

Spring 2021

At the Nexus of Resistance, Resilience, and Repair: Agricultural Violences and the Healing Promise of Seed

Melina Ann Roise
Bard College

Follow this and additional works at: https://digitalcommons.bard.edu/senproj_s2021



Part of the [Food Studies Commons](#)



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](#).

Recommended Citation

Roise, Melina Ann, "At the Nexus of Resistance, Resilience, and Repair: Agricultural Violences and the Healing Promise of Seed" (2021). *Senior Projects Spring 2021*. 183.

https://digitalcommons.bard.edu/senproj_s2021/183

This Open Access is brought to you for free and open access by the Bard Undergraduate Senior Projects at Bard Digital Commons. It has been accepted for inclusion in Senior Projects Spring 2021 by an authorized administrator of Bard Digital Commons. For more information, please contact digitalcommons@bard.edu.

At the Nexus of Resistance, Resilience, and Repair:
Agricultural Violences and the Healing Promise of Seed

Senior Project Submitted to
The Division of Social Studies of Bard College

by
Melina Roise

Annandale-on-Hudson, New York

May 2021

Acknowledgments

I have so much gratitude for my many mentors at Bard for believing in and inspiring me. Every word of encouragement and advice, great or small, has been noticed and appreciated.

First, thank you to my advisor, Christian Crouch, for simultaneously being a calming and motivating presence. You have allowed me to see that this story *is* mine to tell.

Thank you to Rebecca Yoshino, for advising me on research and expanding my ideas while we pick beans and kale. The spaces you have made at Bard have made this place my home.

Thank you to the Lytle family for believing in the vision of this project and offering financial support. Your generosity expanded my ability to both learn and experience.

To Claire and Ella, our Tuesdays together will be missed. Thank you for your continuous presence and words of encouragement.

A special thank you to Olivia, my forever partner in this work. Thank you for always understanding my late-night ramblings and being there for me through literally everything. I cannot express the depth of my gratitude for you here or anywhere.

I would like to thank you all of my friends at Bard and beyond for keeping me supported while we grow: Maya, who helped me through emotionally and told me “I am going to plant seeds when I get back home to Cali,” giving me all I ever hoped for in this project, Arlo, for continued artistic motivation and inspirational words, Francesca, for laughs and love, Jenny, for always reminding me of my roots (and progress), Sam, for your humor and support (unintentional and intentional), Dan, for curiosity on new lands, and Shanga and Michaela, suite gals are forever.

To my family, all of you, blood and not blood, but especially my mom and dad for teaching me that soil-caked feet are a sign of good health and fun. And to Emily, Michael, Scot, Heather, Meme, and Pepe, as much as I talk about being at home at school and with these mountains, home is *really* with you.

To the Mahicanituck and the Catskills, I came to Bard because of you. Thank you for always holding me (even when I don't ask). To the forsythia bush outside my window, for feeling like home, and to the calendula seeds and beans on my dashboard, for staying with me no matter what, thank you.

Abstract

Mainstream campaigns for better food within the United States – including local, organic, and regeneratively grown – fail to contend with the violent realities of America’s foodways. Growing “good food” on stolen land in a system created by the exploitation of Black bodies, Native knowledge, and reproductive capacities requires complete reformation of current systems. As a counter to existing human-nonhuman relationships that emphasize extraction, ownership, and commodification, this paper explores the ways seed saving and sharing allows us to imagine alternative realities. Seeds are a source of matrilineal power, ancestral continuance, and community care and can be used to counter the violent systems of American agriculture. I weave personal narrative and various artworks as an example of my own experiences in practicing nonhuman allyship, employing traditional scholarship, conversation, and alternative media sources for research.

Table of Contents

Introduction	1
Pride of the Foxgloves	1
Notes on Language, Myself, and Giving Voice to the Already Voiced	5
Chapter One: Agricultural Histories, Food Movements, & a Seed Catalog	13
Reframing Historical Realities	17
Current Urgencies	22
A Lexicon of Movements: Food Security and Food Sovereignty	26
Chapter Two: The Position & Politics of Seed	31
The Shifting Position of Seeds	33
Plant-Breeding and Issues of Ownership	36
Seed and the Climate Crisis	39
Pockets, Envelopes, Warehouses, Vaults	42
COVID-19, Visible Vulnerabilities, and Seed Access	46
Interlude: An Ode to The Calendula in the Corner	53
Chapter Three: Imaginings	60
Matrilineal Lives	60
Alternative & Sacred: The Economics of Seed-Sharing	65
Seed-as-people and seed-for-profit	72
Stories, Names, and the Ability to Remember	76
On the Basis of Care & Continuity	82
Interlude: A Short Collection of Poems, Songs, & Celebrations	87
The Beans on my Dashboard (A Concluding Thought)	91
Resources for Learning to Save & Tend Seed	95
Bibliography	96

Introduction

Pride of the Foxgloves

I did not foresee there being an abundance of foxglove seeds that morning. It was a sunny Wednesday afternoon and I was taking down flowers, browned, crisped by the end-of-summer sun, showering their seeds in all their abundant glory. The stalks were almost as tall as I was and tougher than they looked (as I was), resisting my pulls at their roots and caving only to the sickle. The woman I worked for needed help clearing her garden and had one request for the remains: put the flower end into the wheelbarrow first to catch the seeds. I was unprepared for this challenge. As their late blooming and still vibrant siblings watched from pink and white bells, the sound of the pattering on the bottom of the wheelbarrow emphasized their numbers that must have been in the hundreds, thousands. Their first post-birth project was to build a mattress of a quarter-inch of seeds on the plastic and escape my grasp. I couldn't catch them all. They poured from their yonic homes onto the Earth, onto my clothing, and into my braids, tiny miniature-rice-looking beings in shades of browns and goldens that disappeared into my hair. I rejoiced at the thought of flowers sprouting from my scalp. I loved being this seed home, this seeded woman, a host for sprouts, newly anointed kin with the soil, gaining a new ability to hold life from my body. Without thinking much about it, I scooped a handful (probably hundreds) into my jean pocket.

At 21 years old, this was somehow my first interaction with seed saving, and I was hurt. After years of digging in the soil as a child, backyard gardening as a teenager, and farming as a young adult, I had not witnessed the full life cycle of plants, completed in these small moments. Somehow, for some reason, I always cut off my amazement early, ignoring the reproductive

processes of plants in favor of consuming an extra late-season tomato and another handful of tulsi leaves. I went home that afternoon considering myself a newly-formed foxglove-woman hybrid, ready to declare myself a seed keeper, imagining the gardens I could start with my full pockets. At the same time, I was continuously wondering how and why I had managed to spend my portion of a lifetime without witnessing the miracle of flower-birth-creation that I had that day. Where's the beauty in seed packets when foxgloves give so much? Why does everyone I know seemingly buy new seeds each season when here they are, offering themselves for free? I returned home to the few gardening books I had and skimmed their indexes for how to store my new descendants and found, frustratingly, nothing.

I have no foxglove seeds remaining from that day. Disillusioned by the lack of knowledge I had about these seeds and how to care for them, I scattered them around my temporary home. As much as I felt guilty for releasing them from my care, I was comforted in imagining them sprouting in the hundreds, taking over the orchard, continuing the cycle year after year to slowly replace the grass with their stalks, completely. From that day forward, I vowed to make up for the time I had spent with no appreciation of their reproductive capacity (an offense I took personally as a person with a womb). So sprang my fascination, and later frustration, admiration, and adoration, with seeds and the people who keep them.

A few months pass, and I come home from a day of work at the farm, dirty fingernails, aching back, and a happy spirit from a day of planting beets, mustard greens, and lettuce. I have known these plants since before they were born: as seeds. We eat a lot of beans and legumes in my house. Tonight is lentil kitchari for dinner: seeds. Spiced with coriander (seeds) and handfuls of other plants (once seeds), I measure into the pot and stir together. Each seed was once alive and held the potential for the creation of new life. The significance of such varied species all

presenting themselves to me, for me, feels overwhelming. I feel at once immense gratitude for their companionship and guilt at my lack of knowledge of their stories. My questions grew. How can seed be created in such mass amounts? How can reproduction be controlled season after season to create consistent beings, making all of my dinners look the same? Who created this system that brought seeds from Thailand to my dinner plate? I took on this newfound identity as seed-friend, which started with the help of the foxgloves months earlier, continued to grow. Given my socio-political positioning, my identity as a seed friend was wholly accurate and incredibly audacious, evasive, and dishonest.

Although the abundance of the foxgloves pushed me into the world of seed, I had long been considering and reconsidering our personal and societal relationships with food. I spent my freshman year studying Nutrition and Dietetics at a different university, inspired by years of battling an eating disorder that functionally destroyed any enjoyment I found from eating, cooking, baking, and being with food. I entered my freshman year questioning our individual relationships with food, our sustenance which at times was hated by not only myself but many individuals in my close circles. The questions I had were answered, in a way, although not found in my Nutrition 101, Biology, or Organic Chemistry classrooms, but in an experimental honors seminar about economics and race. Here, I realized nothing was inherently broken about the relationship between myself and my plate. In reality, my distorted vision of food was caused by how food is produced, distributed, and idealised through marketing campaigns that are collectively disruptive to the mutually beneficial relationships between plants and the people they feed. My nutrition class, instead of unpacking this, played off of it: corporate-funded studies taught as irrefutable facts, newer research brushed aside and titled “alternative,” and calculations based on calorie-counting, macro-counting, and BMI (the foundations of the diet industry)

applauded as best practice for creating healthy bodies. I spent late Tuesday nights after my nutrition classes thoroughly disillusioned and triggered, without having the words to describe why.

So at the end of my freshman year, I was equal parts unsettled and unquestioning in my decision that the practice of dietetics was not for me. The following spring I transferred to Bard to farm with the Catskills in view and take human rights classes, while rekindling my passion for healing the relationship between humans and food. I began to funnel my questions through lenses of economics, colonialism, gender, and race, simultaneously independent and overlapping. Instead of following individualistic trends towards consumer blame for poor nutrition, I began to think more critically about systematic hunger, exploitation on farm fields, and the environmental destruction many food production causes, distancing myself from past tendencies toward individual blame. I know now that my first instinct to correct individuals (including myself) rather than societal issues within food relationships was a product of my internalized whiteness. Systemically, this same whiteness continues to infiltrate agricultural systems, food and supplement marketing schemes, and food culture as a whole.¹ Due to the privileges of myself and my communities, I was oblivious to these issues as a teenager and young adult. Today, I have words to describe my reasoning behind my feelings of overwhelming betrayal by the field of dietetics. Many of them are written within the following pages.

Over two years had passed after dropping out of my first university before I met the foxgloves. The revelation of inherent abundance and care between plants and humans was gifted to me, on that August afternoon, by the small patch of foxgloves nestled somewhere on Xalish

¹ Alison Conrad, "Identifying and Countering White Supremacy Culture in Food Systems," World Food Policy Center (Duke Sanford, September 2020), <https://wfpc.sanford.duke.edu/sites/wfpc.sanford.duke.edu/files/Whiteness-Food-Movements-Research-Brief-WFPC-October-2020.pdf>.

lands. As I was feeling the sensual tickle of seeds; fill my braids, brush past my eyes, and greet my ears; I could not imagine that the best gift of these flowers was *not* the seed, but rather the way in which I grew to love them so quickly and how they gave to me so abundantly. This experience was counter to how I was raised to think about the plant life that surrounded me, whether on my plate or in the garden.

I write the following chapters to explain why moments of reconnection are so impactful. Hundreds of years of colonization, the development of capitalism, and violence against marginalized peoples have separated humans from plants and created food systems in which the few profit massively from limiting the rights of others to control their own foodways.

Notes on Language, Myself, and Giving Voice to the Already Voiced:

There is a motif in the human rights community that an important part of social justice work involves ‘giving a voice to the voiceless.’ Widely debated and regularly practiced by advocates, journalists, NGOs, and politicians, the idea is well-intentioned: those that have a platform need to use their position in order to advocate for those who are not listened to. We see this on a global scale and in our local communities. Individual and community storytelling can be incredibly effective at bringing about policy and structural changes to society. In an essay by Kay Schaffer and Sidonie Smith, they underline the importance of storytelling—by an individual or through a proxy voice—in human rights work (especially within the past fifty years). They note, however, how stories often become “compromised (...) when subjected to the unpredictable transits of reception.”² In translation, in new forms of media and through new mouths, stories intended to portray human rights abuses can “overwrite the customs and beliefs of the victim.”³

² Kay Schaffer and Sidonie Smith, “Conjunctions: Life Narratives in the Field of Human Rights,” *Biography*, Personal Effects: The Testimonial Uses of Life Writing, 27, no. 1 (Winter 2004): 20.

³ *Ibid*, 5.

The impossibility of an advocate truly relaying and understanding a story in the way a community or individual victim intends causes fractures in the notion of “advocacy.”

In the environmentalism community this is increasingly evident (and to Western minds, logical). People need to speak for the health of fish, rivers, mountains, deer, and soil microbes because they are unable to advocate for their own existence. In this scenario, Western scientists exist as primary translators of the environment to people, courts, and policy, using empirical data and language largely inaccessible to the general public in order to make propositions about what is best for the land, rivers, seas, and their creatures. Aware of the dangers of thrusting desires, language, and otherwise anthropomorphizing land, one can still assume that much of this science and subsequent advocacy has been compromised to “overwrite the victim.” Outside interests, be it corporate or governmental, promote capitalist and imperialist structures, or simply a lack of respect for land, and negate the voice of the planet from its ability to advocate for itself.

The method of western science used to describe land does not acknowledge other perspectives that have existed throughout the natural history of Earth. Given the exclusionary nature of this approach towards understanding the nonhuman environment, we question the efficacy of Western science. In recent years, communities have advocated for environmental changes long before Western science caught up to or “proved” the need for changes asked for by environmental justice advocates. Hundreds to thousands of Indigenous people from a variety of homelands have spoken out against Western ideals for “sustainability,” rethinking what constitutes an ideal human relationship to Earth. Farmers, seed keepers, and researchers who have an intimate connection with the land are practicing active listening in an attempt to translate what the land is communicating. At Standing Rock, the Sioux nation and a broader coalition of Water Protectors gathered to advocate against the construction of a Keystone XL pipeline

through over 800 miles of unceded Lakota territory. The Mní Wičóni movement is commonly translated as “water is life,” regularly believed to represent the idea that water is required for living but is more accurately translated to “water is alive.” Although small, this semantic difference reveals the human motivation and position in advocacy: in “water is life,” people speak for water because “we” need it to survive, in “water is alive,” water holds autonomy and deserves protection regardless of human needs and desires.⁴ A key difference between the environmentalism of Western science and the environmentalism of Traditional Ecological Knowledge is expressed through this: while Western science argues for the protection of human needs and survival, Indigenous people fight for land because she is their kin, understanding that the land is currently, actively, advocating for itself through its constant changes, adaptations, and movements.

Those who advocate for more stringent environmental policies, ask for community land protection, and promote zero waste options are not giving a voice to the voiceless. They exist as translators. The communication of data, whether that be gathered by empirical research or generations of observational knowledge, is a translation of the language of our environments into human language. Standing Rock water protectors show us that environmental translators are not more effective if accredited with degrees and affiliations, but rather when advocacy is rooted in direct experience with the land and the communities that exist on it.

I mention the parallels between issues of story-telling and environmentalism to encourage personal reflection on the ways in which we all engage in speaking for others. Speaking- and working-with versus speaking-for the subjects of advocacy projects helps to foster a more empathetic relationship between advocates and their subjects and changes how we move through

⁴ Julie Sze, *Environmental Justice in a Moment of Danger* (Oakland, California: University of California Press, 2020).

advocacy spaces. In this work, I argue that recentring the autonomy of the nonhuman environment and its inhabitants provides motivation not only to adjust but entirely reform the way Western society relates to land and its people. I tell this story with seeds, who are beings as equally diverse and self-sustaining as the human communities they support. This indelible reality parallels the actions of water, soil, air, and sea. And as storytelling requires listening and advocacy requires relationships, the stories of seed cannot be understood without personal connection.

In order to position myself in this story and describe how personal explorations may take place, I offer moments of narrative and poetry throughout this work. The two interludes, in addition to giving more space for these interdisciplinary and personal moments, are intended to encourage rest and personal reflection after the presented histories and analyses.

While telling this story, I aim to be aware of my position in this story as a white femme with European ancestry. Meaning, I am constantly aware of the tensions within my body as a colonizing body and colonized body, where my own perspectives are necessary and where they are incomplete. As noted in the story of my journey through life and academia, this story is personal to me, but one I view as a collaboration between the many voices I have learned from and aims to consolidate and find connections between the experiences of this land and the people who live from it. I aim to center marginalized voices, a task that includes sourcing from non-traditionally published work because of the way people of color have been excluded from academia. The following chapters deal with misinformation and stereotypes perpetuated in dominant and exclusionary narratives and is briefly noted in the bibliography.

The feminism I work into these pages I define with the help of Banu Subramaniam, whose definition considers how to recognize, engage with, and counter “the co-constituted

meanings of categorizing human populations.”⁵ Here, this can be taken further to meanings of categorizing nonhuman populations as well, as humans often apply the terminology they use to describe themselves (as in naming plants or parts of plants “male” and “female”) or interact with nonhuman partners through a projection of their own sexes.⁶

I make vocabulary choices throughout my project in order to “decolonize” my writing, preferring place and community naming vocabularies of Indigenous communities over descriptions given to places by colonizers. However, small vocabulary choices and attempts to reframe white-washed histories traditionally are not actually acts of decolonization. As Tuck and Yang thoroughly explain in their article “Decolonization is not a metaphor,” the “metaphorization of decolonization” is problematic as it suggests the possibility that the land can be decolonized without giving land back to the people it was stolen from.⁷ Attempts to name plants, land, and communities by their Indigenous names center the voices of those most directly affected.

The Dawnland is one possible name for New England, or the region of the Northeastern United States extending up into Canada. The term developed from the Wabanaki Confederacy’s self-title of “The People of The Dawn,” but is today often employed to describe people from more than just the Wabanaki, including nations from what is currently known as Massachusetts,

⁵ Banu Subramaniam, *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity*. (Urbana, Chicago, and Springfield: University of Illinois Press, 2014), 4.

⁶ Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England*. (Chapel Hill: University of North Carolina Press, 2010); Margarita Zamora, “Gender and Discovery,” in *Reading Columbus*, (Berkeley and Los Angeles, California: University of California Press, 1993), 152-79.

⁷ Eve Tuck and K. Wayne Yang, “Decolonization Is Not a Metaphor,” *Decolonization: Indigeneity, Education & Society* 1, no. 1 (n.d.): 1–40.

New York, and Connecticut.⁸ Growing up in Connecticut and now living in New York, my personal relationship with space forms here.

Turtle Island is one name for the spaces currently known as North America, including Canada, the United States, and most of Mexico. This language delineates from Lenape and Haudenosaunee origin stories, which include mentions of “The Great Turtle” and the beginning of the world on the back of a turtle.⁹

The language of referring to states, nations, and other bounded geographical areas using “currently known as,” “so-called,” or “currently referred to as” implies the construction and impermanence of borders. This land was not always “New York” and bounded in this way, but right now, that is how it is referred to by many.

I often employ a vague and unfocused “we” throughout my writing. This is intentional. The stories, histories, and recommendations made throughout these pages are collective experiences and problems that require collective solutions. The use of “we” instead of “I” or “you” is a small attempt at negating patterns of toxic individualism that holds us in our current condition, and instead focuses on the need for collective change.

The analyses, critiques, and stories presented on the following pages are meant to intersect with the many quickly growing voices challenging the way our current food systems are structured. I cannot pay sufficient homage to the state of migrant labor, the continuation of enslavement systems, violence against Indigenous peoples, the issues of monocropping, fossil fuel, gender violence, and more stories that directly intersect and connect to the one I tell here. Instead, I position this work as a companion.

⁸ George Neptune, “Naming the Dawnland: Wabanaki Place Names on Mount Desert Island,” *Chebacco: The Magazine of the Mount Desert Island Historical Society* 16 (2015): 92–108; Christine DeLucia, “Terrapolitics in the Dawnland: Relationality, Resistance, and Indigenous Futures in the Native and Colonial Northeast,” *New England Quarterly* XCII, no. 4 (December 2019): 548–83.

⁹ Gregory Cajete, “Telling A Special Story,” in *Native Science: Natural Laws of Interdependence*.

My childhood backyard was a place of constant exploration. The house I was lucky enough to live in for the first 18 years of my life was held onto hillside by moss, lichen, and networks of oak and chestnut roots, vertical gardens in the front and backyard went untended for years and flourished, held up by stone walls placed by strangers long before I was born. Pine trees, bee hives, and sticky mosses made the hillside rough on child-soft feet. Before my conscious memory fully remembers, my dad began to build a treehouse in the farthest corner of the yard from our home. It was perfectly situated so that my parents could see us out of the kitchen window, but far enough away that my sister and I could huddle underneath the roughly cutout windows and imagine that we were in a different world. We disappeared there often. Huddled on unfinished wood splintering my hands and knees, using spoons and bowls I snuck from the kitchen, I made friends with plants for the first time. Unencumbered by plant names, biological sciences, classifications of weed-herb-etc, or strange notions I would later develop about my body's "place" in nature, I squeezed drops of forsythia nectar into dirt-encrusted plastic cups, added a few petals on top, finished the potion with a dash of water, and sipped. This was my favorite tea. Accompanied by raw acorn pancakes and dandelion leaf pudding, I created my own *materia medica* based on nothing but simple intuition and the time I spent daydreaming with the help of these plants. Reconsidering why I grew up with such a distorted relationship with food, I remember moments of treehouse-forsythia bliss before engrained separations of nature-culture and land-food-body set in. As much as this project has been rooted in academic scholarship, my learning process has been deeply personal, moving out in and out of of these dualities and false dichotomies. The kid in the treehouse had little to unlearn.

In honor of my treehouse moments, this is a project of imagination. By exploring the history and present-day situation of our human relationship with food, no "answers" to any larger

questions are found, but rather, a clearer and more defined lens through which we can imagine new possibilities for how we, as individuals, communities, and societies, think of ourselves as players in nature and students of place. This work is intended to give a historical perspective while acting as a motivation for personal reflection of how to be a better ally to human and non-human partners alike. And when I finish writing, I intend to plant foxgloves in my yard.

Chapter One: Agricultural Histories, Food Movements, & a Seed Catalog

I sit with a Johnny's Selected Seeds 2021 Catalog on my lap. Seed catalog season is a favorite of many gardening enthusiasts, old favorites and new experiments annotated with sticky notes and dog-eared, chosen for the garden throughout January and February (in New York, where I sit) to prepare for March and April seeding. As an employee-owned, non-GMO, Northeast-based, and reasonably affordable company, Johnny's Seeds is a favorite for home gardeners and many small-to-medium-sized farmers in the Northeastern United States region. The catalog is similar to many seed catalogs nationwide. Glossy pages sell seeds by marketing ecological healthy fruits with pictures of lush baskets, fully grown, vibrantly-colored harvests, and smiling happy gardeners with perfectly cultivated beds. As I flip through, photos of flowers, lettuces, cucumbers, onions, peas, beans, peppers, and herbs grace the pages, besides a few handfuls of dry beans, there seems to be something missing – pictures of the seeds themselves.

