"The wolves are having babies," she'd say,
Time after time.

TABATHA BENNETT, A BORN AND RAISED NEW MEXICAN, IS PASSIONATE ABOUT IMPROVING THE HEALTH AND WELLNESS OF HER COMMUNITY. SHE CULTIVATES CONNECTIONS WITH NATURE, OURSELVES AND OUR COMMUNITY THROUGH YOGA. SHE TEACHES STUDIO CLASSES IN ALBUQUERQUE AND OFFERS DONATION-BASED CLASSES IN THE RIO GRANDE BOSQUE. FOR MORE INFORMATION, YOU MAY VISIT HER BLOG AT YOGAENCANTADA.WORDPRESS.COM.

PHOTO CREDIT: SEEDBROADCAST



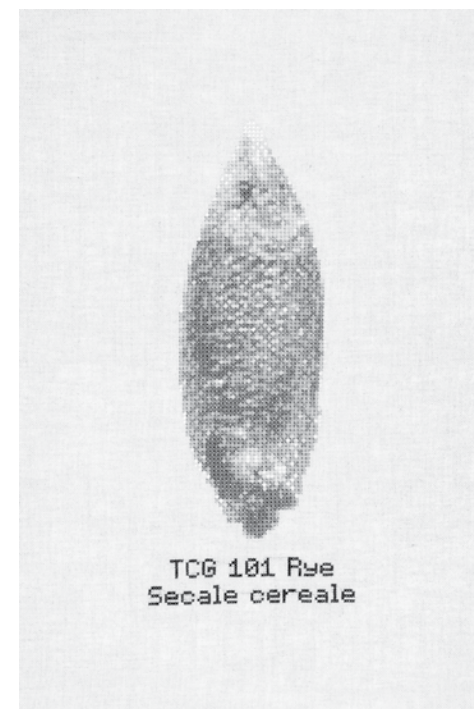
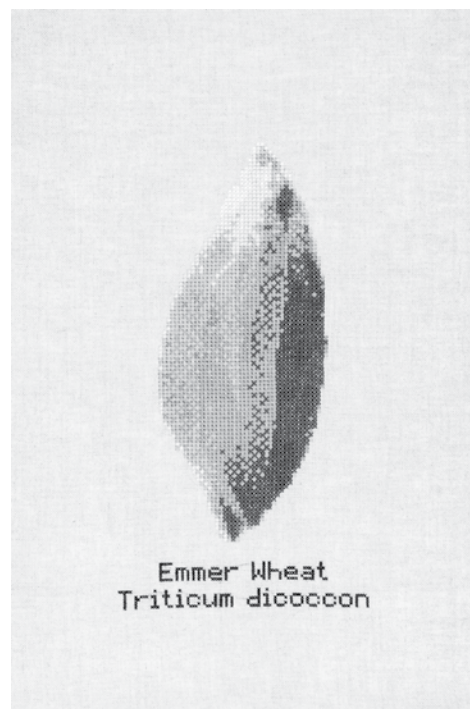
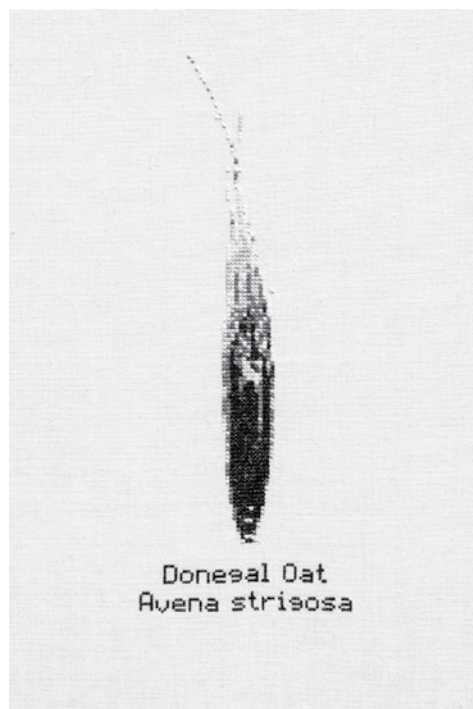
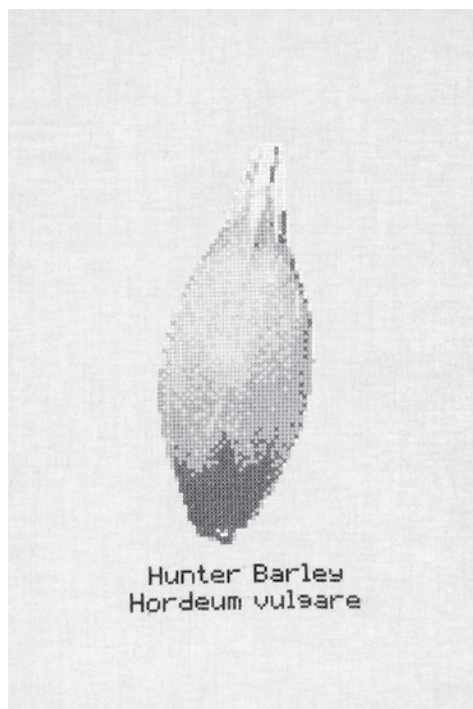
HER SERIES GRAIN 1-4