As an effective marketing tactic, garden and farm suppliers across the country play into how customers think healthy and sustainable agriculture looks. Images of all equally-sized 100%-pest-free lettuce heads, mothers picking flowers with babies on their back, and perfectly trellised beans in greenhouses, abundant and ready for harvest, instill images of the ease and joy of food production. Labels of “organic,” “heirloom,” and “developed by Johnny's” suggest both locality and sustainability to many of today's consumers. Seemingly easeful abundance relates non-industrial food production with something reminiscent of Eden. In more recent and modern

imaginings, landscapes of homesteads and small-scale production replace Eden.



Many of today's movements for better food in the United States assume there is reality to the above – pictures of an abundant oasis of food, seed packets easily obtained from convenient order forms, easily propagating themselves into salads and other meals. Small-scale sustainability is positioned by institutions and corporations as a solution to industrial food systems. Others, including the following, accompany this myth: rising numbers of farmers' markets increase access to local food and mean that our local farms are better supported financially. In reality, most farmers markets pay a membership fee, cost hundreds of dollars of transportation and labor, and make up a small portion of overall sales at a largely inaccessible price.¹¹ A second common misconception is an over-reliance on purchasing organic. The environmental benefits of organic growing isn't confirmed on an industrial scale and varies from

¹⁰ Figure 1: *Johnny's Selected Seeds 2021 Catalog*, (Maine: Johnny's Seeds, 2021), 2-242.

¹¹ Chris Newman, "Small Family Farms Aren't the Answer," *Medium*, July 9, 2020, <https://heated.medium.com/small-family-farms-arent-the-answer-742b6684857e>.

farm-to-farm, and excludes many small farms that can't afford certification despite engaging in responsible land management.¹² Despite pictures of the happy yeoman farmer, smaller and sustainable farms don't always treat workers better, and most farmworkers at small farms are underpaid, lack benefits, and are overwhelmingly undocumented.¹³ While my project is focused mainly within the political boundaries of the United States, such myths have implications on global food systems and workers and influence other nations to accept superficial solutions.¹⁴

While some of the above myths may be marginally true for certain individuals, systematically, they ignore the root of our food and land problems. People within mainstream food movements assume that problematic industrial food systems are solely phenomenons of the past few hundred years, constructed during the Industrial Revolution and intensified with the neoliberalization of the late 20th century. With this lack of historical background, it's easy to assume that better systems of food and farming can be achieved with a few extra grants to underserved communities and farming populations, the incorporation of environmentally friendly agricultural practices, and the encouragement of small-scale farming. However, evidence tells us that the current system cannot just be reformed. Chris Newman, author and farmer at Sylvaniaqua Farms of Virginia, writes that:

“We have this myth in the sustainable agriculture movement that farming and food used to be okay. There was a time when we got it right, when food was organic, when food was about communities and not capitalism. But the truth of the matter is that it was, it overwhelmingly was. The food system we see today is not an aberration of the past but a logical extension of the past.”¹⁵

¹² Chris Newman, “Yes, Organic Farming Will Kill Us All,” *Medium*, February 18, 2017, <https://medium.com/newco/yes-organic-farming-will-kill-us-all-12d900979cf2>; Anuradha Varanasi, “Is Organic Food Really Better for the Environment?,” *State of the Planet: Earth Institute at Columbia University* (blog), October 22, 2019, <https://blogs.ei.columbia.edu/2019/10/22/organic-food-better-environment/>.

¹³ Margaret Gray, *Labor and the Locavore* (Berkeley and Los Angeles, California: University of California Press, 2014).

¹⁴ Image: Figure 1, Johnny's Seeds 2021 Catalog Page 3. Melina Roise, May 1, 2021.

¹⁵ Chris Newman, *Wèlankuntèwakàn 'haki, a Story of Indigenous Agriculture* (Self-Published, 2020), <https://www.patreon.com/sylvanaqua/posts>.

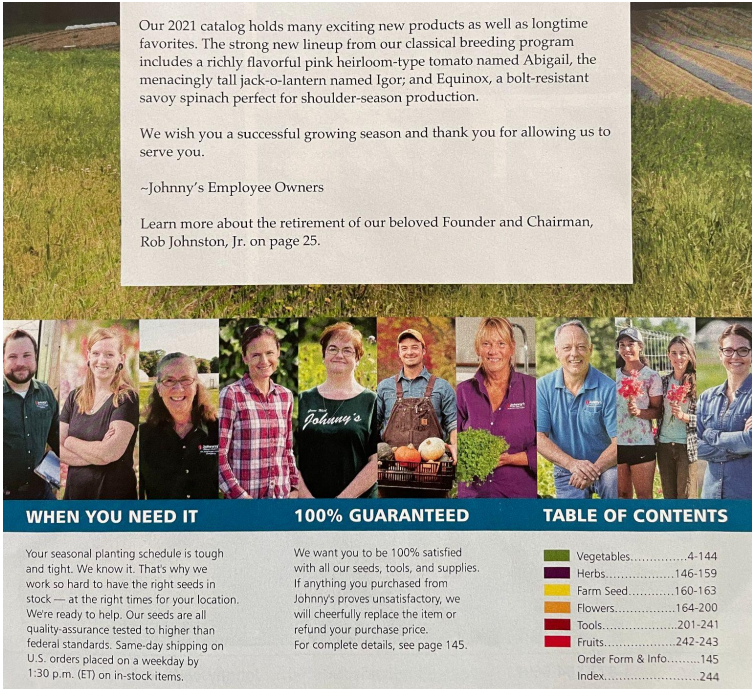
Today, the damaging effects of a food system based on profit over community are broad. The wealth of the United States has primarily been based on exploitation of the land, leading those without access to land (or without the same willingness to exploit) to experience poverty at a drastically higher rate.¹⁶ Food apartheid has left BIPOC communities disproportionately without access to quality food, leading to chronic disease and poor overall community wellness.¹⁷ The 2014 Census of Agriculture determined that 1.6% of the farms on what is currently United States land had principal operators who were Black, 1.8% had principal operators who were Native American, and 14% of principal operators identified as women.¹⁸ Such drastic inequalities on Turtle Island land are not new and certainly cannot be fixed with any minor improvements to a current system.

If we return for a moment to our 2021 catalog, the realities and implications of purchasing seeds, planting, tending, and harvesting within the United States is not as simple, easeful, and joyful as presented. The photos of overwhelmingly white-male farmers are not only misleading but also quite audacious for a catalog selling items appropriated from women and BIPOC.

¹⁶ Vann R. Newkirk II, "The Great Land Robbery: This Land Was Our Land," *The Atlantic*, September 2019, <https://www.theatlantic.com/magazine/archive/2019/09/this-land-was-our-land/594742/>; Percy Wells Bidwell and John I. Falconer, *History of Agriculture in the Northern United States 1620-1860*. (New York: Peter Smith, 1941); Keri Leigh Merritt, "Land and the Roots of African-American Poverty," *Aeon*. March 11, 2016, <https://aeon.co/ideas/land-and-the-roots-of-african-american-poverty>.

¹⁷ Karen Washington, "Food Justice Is Racial Justice." *National Farm-to-School Network*, October 14, 2020.

¹⁸ "USDA Census of Agriculture: U.S. Statistics on Women and Minorities on Farms and in Rural Areas," *USDA National Agricultural Library*, 2014, <https://www.nal.usda.gov/afsic/us-statistics-women-and-minorities-farms-and-rural-areas>.



Our 2021 catalog holds many exciting new products as well as longtime favorites. The strong new lineup from our classical breeding program includes a richly flavorful pink heirloom-type tomato named Abigail, the menacingly tall jack-o-lantern named Igor, and Equinox, a bolt-resistant savoy spinach perfect for shoulder-season production.

We wish you a successful growing season and thank you for allowing us to serve you.

—Johnny's Employee Owners

Learn more about the retirement of our beloved Founder and Chairman, Rob Johnston, Jr. on page 25.

WHEN YOU NEED IT **100% GUARANTEED** **TABLE OF CONTENTS**

Your seasonal planting schedule is tough and tight. We know it. That's why we work so hard to have the right seeds in stock — at the right times for your location. We're ready to help. Our seeds are all quality-assurance tested to higher than federal standards. Same-day shipping on U.S. orders placed on a weekday by 1:30 p.m. (ET) on in-stock items.

We want you to be 100% satisfied with all our seeds, tools, and supplies. If anything you purchased from Johnny's proves unsatisfactory, we will cheerfully replace the item or refund your purchase price. For complete details, see page 145.

Vegetables.....	4-144
Herbs.....	146-159
Farm Seed.....	160-163
Flowers.....	164-200
Tools.....	201-241
Fruits.....	242-243
Order Form & Info.....	145
Index.....	244

19

Reframing Historical Realities:

The agriculture practiced since settler colonists arrived in the Americas in the Fifteenth century is fraught with violence. Although U.S. agrarian ideals romanticize a happy, healthy, democratic, nuclear family-based yeoman farmer, a closer look at history suggests instead that rampant capitalism required the direct destruction of already-abundant Native foodways and land; continual dispossession of Black-held land, labor, and knowledge; the appropriation of women-held knowledge systems; and exploitation of reproductive capacities (to just name a few). Once direct and obvious, today, land and food-based violence endures out of sight, creating a complex political landscape behind choices presented to us on our grocery store shelves. Purchasing food, acquiring land, selling food and, yes, opening new seed packets have implications in the realms of race, gender, and class. Creating solutions to reach the root of

¹⁹ Image: Figure 2, Johnny's Seeds 2021 Catalog Page 1. Melina Roise, May 1, 2021.

continuous disenfranchisement, that abolish exploitative structures and foodways, requires understanding the stories behind these structures.

The typical story of why Europeans shifted to agricultural societies begins with the safety and security that a fixed food source provides.²⁰ To Western eyes accustomed to the security of a community grocer, control over one's environment is preferred to seemingly unpredictable "wild" foods. However, recent discoveries and alternative viewpoints reveal that human populations were growing, reaching new territories, and physically quite healthy (at least without infectious disease and daily arduous labor) without intensive crop cultivation. Humans ate enough calories, had art, language, and social cultures as hunters and gatherers.²¹ Excess labor and management systems developed as modes of subsistence and proto-agriculture shifted towards market farming. The organization of human labor in this way developed into systems of patriarchy and class, which simultaneously developed food inequality due to distribution of power and goods. Richard Manning writes that "it would seem hunger and famine are creations of poverty, not agriculture; but, of course, poverty is agriculture's chief product."²²

The dual labor of women (as those bearing the burden of reproduction and as laborers) along with the creation of hierarchy and control, allowed the upper class to build their wealth.²³ Carolyn Merchant in "Ecological Revolutions" writes that the shift from hunter-gatherer to

²⁰ Europeans colonized the land currently referred to as the United States. For the sake of this paper which focuses on the politics of agriculture in the country, my historical reflections focus on Europeans.

²¹ Alyssa N. Crittenden and Stephanie L. Schnorr, "Current Views on Hunter-Gatherer Nutrition and the Evolution of the Human Diet," *American Journal of Physical Anthropology* 162, no. S63 (2017): 84-109, <https://doi.org/10.1002/ajpa.23148>. <https://doi.org/10.1002/ajpa.23148>; E. Dounias and A. Froment, "From Foraging to Farming among Present-Day Forest Hunter-Gatherers: Consequences on Diet and Health," *The International Forestry Review* 13, no. 3 (2011): 294-304.; James H. O'Keefe and Loren Cordain, "Cardiovascular Disease Resulting From a Diet and Lifestyle at Odds With Our Paleolithic Genome: How to Become a 21st-Century Hunter-Gatherer," *Mayo Clinic Proceedings* 79, no. 1 (January 1, 2004): 101-8, <https://doi.org/10.4065/79.1.101>; Richard Manning, *Against The Grain: How Agriculture Hijacked Civilization* (New York: North Point Press, 2004), 72.

²² Manning, *Against The Grain: How Agriculture Hijacked Civilization*, 72.

²³ Jennifer Morgan, *Laboring Women: Reproduction and Gender in New World Slavery* (Philadelphia: University of Pennsylvania Press, 2004); Mark R. Rosenzweig, "The Demand for Children in Farm Households," *Journal of Political Economy* 85, no. 1 (1977): 123-46.

agricultural societies in England was foundational to the creation of today's "capitalist patriarchy" because it reversed the relationship between the production of food and the reproduction of humans.²⁴ Women in many societies around the world have been the primary producers of food, and as such, the industrialization and commodification of food throughout the 21st century disproportionately damaged women's sources of community power.²⁵

In *The Common Pot: The Recovery of Native Space in the Northeast*, Lisa Brooks describes the Indigenous ways of food distribution of Algonquin and Haudenosaunee nations "not (as) an altruistic ideal but a practice that was necessary for human survival."²⁶ Unlike Manning's analysis of agriculture's "chief product" being poverty, constant equal distribution of the abundance provided by the lands of Haudenosaunee and Algonquin nations ensured the health and stability of individuals, which in turn grounded the health of the community. But with the beginning of settler-colonialism in the Dawnland, agriculture enacted destruction of Native lifeways and direct violence against land.²⁷ Colonists destroyed foodways, bounded land, abused Native-held knowledge, brought invasive plants, and forced early capitalism onto this land – all acts that furthered direct and indirect genocide.²⁸ As the primary agriculturalists in most

²⁴ Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England*, (Chapel Hill: University of North Carolina Press, 2010).

²⁵ Ann Vileisis, *Kitchen Literacy: How We Lost the Knowledge of Where Food Comes from and Why We Need to Get It Back* (Island Press, A Shearwater Press, 2008); Michael Moss, *Salt Sugar Fat: How the Food Giants Hooked Us* (New York: Random House, 2013); Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England*.

²⁶ Lisa Brooks, *The Common Pot: The Recovery of Native Space in the Northeast*, (University of Minnesota Press, 2008).

²⁷ The Dawnland is one Indigenous name for what is currently known as New England (Northeastern United States).

²⁸ Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge, UK: Cambridge University Press, 1986); Christopher Columbus, Clements Robert Markham, and Paolo del Pozzo Toscanelli, *The Journal of Christopher Columbus (during His First Voyage, 1492-93) and Documents Relating the Voyages of John Cabot and Gaspar Corte Real* (London: Printed for the Hakluyt society, 1893), [The Journal of Political Economy, Food Research Institute, Stanford University, LXIII, no. 5 \(October 1955\): 369–95; Virginia DeJohn Anderson, "King Philip's Herds: Indians, Colonists, and the Problem of Livestock in Early New England," *The William and Mary Quarterly* 51, no. 4 \(October 1994\): 601–24; Lisa Brooks, *Our Beloved Kin: A New History of*](http://archive.org/details/journalofchristo00colorich; Bidwell and Falconer, <i>History of Agriculture in the Northern United States 1620-1860</i>; William Cronon, <i>Changes in the Land: Indians, Colonists, and the Ecology of New England</i> (New York: Hill and Wang, 1983); Merchant, <i>Ecological Revolutions: Nature, Gender, and Science in New England</i>; M.K. Bennett,)

communities and bearing the biases of European ideals about both gender and race, Indigenous women suffered.²⁹

As settlers began to take control over more land, more labor was needed to create surplus. The slave traders who brought Africans to the shores of English-claimed North America in 1619 targeted community agricultural leaders because land owners needed their knowledge to effectively build wealth. When rumors of ships taking captives reached women in Northwestern Africa, the women braided rice seeds into their hair despite not knowing where they would be taken or, even, if they would survive. Once brought to new lands, enslaved Africans expressed agency and shared knowledge systems that contributed to their own survival, altered the food systems of the continent, and shaped the economy of the United States. Africans continued to use subsistence practices that increased their food security and continued their medical and spiritual practices, even when sold onto plantations in the American South. Their knowledge of farming was foundational to plantation success and wealth among farmers.³⁰

Post-Emancipation, sharecropping and incarceration continued (and still continue) enslavement systems, while land dispossession kept Black people from gaining wealth.³¹ In a

King Philip's War (New Haven: Yale University Press, 2018); Andrew Isenberg, *The Destruction of the Bison: An Environmental History, 1750-1920* (Cambridge University Press, 2020); Jean M. O'Brien, *Firsting and Lasting: Writing Indians out of Existence in New England* (Minneapolis: University of Minnesota Press, 2010); "The Pilgrims Had No Idea How to Farm Here. Luckily, They Had the Native Americans," *Modern Farmer* (blog), November 23, 2016, <https://modernfarmer.com/2016/11/pilgrims-no-idea-farm-luckily-native-americans/>.

²⁹ Margarita Zamora, "Gender and Discovery," in *Reading Columbus*, Latin American Literature and Culture (Berkeley and Los Angeles, California: University of California Press, 1993), 152–79; Helen C. Rountree, "Powhatan Indian Women: The People Captain John Smith Barely Saw," *Ethnohistory* 45, no. 1 (Winter 1998): 1–29; Kyle Powys Whyte, "Indigenous Women, Climate Change Impacts, and Collective Action," *Hypatia: Journal of Feminist Philosophy* 29, no. 3 (2014): 599–616.

³⁰ Judith A. Carney and Richard Nicholas Rosomoff, *In The Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World* (Berkeley and Los Angeles, California: University of California Press, 2009); Leah Penniman, *Farming While Black: Soul Fire Farm's Practical Guide to Liberation on the Land* (United States: Chelsea Green, 2018); Lydia Mihelic Pulsipher, "The Landscapes and Ideational Roles of Caribbean Slave Gardens," in *The Archaeology of Garden and Field* (Philadelphia: University of Pennsylvania Press, 1994): 202–222.

³¹ "Sharecropping in Mississippi | American Experience | PBS," accessed November 8, 2020, <https://www.pbs.org/wgbh/americanexperience/features/emmett-sharecropping-mississippi/>; W. E. Burghardt Du Bois, "The Freedmen's Bureau," *The Atlantic*, March 1, 1901, <https://www.theatlantic.com/magazine/archive/1901/03/the-freedmens-bureau/308772/>; "Antebellum Mississippi |

moment some now call “The Great Dispossession,” (1950-1975) at least half of a million Black-owned farms failed. In the 1960s, Black-owned cotton farms of the south reduced from 87,000 to just 3,000. Land-grant universities and new USDA regulations (what historian Pete Daniel calls the development of “agrigoovernment”) increased the amount of “mega-farms,” who purchased smaller farms over this period (and were overwhelmingly lead by white people). The United States Commission on Civil Rights determined that many financial pressures placed on Black landowners to sell in the 1950s were illegal.³² A long list of other historical events emphasize the way our food systems are based on violence against marginalized people and their land, another example being the internment of 120,000 Japanese-Americans during World War II that led to mass land loss and forced farm labor.³³

Despite the historical reality that U.S. foodways are based on violence, peaceful, abundant ideas of Jeffersonian agriculture permeate the country’s collective consciousness. The pride of American agrarianism continues to reside in seed catalogs, plastered onto the walls of grocery stores and milk cartons, in tourism materials, in textbooks, hidden between miles of genetically modified corn, and underneath age-old beliefs of an American meritocracy. Today, an environmental crisis pushes reconsiderations of how our food systems are functioning, but without historical reflections, violence and appropriation continue. Sustainability movements remain focused on whiteness: The 2020 Netflix documentary “Kiss the Ground” notes “Indigenous techniques” on one corner of the screen without acknowledging that almost all their

Mississippi History Now,” accessed November 8, 2020, <http://www.mshistorynow.mdah.ms.gov/articles/395/antebellum-mississippi>.

³² Newkirk II, “The Great Land Robbery: This Land Was Our Land.”; Pete Daniel. *Dispossession: Discrimination Against African American Farmers in the Age of Civil Rights*. (University of North Carolina Press, 2013).

³³ Emily Zentner, “What Happened To The Property Of Sacramento’s Japanese American Community Interned During World War II?,” *CapRadio*, June 4, 2019, <https://www.capradio.org/135196>; Lisa Morehouse, “Farming Behind Barbed Wire: Japanese-Americans Remember WWII Incarceration,” *NPR.org*, accessed April 9, 2021, <https://www.npr.org/sections/thesalt/2017/02/19/515822019/farming-behind-barbed-wire-japanese-americans-remember-wwii-incarceration>.

noted soil regeneration techniques originate from Indigenous agricultural knowledge.³⁴ Within violent white supremacy movements in the United States eugenics language has been linked to a push for organic agriculture. Using language of “purity” and the rejection of “foreign substances,” Nazi scientists promoted natural foods. More recently, a QAnon leader arrested after invading the Capitol refused to eat in jail until he was provided organic food.³⁵ In the world of seed selection and planting, seed catalogs regularly use white bodies to market plants with Indigenous and African heritage, an act of continued white supremacy in agricultural economies and knowledge systems.

Current Urgencies:

Failing to contend with the reality of violent systems perpetuates a push for inadequate change. Karen Washington says: “Our food system does not need to be ‘fixed,’ it's not ‘broken’. It was designed this way and needs to be changed foundationally.”³⁶ And the need for change is urgent. As I type this, an eighty-foot “climate clock” standing watch above New York City’s Union Square projects that humans have six years, 277 days, and less than 20 hours to achieve zero carbon emissions in order to prevent the world from warming above the 1.5°C threshold for irreversible climate damage.³⁷ And although the clock may achieve a goal of motivating both individuals and policymakers to take immediate climate action, it has been criticized for its picture of current climate safety, when in fact, millions of people already have been and are being directly harmed by the environmental danger we are currently facing.³⁸ The “climate

³⁴ Joshua Tickell and Rebecca Harrell Tickell, “Kiss the Ground” (Benson Productions, April 2020).

³⁵ Ligaya Mishan, “The Activists Working to Remake the Food System,” *The New York Times*, February 19, 2021, <https://www.nytimes.com/2021/02/19/t-magazine/food-security-activists.html>.

³⁶ Washington, “Food Justice Is Racial Justice.”

³⁷ “The Climate Clock.” ClimateClock.World, Accessed March 29, 2021, 11:07 AM. <https://climateclock.world>.

³⁸ Abrahm Lustgarten, “How Climate Migration Will Reshape America.” *The New York Times*, September 15, 2020, <https://www.nytimes.com/interactive/2020/09/15/magazine/climate-crisis-migration-america.html>; Julie Sze. *Environmental Justice in a Moment of Danger*. (Oakland, California: University of California Press, 2020); Kyle

clock” has parallels in the realm of food justice that continue to placate advocates and depoliticize action. Markers of “60 more years of fertile topsoil” or “840 million hungry by 2030,” while intending to motivate action, fail to acknowledge the harm of today.³⁹ Grocery store donation bins, government and corporate sponsored food pantries, and government aid to farmers create a facade of systems change while hiding continued benefits of economic inequality for major corporations and exploitation of low income communities.