SADHBH GASTON

Her series Grain 1-4, was commissioned by Teagasc for CERERE, an European Union initiative investigating the role of heritage grains in modern society. With these pieces she examined the information we have on these grains, breaking down expanded images of grains no longer commonly grown, including Donegal oat and rye, into 'pixels' cross stitched onto linen. The resulting images further blur our knowledge of these grains, questioning the quantity and types of knowledge we have about how they are grown and used. Combining this with text questions the historic disconnect between tacit and scientific knowledge and how they might be used together to bring these grains into future use.

Sadhbh's use of embroidery encompasses careful planning and precise execution to make works that scrutinize contemporary and ancient aspects of clothing and food – items that can come and go quickly in our daily lives.

SADHBH GASTON IS AN EMERGING ARTIST FROM IRELAND, CURRENTLY LIVING AND WORKING IN CORK CITY. GROWING UP IN THE BURREN, CLARE FOSTERED HER INTEREST IN AGRICULTURE AND THE POLITICS OF PRODUCTION, INFORMING HER RESEARCH INTO GLOBALIZATION AND ITS RELATIONSHIP TO RURAL LIFE.



'Hunter' Barley: Spratt-Archer *Hordeum vulgare*

Seed source: Stored as the accession Hunter Barley at the Department of Agriculture, Food and the Marine, Backweston Farm, Leixlip, County Dublin

Attributed to Herbert Hunter, a hybrid variety Spratt-Archer was created in Ireland in 1908. Used in the craft brewing industry, it is currently marketed as a heritage grain. In 1904 Herbert Hunter joined John Bennet (1862-1935), on whose farm in Ballinacurra, County Cork Ireland's Department of Agriculture and Technical Instruction (DATI) founded a Cereal Breeding Station. Together they 'spent long days in the barley fields with the farmers and local maltsters' (Fisher Box, 1987, 48), leading to the Spratt-Archer hybrid. It proved to be 'amazingly adaptable' (Horne, 1951, 86).

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Donegal Oat *Avena strigosa*

Seed source: Irish Seed Savers and Brown Envelope Seeds, County Cork.

Stored as the accession Donegal Oat at the Department of Agriculture, Food and the Marine, Backweston Farm, Leixlip, County Dublin.

The Donegal oat is an Irish heritage grain known as a black or bristle oat. Bristle oat has been closely associated with rye; Tom Curtis has noted that it is often a companion species where the former is grown. The Donegal oat is well suited for growing on poor marginal land and was sown this year by Kate Carmody for CERERE on her farm in North Kerry. Oats are usually a reliable crop for spring sowing, however this year an extremely wet spring followed by summer drought resulted in a very poor crop. A small amount of oats was harvested by hand and the seed saved for next year.

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Emmer Wheat *Triticum dicoccon*

Seed source: Teun de Jong / George Pars Graanhandel, St. Jacobiparochie, Friesland, Netherlands

A grain of Emmer wheat was identified in a sample of charcoal linked to beaker ware at Newgrange in the Boyne valley from around 4000 BCE and was also excavated from medieval sites in Swords, Dublin. The seed was difficult to source, arriving via the Netherlands, and will be grown in Fingal by farmer Larry McGuinness over 2018/2019. He will be aided by the experience and knowledge of CERERE Mind Meitheal participants Dominic Greyson and Michael Miklis, co-founder of Irish Seed Savers, who have both previously grown the crop.

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TCG101 Rye *Secale cereale*

Seed source: Inis Meáin
Stored as the accession TCG101 at the Department of Agriculture, Food and the Marine, Backweston Farm, Leixlip, County Dublin.

TCG101 is one of a number of varieties of rye found on the Aran Islands and holds an important place in the heritage of the islands. Grown for centuries as a thatching material for houses, it is culturally significant to the vernacular architecture of the island. It is also genetically important to maintaining cereal landraces and provides an ecological sanctuary for important plants such as darnel, or *Lolium temulentum*, thought to be extinct in the wild.

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OUR AMAZING JUNIPERS

SARA WRIGHT

Tomorrow we are supposed to have the first freezing temperatures and I am watering my adopted juniper, the first tree species that I fell in love with when I came to Abiquiu, because of its fantastic myriad of shapes, its tenacious ability to cling to cliff edges and because so many of these trees are allowed to live out their natural lifespans of a few hundred to a thousand years or more. Now my love and amazement for these drought resistant trees has deepened into genuine concern because this summer's drought has turned clumps of needles brown on most of the junipers on the mesas and many appear to be dying unnaturally (very old trees do have a strange half dead look that is normal). Anyone with eyes can see how dis - stressed these trees are.

Water is Life. Here in the river valley, including the Bosque there are fewer dead patches but little or no new growth on the junipers. A few days ago I took a tape measure to measure new spikes on the solitary juniper that I water, noting that most fronds had bright blue green spires measuring twelve inches or more. Although I am happy for my tree I am also frightened because it is clear that we are now *living* the ravages of climate change and most of the junipers around here have little or no new growth and are not doing well.

Western junipers are an "indicator species." If they are showing signs of stress from lack of water then other less resilient trees are even more threatened. Not to take heed of this juniper tree warning would be a grave mistake. For me, the upside of this knowing has validated my belief that I must stay with native flowering plants and because of what the junipers are saying instead of planting fruit and other trees I am going to choose more junipers. Fortunately, there are many beautiful cultivars to choose from. My neighbor Bruce has a gorgeous blue green gray green teardrop shaped juniper that is definitely on my list. It even has a huge bird's nest hidden within its boughs.

Western junipers are dimorphic, meaning that they have two growth forms. One is upright (like my tree), and the other, much more common is bush-like opening to the sun like a flower. Even the biggest trees are not taller than 40 feet. The seedlings especially bear bluish green awl shaped leaves that are pointed at the tip. Mature leaves are a darker green and scale - like in appearance. The older leaves are borne in pairs or whorls of three and are rounded at the tip. The arrangement of the adult "leaves" in a circular pattern gives the twigs and uncanny resemblance to coral.

Although juniper and cedar are related – both belong to the cypress family - cedars produce small woody cones while junipers produce a bluish berry -like cone. Most junipers are dioecious, meaning that male and female cones are found on separate trees and once you observe the difference it is easy to differentiate between the two (to make things confusing some junipers have both male and female cones on one tree). The male cones are brownish in appearance and very small. These latter produce pollen sacs that release pollen grains in spring and summer, as many people that suffer from allergies know. The female cones look like berries. As the trees age some of the trunks become twisted and gnarled.

Junipers are one of the top ten plants for wildlife. Many birds love their berries and around here the Cedar waxwings, the Townsend solitaire, and American robins flock to the juniper cluster that shades the ground. I also see Dark Eyed juncos, Canyon towhees, and House finches scratching the ground under the tree. Collared doves, Pinion jays, Magpies, sparrows, and Western bluebirds to mention a few, gather in these trees for protection from hawk predation. And when winter winds are fierce and deadly, birds of all kinds seek protection from the bitter cold in the junipers' thick branches.

To survive in dry climates, *western junipers have long taproots and extensive lateral root systems that can efficiently obtain moisture where none seems to exist.* They are intolerant of shade, so if you are going to plant some give them space and lots of sun.

Of particular interest to us during climate change is the way Junipers use water. Rain falling on a juniper canopy is partially intercepted by the foliage, branches, and trunk (this of course is also true for other trees but less so if their canopies are not dense). In brief storms like the few we had this summer much of the intercepted moisture evaporated and did not reach the ground so the tree roots were never watered. Wind has a negative impact during storms also lessening the possibility of the trees' ability to absorb moisture and we had wind with every brief rain.



Transpiration nourishes the trees and is the process by which water is carried from roots and trunks to the small pores on the underside of leaves, where it changes to vapor and is released to the atmosphere. Transpiration cannot occur in soil that is devoid of moisture so without rain or during brief deluges most of the water becomes run off and even the lateral roots of Junipers (and other trees if they have them) receive little or no water. *Transpiration ceases as the Junipers try to conserve what water they already have.* In Abiquiu all of our unwatered Junipers (as well as other trees) have been literally starving for water. It is no wonder leaves/needles withered turned brown and dropped to the ground.

Now that it is October and we are getting the first real rain of the year we need to hope that the air temperatures stay mild enough to keep transpiration occurring. Soil water uptake is reduced when the soil temperature is below 50 degrees. If air temperatures are near or below freezing, then very little or no transpiration occurs at all.