In order to counter beliefs that humans still have six years and 277 days to take action, and that individual purchasing choices can provide solutions, the following few pages list current violences of our food systems. This summary, although incomplete, emphasizes why restructuring and reimagining our food structures is urgent work.

First, 24 million Americans live under food apartheid. Food access challenges, as the vocabulary of apartheid represents, are developmental and state-sanctioned: white communities have four times as many grocery stores as Black communities, the government continues to bail out companies that throw food away instead of donating it, and government subsidy programs leave out millions of undocumented and underresourced families.⁴⁰ Climate change will continue to divide food access, and food access issues continue to cause disease and death in under-served communities.⁴¹

Whyte, “Is It Colonial Deja Vu? Indigenous Peoples and Climate Justice.” *Earthsan Publications*, (November 2016): 88–104.

³⁹ Chris Arsenault, “Only 60 Years of Farming Left If Soil Degradation Continues,” *Scientific American*, December 5, 2014; Harry Kretchmer, “Global hunger fell for decades, but it's rising again,” *World Economic Forum*, July 23, 2020.

⁴⁰ For more on food apartheid: Anna Brones, “Food apartheid: the root of the problem with America’s groceries, an interview with Karen Washington,” *The Guardian*, May 15, 2018; Devon Mihesuah, *Recovering Our Ancestors’ Gardens: Indigenous Recipes and Guide to Diet and Fitness*, Revised, At Table Series (Lincoln NE: University of Nebraska Press, 2020).

⁴¹ Newman, *Wèlankuntèwakàn 'haki, a Story of Indigenous Agriculture*; Penniman, *Farming While Black: Soul Fire Farm’s Practical Guide to Liberation on the Land*; Washington, “Food Justice Is Racial Justice.”

Next, according to the Center for Disease Control, non-white people in the United States are .7-1.7 times more likely than white people to contract COVID-19, and are meanwhile 1-2.4 times more likely to die from the virus. Poverty, healthcare access, medical discrimination, and housing insecurity are the causes.⁴² And although the pandemic increased economic inequalities across racial and income divides, economic relief and stimulus aid never reached the small portion of Black farmers.⁴³

Foodway erasure and a lack of government funding for Indigenous health results in many Indigenous nations existing primarily under food apartheid, with few choices for stores, and often have no choice but to eat highly processed foods. Overall, at least 16% of Native Americans have diabetes (a rate 2.2 times higher than non-Native people), and 43% are considered obese. Although food apartheid, economic discrimination, and colonization are all main factors, nutritionists haven't studied the specific needs of Native people but advocate diets that are inherently bad for them (about 75-100% of Native people are lactose intolerant and their communities also suffer from higher rates of celiac disease, despite the government recommending and providing subsidies for dairy and wheat, excessively). Devon Mihesuah writes that “food-related illnesses and diseases are inextricably interrelated with historical and modern politics, economics, culture, environmental issues, and genetics.”⁴⁴

The Louisiana State Penitentiary is also known as the Angola prison after the former plantation it's placed on whose enslaved workers were from Angola, Africa. Angola is an area

⁴² “Hospitalization and Death by Race/Ethnicity.” *The Center for Disease Control*, March 12, 2021. <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>.

⁴³ Patrice Gaines, “USDA Issued Billions in Subsidies This Year. Black Farmers Are Still Waiting for Their Share.” *NBC News*, October 28, 2020, <https://www.nbcnews.com/news/nbcblk/usda-issued-billions-subsidies-year-black-farmers-are-still-waiting-n1245090>.

⁴⁴ Devon Mihesuah, *Recovering Our Ancestors' Gardens: Indigenous Recipes and Guide to Diet and Fitness*, (Lincoln NE: University of Nebraska Press, 2020).

the size of Manhattan where the labor of the inmates are used to farm corn, cotton, soybean, and wheat crops, along with tending a herd of 1,600 cattle. Miles of cotton fields in all directions tended by majority Black imprisoned people, watched by majority white guards on horseback, is visually reminiscent of chattel slavery within agriculture and food production.⁴⁵ The Thirteenth Amendment ended slavery except as a punishment for a crime, and today, 30,000 incarcerated people make less than a dollar a day in forced food production labor while incarcerated. In the United States, incarceration is racial, with over 60% of incarcerated people being of color.⁴⁶

To continue meeting the need for a surplus of underpaid labor, the USDA created “guest worker programs” for agricultural operations. Beginning with the Bracero program during WWII and later developing into H2A and H2B visa programs, these visas allow people from certain countries to work within agricultural settings while allowing their employers to avoid worker protection and wage laws, and the nation to prevent and regulate permanent immigration. Besides guest workers, an additional 12 million undocumented agricultural workers remain in the United States, and are exploited and paternalized even on small, local farms that many consumers see to be more “ethical.”⁴⁷

And finally, during the time of a food system in crisis, the weight on farmworkers of continuing our food system status quo only increases. Although deemed essential, farmworkers suffered through COVID-19 without access to PPE, stimulus checks, or any access to sick leave. The Young Farmers Association stated that “while COVID-19 stimulus relief efforts have focused on farm owner concerns, farmworkers, especially undocumented workers, continue to lack basic protections afforded to other workers. Our agricultural system would collapse without

⁴⁵ Delia Cabe, “Angola State Prison: A Short History,” *Journalism School of Columbia University*, April 2010.

⁴⁶ Sarah Evans, “Is Prison Labor the Future of Our Food System?” *Food First*, September 7, 2018, <https://foodfirst.org/is-prison-labor-the-future-of-our-food-system/>.

⁴⁷ Gray, *Labor and the Locavore*.

farmworkers, and as such they are deemed essential workers. But as farm workers continue to grow and harvest the food we all rely on, they put their lives at risk.”⁴⁸

With the above realities and many more all being a result of foundationally exploitative agricultural systems, it is imperative to reconsider what kind of solutions are accepted as effective. So, I consider again the seed catalog still sitting, sticky-noted, on my coffee table. The pages suggest that dominant agriculture today is a mutually beneficial system for people and plants. In reality, these systems were built on the dispossession of Indigenous lands, the enslavement of African peoples, and continues with the exploitation of migrants and incarcerated people. Although local and democratized production may be key to better food, a continually white-washed and profit minded start through seed surely cannot be an answer to foundationally corrupt systems. In order to abolish the current food production systems that are structured by the existent politics of gender, class, and race, we must actively reject any narrative of so-called “sustainable” agriculture that does not acknowledge the role that historically marginalized people have in constructing our current food system. As I take inventory for this year’s garden, I imagine the ways these seeds, too, have been entangled in and changed by agricultural violence.

A Lexicon of Movements: Food security and food sovereignty

The aforementioned histories and current realities present a foundationally unequal food system with deep histories of violence. Traditionally white-washed histories instead encouraged tales of early egalitarian homesteading, myths of an American meritocracy, and fables of functioning charity systems, making many believe that there is no need for a call to arms. Neoliberal capitalism posits competition as the main motivating force in all production and

⁴⁸ “Statement on Farm Workers and COVID-19,” National Young Farmers Coalition, accessed April 11, 2021, <https://www.youngfarmers.org/farmworkerscovid19/>.

consumption and has not spared food production and distribution from its dominion. Through the last forty years or so, the “neoliberal food regime,” in which global food production and distribution systems are governed by neoliberal policies, enforced class and state power relations within food trade.⁴⁹ Many campaigns for better food today believe radical changes are unnecessary if enough people can donate to the local food bank, if enough choose to spend their money at a local farmers market, and if enough farmers frame permaculture certificates in their homes.

Mainstream, fashionable food movements such as slow, local, and organic foods step minimally away from issues of access and exploitation. Programs aimed to promote food security, including food banks and the Supplemental Nutrition Assistance Program (SNAP), continue to benefit the nation’s largest corporations while only providing band-aid solutions for food insecurity.⁵⁰ Scientists debate the environmental merits of organic and “natural” foods, while such vocabulary has been historically linked to ideals of “purity” pushed in eugenics movements.⁵¹ Regenerative agriculture movements diminish voices of the historically marginalized while often missing the urgency of our climate crisis.⁵² Fashionable, or mainstream, food movements that emphasize consumer health without greater consideration of those involved

⁴⁹ Joe Wills, “Food Security vs. Food Sovereignty: The Right to Food and Global Hunger,” in *Contesting World Order?: Socioeconomic Rights and Global Justice Movements*, (Cambridge: Cambridge University Press, 2017), 94–150.

⁵⁰ Kayleigh Garthwaite, “It’s Not the Hungry Who Gain Most from Food Banks – It’s Big Business,” *The Guardian*, March 25, 2019, <http://www.theguardian.com/commentisfree/2019/mar/25/big-business-food-banks-subsidise-reputation>; “Chart Book: SNAP Helps Struggling Families Put Food on the Table,” Center on Budget and Policy Priorities, accessed February 19, 2021, <https://www.cbpp.org/research/food-assistance/chart-book-snap-helps-struggling-families-put-food-on-the-table>.

⁵¹ Kristin Toussaint, “There’s a Disturbing Nexus of Organic Food and White Supremacists,” *Fast Company*, January 13, 2021, <https://www.fastcompany.com/90593995/theres-a-disturbing-nexus-of-organic-food-and-white-supremacists>; Anuradha Varanasi, “Is Organic Food Really Better for the Environment?,” *State of the Planet: Earth Institute at Columbia University*, October 22, 2019, <https://blogs.ei.columbia.edu/2019/10/22/organic-food-better-environment/>.

⁵² Gosia Wozniacka, “Does Regenerative Agriculture Have a Race Problem?” *Civil Eats*, January 5, 2021, <https://civileats.com/2021/01/05/does-regenerative-agriculture-have-a-race-problem/>.

in food production directly privilege white voices and fail to address exploitation within farming and food systems that drive socioeconomic disparities and damage both human and nonhuman environments.⁵³ Food security work and research, often corporate-led, continues to be “hegemonic in global governance and currently serves as the legitimising framework for the neo-liberal food regime.”⁵⁴ Ideologies of whiteness and capitalism that both stress individualism and paternalism continue within these food trends.⁵⁵

Countering layered systems of capitalism, whiteness, and land exploitation, requires deep systemic change work towards food sovereignty and food justice. As I build a framework for introducing seed saving networks and independent plant breeders as foundational to environmental and community resilience, I emphasize how these movements’ players and their motivating philosophies do not adequately address the primary causes of inequity within food systems.

Food sovereignty is defined broadly as the ability of people and their communities to choose the way food is produced, acquired, and consumed while also “defin(ing) their agricultural and food policy.”⁵⁶ Begun by peasant and Indigenous communities of the Global South as a direct response to neoliberal paradigms increasing disparities within food systems, the fight for self-determination of food is enacted across the globe by communities who experience food injustice. Wills writes that “advocates of food sovereignty explain the paradox that the majority of the world’s hungry are themselves food producers by reference to the political and

⁵³ Alison Conrad, “Identifying and Countering White Supremacy Culture in Food Systems,” World Food Policy Center (Duke Sanford, September 2020), <https://wfpc.sanford.duke.edu/sites/wfpc.sanford.duke.edu/files/Whiteness-Food-Movements-Research-Brief-WFPC-October-2020.pdf>.

⁵⁴ Wills, “Food Security vs. Food Sovereignty.”

⁵⁵ Conrad, “Identifying and Countering White Supremacy Culture in Food Systems.”

⁵⁶ Kyle Powys Whyte, “Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance,” ed. A Barnhill, T Doggett, and A Egan, *Oxford Handbook on Food Ethics*, 2017; “Food Sovereignty : Via Campesina,” Via Campesina English, January 15, 2003, <https://viacampesina.org/en/food-sovereignty/>.

economic disempowerment and marginalisation of small-scale food-producing communities.”⁵⁷

The table below outlines the primary differentiations of food security versus food sovereignty.

	Food security paradigm	Food sovereignty paradigm
Conceptualisation of food	Commodity	Fundamental right
Food principally produced for	Global markets	Local communities
Mode of production	Industrial, chemical-intensive and GMO technologies	Agro-ecology
Economic model	Free market	Interventionist
Approach to plant genetic resources	Private property rights	Anti-patent/communal
Lead instrument	Agreement on agriculture	Nyéléni Declaration
Lead organisation	World Trade Organization	La Via Campesina

⁵⁸

The first row of the table compares the “conceptualization of food,” differing from a “commodity” under food security movements and “fundamental right” by food sovereignty movements. Neoliberalism and capitalism extend to food as a product that needs to be continuously improved, marketed, and increased in order to be of value. This commodification process has not only created a market where millions of people go hungry, but continues to alter the relationship between humans and food, land, and seed. Institutional-sponsored food security works to uphold neoliberalism, and by extension, continues inaccessibility to food by maintaining the severed relationship between people and their foodways. Rowen White writes: “the colonization inherent in this cancer of the global industrial food takeover is a staggering force which to this day continues to disrupt and sever time-honored relationships to seeds and ancestral lands.”⁵⁹

⁵⁷ Wills, “Food Security vs. Food Sovereignty.”

⁵⁸ *Table 3.1 Food Security and food sovereignty paradigms compared.* Reproduced from Wills, “Food Security vs. Food Sovereignty,” 109.

⁵⁹ Rowen White, “Fertile Resistance and Reconciliation,” *Sierra Seeds*, April 13, 2018, <https://sierraseeds.org/fertile-resistance-and-reconciliation/>.

The work of La Via Campesina on food sovereignty, in conjunction with the efforts of Indigenous leaders across Turtle Island and Vandana Shiva based in India, has naturally extended into the beginnings of all food: seed.⁶⁰ “Seed sovereignty” is today an ongoing movement on Turtle Island lands, initiated by Indigenous leaders and persisted by food activists, farmers, environmental scientists, and everyday gardeners. Notable voices in the movement include the Indigenous Seedkeepers Network, Vandana Shiva, and the Seed Savers Exchange, who proclaim that “seed security” is not enough. Seed being continually produced by corporations and assured by seed banks is not adequate given continued cultural erasure and environmental destruction. Seed sovereignty mirrors the paradigm of food sovereignty by proclaiming access to seed, and seed that is culturally relevant, environmentally appropriate, and affordable. Seed is not a commodity, but a fundamental right. The systems of seed saving and sharing must exist in networks connected through people and place, disrupting the stark individualism and land separation inherent to capitalist systems.

In order to understand the multi-dimensional power of seed sovereignty work, the past hundred years of control and commodification of seed systems needs to be unpacked. Today, control of seed is a reflection of the ways land and bodies are also controlled. Seed specifically is entangled in politics of race, gender, and human-nonhuman relations. Returning to work with seed offers alternative conceptions of food systems that challenge existing power structures and commodification practices while being accessible to a broad audience, requiring little official education and few resources other than a few seeds, a patch of soil, and patience.

⁶⁰ Jack Kloppenburg, “Seeds, Sovereignty, and the Via Campesina: Plants, Property, and the Promise of Open Source Biology” (Department of Community and Environmental Sociology of the University of Wisconsin-Madison, November 2008).

Chapter Two: The Position & Politics of Seed

Your ancestors and mine likely saved seeds in small pouches, pockets, and envelopes each season, sharing excess with neighbors and getting new varieties back, cyclically, each year, reciprocal. Most foods we know today were developed in this way: by people working with their communities, the Earth, and plants, in collaboration. Every agricultural community around the world has a history of plant breeding, including the Indigenous communities of the Dawnland and even the colonists George Washington and Thomas Jefferson who later claimed Indigenous land for themselves. Such a picture of unification around an agricultural practice creates a mythical image of agricultural peace and abundance. Although generally dispelled in chapter one, this unification of a simultaneously common and diverse practice of seed saving and sharing was once true.⁶¹ A more complicated reality is now the case. Issues of genetic modification, patenting, and seed access have disrupted and prevented long-held seed collection and sharing, mirroring the violences of our food systems.

The increase in thriving, independent seed companies and small seed saving exchanges is often viewed as a piece of the trending slow food and local food movements. The number of small seed companies are steadily increasing after a quick decline in the early 2000s, as with the prevalence of online swaps and community seed libraries. Today, “freelance” or “non-institutional” plant breeding projects have become more prevalent as a continuation of consumers rejecting mass produced goods. Carol Deppe, author, plant-breeder and PhD in biology, writes that in her experiences with the non-institutional plant breeding world, “the main rewards are the satisfaction of curiosity, the fun of the work itself, and, if successful, the

⁶¹ Petra Page-Mann, “We Are All Plant Breeders Now,” *Small Farmer’s Journal* 43, no. 3 (March 16, 2020), <https://smallfarmersjournal.com/we-are-all-plant-breeders-now/>; Rebecca Karstensen, “The History of Seed Saving,” *Indiana University Bloomington* (October 2017), <https://blogs.libraries.indiana.edu/wyliehouse/2017/10/25/the-history-of-seed-saving/>.

superiority of the new cultivars.”⁶² Framed here as a hobby, the increased number of gardeners sharing seeds appears ultimately non-consequential. Seed-sharers may be curious, but not radical. They may be kind but aren’t change-makers. But meanwhile, movements for slow, organic, and local food ignore the disturbing realities behind species consolidation and patenting processes. Seed issues have become largely unseen despite everything we eat begins from the depths of our seed systems. Seedways today have become, much like foodways, a mode of enacting violence on marginalized communities, and the reclamation of seed saving provides an opportunity for healing.⁶³

With the knowledge of the ways in which both seeds and foodways have been taken from public knowledge into commodification, those who pack seeds into small envelopes and leave them on their neighbors' steps become revolutionary. With each plant grown for seed rejecting preconceived relationships between humans and nonhumans, seed sharers exercise their right to harmonious exchanges with land, refusing to purchase and preferring to cultivate, tend, and take care. As described in this chapter, the commodification of our food and seed is coupled with the aforementioned histories of colonization and exploitation of land. Colonization is reflected in individual relationships with seed. The way we interact with plants through purchasing, planting, and tending have changed under the force of capitalist pressures, encouraging us to grow only for product, to purchase more, and to see ourselves as owners of land and plants. Seed saving is an anti-capitalist practice of continually rejecting control and commodification because it presents opportunities to encourage communities to relate to plants. In order for the reclamation of heritage, land, and autonomy to be realized, reforming seedways is imperative.

⁶² Carol Deppe, “Freelance Plant Breeding,” ed. Irwin Goldman, *Plant Breeding Review* 44, no. 1 (2021).

⁶³ “Foodways” is defined by Merriam-Webster as “the eating habits and culinary practices of a people, region, or historical period.” Seedways, then, refers to the practices (including modes of sharing, saving, and plant breeding) of a people. “Foodways,” Merriam-Webster, accessed April 29, 2021, <https://www.merriam-webster.com/dictionary/foodways>.

The Shifting Position of Seeds:

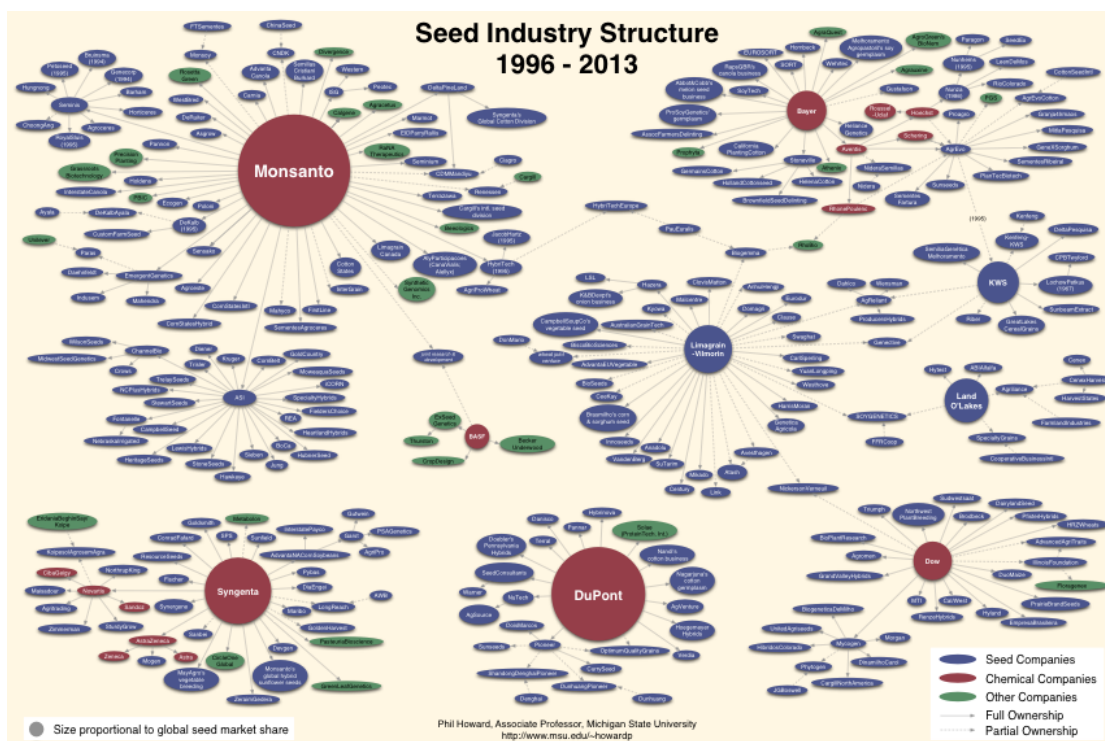
The process of moving seeds away from being communal began in the 1800s. As capitalist agriculture was continuing to expand with the United States, the Secretary of the Treasury initiated a program that gathered and studied seeds and their data. In 1839, the U.S. Patent Office began an agricultural division which collected and distributed seed, eventually developing into The American Seed Trade Association (ASTA) in 1883. At this point, the ASTA noticed an opportunity to profit off seed distribution and began to lobby for the end of free seed distribution. By 1924 they won, and the free seed program ended so that seed for sale could take its place.⁶⁴

With the development of biotechnology, seeds have continuously been commodified. Control over plant genetic information began with the Plant Patent Act of 1930 that allowed patents for novel, non-sexually reproduced plants and continued to the 2001 Supreme Court Case *J.E.M. Ag Supply v. Pioneer Hi-Bred International* that ruled that plants can be fully patented with utility patents, controlling the use of seed along with its sale. Such rulings have allowed large, global corporations to take control of seed supply through the patenting of key genetic strains. In 1996, there were 300 independent seed companies in the United States, which dipped to fewer than 100 seed companies by 2009. In 2007, Monsanto, DuPont, Syngenta, and Bayer controlled 49% of the world seed supply. Mergers of Dow and DuPont in 2017 and of Bayer and Monsanto in 2018 continue the monopolization of seed by only a few companies.⁶⁵ The graphic below, produced in 2013 by Phil Howard of Michigan State University, represents the

⁶⁴ Debbie Barker, "History of Seed in the U.S. The Untold American Revolution," *Center For Food Safety* (August 2012), https://www.centerforfoodsafety.org/files/seed-report-for-print-final_25743.pdf; Percy Wells Bidwell and John I. Falconer, *History of Agriculture in the Northern United States 1620-1860*. (New York: Peter Smith, 1941).

⁶⁵ Rowen White, "Fertile Resistance and Reconciliation," *Sierra Seeds*, April 13, 2018, <https://sierraseeds.org/fertile-resistance-and-reconciliation/>.

consolidation process from 1996 to 2013 that has continued to intensify with mergers and acquisitions today.



66

This consolidation and control of seed has consequences. Presently, the top ten seed and chemical companies – most of which are U.S. run corporations – control 73% of the seed market globally. As a result, the Food and Agriculture Organization (FAO) of the United Nations has estimated that 75% of crop diversity was lost between 1900 and 2000, causing 96% of crop varieties to be extinct. Genetic information that may have been necessary to the development of crops that are more resistant to heat, drought, salinity, pests, and disease, all of which are necessary for climate change adaptation, was lost.⁶⁷ The loss of genetic diversity among crops is an extension of historic foodway erasure that impacts marginalized communities. Much of the

⁶⁶ Image: Figure 3, “Seed Industry Structure 1996-2013.” Reproduced from Philip Howard, “Global Seed Industry Changes Since 2013,” December 31, 2018, <https://philhoward.net/2018/12/31/global-seed-industry-changes-since-2013/>.

⁶⁷ “Crop Biodiversity: Use It or Lose It,” Food and Agriculture Organization of the United Nations, October 2010, <http://www.fao.org/news/story/en/item/46803/icode/>; Barker, “History of Seed in the U.S. The Untold American Revolution.”

genetic information claimed by large companies has been developed over generations by North American Indigenous and African people, and is today being used to build the wealth of white business owners.

Another result of a few corporations monopolizing global seed supply is a steep increase in seed price, which has reduced the accessibility of seed to low-income communities and caused economic strain for farmers. Based on summaries from farms enrolled in Illinois Farm Business Management, The University of Illinois calculated that the average price spent for seed per acre increased from \$23 per acre in 1990 to \$118 per acre in 2015.⁶⁸ As a specifically severe case study, genetically engineered soybean prices have risen 325% between 1995 and 2007.⁶⁹ The combination of the loss of crop species and steep price increases has made growing one's own food increasingly inaccessible, especially for those without generational wealth and land allotments afforded by being a white settler on this land. A 2018 poll run by the Konkurrenz Group found that 93.7% of farmers are concerned by the most recent merger of Bayer and Monsanto and believe it will negatively impact farmers and farming communities, with concerns of legal battles, herbicide and pesticide dependence, and seed prices.⁷⁰

With many culturally-specific and heirloom crops lost or rare, legally allowed and biologically available seed to be saved (including landrace, open-pollinated, and heirloom varieties) are harder to find. Today, difficult-to-save hybrid F1 seed varieties make up the majority of those sold by major corporations. F1 hybrids originally created in the 1920s intended to decrease self sufficiency in seedways around the same time in which seeds began to be sold

⁶⁸ Sarah Sellars and Gary Schnitkey, "Growth Rates of Fertilizer, Pesticide, and Seed Costs Increase over Time," *farmdoc daily* 6, no. 130 (July 2016),

<https://farmdocdaily.illinois.edu/2016/07/growth-rates-of-fertilizer-pesticide-seed-costs.html>.

⁶⁹ "Our GM Food Fears Aren't Irrational," *Wall Street Journal*, November 8, 2013,

<https://online.wsj.com/article/SB10001424052702304527504579167700690265822.html>.

⁷⁰ "Poll: Farmers Overwhelmingly Oppose Bayer Monsanto Merger," *Friends of the Earth*, March 8, 2018, <http://foe.org/news/poll-farmers-overwhelmingly-oppose-bayer-monsanto-merger/>.

for profit instead of given away. F1 varieties (the “first filial generation”) contain all dominant traits in the parent strain, creating seed products of the plant that will be very different from the parent plant. For these strains, it takes a total of five years of seed saving in order for the seed to return to resemble the parent crop. Most patented varieties are F1 varieties because the difficulty of saving them makes their usage easier to control. The combination of legal and biological restrictions around seed-saving enters farmers into binding legal agreements with the opening of a seed packet.⁷¹ Smaller scale growing projects suffer economically with the need to repurchase each season combined with steep price increases.

Environmental implications of the widespread use of genetically engineered and F1 seed are often discussed among smaller farms: widespread use of pesticides and fertilizers is increasing, the possibility of GE seed and pesticide-resistant superbugs is rising, and the creation of climate-adapted and drought resistant crops is rare. Loss of plant diversity increases the vulnerability of our food systems and impedes our ability to adapt to global changes, including climate, pandemics, and economic challenges. Plant patents combined with biotechnology developments pose issues for the immediate and long-term resilience of our food production systems. Today, farmers who are largely unable to replant, exchange, and distribute seed due to biological or legal barriers are dependent on unstable supply chains and seed inappropriate for changing conditions.⁷²

Plant-Breeding and Issues of Ownership:

Institutions continue to push the dogma of genetic reductionism through continual appropriation of natural resources, claiming ownership of seed that has been stewarded by other

⁷¹ Catherine Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving* (Burlington, VT: Ashgate Publishing Company, 2013).

⁷² Nurcan Atalan Helicke, “Seed Exchange Networks and Food System Resilience in the United States,” *Environmental Studies*, no. 5 (2015): 636–49.

communities for generations.⁷³ Communities around the world have witnessed their ancestral seeds claimed by corporations, mass packaged, and sold for corporate profit.⁷⁴ Because of these processes, seed patenting exists as a continual act of colonization and cultural erasure mirroring the way culturally-important crops and modes of agriculture were appropriated by colonists from Native and African individuals since the beginning of the United States. From the early 20th century to the beginning of 2021, a slow but sure shift of seed as a life-giving right to a product kept primarily in the hands of these scientific elites has taken place.

The geneticists and ecologists of breeding labs create formulas and patterns sold en masse by large seed companies. Plant breeding is defined as the process of using “a variety of sciences to improve the genetic potential of plants,” meaning intentional genetic manipulation as done by Western-science-approved breeders.⁷⁵ Catherine Phillips emphasizes that the work of seed savers outside of the lab devolved with policies that promote “plant breeder’s rights” by valuing lab scientists’ knowledge systems and products over traditional breeding knowledge and practices.⁷⁶ In resistance to the Western control of knowledge access, small-scale seed companies, seed libraries, and community seed exchanges function as plant-breeding projects run by people without lab coats. The cultural divide between institutional and freelance plant breeders complicates the legalistic debates around who can control plant-breeding knowledge and who has the right to plant genetic material. Additionally, there is the question of whether it is appropriate for humans to manipulate seed lifeways.

⁷³ Finn Bowring, *Science, Seeds, and Cyborgs: Biotechnology and the Appropriation of Life* (Verso, 2003).

⁷⁴ María Paula Rubiano, “Centuries After Their Loss and Theft, Native American Seeds Are Reuniting With Their Tribes,” *Atlas Obscura*, September 8, 2020, <http://www.atlasobscura.com/articles/native-seed-rematriation>; “Seed Saving & Seed Sovereignty Fact Sheet” (First Nations Development Institute, 2015), <https://www.firstnations.org/wp-content/uploads/publication-attachments/2015-Fact-Sheet-11-Seed-Saving-and-Seed-Sovereignty.pdf>.

⁷⁵ “What Is Plant Breeding?” National Association of Plant Breeders (NAPB), accessed February 20, 2021, <https://www.plantbreeding.org/content/what-is-plant-breeding>.

⁷⁶ Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving*.

Patenting systems offer a poignant example to explore such questions. Previously autonomous and mutable organisms shift into stable, governed, and controlled objects as an authority structure between government, scientists, steward, and seed forms, reconfiguring human and nonhuman power relationships.⁷⁷ In this hierarchy, seed itself holds little autonomy, with governments and institutions creating or blocking access for humans to access seed materials. Alternative methods of sharing seeds shift power dynamics and reject the absolute authority of patents, valuing sharing over restricting access.

The Experimental Farm Network is a collaborative, non-hierarchical, volunteer-based plant breeding project who takes part in seed-sharing work. Primarily functioning as an open-source online platform connecting volunteers with projects, the Experimental Farm Network encourages the free sharing of seeds, plant materials, and the knowledge needed to grow and pollinate.⁷⁸ Projects such as these emphasize seed adaptivity and resource-sharing over profit and control, creating new human-seed relationships that recenter the autonomy of seed and the resilience of the community over a company or institution. Rowen White, Mohawk/Kanienkeha:ka seedkeeper, writes: “We are recognizing the need for these seeds to be back in living context. In an era of displacement and acculturation, some of these varieties were completely lost in their communities of origin, and we are now locating derivatives of these seeds in such public and private collections.”⁷⁹

Many Indigenous seed keepers reject the human relationship with seeds engendered within corporate and scientific power hierarchies. The First Nations Development Institute states that as “large commercial agricultural interests begin to claim ownership over seeds, many

⁷⁷ Ibid.

⁷⁸ Nate Kleinman, “Experimental Farm Network and Cooperative Gardens Commission,” interview by Melina Roise, February 24, 2021; Nate Kleinman and Dusty Hinz, “Experimental Farm Network,” The Experimental Farm Network, 2021, experimentalfarmnetwork.org.

⁷⁹ Rowen White, “Seed Rematriation,” *Sierra Seeds* (blog), March 19, 2018, <https://sierraseeds.org/seed-rematriation/>.

farmers and Indigenous communities will have difficulty in saving local seeds that have existed in their communities for centuries.”⁸⁰ Such is true even for institutions claiming seed materials for conservation and environmental purposes. When seed is appreciated as a resource but not as living beings, appropriation and exploitation continue, even when intentions are positive. The conservation manager at Native Seed SEARCH notes that seed banks around the country and abroad have taken a white savior-like approach towards Indigenous seed conservation. For example, by bringing Native seeds to banks without the community’s permission, hundreds of years of appropriation and exploitation processes continue under a new name of “environmental resilience.”⁸¹ The same lack of true listening and solidarity exists in organic and local “good food” movements. Seeds are continually viewed as products and sold to benefit corporations when seed access is viewed as something necessary solely to meet human needs. When described as nonhuman partners and ancestors that deserve their homes, communities, and agency, relationships are reconfigured. It is imperative that communities who are survivors of agricultural violences throughout American history are centered in seed work to dismantle these destructive power dynamics.

Seed and the Climate Crisis:

The lethal impacts of climate change on communities can be called “slow violence,” terminology introduced by Rob Nixon to describe harm that occurs “gradually and out of sight,

⁸⁰ “Seed Saving & Seed Sovereignty Fact Sheet.”

⁸¹ “White saviorism” or a “white savior complex” refers to aid or charity provided by white communities to communities of color in a generally self-serving and narrow-minded way. Saviorism continues acts of white supremacy by positioning white people as needed for help, when often, solutions from outside a community only perpetuate problems. Whiteness stays centered. Teju Cole, “The White-Savior Industrial Complex,” *The Atlantic*, March 21, 2012, <https://www.theatlantic.com/international/archive/2012/03/the-white-savior-industrial-complex/254843/>; María Paula Rubiano, “Centuries After Their Loss and Theft, Native American Seeds Are Reuniting With Their Tribes,” *Atlas Obscura*, September 8, 2020, <http://www.atlasobscura.com/articles/native-seed-rematriation>.

(...) dispersed across time and space, attritional violence (...) not viewed as violence at all.”⁸² Such unrecognized destruction is reflected in the ways food has been separated from communities through land dispossession, seed destruction, and seed patenting throughout the 20th and 21st centuries.

Although days of explicit enslavement and genocide have ended, and no more government-sponsored burnings of seed stores or mass killings of bison take place, steady patenting and erasure of culturally important plant genetic materials through policy shifts, court rulings, and corporate consolidation continue to decrease capacities of communities to control their own food supplies. These violences of late-stage neoliberal capitalism are invisible to most, as survival requires participation and therefore continues to be unquestioned. Rob Nixon describes the dangers of invisible violence, saying that damage that is “unobserved” goes undiagnosed and untreated.⁸³ Similarly, the long term health impacts of a lack of food and seed sovereignty among communities of color cause increased rates of nutrition-related health conditions and go undiagnosed as invisible effects of pervading racism and land exploitation.⁸⁴

Many scientists, activists, and agriculturalists are concerned about the changes that will need to be made within our food systems within the coming years. Current agricultural systems in the United States rely heavily on fossil fuels for producing and distributing food from rural areas to urban areas, and the switch to renewable energy sources will require communities (including urban communities) to produce more of their food locally.⁸⁵ If food is to be produced

⁸² Rob Nixon, “Introduction,” in *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 1954), 2.

⁸³ Nixon, “Introduction,” 1–54.

⁸⁴ Devon Mihesuah, *Recovering Our Ancestors’ Gardens: Indigenous Recipes and Guide to Diet and Fitness*, Revised, At Table Series (Lincoln NE: University of Nebraska Press, 2020); Kyle Powys Whyte, “Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance,” ed. A Barnhill, T Doggett, and A Egan, *Oxford Handbook on Food Ethics*, 2017.

⁸⁵ Jason Bradford, *The Future Is Rural: Food System Adaptations to the Great Simplification* (Corvallis, Oregon: Post Carbon Institute, 2019), postcarbon.org.

locally in all climates, biodiversity within crop species must be prioritized. Climate change presents a prolonged challenge to vulnerable food systems and access to save-able seed is the very foundation of resilience.

Scholars, agriculturalists, and activists identify that the consolidation of seed corporations and proprietary seed continues to damage communities' abilities to maintain or develop food sovereignty. Self determination over food systems requires an ability to access and afford the desired types of seed. Often, such efforts of localized food systems require seeds specifically suited to a bioregion and/or cultural heritage of the community. Kyle Whyte, along with many other Indigenous scholars, know that Indigenous food sovereignty is dependent on crop conservation. In his article "Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance," Whyte provides specific examples of the relationship between food sovereignty and collective cultural adaptation and resilience of Indigenous communities. Indigenous community members across Turtle Island continue to fight for their treaty rights, treaties of sovereignty that inherently include food sovereignty as a direct extension from land resources. Minnesota Chippewa Tribal President Normal Deschamps and Anishinaabe Elder Frances Van Zile speak to the need of - and right to - unique varieties of wild rice seed, saying: "We are of the opinion that the wild rice rights assured by treaty accrue not only to individual grains of rice but to the very essence of the resource. We were not promised just any wild rice; that promise could be kept by delivering sacks of grain to our members each year. We were promised the rice that grew in the waters of our people, and all the value that rice holds," and, "There is no substitute for wild rice. My whole way of being as an Indian would be destroyed. I can't imagine being without it. And there is no substitute for this lake's rice."⁸⁶

⁸⁶ Whyte, "Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance"; David Andow, Theresa Bauer, Mark Belcourt, Paul Bloom, Brenda Child, Jill Doerfler, Amber Eule-Nashoba et al. "Wild Rice White Paper: Preserving the Integrity of Manoomin in Minnesota." In *People*

These leaders know that cultural and environmental resilience requires food sovereignty, and food sovereignty requires seed. The control of seed is an extension of colonization efforts. Seed patenting and control is another method which the state employs to deny Indigenous communities their treaty rights and violate their sovereignty.

Pockets, Envelopes, Warehouses, Vaults:

With a dramatically changing climate, challenges are presented in methods of storing and preserving seeds. To continue adequate food production, there is a need for plants who are resilient in periods of extreme heat, drought resistant, tolerant to high salinity, and less vulnerable to pests and disease. Various “doomsday” gene banks have been created in response to the threat of the climate crisis. There are now approximately 1,750 gene banks worldwide, some of which hold more than 10,000 “accessions,” which are defined as distinct genetic materials.⁸⁷ Most genebanks are controlled by national governments and are referred to as “*ex situ*” (or “out of place”) conservation techniques. The Svalbard Global Seed Vault, managed by the Norwegian government in partnership with the Global Crop Diversity Trust, is the largest and most diverse collection of food seeds in the world. Gene banking through *ex situ* conservation keeps plant materials in temperature and light managed vaults, while large sizes of *ex situ* conservation sites are better for industrial sized research projects and are less prone to depletion.⁸⁸ The Svalbard Global Seed Vault holds seeds underground, in a building most humans would likely describe as a prison.

Protecting Manoomin: Manoomin Protecting People: A Symposium Bridging Opposing Worldviews. Mahnomen, MN, White Earth Reservation, 25-27. 2009; “Sulfide Mining: The Process and the Price, A Tribal and Ecological Perspective.” Great Lakes Indian Fish and Wildlife Commission, 1995.

⁸⁷ “Crop Biodiversity: Use It or Lose It,” 2010.

⁸⁸ Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving*; Sheryl D Breen. “Saving Seeds: The Svalbard Global Seed Vault, Native American Seed Savers, and the Problems of Property,” *Journal of Agriculture, Food Systems, and Community Development* 5, no. 2 (Winter 2014): 39–52.

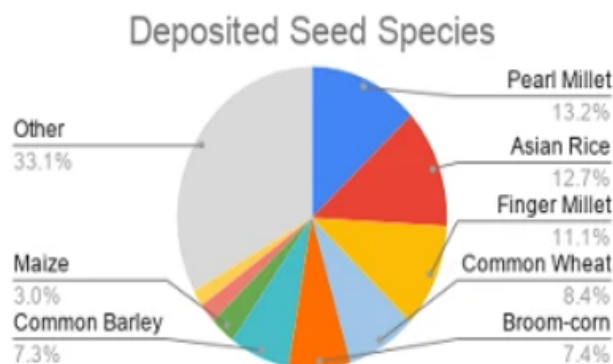


89

Keeping seeds in dormancy in this type of environment is another mode of humans asserting control over lifeways. *Ex-situ* conservation also requires the repression of seeds' reproductive capacities, keeping them in an environment unsuitable to growth and evolution. Out-of-place conservation requires selecting which seeds deserve such intense protection. In preparation for a doomsday-like scenario, the majority of seeds kept in vaults are focused on optimizing calorie production over preserving crop diversity. The result is an overwhelming focus on grains. Just nine specific species of grain, outlined below, account for over two-thirds of the space in the vault, leading crops that are heavier in nutritional value to effectively become marginalized.⁹⁰

⁸⁹ Image: Figure 4, "Svalbard Global Seed Vault," reproduced from "*SeedVault.no – A Site about Seeds!*," accessed April 22, 2021, <https://www.seedvault.no/>.

⁹⁰ "What Seeds Are in the Svalbard Global Seed Vault?," Svalbarði Polar Iceberg Water, accessed January 25, 2021, <https://svalbarði.com/blogs/news/what-seeds-are-in-the-svalbard-global-seed-vault>.



91

The level of human control exercised over seed lifetimes and evolutionary processes in large seed banks such as Svalbard is not seen in other methods of seed saving, which often take place with annual germination and continued breeding processes. Gene banks differ in purpose and execution from “*in situ*” or “in place” conservation. Based on community care and cultivation, *in situ* conservation is continued largely through Indigenous communities throughout the world, including on Turtle Island, although the above-mentioned challenges continue to be present. Here, seeds are viewed differently in their necessity, autonomy, and ability to be “owned.” Catherine Phillips consolidates the ways that gene banking differs from community seed saving in three main categories: the reinforcement of divisions and inequities (including between the global north and south, farmers and plant breeders, commercial farmers and community farmers), the relationship between humans and nonhuman beings (in one scenario seeds become a resource in stasis for capital gain, and in another seeds are continually autonomous), and in genetic reductionism (in the loss of autonomy during *ex situ* conservation

⁹¹ Image: Figure 5, “Deposited Seed Species,” Reproduced from “What Seeds Are in the Svalbard Global Seed Vault?” Svalbarði Polar Iceberg Water, accessed January 25, 2021, <https://svalbardi.com/blogs/news/what-seeds-are-in-the-svalbard-global-seed-vault>.

and practices seeds become little more than the subjects of science experiments).⁹² When considering the relative agency of nonhuman species within human-nonhuman interactions, there is a clear distinction between *in situ* and *ex situ* conservation processes and the relative agency they allow seeds as living beings. When patented, genetically modified, and bred to be the same generation after generation by seed companies and seed vaults, seeds become commodities. *Ex situ* storage partnered with patenting processes disrupt the co-creative relationship where plants and humans both have autonomy to adapt to environments, and instead, cause humans to become the primary pressures of change.⁹³

Such systems of storing seed from around the world may be somewhat effective in continuing calorie production through different grains. Yet, through this level of selectivity and reproductive control, gene banks, no matter how large and inclusive of species, exist within the same systems of reproductive and biological control that enable seed patenting and distribution control. Vandana Shiva, an Indian scholar and food sovereignty activist, has analyzed the faults within food systems reliant on seed banking. She writes that “ensuring the continued use of these seeds and plants is the best way to conserve them; whichever economic system determines how plant species are used also influences which species will survive and which will be pushed to extinction.”⁹⁴ Ninety-six percent of crop varieties that once lived in what is now called the United States are extinct, while globally, other varieties that are not prioritized in *ex situ* conservation are now described as “marginalized” or “neglected.” Human control over seed lifeways - by forcing them into slowed metabolic states and germinating them only in otherwise sterile conditions - disrupts the relative agency of the species and creates a barrier of their ability

⁹² Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving*; Breen, “Saving Seeds: The Svalbard Global Seed Vault, Native American Seed Savers, and the Problems of Property,” 2014..

⁹³ Rowen White, “Reseeding the Food System,” *Emergence Magazine*, October 11, 2019, <https://emergencemagazine.org/story/reseeding-the-food-system/>.

⁹⁴ Vandana Shiva, “The Stolen Harvest of Seed,” in *Stolen Harvest: The Hijacking of the Global Food Supply*, Culture of the Land (University Press of Kentucky, 2016), 79–93.

to adapt to changing climate conditions.⁹⁵ For these reasons, *ex-situ* conservation is disrespectful and insufficient to those that view seed as living ancestors and extensions of home communities. And even for those who do not come from communities with these views, out-of-place conservation disconnects seed from people in a way that continues objectification and commodification, failing to address the foundational issues in our human-food system relationships.

COVID-19, Visible Vulnerabilities, and Seed Access:

As I write this chapter at the beginning of 2021, in the midst of the global SARS-COV-2 pandemic, garden stores and companies around the country are experiencing high demand for seed. Even with anticipating this trend in preparing their 2021 stores, seed companies such as Missouri-based Baker Creek Heirloom Seeds and Wisconsin-based Jung seed are running out of varieties and experiencing severe packing and shipping delays.⁹⁶ Some companies believe the trend is because many Americans experienced food chain supply disruptions - apocalyptic-like empty grocery store shelves - for the first time in their lifetimes throughout April and May of 2020. In talking with K Greene of Hudson Valley Seed Company, he emphasized that the shift of interest in acquiring and planting seeds went further into an increase of consciousness into the issues around seed access, consolidation, and control.