Adult junipers define our unique landscape with their glacial growth and fragrant aroma. These trees are active during much of the year, and are able to absorb spring runoff to begin transpiration. They are also able to take advantage of soil nutrients long before other trees are awake, making junipers the ideal tree to plant in times of unwelcome planetary change.

REMEMBERING WHAT'S BROKEN

SARA WRIGHT.

I kneel before
my woodstove
kindling fire
in sapphire blue,
flaming orange gratitude
rising unbidden.
Bare limbs etch stories
against curved canvas
empty space - sky or dome
as Venus fades
and the day begins...

A golden dawn
awakened the Ravens.
Fluffed feathery balls
perched on frost slipped
trees whose crystals
shivered in a landscape
tipped in white gold -
each twig on fire
from the rising sun.
Swooping down for
cracked corn, coal black
Messengers quork
and hop as small
birds retreat.

January's fur coat
is white.
My brother is dead.
I think of polar bears.
Blue ice
cracks under frightened claws -
Roots starve for water.
Dying slices my
joy in two
even as evening
grosbeaks
come to feed
and sea smoke
rises from the river.

WORKING NOTES:

January in New Mexico is like a dream when snow covers the ground twisting cactus into fantastic shapes and coating wheat colored grasses in silver helping me to forget that they never turned green. Crystal ground stars are so brilliant they hurt my eyes as I tramp around happily on snow-shoes under a warm afternoon sun and awaken to a frozen world. I am lulled into a peace I know is temporary because below four inches of snow the drought rages on shrinking the roots of each thirst driven plant and tree. There isn't enough snow cover for Northern New Mexico's mountains to create spring run off, the precious water that is needed for frogs to breed and corn to grow. Alpine glow brings down the night and the Great Bear rises in the North and still I pray for water...remember my dead, and the Great Dying to come.



THE AMAZING SCARLET RUNNER BEAN (*PHASEOLUS COCCINEUS*)

SARA WRIGHT

ILLUSTRATIONS: IREN SCHIO

About 30 years ago I was visiting a neighbor for the first time early one August when I spied the most extraordinary vine of brilliant orange pea sized flowers cascading from an emerald climber that stretched across the entire wire wall of a huge vegetable garden. Eileen left an eight foot arch open by tying back some of the vines for an entrance. The vines were massive, at least 12 to 15 feet high and at least 100 feet long, and I could see and hear the sound of joyful ruby throated hummingbirds as they buzzed from one blossom to another as millions of bees, swallowtails, and monarchs swooped through the air lighting upon loose tendrils that were attempting to find purchase somewhere by climbing on the backs of their neighbors. To say I was transfixed by the sight is an understatement. I lost time in the blue and gold mountain field in Western Maine as I stood there astonished and bewildered by such abundance and beauty.

Returning to ordinary time, and gathering my wits about me, I asked my new friend about the vine and was only then I was formerly introduced to the magnificent Scarlet Runner bean. As we wandered down the fence line Eileen told me that she had grown up in the south and had been surrounded by these vines since she was a child; she was then a woman in her late sixties. As we peeked into the plethora of leaves I was delighted to see small green beans developing from the flowers and was told that these beans were delicious to eat, especially when picked while still young. I had been a gardener all my life – how had I missed learning about such a plant?

By the time I left Eileen's house that afternoon I had a whole handful of shiny deep mauve and black kidney shaped beans in my hand for next year's planting. These were heirloom seeds that Eileen had been given by her own mother. I was ecstatic.

This was the beginning of my love affair with Scarlet Runner beans, an affair that continues into the present. The first year I grew them they took over the entire back porch. I soon learned to plant even more vines like Eileen had so the deer could feast on the bounty too.

One spring a black bear watched me place my seeds into rich loam from behind his spindly screen of bushes, and that very night Little Bee came back and dug up every bean that I had planted (An endless curiosity is a fundamental aspect of friendly backyard bears)!

As the years passed my own wild unkempt garden was covered in more and more scarlet runner vines, flowers, and beans. I discovered to my surprise that black bears also loved to eat the blossoms and seed pods. Even with all the competition, I had plenty of fresh green beans and took endless joy out of watching so many bees, butterflies, bears, and hummingbirds feast along with me.





About ten years ago when colony collapse devastated the honey bee population the bumblebees took over, but I couldn't help noticing that overall there were less and less bees and butterflies drinking sweet nectar. Diminishment of various species is invisible to some. Only during the last two summers I spent in Maine did I have fewer hummingbirds...

Every year after the harvest I gathered and gave away seed gems to friends who seemed to appreciate them as much as I did – passing on the priceless gift of un contaminated heirloom seeds - seeds that held a future free of human manipulation within each be-jeweled skin.