“In 2009 we saw a bit of an increase (in sales). As people's financial stress increases, or when people are out of work, there's more interest in gardening, and growing food, and feeding your family and your community. But that's nothing compared to what we've experienced during COVID, and I think it's really brought a lot of attention to what I've been trying to get people to think about for years, which is: where do seeds come from, who grows the seed, and how do they grow the seed? And so many more people are talking about this now. And just like with healthcare and racial equity and all of these other things, we're seeing the cracks in the system

⁹⁵ Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving*.

⁹⁶ Jodi Helmer, “Be Prepared for a Possible Seed Shortage,” *Modern Farmer* (blog), January 18, 2021, <https://modernfarmer.com/2021/01/be-prepared-for-a-possible-seed-shortage/>.

that have always been there but in a much bigger way. And so we're seeing the fragility and vulnerability of our seed system in a way that is usually completely invisible and purposefully invisible. That these larger seed corporations in control don't want us to know."⁹⁷

COVID-19 has been a display of how fragile seed systems are. As K noted, this is a reflection of broader systemic issues, and the Hudson Valley Seed Company wasn't the only seed company who noticed changes in how people were relating to seeds, gardening, and food during the pandemic. Petra Page-Mann of Fruition Seeds has noted an overall shift in how gardening is viewed as a whole. About gardening and seed saving, Petra said:

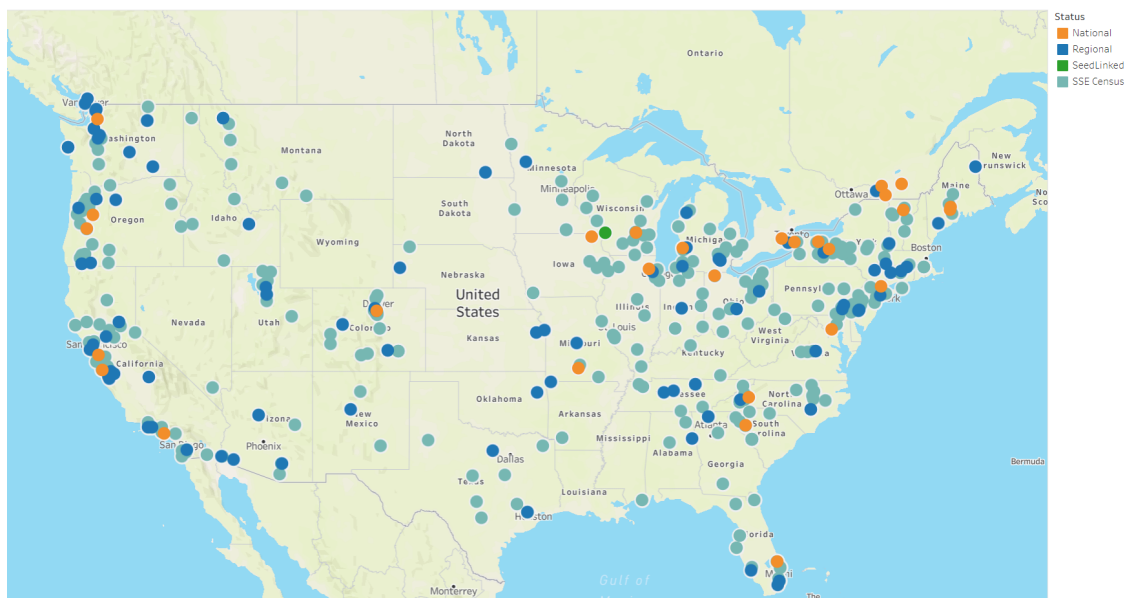
*"It's been interesting to see that nobody calls gardening a hobby anymore. Our dominant culture is starting to see that there's much deeper roots and our collective is so dependent on (food production). There are gifts to seeing and naming things that are finite. Not seeing the world as this infinite resource that we can just take from all the time. It's been terrifying also just to see how afraid people are and buying quantities of seeds that nobody has business having, because that fear of hoarding will never translate to abundance. It's one thing to know intellectually and another to know not intellectually. (...) It's been really nice to see also, that people are being extraordinarily generous with their seeds. (...) For years and years people have said "yeah so, you share seeds," when we're here to transform people and transform the world as people are transforming us. And since it's been eleven and a half months that we've been like: no for real. This is the work that we do. It's the work that seeds offer us."*⁹⁸

Seed-keepers interviewed here have noticed the dangers exposed by COVID-19, including the seed shortages, but have also noticed an increased understanding within consumer growers, of all types, to the necessity of seed access. In the Northeast where both of these companies are from and from where I am writing now, access to regionally adapted, locally bred seed isn't difficult to find for those with transportation and capital. With a densely populated area and a great number of farms being smaller and family owned, growers on the coast have many more opportunities to purchase regionally-adapted seeds.⁹⁹

⁹⁷ K Greene, "Hudson Valley Seed Company and Seedshed," interview by Melina Roise, February 15, 2021.

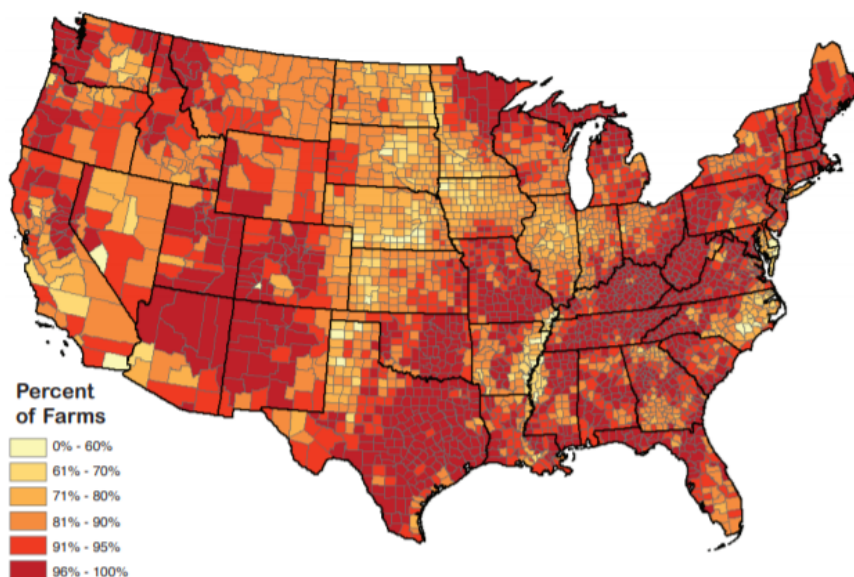
⁹⁸ Petra Page-Mann, "Seeds, Extractive Systems & How We Move Forward Together," interview by Melina Roise, February 10, 2021.

⁹⁹ Comparatively, in the middle of the country most land is dedicated to monocropping and livestock grazing.



100

Percent of Farms with Sales Less than \$250,000



101

¹⁰⁰ Image: Figure 6, “Regional Seed Companies Map,” reproduced from “Find A Seed Company,” *SeedLinked*, accessed February 16, 2021, <https://www.seedlinked.com/regional-seed-companies-map/>.

¹⁰¹ Image: Figure 7, “Percent of Farms with Sales Less than \$250,000,” reproduced from “2007 Census of Agriculture: Small Farms,” *U.S. Department of Agriculture*, (National Agricultural Statistics Service, 2007), 4.

The above maps comparing farm size to regional seed companies reveals a geographical pattern in the lack of small farms and regional seed companies in the middle section of the country, from the Dakotas south to Oklahoma.¹⁰² This region corresponds to where the majority of soy and corn is grown, two industries known for their reliance on patented biotechnologies of seed and pesticides. Small farmers and gardeners in the middle bioregion of the continent have little access to seeds regionally adapted to the lands that they live on, causing them to rely more heavily on vulnerable corporate seed systems. Either an acute or chronic event of stress such as COVID-19 or a changing climate, those existing under “seed apartheid” will be under increased pressure.¹⁰³ Although current systems of postage and travel allow residents of these areas to outsource seed from other regions, there is continued lack of access to place-specific seed.

Alternative methods of acquiring seed also experienced increases in sharing during the pandemic. The Seed Savers Exchange is a nonprofit organization that connects, stores, distributes, and educates land stewards while functioning as the largest seed exchange online platform. Their executive director noted that throughout the pandemic, the number of new seed listers tripled while requests for seed bank samples were up thirty percent. The team at the Seed Savers Exchange hope that beyond providing people with the necessary tools for resilience through this time, their work in distributing heirloom seeds can help “people to connect with their garden heritage and traditions that have really been at risk of declining over the last several decades.”¹⁰⁴ During the pandemic, the increase in reclaiming heritage traditions increased just as non-heirloom seed increased, too.

¹⁰² “2007 Census of Agriculture: Small Farms,” *U.S. Department of Agriculture*, (National Agricultural Statistics Service, 2007)

¹⁰³ I adapted this term from “food apartheid,” vocabulary employed by food activists. As discussed in chapter one, “food apartheid” (or in this case, seed apartheid) is better vocabulary than “desert” in order to highlight the systemic and human-created realities of these geographic regions.

¹⁰⁴ Lisa Held, “The COVID Gardening Renaissance Depends on Seeds - If You Can Find Them,” *Civil Eats*, February 22, 2021, <https://civileats.com/2021/02/22/the-covid-gardening-renaissance-depends-on-seeds-if-you-can-find-them/>.

As seen during COVID-19, our postal systems are not always reliable and outsourcing necessary items for food production is a gamble on the continuation of our already vulnerable systems. For the first in many American's lifetimes, grocery store shelves dwindled and occasionally went bare. If climate disasters continue to become more frequent, access to food and growing materials must be local to avoid our dependence on nationwide chains. The same is true for seed. Vernooy et al. writes that "community seed banks can enhance the resilience of farmers, in particular of communities and households most affected by climate change. Community seed banks can secure improved access to, and availability of, diverse, locally adapted crops and varieties, and enhance related Indigenous knowledge and skills in plant management, including seed selection, treatment, storage, multiplication, and distribution."¹⁰⁵ And those who save seed don't need academic proof to confirm the importance of their networks.

Community seed shares and traditional seed-saving practices offer a solution to declining genetic diversity, impending climate change, and governmental control over food. Based on webs of ecological and community connection, *in situ* conservation practices can differ in ritual, seasonality, and sharing practices, depending on the place, cultural community, and seeds being stored. The practice of saving seed within communities cannot be described or encompassed by any one example. Across the world and across Turtle Island, plant breeding, seed processing, seed storing, and seed ceremonies differ. Yet, practices align in the relationship between humans and plants and the collective responsibility created among communities of seed savers.

Exploring the social and political landscape through which seeds have become commodified reveals a direct connection between past agricultural violences and those which

¹⁰⁵ Ronnie Vernooy, Bhuwon Sthapit, Gloria Otieno, Pitambar Shrestha, and Arnab Gupta, "The Roles of Community Seed Banks in Climate Change Adaptation," *Development in Practice* 27, no. 3 (2017): 316–27.

continue today. As a practice of resilience, seeds and their stewards continue to resist agricultural control through saving and sharing. By focusing on restoring matrilineal lifeways, sovereignty and power of BIPOC communities, and reconfiguring human-nonhuman kinship, seed systems outside of institutional control offer us grassroots food system reformation. As buying seeds from patented corporations is a political act, buying less and sharing more is too. In its ability to increase access, develop resilient and biodiverse populations, and reclaim cultural sovereignty, seed work exists outside of capitalist and corporate structures.

I will end this chapter with an offering of an image, and one that your ancestors would recognize: pockets full of seeds collected from the unharvested crops, at the end of the evening, tending to the garden, taken to neighbors, friends, or family member's dwellings, pockets emptied, gratitude exchanged, pockets refilled.

Different in geography but similar in intention, today, a member of the Facebook group "Heirloom Gardening & Seed Saving," posts a question: "A newbie question...when saving tomato seeds, I have read that you use a blender to basically chop the tomatoes up to get almost like mush or mash. You then let it sit for several days until it gets moldy, then rinse and dry. Any thoughts on this? If that is not how you do it can someone explain to me because I am getting conflicting info on google." The post has 31 responses, including pictures, links to articles, and book recommendations, all encouraging in tone. Another post from a clear potato-lover reads: "Hey everyone! Who here chits their potatoes? I don't normally, but for once I have the space, and the spuds, and won't be able to plant for another week or two so I'm giving it a shot. Do you see a difference when you do and don't chit?" 11 responses, photos, and links.¹⁰⁶

Albeit a community of over five thousand, certain communities like the Heirloom Gardening & Seed Saving group continue traditions of open source sharing and knowledge. Yes,

¹⁰⁶ "Heirloom Gardening & Seed Saving," *Facebook*, accessed April 14, 2021.

it is a different world than our ancestors knew, one fraught with political implications with each choice we make of what to buy, where to buy, if to buy, where to plant, what to plant, and how to share. But if we choose to engage with these politics and histories as opportunities rather than burdens, new realities are revealed. Counter to the past hundred years of control and commodification, seed-sharing is an embodiment of community care, for both human and nonhuman kin, an exploration of individual partnerships and positionality on land and with each other.

Later in this work, I introduce storytelling as a mode of growing respect for nonhuman partners - specifically, in this case, seed. Stories, in the mode of song, poetry, written prose, visual arts, and oral traditions, allow us to imagine new or remember old ways of being. Here I present my experiment in re-imagining relationships through storytelling, particularly in relation to one species of seed. I acknowledge that I talk about “seed” as if this is a homogenous population who all interact similarly with the world. I engage with seed this way out of convenience to me and because the scholarship I am working from discusses seed similarly within one broad category. Through a narrative of myself and individual seed species, I hope to inspire readers not to think of “seed” as a monolith but to consider how relationships between plants and humans (much like any other relationship) exist on a unique, individual level.

Interlude: An Ode to My Calendula in the Corner

My body is surrounded by Western red cedar closely and the Salish sea in all directions, further away. Wild blackberry runs along the road. Salal takes over gardens, inviting deer to join them with their berries ignored by human hands. Mountains in all directions, besides the way my feet point when I wake up. I joke about being a new ingredient in this island soup. I joke, but I do feel myself brewing, blending, coalescing with the water surrounding me, held by the land that rises high above in the distance, making my skin feel sharp and rendering me zoetic, remembering my body to be a piece of this whole.

I will offer some of the many names of a plant I became close with here: Calendae, Caltha, Mary’s Gold, Marigold, pot-marigold, *Calendula Officinalis*, heliotropos, solsequium, turnesol, souci. These names come from Latin, French, Dutch, Greek and English lineages,

expressing sunshine, divinity, and place.¹⁰⁷ As the languages represented here tell us, the plant has been loved by people all over the world and most likely developed in Europe, first used by the Romans before adapting North. Variations of marigold and calendula developed possibly simultaneously, if not slightly after, the first European varieties. In India, marigolds drift through waterways and garnish bodies alive and no longer alive, in constant ceremony. In ancient Greek mythology, a woman named Caltha fell in love with Apollo, the sun god, and she melted under the power of his rays. In the place where she melted, a single calendula flower grew. It is believed that the varieties of calendula that are garnished with red tones hail from the Aztec people, being that when the Aztecs were murdered by Spanish *conquistadores*, their blood joined with the flowers to make them even more beautiful.¹⁰⁸

The specific plants I met here were some version of *Calendula Officinalis*. I spent many hours each day in the garden in my island bowl, harvesting beans, picking strawberries, and arranging flower bouquets, with the nights spent still there, with dreams filled with digging up fist-sized clover bulbs, taking down crisped sweet peas, and pulling up plumped onions. Each row of this garden began with a calendula plant. Mirroring the meaning of the Latin *Calendae*, which refers both to the plant and the first day of each month, this calendula in the Xalish Sea continued to be a border plant, a portal plant, a celebration plant. I didn't spend so much time tending to these Calendula individually. They are rather low maintenance and demanded little attention from me. These flowers were plucked easily at their peak, only to rebloom in just a few days. The woman I harvested for told me more than once not to worry if the flowers were not yet at bloom, for the more one picks, the more the flower blooms. How generous. So many flower

¹⁰⁷ David Macht, "Calendula or Marigold in Medical History and in Shakespeare," *Bulletin of the History of Medicine* 29, no. 6 (1955): 491–502.

¹⁰⁸ Gillian Nye, "The Flower of the Sun," *Roots Herbal Apothecary*, May 2012, <http://www.rootsoforiginals.com/media/print/lighthouse-peddler5-12.html>.

heads were plucked. I caught the stems between my index and middle fingers while moving my palm in a half circle away from my waist, to cradle the flower in my hand, and continuing through the circle to remove the flowerhead. The motion was organic, seamless, and together, the calendula and I filled baskets and baskets with orange, red, and yellow calendula heads.

Calendula is bitter. The flowers are (and historically have always been) used by humans for wound and skin healing, digestive help, and muscle toning. When infused into oil and combined with goat's milk from just a few hundred feet away, the bitterness of Calendula becomes a delicious aid for the skin. My first interaction with calendula was this way. In the summer of 2018 I took a solo road trip to a small town in Vermont, and in a small co-op grocery store noticed a line of bottles labeled distinctly with just a photo of a calendula flower, and a list of ingredients (dried calendula flowers, olive oil) and short list of actions (muscle and skin soothing). I was sore, so I bought some.

Two summers later, my most intimate moment with Calendula was in a state of almost-emergency: after a summer of pandemic, multiple part-time jobs and unexpected moves, my period hit me intensely, and probably due to the fact that my life at the time was quite disjointed and remote, with no access to a vehicle, and a half hour bike ride to town (which I could not complete in my current state), in a male-dominated space. I had few options for relief. Calendula became my friend. The vibrancy of the petals reflects its powerful muscle-toning and anti-inflammatory powers, which I combined with the leaves and petals of yarrow in a large mason jar. I let the infusion sit for almost an hour before drinking: although it was bitter, I gulped it down.

Towards the end of my month's stay on this land, the season of continuous blooming for the calendula slowed, and more and more flowers went to seed - unplucked petals closing like a

fist, hardening, losing their pigment of orange to turn shades of tan from a dark brown to sandy shade. So I began to save them. Like the flowers they too seemed to leave their homes easily. By cradling the seed head in my hand and using my thumb to stroke the seeds downwards, I easily collected them, slipping the ridged, curved, teeth-like new-beings into my pockets in the dozens.



When packing my bags to return East, I didn't forget these seeds, which I had hid under our makeshift kitchen in reused plastic bags labeled "Dried Pears - Fall 2019" in faded permanent marker. I placed them inside my sneakers, which I wrapped in a sweatshirt, and put into my bag.

These new lands I took the Calendula to greeted me with more opportunities for collecting seeds. My roommates and I created a seed-corner, with additions to which I added my calendula (pictured above the squash seeds, on the pan, rightmost and center piles).

¹⁰⁹ Image: Figure 8, Melina Roise, March 5, 2021.



110

One evening once we believed they were thoroughly dried (although as novices this was somewhat a guess), we packed the seeds into hand-folded paper packets made of old grocery bags, taped them shut, labeled them, and put them on the top shelf of our closet. There they rested from October through March.

March 5th, 2021

I bought the grow-light to complete this project in time, I told myself. I needed to start the seeds early for this project, I told myself, not because my skin was dying to touch soil again, not because I was wishing for the snow to melt and seeds to leave their dormancy. Praying urgently. But for whatever reason it didn't matter once the Calendula were out of the closet. There was no repacking that box once the tape was unsealed. A small 24-seed tray filled with soil, packed, filled again, lined with seeds, covered, watered, and placed just a few feet from my bed, under the light.

¹¹⁰ Image: Figure 9. Melina Roise, September 2, 2020.

March 10th, 2021

The first sprouts began today. I watched them, taking a glance once every couple of hours, watching their slow reveal. This morning there were a few cells that had just slightly raised bits of soil. I imagine the new sprouts awakening to find themselves buried. Sensing the direction of the sun, they send their radicles beneath them, rooting, before sprouting above ground, pushing the Earth with equal parts force and gentleness.

March 14th, 2021

Eight sprouts today. The first are beginning to get small leaves. They are the first thing I see when I wake up each morning. I am honestly quite in love with them.

March 19th, 2021

An email I sent two thousand miles away, ending: “I’m nearing the end of my thesis writing and have some exciting projects happening with the on-campus job I have. We are in the midst of maple sugaring season, which is always fun, and I just seeded some of the calendula seeds I got from your garden last summer that will soon live in our community garden on campus! Yay for spring!”

April 2nd, 2021

The first “true leaves” of the calendula formed throughout last night and today. The sprouts are not much taller but their green has become deeper and darker. I continue to greet them each morning, water them almost every day, and turn on their little colored lamp, hoping that’s enough.

April 12th, 2021

The calendula sprouts have grown too large for their small plastic homes. Although I’m not sure, I am guessing that this is the reason why they haven’t grown any bigger than my thumb.

One of my house plants has fungus gnats, and I'm worried about them not being the nicest to my calendula. So today, in the few moments of real sunshine this afternoon, I take out my dead lavender plant from its pot, line the terracotta bottom with stones for better drainage, add fresh potting soil, and make a new home for my calendula. Although at the farm I used to use popsicle sticks to transplant seedlings, this time I use my fingers, gently scooping them with care between my fingertips. Four went into each pot. I watered them again.

April 27th, 2021

In early March, my calendula sprouts were the first bit of growth I had seen in months. Today, they're lost in a sea of spring. The forsythia bush outside my window has long been in bloom and today, I noticed it beginning to turn from yellow to green at the tips of its branches. I have been watching the violets open, the dandelions pop, and the nettles and chickweed claim new territories. I have forgotten my calendula, so I dedicate a few minutes today to observing them. Most have six leaves by now, three rows of two, that droop on either side. They remind me of droplets. One leaf has a hole bitten into it (probably the fungus gnats) and one seedling is significantly smaller than the others, with only three leaves.

April 30th, 2021

I soothe nettle stings with calendula oil and water the plants.

Chapter Three: Imaginings

I leave the story of the calendula unfinished. When moving in cycles as seed saving and our seasons do, there can really be no start or end. I imagine and hope that someone, if not myself, will be there to continue the cycle of saving and planting the calendula for next year. I imagine and hope that eventually, more and more cycles will begin. I imagine and hope that through becoming more aware of our relative positions within seed politics, practitioners can embody the beginnings of alternatives to violence. This chapter is devoted to exploring these possibilities.

Matrilineal Lives

A 2019 study done by the University of Geneva found that “seeds inherit memories from their mothers” through “interfering RNA” epigenetic mechanisms. Seeds learn continually with each generation because data erases once embryos sprout, and scientists write that the “paternal gene is silenced” while “maternal and environmental factors cause dormant seeds to awaken.” The information passed to the new seed determines the length of dormancy, allowing seed resilience and biological optimization to shift with each lifecycle.¹¹¹ Explorations of seed biology extends the possibility of continuing matrilineal knowledge. Epigenetics differ from stories, songs, and writing through which humans learn, but similarities in feminine lineages bond us to this companion species. The recognition of Western scientific fields of the relationship between seeds and mothering opens new discussions on the relationship between gender and seed.

Knowledge of the seed-mother connection has existed within the Hopi nation for time immemorial. They have a word in Uto-Aztecan, *poshumi*, that refers to both corn kernels stored

¹¹¹ Universite de Geneve, “Seeds Inherit Memories from Their Mother: Maternal and Environmental Control of Seed Dormancy Is Carried out through Novel Epigenetic Mechanisms,” *ScienceDaily*, March 26, 2019, <https://www.sciencedaily.com/releases/2019/03/190326105610.htm>.

as seed for next season and can also be used to describe young women of child-bearing capabilities. In their ability to continue the lifelines of the community kernels and young child-bearing people continue the lifeways of both corn and people, held in reciprocal, mutually responsible relationships.¹¹²

Women in many communities have traditionally been caretakers and food providers, and accordingly, seed keepers and plant breeders. As reflected in chapter one, early changes in land and agriculture – such as enclosing land, introducing cattle, and commodifying land – burdened women and especially Native women. In the later parts of the 20th century, patenting processes claimed seeds as intellectual property and barred others from seed saving, violating matrilineal knowledge systems. Labs and companies run overwhelmingly by white-cis-male bodies and pedagogies continually appropriate from long-kept practices of plant-breeding, seed-keeping, and soil-tending from the depths of women’s pockets. Barred from entering the field they created, Western biological sciences exclude women politically and systematically.¹¹³ Today, despite the push of “female-friendly policies,” the retention rate for women in science is low. Banu Subramaniam purports social contexts for science as an explanation, stating “mainstream science as a gendered institution remains entirely unexamined.”¹¹⁴ Western science rejects indigenous forms of science and medicine, most of which were developed and led by women, preferring objectivity, rationality, and complete social decontextualization – despite the context for scientific productions being predominantly male, white, and using colonial perspectives.

Plant breeding today aligns with established gender patterns. The majority of institutionally respected plant breeding work happens in traditionally (and continually)

¹¹² Mary E Black. “Maidens and Mothers: An Analysis of Hopi Corn Metaphors.” *Ethnology* 23, no. 4 (October 1984): 279–88.

¹¹³ Banu Subramaniam, *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity*. (Urbana, Chicago, and Springfield: University of Illinois Press, 2014), 206.

¹¹⁴ *Ibid*, 216.

exclusionary situations, despite the majority of information used in labs as “raw genetic material” being created by women. Carol Deppe has recently termed “freelance plant breeders” as those who work outside these institutions, noting that “with the exception of the last century or two, all plant breeders were freelance plant breeders” and that freelance plant breeding ancestors are the source of the majority of the work being done today in exclusionary systems.¹¹⁵ The work of individual seed keepers, most small-scale seed companies, and seed exchanging collaboratives are considered freelance plant breeders.

Even in these freelance spaces non-men are left out. A 2013 study done by James R. Veteto and Kevin Welch titled “Food from the Ancestors: Documentation, Conservation, and Revival of Eastern Cherokee Heirloom Plants” counted only one female grower with 14 male growers.¹¹⁶ In my interviewing and research process, only one out of four seed company owners interviewed was femme.

As discussed throughout the first chapter, many communities historically positioned members of society with childbearing capabilities as the primary food producers. Those who carried babies in their wombs and on their backs also collected seeds in their pouches. Through an ecofeminist lens, correlations between colonialism, women’s knowledge dispossession, and food commodification are logical. Margarita Zamora’s notes about the language of Columbus and Carolyn Merchant’s notes about the colonial scientific revolution teach us that land separation and exploitation are gendered acts.¹¹⁷ Colonialism and whiteness are corresponding ideologies both supporting the idea that nature is man’s dominion for control; reproduction and

¹¹⁵ Carol Deppe. “Freelance Plant Breeding.” Edited by Irwin Goldman. *Plant Breeding Review* 44, no. 1 (2021).

¹¹⁶ Kevin Welch and James Veteto, “Food from the Ancestors: Documentation, Conservation, and Revival of Eastern Cherokee Heirloom Plants,” in *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*, ed. Virginia Nazarea, Robert E. Rhoades, and Jenna Andrews-Swann (Tucson: University of Arizona Press, 2013).

¹¹⁷ Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution*, (San Francisco: Harper & Row, 1983); Zamora, Margarita. “Gender and Discovery,” in *Reading Columbus*, (Berkeley and Los Angeles, California: University of California Press, 1993), 152–79.

food harvesting, both being processes that appear “animalistic,” require domination achieved through the extension of capitalism into food and women's knowledge systems.¹¹⁸

Ann Vileisis's work *Kitchen Literacy* positions the commodification of nature and its relative foodways as an extension of patriarchy. Commodification dispossessed women of the knowledge and power held through the garden, creating a food-as-product system where the role of women is reduced from holding the power of food to being purchasers of food.¹¹⁹ Such a process extends into seed, as well. Commodification and genetic modification of seed, working as an extension of patriarchy and parallel to food commodification, reduced gardeners from life-givers to hobbyists and seed planters from ingenious creators to people who bought packets.

In many Indigenous communities from the Dawnland, particularly, land-tending and agricultural work has been and continues to be the work of primarily women. The violence of separating agricultural practices from women throughout continued processes of colonization, and because of being ancestrally from this land, has therefore impacted Indigenous women in particular. Today, individual lineages of women and femmes continue this line of knowledge.

Rowen White is one of these carriers of knowledge. Expanding on the Mohawk connection of women to land, she says: “in many of our communities, there's a matrilineal connection to Earth. In many of our communities, women carry bundles of seed, and the ways in which these seed songs and ceremonies are kept alive is in the hands and hearts of women.”¹²⁰ Mohawk women have always been the primary caretakers of lands, made increasingly difficult through periods of continual land destruction and displacement by white settler-colonists. Kyle Whyte has developed a term for the weight Indigenous women carry as land tenders and

¹¹⁸ Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution*.

¹¹⁹ Ann Vileisis, *Kitchen Literacy: How We Lost the Knowledge of Where Food Comes from and Why We Need to Get It Back* (Island Press, Shearwater Press, 2008).

¹²⁰ Rowen White, “Reseeding the Food System,” *Emergence Magazine*. October 11, 2019, <https://emergencemagazine.org/story/reseeding-the-food-system/>.

defenders in a time of continued colonialism and climate danger “relational responsibilities.” These responsibilities form with the living and nonliving counterparts of the earth. Often, disruptions in species and environments cause shifts in the identities and responsibilities, as caretakers, of Indigenous women.

A 1779 story illustrates these interweaving and overlapping responsibilities. When she appeared out of an otherwise abandoned Haudenosaunee village, soldiers called Madam Sacho, a Haudenosaunee elder, “a very old Sq*aw,” “helpless impotent wretch,” and an “antediluvian hag.” These soldiers were under the command of U.S. Major General John Sullivan and General George Washington on a campaign of devastation in the Country of the Six Nations of the Haudenosaunee. Women had long held power within Haudenosaunee communities, with the ability to wage wars, select chiefs, participate in councils, and direct agricultural activities. On this day of threat, the rest of Madam Sacho’s community had evacuated. She stayed present, transcending gender, age, and language barriers, successfully preventing further destruction that “particularly affected women because they tended to crops and harvested trees.” Sarah Pearsall writes that “Anglo-Americans in the American Revolutionary War adopted new forms of systematic violence against Indigenous people, specifically women and children, ones they would continue to exploit” throughout continued colonial processes and land destruction.¹²¹

Whyte provides the example of relational responsibilities women of the Anishinabek Nation hold through their duties as water caretakers. The United States and Canadian Federal Governments claimed sacred water sources of the Great Lakes for fishing and drinking, and polluted by sewage and mercury.¹²² Autumn Peltier, a 13-year-old Anishinaabe girl from

¹²¹ Sarah Pearsall, “Recentering Indian Women in the American Revolution,” in *Why You Can’t Teach United States History Without American Indians*, (University of North Carolina Press, 2015), 57–70.

¹²² Kyle Whyte, “Indigenous Women, Climate Change Impacts, and Collective Action,” *Hypatia: Journal of Feminist Philosophy* 29, no. 3 (2014): 599–616.

Wikwemikong First Nation inspired by the women in her family lineage, “represents the water” and advocates for her community’s sacred resources.¹²³ Peltier, now 17, is an example of a complete subversion of who is afforded voice under colonialism and patriarchy. As a young person, a citizen of a First Nation, and as a woman, Peltier experiences the realities of environmental destruction more sharply than anyone else. As community caretakers, climate change and colonial pressures push more leadership and adaptive pressures on Indigenous women. This was seen in the 1700s when early colonists forced livestock onto Pequot communities, in 1776 with the Sullivan campaign’s mass destruction of seeds and lands, and continues today with control and commodification of seedways.¹²⁴

Given the realities of interactions between gender and seedways, solutions must focus on re-centering women, and especially Indigenous women. Seeds and the way they are shared, by holding matrilineal lifeways within their biology and providing opportunity for reclamation of foodways, are inherently feminist. I discuss how storytellers, alternative economic practices, and valuing care ethics align with feminist epistemologies throughout the following sections.

Alternative & Sacred: The Economics of Seed-Sharing

Working within the “corporate food regime,” as defined by Eric Holt-Giménez, cannot solve systemic issues of corporate control over food and seed production (including but not limited to food apartheid, a lack of culturally appropriate foods, and environmental degradation). Giménez designates “corporate” and “reformist” politics under the existing food regime, including organic, local, and climate-resistant crops.¹²⁵ Such well-intended politics fail to address

¹²³ Rhiannon Johnson, “13-Year-Old Anishinaabe Water Advocate to Speak at United Nations.” *CBC News*, December 14, 2017. <https://www.cbc.ca/news/indigenous/autumn-peltier-anishinaabe-water-advocate-un-1.4448454>.

¹²⁴ Virginia DeJohn Anderson, “King Philip’s Herds: Indians, Colonists, and the Problem of Livestock in Early New England.” *The William and Mary Quarterly* 51, no. 4 (October 1994): 601–24.

¹²⁵ Eric Holt-Giménez, “Food Security, Food Justice, or Food Sovereignty?” *Institute for Food and Development Policy* 16, no. 4 (Winter 2010).

issues of systems, working only to improve the product without changing purchasing, distribution, or accessibility. Switching the purchase of a conventionally grown tomato to a local and organic one has little to no effect on issues fundamental to the neoliberal capitalist process. Access to a locally-grown heirloom tomato is limited in areas of limited food options, higher price-points impair many more from access, and local labels don't necessarily diminish concerns related to labor exploitation.¹²⁶ So while the tomato may be marginally healthier for the consumer and environment, the revolution we need will never occur in the organic grocery aisle.

We may be willing to shift our thoughts for a moment from our personal experiences that happen daily and weekly in food purchasing to parallel trends across the US that extend globally. Environmental historian and historical geography Jason Moore describes our current economic and geographical reality as “capitalocene.” Moore writes that capitalism is not just an economic or even social system, but a way of organizing life and nature itself, including separating “nature” from humans.¹²⁷ We see this division when browsing grocery stores and seed racks, and when humans see themselves as separate from nature, exploitation is more likely to occur. When confronting the urge to buy instead of nourish and grow, when feeling the need to purchase hundreds of more seeds than ever would be needed for a season, and when deciding, again, which tomato would be “best” for our evening salad, we take part in capitalistic methods of separation.¹²⁸

¹²⁶ Margaret Gray, *Labor and the Locavore*, (Berkeley and Los Angeles, California: University of California Press, 2014).

¹²⁷ Jason Moore, *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Kairos: PM Press, 2016).

¹²⁸ Capitalocene is offered by Moore as an alternative to the idea of the “anthropocene,” another proposed name for the geological epoch of our planet when human actions have been the dominant force on environmental changes. To Moore, Anthropocene terminology presents humanity as a homogenous acting group, when in reality, the majority of humans on this planet have not played a role in shaping our climatic events. Rather, capitalism and its driving forces have caused the most damage.

If capitalism defines our current state of relating to nature, as Moore and colleagues represent, then present solutions to our food system problems will not achieve the changes necessary for species resilience. Reformations of agricultural ways, if continued under capitalism, will perpetuate exploitation in new ways. More significant changes must shift the economic system itself. In *Sacred Economies*, Charles Eisenstein writes: “mass-produced, standardized commodities, cookiecutter houses, identical packages of food, and anonymous relationships with institutional functionaries all deny the uniqueness of the world. The distant origins of our things, the anonymity of our relationships, and the lack of visible consequences in the production and disposal of our commodities all deny relatedness.”¹²⁹ This disconnection through commodification and human control, he continues, breeds selfishness and feigned scarcity. Returning to our example of the tomato: does purchasing local food and knowing where a tomato grew make our relationship with food less anonymous? Standardization processes in production and distribution continue to “deny uniqueness,” rendering some fruits worthy of purchase and others not, even in organic and biodynamic systems of agriculture. If one were to develop an ongoing relationship with a grower at a farm stand, the consequences of our purchases become more visible through understanding where our dollars move. But mass purchasing at major grocery stores continues denial of relatedness. Holt-Gimenez writes: “No amount of fresh produce will fix urban America’s food and health gap unless it is accompanied by changes in the structures of ownership and a reversal of the diminished political and economic power of low-income, people of color.”¹³⁰ There has been consistently enough food produced within our global systems to feed the entire human population. Still, political and institutional barriers, along with corporate control, continue hunger.

¹²⁹ Charles Eisenstein, *Sacred Economies: Money, Gift, and Society in the Age of Transition*, (Berkeley: North Atlantic Books, 2011), 8.

¹³⁰Holt-Giménez, “Food Security, Food Justice, or Food Sovereignty?” 4.

Although some settlers on this land may have been able to artificially remove themselves from these systems by producing their own food throughout the 1800s, the danger that separates today from one hundred years ago is that there is no choice of participation. Corporate consolidation and barriers to land access prevent most from having the option of engaging with or beginning an alternative system of food procurement. Participation is compulsory, invisible, and necessary for survival, *especially* for marginalized groups who cannot afford to have land access.

In her essay “The Serviceberry: An Economy of Abundance,” Robin Wall Kimmerer writes: “Continued fealty to economies based on competition for manufactured scarcity, rather than cooperation around natural abundance, is now causing us to face the danger of producing real scarcity, evident in growing shortages of food and clean water, breathable air, and fertile soil.”¹³¹ The creation of sterile hybrid seed varieties has taken seed from the economy of abundance and into capital. As seen in significant seed shortages that began with COVID-19 and continue through 2021, seed is another naturally abundant resource that has been created scarce for commodification to happen, another natural resource exploited by the capitalocene.

Before a century or so ago, procurement, selection, storage, and preparation of seeds were hyper-localized. All around the world, small networks of farmers, gardeners, and homesteaders worked to diversify and secure their community’s access to seed. Robert E. Rhoades writes that “with seeds understandably being crucial to survival and identity, farming and gardening societies always maintain a strong cultural and agronomic link between their planting material and the rest of their food system.”¹³² Today, these relationships have essentially

¹³¹ Robin Wall Kimmerer, “The Serviceberry: An Economy of Abundance,” *Emergence Magazine*, December 10, 2020, <https://emergencemagazine.org/story/the-serviceberry/>.

¹³² Robert E. Rhoades, “When Seeds are Scarce: Globalization and the Response of Three Cultures,” in *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*, ed. Virginia Nazarea, Robert E. Rhoades, and Jenna Andrews-Swann (Tucson: University of Arizona Press, 2013), 262.

broken down. The everyday gardener accesses seed through large-scale regional distribution systems that stock farm supply, home improvement, and grocery stores. A growing number of smaller regionally specific seed companies diversify this stock, but the “cultural and agronomic link” between these seeds and the rest of our food systems remains severed.

Alternatively, seed-sharing networks - including community seed swaps, seed hubs, and seed libraries - work to regain the connection between our place, community, food, and planting material. Seed-saving and seed-sharing networks offer alternative interactions with food systems. Counter to scarcity and commodification, as a practice, saving seed inherently creates abundance. Every individual seed holds the potential of creating a handful of new seeds, which can be replanted or shared again and again. In practice, seed sharing systems embody abundance: Seed libraries practice the return of seed stores at the end of the season. Seed distribution hubs distribute free seed to an area. Seed swaps, whether local or international, create networks of diversity through many people sharing small amounts of excess. As I experienced in my initiatory moment with foxgloves, moving through the process of planting through harvesting teaches us that *we have enough*. Competition becomes unnecessary. Purchasing leads to excess. Seed-saving invites practitioners to witness and embody an alternative to so-engrained mindsets of scarcity.

As seed-saving creates abundance, seed-sharing creates new economic systems. In times of danger, when our current systems falter or fail, alternative economies are necessary for survival. And for communities whose current systems have repeatedly harmed, the ability to create new networks offers a compelling model of resistance. To save seeds, to share seeds, and to share knowledge about seeds is not to take part in an existing channel of a food system, no matter how unique, minor, or new, but to continually create a new network that places plants

themselves back as the primary agents of production. We should trust the plants themselves with their own reproduction rather than placing emphasis on exploitative relationships between humans and plants. The individual practice of growing, tending, and seed saving in itself is a practice of relating to the Earth and witnessing its abundance in a way that Eisenstein would believe re-connects us to the land while having the power to disconnect us from cycles of commodification. For many people on the land currently referred to as the United States, this practice reconnects them to the Earth in a completely new way. Re-connecting to Earth in a cycle that sustains us outside of purchasing patterns, rather than repeating an ideology of scarcity within capitalistic practices, works to reform mindsets instead of simply redirecting them. Even long-time gardeners who have traditionally bought seeds annually can learn new connections through seed saving.

In her graduate thesis for the Harvard Graduate School of Design titled “It Starts With A Seed: Exploring Place-Based Socio-Ecological Care and Alternative Economies in Community Seed Saving Initiatives,” Katie Gourley connects community seed saving initiatives to theories of feminist political economies, which hold “space for nuanced critiques of human supremacy, the study of everyday life, practices of care, the politics of place, and the existence of diverse economies.”¹³³ Witnessing natural abundance afforded through practices of care requires reconsidering anthropocentric and patriarchal viewpoints. For this reason, it’s not necessary to diverge from the corporate food regime to exercise the benefits of seed-saving. As an everyday practice of care and relation to Earth, seed-saving allows us to practice and prepare for alternative futures.

¹³³ Katie Gourley, “It Starts With a Seed: Exploring Place-Based Socio-Ecological Care and Alternative Economies in Community Seed Saving Initiatives,” (MA diss., Harvard University Graduate School of Design, 2019), 43.

Sharing economies come naturally in environments where abundance is understood to be mutually beneficial. Carol Deppe, author of *The Resilient Gardener: Food Production and Self-Reliance in Uncertain Times*, writes: “We humans trade. (...) My friends, neighbors, and exchange networks are part of my resilience. I aim for greater self-reliance. I enjoy doing more for myself. And I love to garden and to grow food. But I don’t aim at “independence.” Healthy humans are never independent. We are interdependent.”¹³⁴ In communities of gardeners, farmers, and friends, sharing and swapping saved seeds in excess is standard practice. Today, online communities offer opportunities for dependence and sharing. The subReddit r/seedswap currently has 11.3 thousand members as of March 2021. The Facebook group titled “Great American Seed Swap/Trade Project” has 25 thousand members, and one rather vaguely titled “Free plants and seeds for humanity” has 39 thousand members.¹³⁵ Trading occurs spontaneously when abundance is embraced.

Dupont, Syngenta, Monsanto, and Advanta (the four largest seed companies today) still take part in manufactured scarcity; many smaller bioregional companies are attempting to counter the narrative seeds-as-scarcity while still selling seeds in for-profit business models. Some smaller seed companies, although not all, provide educational resources on how their customers can save seeds and become more resilient gardeners themselves. Petra Page-Mann at Fruition Seeds, who encourages her customers to save seeds themselves, says she often gets the question of “why?”¹³⁶ While neoliberal capitalist systems teach us that maximizing profit must be our goal over anything else, business owners can find it possible in moments like these to

¹³⁴ Carol Deppe and Makenna Goodman, “Food in Uncertain Times: How to Grow and Store the Five Crops You Need to Survive,” *Chelsea Green Publishing* (blog), 2020.

¹³⁵ “r/seedswap,” Reddit, accessed March 12, 2021, <https://www.reddit.com/r/seedswap/>; “Great American Seed Swap/Trade Project,” Facebook, accessed March 12, 2021, <https://www.facebook.com/groups/gassp/>; “Free Plants and Seeds for Humanity,” Facebook, accessed March 12, 2021, <https://www.facebook.com/groups/128514614589253/>.

¹³⁶ Petra Page-Mann, “Seeds, Extractive Systems & How We Move Forward Together,” interview by Melina Roise, February 10, 2021.

provide resources for individuals to create abundant economies for themselves and their neighbors through new channels of current systems.

In its ability to connect us to place, teach us abundance, and exist outside of traditional acts of violence, seed-saving and seed-sharing networks work as an alternative to food systems that have caused racialized and gendered violence for generations. Resisting compulsory participation in ongoing capitalocene, I will offer Donna Haraway's vision of an alternative: the Chthulucene, a current and extending future geological epoch of learning new ways of being, living, and dying-with, "a kind of time place for learning to stay with the trouble of living and dying in response-ability on a damaged Earth."¹³⁷

When discussing the economization of living beings, scholars such as Haraway center feminist debates. The exploitation of reproductive ability is inherent to the economization of life.¹³⁸ For seeds and seedways, the destruction of traditional ways of keeping seed through the natural reproductive processes of the plants, most commonly facilitated by women acting as seed-midwives, was the dispossession of women-kept knowledge and power.

Seed-as-people and seed-for-profit?

In the research conducted for this project, I spoke to various people who work in seed distribution circles. Although some worked in for-profit sales, all were aware of the conflicting ideologies between seed-for-sale and seed-for-life. Capitalism and plant-commodification are central powers which control seed and food using artificial scarcity. These power dynamics bring ethical and moral questions about how, when, and who should have the right to distribute seeds. Informal seed swaps, sharing systems, and even more formal seed library structures can

¹³⁷ Donna Haraway, *Staying With The Trouble: Making Kin in the Chthulucene*. (Durham and London: Duke University Press, 2016), 2.

¹³⁸ Adele Clarke and Donna Haraway, *Making Kin Not Population*. (Chicago: Prickly Paradigm Press, 2018), 13.

enable participants to imagine and participate in other-than-neoliberal capitalist economic structures. Some small seed companies bridge gaps by existing simultaneously within capitalist systems and as seed-sharing hubs. Seeds have only been “sold” for about a century now, and today, businesses that understand the need for food sovereignty and food justice can feel internal friction between needs and beliefs when selling seeds for profit. Questions continue to be raised throughout the seed saving, selling, and sharing community: Can seed be understood as a sacred ancestor of ours while simultaneously being sold? How can seed be sold or distributed ethically, without commodification? Can for-profit seed companies play a role in the creation or sustenance of systems of resistance?