When I moved to New Mexico I brought a few with me and my friend Iren was the first recipient of this precious bounty. She, in turn, passed some seeds onto others. Last summer her entire back fence was covered in gorgeous plants. Here in New Mexico the vines don't grow quite as tall but they are still abundant, and during July deer and elk ate some of Iren's blossoms (but there were plenty left for her to harvest).

Here, I planted my beans in a pot above ground. I do not recommend this practice. These beans need ample water and need to be planted in the Earth to thrive (mine had yellowing leaves). I also noted the effect the intense heat had on the beans. The plants didn't start producing beans until August though we planted in mid – May, I believe. It's important to know that Scarlet Runners will not survive frost. What I did notice is that butterflies (swallowtails) and a number of different bees flocked to the flowers. Hummingbirds loved them!

Imagine my shock when I discovered that the history of Scarlet Runner beans began in North America. These beans are native to the highlands of Mexico, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua, where they have been cultivated for thousands of years.



This climbing plant is one of the oldest documented beans known to humans!

Native Americans consumed almost every part of the plant including the starchy root. Some Indigenous tribes regard the Scarlet Runner bean as a sacred plant. The plants seem to pulse with the life force, at least for me.

Today, Scarlet Runner beans are usually grown as annuals for the obvious reasons - their showy flowers and their edible pods and seeds. I recently learned that they are unusual among bean species because they are perennial in places where the ground doesn't freeze and they climb in a clockwise direction. In retrospect I wondered if they were grown as perennials in the south where Eileen once lived.

I remember Iren asking me if you could cook the dried beans. My friend Eileen had never mentioned the practice so I didn't know until I did this research that here in the U.S. consumers, up until recently, were more likely to find the shelled dried beans to cook than seeds to plant! Mature dried Scarlet Runner beans are $\frac{3}{4}$ inch in length. They can be cooked like Pinto or Pink beans and used in dishes such as soups and stews. Scarlet Runner beans are less starchy than Lima beans with a nutty garden-fresh flavor. These beans are also known by the common names of Scarlet Conqueror, Fire beans, Mammoth beans, Red Giant beans, and Scarlet Emperor beans.

Today, of course there are many cultivars to choose from but I prefer the lineage I have because I know those seeds originated at a time that preceded spraying etc. and they also have sentimental value. If anyone is interested in the gift of a few seeds please contact me at Sara@megalink.net.

With that much said so much is happening with seed savers across the country that it is now possible to buy heirloom seeds from a number of companies. This year when I attend the Tewa Women's Seed Exchange I plan to bring some of my Scarlet Runner beans from last year's harvest. My guess is that Iren will do the same!

SARA IS A WRITER, ETHOLOGIST AND NATURALIST WHO IS MAKING HER HOME IN ABIQUIU, NEW MEXICO AFTER LIVING IN MAINE FOR MOST OF HER LIFE. 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.

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





SEED ALTAR

SIMONE JOHNSON

I made this seed altar during the summer of 2017, a few months after starting my seed stewardship studies. The ceramic dolls were painted by my grandmother when I was a child. In the mason jar are bean seeds while corn and watermelon seeds alternate around them. I can't remember the name of the beans and where I got them from, but the Blue Jade Dwarf Sweet Corn came from Hudson Valley Seed Company. I received the two varieties of watermelon seeds during an impromptu seed swap between me and a young black seed saver from Brooklyn. This person was like 21 and chock full of knowledge about seeds, land and growing food. We were both apprenticing at a farm in Manhattan that season.

It was a special year because (outside of agricultural crops) I learned how to identify different plants; those called weeds, woodland perennials and a number of trees.

I used the green cloth several times as a lappa to dance with during West African, Afro-Haitian and Congolese classes. One time I used it to make a similar seed altar in a performance about being a returning generation farmer.

When I made the altar, and even now, I was thinking about familial and ancestral foods. I imagine as I continue to learn and grow along this seed path, my seed altars will be infused more with my personal seed stewardship practice, my heritage and all the directions from whence it comes, and reminders to keep Sankofa alive in my body, in the soil, the seeds, the water, the land, community. Damn.

I also imagine these womxn humming, singing, praying (over), dreaming, conjuring, talking and laughing with the seeds. Dance, drum, music not far behind.

SIMONE IS INTERESTED IN A MIX OF SEED ART AND SEED JOURNALISM. SHE REALLY WANTS TO GROW TOMATOES THIS SEASON SO SHE CAN MAKE OXTAIL SOUP AND TACOS!

*“Remember the plants, trees, animal life
who all have their families their histories too.
Talk to them, listen to them.
They are alive poems.”*

Joe Harjo