Petra from Fruition Seeds told me: “Selling people is really wrong. And selling seeds is really, pretty wrong. I’ll spend the rest of my life reconciling that. Fruition Seeds may be composted one day because it is part of this extractive system of oppression. For now, we’re still sharing seeds and finding our way through these conversations.”¹³⁹ Fruition holds conflicting realities of seed for sale and as ancestors by teaching seed saving, understanding that some customers will only buy from them once and save their seeds in future seasons. Quoting Robin Wall Kimmerer, Petra says, “all flourishing is mutual,” reflecting an understanding that the seeds, even if bred in decade-long projects, belong to no one. In this way, some seed companies toe the line between extraction and resistance, participating in commodification first but following with encouraging sharing, abundance, and community.

The realm of non-profit and NGO seed-work brings new implications. Nate Kleinman works with the Experimental Farm Network and the Cooperative Gardens Commission, who sell seeds, coordinate garden projects, and give seeds away in different settings. Nate told me that

¹³⁹ Petra Page-Mann, “Seeds, Extractive Systems & How We Move Forward Together,” interview by Melina Roise, February 10, 2021.

selling seeds enables the company to give seeds away to those who need them. He says: “Last year, the seeds that co-op gardens gave away dwarfed the number of seeds that we sold, and that’s wonderful.”¹⁴⁰ In this way, Nate’s projects work as a redistribution system where people with financial privileges fund the needs of those less privileged. Although seeds are still packaged and sold, their profits fund increasing seed access. Some regions have formal organizations whose mission is to collect and redistribute regionally-specific seeds, such as Native Seeds SEARCH in the Southwest, Southern Seed Legacy in the Southeast, and Seed Savers Exchange nationwide. Such organizations collect heirloom seeds, breed them, and sell them, using the funding to provide community grants, conservation initiatives, and farmer education. Although neither the Cooperative Gardens Commission nor any of the seed saver network organizations are for-profit ventures, they work simultaneously inside and around commodification systems. Selling branded packets of seeds as a product while using profits to continue seed resilience ultimately benefits cultural and biological conservation work, resisting continued monopolization of the seed world.

In a different vein of work, the Open Source Seed Initiative (OSSI) connects small, open-pollinated seed companies with growers and savers. They aim to close holes created by the continued impacts of the Plant Varieties Protection Act (PVPA) that bleeds into seed libraries which run primarily off of donated seed from larger seed companies. The distribution of corporate patented seeds prevents creating self-sufficient libraries, as people cannot save and breed seeds without permission from the company. OSSI carries the mission to “free the seed” by promoting and educating about plant access. The seed providers OSSI connects with pledge to keep their seed open-source and unpatented, protecting the “freedom to save, grow, replant,

¹⁴⁰ Nate Kleinman, “Experimental Farm Network and Cooperative Gardens Commission,” interview by Melina Roise, February 24, 2021.

share, trade, sell, trial, study, select, adapt, cross, and breed the seeds.”¹⁴¹ Although OSSI itself takes no part in breeding and selling, they simultaneously encourage purchasing and saving.

While small to medium-sized seed companies reconcile with their actions and histories, seed giants continue to standardize and monopolize processes that cause increasing amounts of damage to seed and food systems. Part of the power of starting and growing seed companies is to allow for seed access from small farms rather than industrial production, to support biodiversity in gardens and worldwide, lean towards *in-situ* and *in-vivo* conservation, and work towards resilient systems.

Although access to more culturally and bioregional appropriate seed varieties is favorable, the Seed Savers Exchange, OSSI, and similar seed network purchases, for the consumer, generally lack the participatory component and fail to promote the imaginative value of alternative seed systems. There is little differentiation between purchasing from a large scale seed company, small scale seed company, or a non-profit: When spring arrives, and the garden is planned, online or print catalogs boast pictures of fully-grown fruits, vegetables, and flowers. Few-sentence descriptions give a condensed history of the variety’s source and qualities. Buyers purchase a seed as a product, expecting a specific germination rate, physical object, and consumable result. Such processes continue Eisenstein’s “mass-produced, standardized commodities,” and create opportunities for Wall Kimmerer’s “competition for manufactured scarcity,” yet coexist as mainstream and accessible modes of supporting biodiversity in our communities and continuing later breeding projects.

¹⁴¹ “The Open Source Seed Initiative: Growing Access to a Liberated Domain of Plant Genetic Diversity,” *Open Source Seed Initiative*, December 2017, <https://osseeds.org/>.

Stories, Names, and the Ability to Remember:

In their essay “Apples of Their Eyes: Memory Keepers of the American South,” Susannah Chapman and Tom Brown consider the way the continuation of apple varieties hold memory and place. They write that the creation or re-creation of place happens by exchanging seedlings and seeds, which circulate “practical, personal and cultural memories of apple cultivars.”¹⁴² In particular, the “nomenclature of apples serves as a repository of cultural, historical, agricultural, and culinary knowledge.”¹⁴³ Names of plants, much like names of people and places, can tell us things about their pasts. Many plants, having multiple names, denote multiple histories and groups of people who tended and cultivated them. A commonly known example may be *maize* and *corn*.¹⁴⁴ The English spelling “maize” comes barely-altered from the Spanish “maiz,” which came to Spanish from the Taino (the native language of Haiti and the Dominican Republic) “mahiz.” As maize is believed to have been initially bred in central Mexico and spread throughout Turtle Island as a staple crop, communities indigenous to so-called Mexico and the United States have hundreds of different names for the harvest and its web of related cousin-seeds. So while “maize” tells a story of the movement around the Atlantic, “corn” offers different perspectives of this plant’s history and current state of being. “Corn” is derived from a generic word for any grain (before the movement of people from Western Europe across the ocean, oats, wheat, and rice were also called corn in Scotland, England, and Batavia, respectively). When British settlers found maize to be the best-growing grain on this new land,

¹⁴² Susannah Chapman and Tom Brown, “Apples of Their Eyes: Memory Keepers of the American South,” in *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*, (Tuscon: University of Arizona Press, 2013).

¹⁴³ *Ibid.* 44.

¹⁴⁴ For me, *corn* makes me think of genetically-modified, homogenous ears of the plant, all pale yellow in color with light green leaves. I think of the plant, when referred to by this name, on grocery store shelves and on farm market tables. *Maize* paints a broader picture, with multi-colored kernels and darker colored leaves. I picture this plant on its stem, in the soil. I don’t expect that this thought-experiment would yield the same result for all people (actually, I hope it doesn’t) but encourage you to try it yourself and consider what it means for you.

they began calling it “Indian corn,” and later, just “corn.”¹⁴⁵ Like the names of different apple varieties introducing us to various stories of the trees and their fruits, tracing the etymology of these two widely known names of this staple grain crop (and, I’m sure, all of the names I am missing acknowledgment of here) reveals the plant’s cultural and geographical histories.¹⁴⁶

From pages I have written and have yet to write, I have learned how seed stories and human stories are intertwined. Geographically, evolutionarily, and culturally, seeds and their food products have moved-with, changed-with, and caused the movement of humans: People from Western Africa braided seeds in their hair when they were kidnapped from their homes and brought into enslavement. Their hope for survival and immense capacity for resilience brought rice, millet, and okra to new lands where they continued to grow and change, as African-American creolization began as well.¹⁴⁷ Through the violent mass displacement of the Long Walk and the Nunna daul Tsuny (Cherokee words that translate to “the trail where they cried,” commonly taught as the Trail of Tears) people carried seeds with them.¹⁴⁸ The ability for these seeds to survive with their human caretakers illustrates the mutual resilience that exists within instances of human-plant allyship.

Many seed stories have been lost, others miscounted, and some remembered. In sharing seed within families, passing seed between generations accompanies stories of family histories. In-community researchers in Appalachia followed stories of seed through art-based inquiry.

¹⁴⁵ Sam Dean, “The Etymology of the Word ‘Corn.’” *Bon Appetit*, July 11, 2013; John E Staller, “An Introduction to Maize Cobs and Cultures.” In *Maize Cobs and Cultures: History of Zea Mays L.*, (London New York: Springer Heidelberg Dordrecht, 2010), 1–8.

¹⁴⁶ Is this why my own associations with this vocabulary exist? The generalized-Americanized vocabulary of “corn” presenting an image of genetically modified dent and sweet corn, largely separated from its cultural past, whereas maize paints a more complicated picture?

¹⁴⁷ Judith A Carney and Richard Nicholas Rosomoff, *In The Shadow of Slavery: Africa’s Botanical Legacy in the Atlantic World*, (Berkeley and Los Angeles, California: University of California Press, 2009); Penniman, Leah. *Farming While Black: Soul Fire Farm’s Practical Guide to Liberation on the Land*, (United States of America: Chelsea Green, 2018).

¹⁴⁸ White, “Reseeding the Food System,” 2019.

Here, seed keepers use storytelling as their primary mode of communicating stories. Called “cultural tradition-bearers,” these storytelling-seed keeping elders hold vital information that supports knowledge of ecosystem diversity, cultural resilience, and gardening ways. While knowledge passes through families, lineages aren’t shared outside family lines.¹⁴⁹ Here, seed-sharing works in tandem to support memory-sharing. Acts of community and familial preservation run counter to capitalist pressures encouraging selling over-sharing and “progress” over memory.

Seed stories can be complex. When oversimplified, especially for the purpose of sales, histories can act as further commodification instead of remembrance. Seed-sharing in the form of for-profit companies and not-for-profit libraries offers challenges in how to share accounts of plant varieties appropriately. The Seed Savers Exchange and Baker Creek Seeds both sell a seed they call “The Cherokee Trail of Tears Bean.” Seed Savers Exchange tells the story of this seed in just a few sentences:

Also known as Cherokee Black, the variety is good as both a snap and a dry bean; when mature, the greenish-purple 6” pods encase shiny jet-black seeds. This bean was shared with Seed Savers Exchange by the late Dr. John Wyche of Hugo, Oklahoma. His Cherokee ancestors carried this bean over the Trail of Tears, the infamous winter death march from the Smoky Mountains to Oklahoma (1838-39) that left a trail of 4,000 graves. Pole habit, snap or dry, 85 days. ±1,600 seeds/lb.¹⁵⁰

Here we are presented with another question: Should seed stories, especially ones complex and traumatic, be used to sell seed? It is common practice for seed companies to use histories when selling heirloom and landrace varieties. To make these stories fit in catalogs, on packets, and on websites, ancestries of the seed are dramatically reduced and over-simplified.

¹⁴⁹ Chris Dockery, “Heirloom Seed and Story Keepers: Arts-Based Research as Community Discourse in Southern Appalachia.” *Journal of Appalachian Studies* 20, no. 2 (Fall 2014): 207–23.

¹⁵⁰ Seed Savers Exchange. “Cherokee Trail of Tears Bean: *Phaseolus Vulgaris*.” Accessed March 19, 2021, <https://www.seedsavers.org/cherokee-trail-of-tears-bean>.

Seedshed, a nonprofit organization that aims to support communities towards seed sovereignty, offers workshops "for seed companies, plant breeders, and others about where seed stories come from and what our responsibility is in terms of how we share them." Many seed companies might call something an "Indian" or "African-American Heirloom" variety not based on independent research or from their seed source but because they know that associating a seed with these identities will increase sales. K Greene told me that such practices are "a continuation of the extractive nature of the dominant culture of Indigenous seed stories, Indigenous practice, Indigenous histories, and genocide," exploited as a way to get people to participate in a seed library or buy from a seed company.¹⁵¹ The aforementioned stories like the Trail of Tears bean intend to share complex and often traumatic stories of plants that, yes, need to be remembered. However, presented in a condensed form and designed to promote sales, stories such as these are not commemoration but continued commodification of seed and their varied pasts.

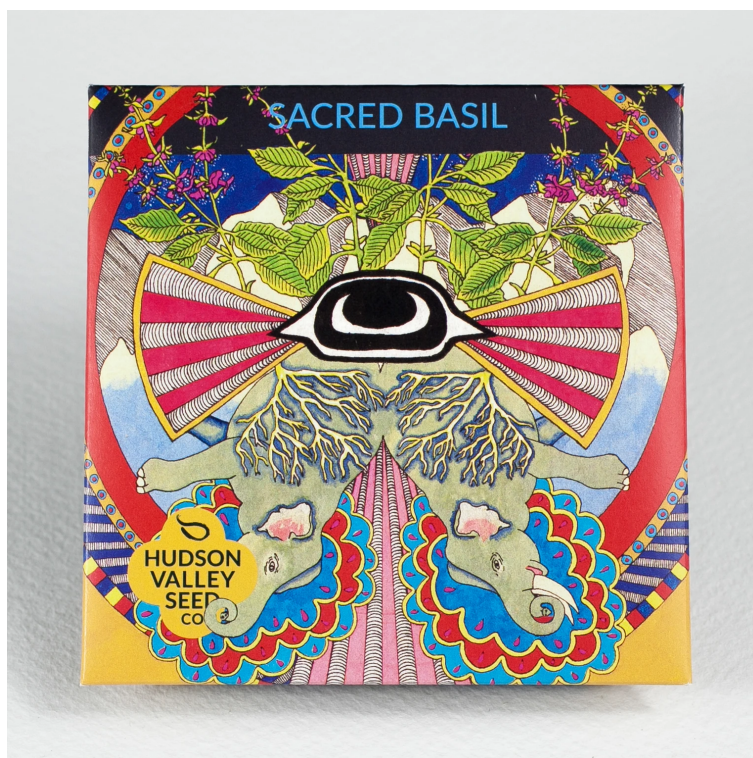
The story of the Cherokee Trail of Tears Bean told by non-community members differs from the first-person experiences or in-community histories kept alive through *en vivo* conservation. Stories told through detached viewpoints *and* with an underlying profit motivation, as is done here, uses traumatic histories of living beings for marketing purposes. The production and consumption of mass media today supports the selling of trauma stories, with an industry term of "if it bleeds, it leads." Recently published work has described how this tendency affects victims by minimizing complex experiences and reopening old wounds. Producers and consumers are also harmed by the use of trauma narratives in the marketing of seeds. Under capitalism, "selling trauma" creates pain necessary for profit and survival.¹⁵² Seed companies

¹⁵¹ K Greene, "Hudson Valley Seed Company and Seedshed," interview by Melina Roise, February 15, 2021.

¹⁵² Jeanette McVicker. "Review of Rothe, Anne, Popular Trauma Culture: Selling the Pain of Others in the Mass Media and Underwood, Doug, Chronicling Trauma: Journalists and Writers on Violence and Loss," *Jhistory, H-Net Reviews*, June 2013. <http://www.h-net.org/reviews/showrev.php?id=39307>.

telling reductive and violent stories - whether consciously or unconsciously - lean into the commodification of pain and continued exploitation of marginalized experiences.

Some companies aware of the sacredness of seed stories continually cope with the tensions presented between telling and selling stories. Some companies have implemented creative solutions geared towards addressing the oft disregarded stories of plant cultivation. The Hudson Valley Seed Company (HVSC) commissions artists to design their signature “art packs” that aim to “tell the story of a particular seed variety (in) a unique celebration of the diverse stories of seeds and their stewards.”¹⁵³



Sacred Basil: “Tulsi, considered a sacred plant in the Hindu religion, has been cultivated for at least 3,000 years. Known as the “Incomparable One,” “Queen of the Herbs,” and “Elixir of Life,” the scent, as well as preparations of the herb, have been used to heal for centuries. Today’s plant scientists classify Sacred Basil as an “adaptogen”—a substance that helps us adapt mentally and physically to stressful circumstances. One whiff of its exquisite aroma and you’ll

*understand why.”*¹⁵⁴

¹⁵³ “Art Packs,” Hudson Valley Seed Company, accessed March 23, 2021, <https://hudsonvalleyseed.com>.

¹⁵⁴ Image: Figure 10, “Sacred Basil,” text and image reproduced from Hudson Valley Seed Company, accessed March 23, 2021. <https://hudsonvalleyseed.com/products/sacred-basil>. Ink-on-paper artwork by Jessi Carter, <https://www.saatchiart.com/jessicarter>.

A four sentence description of a 3,000-year-old plant is of course reductive. However, the complex piece of art presented with the text includes a physical representation of the plant, an eye, elephants, mountains, bright colors, and diverse patterns, providing motivation for consumers to think more critically about the source, diverse histories, and many stories of this seed. HVSC shared with me that “people write and share with us their own (stories about) how the art informs their relationship with the seed,” meaning that even if the art doesn’t inform the consumer about specific events within the plant’s development and history, it inspires consumers to think more deeply about how they interact with the seed.¹⁵⁵

Southern Exposure Seed Exchange (SESE), based in Mineral, Virginia, has a unique way of sharing the sources of their seed within their catalog. First, they feature some of their growers in their catalog.¹⁵⁶ SESE shares the explanations and stories of seeds not through all of history or one defining moment in time (As HVSC and Baker Creek both do above), but through how the seeds came to them particularly:

“Dean’s Purple-Podded Pole Beans: [Family heirloom from TN. Supplied to us courtesy of Seed Savers Mark Schonbeck, Valerie Lyle, and Dean Turley. Dean received the beans as a gift from a student whose family brought it to Frost Bottom, TN, where they settled 150 years ago.] Plants form a gorgeous purple and green screen loaded with vivid 5–6 in. purple beans. Save both light and dark seeds to replant for more tender pods and a finer taste. Good bean beetle resistance.

#13602 Pkt (~46 seeds) \$2.50.”¹⁵⁷

In doing so, SESE positions themselves directly in relationship with seed and seedkeeper so that the consumer can be aware of their position in the seed’s life. This information develops their relationship with the seed by beginning on a personal note. Dean’s Purple-Podded Pole

¹⁵⁵ K Greene, “Hudson Valley Seed Company and Seedshed,” interview by Melina Roise, February 15, 2021.

¹⁵⁶ Unknown to many buyers, seed companies don’t grow all of the seed they sell. They may grow some varieties, but almost always outsource and combine with other seed growers and farmers to create a full selection of seed varieties available to their customers.

¹⁵⁷“Southern Exposure Seed Exchange 2021 Catalog and Garden Guide.” (Mineral, VA: Southern Exposure Seed Exchange, 2021). www.southernexposure.com.

Beans as they are today only exist and are in this catalog because of Dean, Mark, and Valerie, so that is the story told here.

Stories of plants are passed down through more ways than just seed sharing. Harvest festivals, holidays, and recipes celebrate culinary and seasonal histories. Learning stories of seed - whether that of last season or 3,000 years ago - teaches us how deeply and continually partnered to plants we are, not only in their fully-formed consumable states but as seeds, too. Realizing the continued human relationship with plants throughout our lifetimes and ancestries releases us from seeing plants simply as commodities.

Food and place hold memories. We feel this when driving over rivers or around mountains we once frequented. With their landscapes, smells, and climates, lands have the power to bring memories of distant and not-so-distant pasts. The land holds stories through changes in its environment. Place names tell stories, and trees and roots hold information about past seasons and years within them. The scent of a certain spice can cause us to remember days or places past, dinners, and the people with whom we shared meals. Landscapes and fruits -- whether seed or apples -- express history, meaning, and memory.

On the Basis of Care and Continuity: Building Relationships Beyond Species, Gender, & Capital

“Knowing that you love the earth changes you, activates you to defend and protect and celebrate. But when you feel that the earth loves you in return, that feeling transforms the relationship from a one-way street into a sacred bond.”¹⁵⁸ - Robin Wall Kimmerer

“We are, constitutively, companion species. We make each other up, in the flesh. Significantly other to each other, in specific difference, we signify (...) love. This love is a historical aberration and a naturalcultural legacy.”¹⁵⁹ - Donna Haraway

¹⁵⁸ Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Canada: Milkweed Editions, 2013).

¹⁵⁹ Donna Haraway, *Manifestly Haraway* (University of Minnesota Press: Minneapolis, 2016), 94.

Through this chapter, I have outlined how seed-saving encourages us to exist outside of damaging systems. Spaces of alternative economies remove us from capitalist pressures, while feminist relationships to land and stories restore matrilineal power with the ultimate goal of returning autonomy to seed so as to remove humans from anthropocentric views. Cultural, racial, and gender-based power reformations work within seed-sharing by continuing stories and ancestry.

Throughout my research for this project, many seed-savers, whether company owners, farmers, or friends, emphasized the joy, magic, and beauty they have witnessed through their personal experiences in developing relationships with seed. I had the opportunity to practice seed-saving last summer. Being a college student in a pandemic, I had been displaced a few times throughout the growing season and found myself feeling foreign in the late summer heat that had traditionally made me feel safe. After four weeks away, I returned to a garden where I spent much of my time, deciding that entrusting my brother with tending this area had maybe not been the best choice at continuing care. The beans had climbed past their tent to reach their arms across the entire tomato patch, pulling stalks down in slow motion dominoes, the potato plants were nibbled by potato beetles who had finally found the home I unwillingly created for them, and the plot of herbs I had intended for continual harvest had long grown leggy, flowered, and gone to seed. Here was a gift I had never had the patience to wait for before. Although only in this space for 24 hours, in the liminal space between summer and school and moving across the country to a new bioregion, immersing myself in collecting and processing seeds prevented me from feeling lost. I stayed grounded.

Here we have another power of seed-tending: it requires connection to place and ample patience. There is no quick way to learn plant breeding or seed saving. Bound to the Earth's

seasonal cycles, whatever bioregion we have our feet on requires noticing, and the dynamic needs of plants prevent hands-off or disengaged learning possibilities. We are obligated to intimate experiences with the land we live on, to trust season cycles, and to take care of a non-human partner on an almost daily basis. Donna Haraway's relational ontologies of "thinking-with" and "learning-with" offer us vocabularies to describe experiences of slowly unraveling anthropocentric viewpoints through connection with land and seed. No classroom can teach how to watch the light pass over the land you live on to pick a spot for your seeds. No textbook can replace the satisfaction of soil-caked fingernails. On thinking-with, Maria Puig de la Bellacasa writes, "it both supports singularity by the situated contingencies it draws upon and fosters contagious potential with its reaching out, its acknowledgment of always more-than-one interdependencies."¹⁶⁰ Very few other moments require this attention and guidance of Earth by guiding a plant through a complete life cycle, from seed to seed. We cannot learn without place and practice.

In contrast, large-scale agricultural practices focus on control. Chemicals prevent bugs and diseases, sprinklers and hail cannons control certain weather patterns, and genetic engineering creates completely standardized and predictable crops. Proclamations of technological and scientific improvements position humans as saviors instead of as students of the Earth. Genetic engineering and biotechnology fabricate the notion of human mastery over nature. Learning seed saving requires us to relinquish control and to trust the land and seeds' capabilities to provide for us. When we give autonomy to the seed and trust Earth's ability, we learn that we have never *really* been in control. Bellacasa writes in her chapter "Soil Times: The Pace of Ecological Care" how caring for the environment puts us at odds with the speed at which

¹⁶⁰ Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds*, Posthumanities 41 (Minneapolis: University of Minnesota Press).

capitalism pushes progress. When humans must care for something that exists in a different epochal timescape, the capitalistic need for progress becomes futile.¹⁶¹

Planting seed with the intention of harvesting seed separates us from commodification and encourages abundance. Harvests allow little “product” besides continuing life cycles, releasing us from the notion that we must purchase for survival: instead, we learn how land supports us. Bellacasa writes that the practice of care is vital for supporting lifeways that are “interconnect[ed] and interdependen[t] in spite of the aversion to “dependency” in modern industrialized societies that still give prime value to individual agency.”¹⁶² Seed-saving and seed-sharing encourage practitioners to remember the dependency of humans on the places and other beings with whom we coexist. The everyday person, farmer or not, can re-imagine how interactions with and care for our environments shape us. And whether collecting wild seeds or planting cultivated seeds, the relationship between human and nonhuman autonomous objects requires an acknowledgement of mutual reliance. Care, as a key theme in feminist ethics in its ability to return power, autonomy, and respect to traditional caregiving is radical in the way it reverts human - nonhuman relations.¹⁶³ Seed saving offers us an example of the differences between working *on* to working *with* land: from control to autonomy, from profit to friend. Through place-based nature and requirements of care, seed saving and sharing teaches us how to be allies of the Earth instead of its saviors.

May 1, 2021

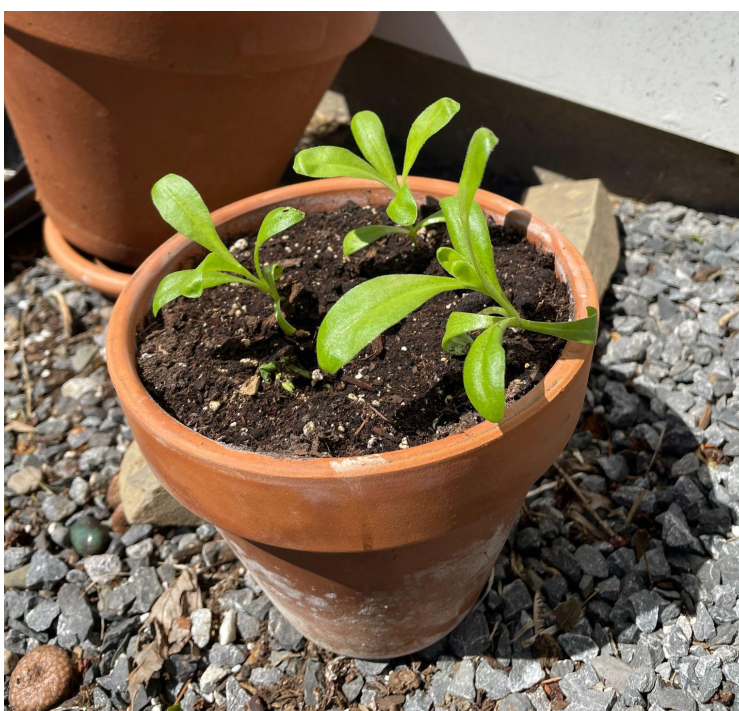
It seems fitting that despite purchasing fancy colored lights to make the calendula in the corner grow faster, none have grown more than a few inches. I echo Banu Subramaniam...

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Grace Clement, “The Ideal Types of Care and Justice,” in *Care, Autonomy, and Justice: Feminism and the Ethic of Care* (Westview Press, 1996).

“almost there, but never quite.” Another lesson in nature being in charge of itself, and myself being the student, just the aide, not the master. It’s spring now, though, my house is decorated with a few picked tulips and daffodils and I have not seen frost-tipped grass in weeks.¹⁶⁴ Today I move one pot of calendula outside to begin to harden them off and prepare their move permanently into the Earth. There is little to be done, really, to continue my care besides watering and waiting, finishing and submitting this story, and eventually planting them somewhere in the community garden.



165

I, too, am preparing my move. For a while, I thought I was going to leave this area after graduation. I intended to move back to where the calendula seeds were collected while leaving these plants here as my replacement, but now I think I’ll stay with them, in a cradle of Catskills and Calendula, considering, “almost there, but never quite,” still learning and imagining, we keep growing.

¹⁶⁴ Image: Figure 1, Melina Roise, May 1, 2021.

¹⁶⁵ Image: Figure 11, Melina Roise, March 5, 2021.

Interlude: A Short Collection of Poems, Songs, and Celebrations

Thank You

If you find yourself half naked
 and barefoot in the frosty grass, hearing,
 again, the earth's great, sonorous moan that says
 you are the air of the now and gone, that says
 all you love will turn to dust,
 and will meet you there, do not
 raise your fist. Do not raise
 your small voice against it. And do not
 take cover. Instead, curl your toes
 into the grass, watch the cloud
 ascending from your lips. Walk
 through the garden's dormant splendor.
 Say only, thank you.
 Thank you.

- Ross Gay¹⁶⁶

Seeds

there are always seeds that thread us
 and carried on the wind set us apart
 does the wind come from the origin
 of the mother or the father
 will my origins be blown away
 or remain in distance if I leave
 will the wind stand breathless
 shall I remain to die broken from home

- Ali Cobby Eckermann¹⁶⁷

¹⁶⁶ Ross Gay, "Thank You," *Poetry Foundation*, 2021.

¹⁶⁷ Ali Cobby Eckermann, "Seeds," reproduced from Candy Royalle, "Ali Cobby Eckermann's poetry: inspiring those of us who feel like outsiders," *The Guardian*, 2017, <https://www.theguardian.com/books/2017/mar/04/ali-cobby-eckermanns-poetry-inspiring-those-of-us-who-feel-like-outsiders>.

(segment from) **Black Gold**

I am umber, ochre
 Saffron, sienna
 Crimson, cinnamon
 Cocoa brown and ebony

I am gold, gold, Gold

You are soiled

Filthy

Black

Dirt

Rich

You are soul, soul, Soul

Take me in your palms
 breathe in my memory

Remember me

Fall soft where you belong, my seed
 I need you

The future depends on me
 - Naima Penniman¹⁶⁸

(Segment from) **Fox**

for a human animal to call for help
 on another animal
 is the most riven the most revolted cry on earth
 Come a long way down
 Go back far enough it means tearing and torn endless
 And sudden
 Back far enough it blurts
 Into the birth-yell of the yet-to-be human child
 Pushed out of a female the yet-to-be woman
 - Adrienne Rich¹⁶⁹

¹⁶⁸ Naima Penniman, "Black Gold," in *Farming While Black: Soul Fire Farm's Practical Guide to Liberation on the Land* (Chelsea Green, 2018), 318-319.

¹⁶⁹ Adrienne Rich, "Fox," in *Fox* (W.W. Norton & Company, 2001), 25.

Roan Dream

A mountain appeared to me
 And with a ridge like a blade
 Dug me from the stagnant earth,
 Poured light after me
 Upwards out of gravity,
 Flooding her jagged face

I fell into her sides
 Her backwards rock
 Sloped descent into
 My folded spirit

Tumbled hours spent striking
 Clouds—
 You called me with all
 Your voices and I unfurled,
 I ascended
 Feet first into your
 Cavities,
 I cried from your streams to
 Your crawling fogs.
 Now you are
 The mother I long for.

- MK Yoon¹⁷⁰

Seeds

Sometimes I wish I was a seed living in the dirt
 When I take for granted what I love my stomach turns it

Take me back
 Back to where this started
 Holy land
 Find a way back down to the seeds

- Crumb¹⁷¹

¹⁷⁰ MK Yoon, "Roan Dream," in *Folklore for Resistance*, 2020, 29.

¹⁷¹ Crumb, "Seeds," April 30, 2021, track 3 on *Ice Melt*, Crumb Records © 2021.

Singing Everything

Once there were songs for everything,
Songs for planting, for growing, for harvesting,
For eating, getting drunk, falling asleep,
For sunrise, birth, mind-break, and war.
For death (those are the heaviest songs and they
Have to be pried from the earth with shovels of grief).
Now all we hear are falling-in-love songs and
Falling apart after falling in love songs.
The earth is leaning sideways
And a song is emerging from the floods
And fires. Urgent tendrils lift toward the sun.
You must be friends with silence to hear.
The songs of the guardians of silence are the most powerful—
They are the most rare.

- Joy Harjo¹⁷²

¹⁷² Joy Harjo, "Singing Everything," in *An American Sunrise* (W.W. Norton & Company, 2019), 53.

The Beans on my Dashboard (A Concluding Thought)

My mind returns again and again to the foxgloves and forsythia, the calendula sprouts, and all of the others who have led me into asking questions: the basil seeds my best friend gave me for my birthday, the leftover radish seeds my grandfather had, the bundles of lemon balm that have been hanging in my apartment for six months now, the echinacea seeds I have planted dozens of times with no germination. Through planting, tending, and growing (although I may not always have an abundant harvest) I learn continuously how it feels to be held in reciprocal relationships. Holding small beans in my hands that would one day nourish me, knowing that for months before then, I would have to nourish them, returns us to a purity unmatched in the political sphere of today.

Late last fall I left a shift at the Bard Farm and passed by a red bean pole tent reminiscent of a playscape from elementary school. I noticed bean pods that remained, crisped, still on their stalks, and full. I collected a handful of beans and carried them in my pocket to a small cubby in the dashboard of my car, as a partner to my sea glass collection. Over the past six months or so they have attracted many questions from friends and family members wondering why I keep beans behind my steering wheel (and at one point they spilled out of my pockets, so beans were also found in door handles, on the ground, and on seats). The true answer is always nothing more than “they keep me company.” We dance together on road trips, and in times when the loneliness of winter hits, they have always been there, dancing.

Although I don't think they would be viable after experiencing multiple seasons in a car, the beans have changed my relationship with seed. They are representative of another relationship, not quite reciprocal in terms of physical giving but, I would like to believe, for emotional support. Throughout this project, I have continually reflected on my own relationship

with plants and land. I have sought to unlearn the boundaries created by cultural conditioning. Instead of seeing myself as a land steward, I wonder, what if I am a land student? What if the land is stewarding me? Instead of considering what I want to plant in my garden, what if I ask which plants want to grow here? What if instead of feeling guilty for being a white person on stolen land, I promise just to love, listen to, and learn from the land, to learn stories, and move through them with compassion? What if, instead of feeling pressured to use my womb for reproduction, I remember my ancestors who were womb-bearers who kept seed, who knew that was enough care-taking? What if I am not bringing my beans around everywhere I go, but, what if their presence is really guiding me? Continual reconsiderations of these questions have been some that I have asked my seed-friend-partners. With whispers and wishes into handfuls of calendula seeds and dashboards of black beans, I plant these questions into warm soil. I watch them grow.

In a time of crisis, we must focus energy on ensuring that our communities and loved ones have access to drinkable water. It can feel unproductive and naive to imagine a healed future. Why whisper to a seed when we still need to make sure our communities won't go to bed hungry tonight? Why decorate envelopes of seed for friends when we need to organize, write letters, and fight for basic survival? As is now known, all of us descend from people who lived in seed-abundant societies, who learned with and from plants, who lived in communities of human and nonhuman. In a time of crisis, seeds allow us hope. We can remember that if we can imagine better futures and move towards them today, they will exist, much like how we can plant the last of our corn kernels this summer and by fall, they will be grown. In their challenges of capitalist constructions and violent realities, seeds offer us alternatives.

Remembering our innate human connections with plants is not difficult. It doesn't require reading books or a thesis. We cannot learn it in a biology lab or textbook. Learning to be with plants and seeds is more like learning to dance. With no need to dissect the anatomy of the human body or understand time signatures, at a young age, music makes us sway, bob, shimmy, and spin. We belong in music. Similarly, there is no need to understand the complexities of botany or know the Latin names of plants. Rowen White writes that in her work with young people in community gardens, songs and celebrations of seed and soil return naturally after being gone for generations. It is almost as, although briefly forgotten, seed songs are within us.¹⁷³ Our teachers are the seeds and our communities.

In order to continue to expand our imaginations in creating relationships with the Earth that counter long histories of racial, gender, and class violence, we all have to work on remembering this connection. Learning how to be in respectful and reciprocal relationships with seeds is easier begun as children, just as learning a language and starting to dance become problematic as we get older – with our self-doubt, lack of belief, and lack of time. Opportunities for play and exploration with the natural world should be a priority in building a better world. Learning to save seed should be like learning how to tie shoes: intrinsic, necessary, and incontestable.

Those of us who are older and past ages of naive exploration can continue to learn as we also hold political implications close. Land tenders must do seed work while aware of the dangers of decreasing biodiversity, the appropriation of cultural resources, and the issues with gatekeeping knowledge. With our voices and purchasing powers, we can continue to counter exploitative systems by purchasing seeds only when we need to and from independent plant

¹⁷³ Rowen White, "Reseeding the Food System," *Emergence Magazine*, October 11, 2019, <https://emergencemagazine.org/story/reseeding-the-food-system/>.

breeders who practice holding biodiversity and encourage seed saving. We can learn the stories of our seeds and how our ancestors interacted with them, and once we get to know them, we can write our own stories with them, too, so that our future generations can never be without guides.

No act can remedy the past violences committed against people of color and womb-bearers. Food movements are often inadequate in addressing the violent foundations of our food systems. Getting to the root of these problems requires more than a simple recognition. As Angela Davis reminds us, “radical simply means ‘grasping things by the root.’”¹⁷⁴ Such is confirmed by the natural world and scientists; The first sprouts from seed shells have been adequately named “radicales,” teaching us how small movements into growth and expansion, although invisible to those above the soil, are where change begins.¹⁷⁵ Our seed friends illustrate the power of engaging in small anti-capitalist and anti-commodification practices as radical and necessary.

Whisperings:

Poetry never comes when I ask it to,
 The breeze, answering, does today.
 Moving, colors a sea in names,
 Most unknown.
 A language I’m learning,
 (Haven’t learned yet.)
 Still held, cradled by untranslated whispers,
 (My favorite song is in Portugese)
 Blue,
 Un-blue,
 I move too.
 This time, I whisper back.
 Next time, I sing.

¹⁷⁴ Angela Davis, “Moe Lectureship in Women’s Studies” (Gustavus Adolphus College, April 12, 2006).

¹⁷⁵ “Radical: Plant Anatomy,” Britannica, accessed May 2, 2021, <https://www.britannica.com/science/radicle>.

Resources for Learning to Save & Tend Seed:

Online Resources:

Seed Seva Seasonal Mentorship Online Course (Sierra Seeds, by Rowen White):

<https://sierraseeds.org/seed-seva/>

Fruition's Seed Starting Academy:

<https://www.myfruitionseeds.com/Fruition's%20Seed%20Starting%20Academy>

Native Seed Search. "Seed Saving Instructions." Accessed April 22, 2021.

<https://www.nativeseeds.org/pages/seed-saving-instructions>.

Community Seed Network. "Seed Saving Resources." Accessed April 22, 2021.

<https://www.communityseednetwork.org/resources>

Organic Seed Alliance. "A Seed Saving Guide for Gardeners and Farmers." Accessed April 22, 2021.

<https://seedalliance.org/publications/seed-saving-guide-gardeners-farmers/>

Books & Chapters:

Ashworth, Suzanne. *Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners*. 2nd ed. Seed Savers Exchange, 2002.

Coykendall, John, and Christina Melton. *Preserving Our Roots: My Journey to Save Seeds and Stories*. The Southern Table. LSU Press, 2019.

Maxi'diwiac. *Buffalo Bird Woman's Garden*. Vol. 9. Minneapolis: University of Minnesota, 1917. <https://digital.library.upenn.edu/women/buffalo/garden/garden.html>.

Penniman, Leah. "Chapter Six: Saving Seeds." In *Farming While Black: Soul Fire Farm's Practical Guide to Liberation on the Land*. United States of America: Chelsea Green, 2018.

Bibliography

Primary Sources:

- “2007 Census of Agriculture: Small Farms.” United States Department of Agriculture, National Agricultural Statistics Service, 2007.
https://www.nass.usda.gov/Publications/AgCensus/2007/Online_Highlights/Fact_Sheets/Farm_Numbers/small_farm.pdf.
- “Black Producers.” In *2017 Census of Agriculture*. United States Department of Agriculture, 2017.
https://www.nass.usda.gov/Publications/Highlights/2019/2017Census_Black_Producers.pdf.
- Aweri, Mahlikah. “Seed Rematriation & Vital Pathways of the Garden.” *Indigenize! A Growing Culture: Hunger for Justice Series*, October 12, 2020.
<https://www.youtube.com/watch?v=zbSYwvw4QFA>.
- ClimateClock.World. “The Climate Clock.” Accessed March 29, 2021.
<https://climateclock.world>.
- “Changing the Narrative About Native Americans: A Guide for Allies.” *Reclaiming Native Truth*, 2018, 3–35.
- Davis, Angela. “Moe Lectureship in Women’s Studies.” *Gustavus Adolphus College*, April 12, 2006.
- Friends of the Earth. “Poll: Farmers Overwhelmingly Oppose Bayer Monsanto Merger,” March 8, 2018.
<http://foe.org/news/poll-farmers-overwhelmingly-oppose-bayer-monsanto-merger/>.
- Gay, Ross. “Thank You.” *Poetry Foundation*, April 12, 2021.
<https://www.poetryfoundation.org/poems/92120/thank-you-587653381d670>.
- Greene, K. “Hudson Valley Seed Company and Seedshed.” Interview by Melina Roise, February 15, 2021.
- Harjo, Joy. “Singing Everything.” In *An American Sunrise*, 53. W.W. Norton & Company, 2019.
- Hudson Valley Seed Company. “Art Packs.” Accessed March 23, 2021.
<https://hudsonvalleyseed.com>.
- “Johnny’s Selected Seeds 2021 Catalog,” (Maine: Johnny’s Seeds, 2021), 2-242.
- Kleinman, Nate. “Experimental Farm Network and Cooperative Gardens Commission.” Interview by Melina Roise. February 24, 2021.

- Lujan Grisham, Michelle. H.R.3782 - 113th Congress (2013-2014): Native American Seeds Protection Act of 2013, Pub. L. No. HR 3782 (2014).
<https://www.congress.gov/bill/113th-congress/house-bill/3782>.
- Maxi'diwiac, *Buffalo Bird Woman's Garden*, vol. 9 (Minneapolis: University of Minnesota, 1917), <https://digital.library.upenn.edu/women/buffalo/garden/garden.html>.
- National Young Farmers Coalition. "Statement on Farm Workers and COVID-19." Accessed April 11, 2021. <https://www.youngfarmers.org/farmworkerscovid19/>.
- Nelson, Melissa. "The Native Seed Revolution." Accessed September 10, 2020.
<https://www.nativeseedpod.org/podcast/2018/episode-1-the-natural-law-of-seeds>.
- "Official Site of the Delaware Tribe of Indians » Some of the Ways of the Delaware Indian Women." Accessed January 10, 2021.
<http://delawaretribe.org/blog/2016/08/07/some-of-the-ways-of-the-delaware-indian-women/>.
- "Homestead Act (1862)," *Our Documents*, accessed October 19, 2020.
<https://www.ourdocuments.gov/doc.php?flash=false&doc=31>.
- "Transcript of Dawes Act (1887)," *Our Documents*, accessed October 19, 2020.
<https://www.ourdocuments.gov/doc.php?flash=false&doc=50&page=transcript>.
- "The Open Source Seed Initiative: Growing Access to a Liberated Domain of Plant Genetic Diversity." Open Source Seed Initiative, December 2017.
- Page-Mann, Petra. "Seeds, Extractive Systems & How We Move Forward Together." Interview by Melina Roise. February 10, 2021.
- . "Saving Our Seeds, Saving Ourselves." September 3, 2020.
<https://fruitionseeds.mykajabi.com/saving%20seeds>.
- Rich, Adrienne. "Fox." In *Fox*, 25. W.W. Norton & Company, 2001.
- Rothschild, Connor. "Mapping Police Violence," 2021, <https://mappingpoliceviolence.org/>.
- Santistevan, Miguel. "A Declaration of Seed Sovereignty: A Living Document for New Mexico." Traditional Native American Farmers' Association (TNAFA) and the New Mexico Acequia Association (NMAA), March 11, 2006.
<http://www.tnafa.org/uploads/6/6/3/4/66345041/seeddeclaration.pdf>.
- "Southern Exposure Seed Exchange 2021 Catalog and Garden Guide." Mineral, VA: Southern Exposure Seed Exchange, 2021. www.southernexposure.com.
- Taylor, Owen, and Chris Bolden-Newsome. "Ira Wallace and Southern Exposure Seed Exchange." *Seeds and Their People*, n.d.
- *Tickell, Joshua, and Rebecca Harrell Tickell. "Kiss the Ground." Benson Productions, April 2020.

Toasted Sister Podcast. “The Seed Path.” Accessed September 10, 2020.

<https://soundcloud.com/toastedsisterpodcast/e5-rowen-white-the-seed-path>.

“United Nations Declaration on the Rights of Indigenous Peoples.” United Nations General Assembly, Sixty-first Session, 2007.

USDA National Agricultural Library. “USDA Census of Agriculture. U.S. Statistics on Women and Minorities on Farms and in Rural Areas,” 2014.

<https://www.nal.usda.gov/afsic/us-statistics-women-and-minorities-farms-and-rural-areas>.

Via Campesina. “Food Sovereignty: Via Campesina,” January 15, 2003.

<https://viacampesina.org/en/food-sovereignty/>.

White, Rowen. “Fertile Resistance and Reconciliation.” *Sierra Seeds* (blog), April 13, 2018.

<https://sierraseeds.org/fertile-resistance-and-reconciliation/>.

———. “Reseeding the Food System.” *Emergence Magazine*. October 11, 2019,

<https://emergencemagazine.org/story/reseeding-the-food-system/>.

———. “Seed Rematriation.” *Sierra Seeds* (blog), March 19, 2018.

<https://sierraseeds.org/seed-rematriation/>.

———. “The Seed Apothecary.” *Sierra Seeds* (blog), February 17, 2014.

<https://sierraseeds.org/the-seed-apothecary/>.

Washington, Karen. “Food Justice Is Racial Justice.” *National Farm to School Network*, October 14, 2020.

Wilkinson, Grace. “Praise Song for the Kitchen Ghosts.” *Emergence Magazine*, September

10, 2019. <https://emergencemagazine.org/story/praise-song-for-the-kitchen-ghosts/>.

Yoshino, Rebecca. “Introduction to Seedkeeping Workshop.” Bard College, October 16, 2020.

Yoon, MK. “Roan Dream.” In *Resilience*, 1:29. Folklore For Resistance, 2020.

Young, Ayana, and Rowen White. “Seed Rematriation and Fertile Resistance,” *For the Wild*, July 22, 2020,

<https://forthewild.world/listen/rowen-m-white-on-seed-rematriation-and-fertile-resistance-193>.

Secondary Sources:

“3 More Tribes Sign International Buffalo Treaty.” *AP NEWS*, October 10, 2019, sec. General News. <https://apnews.com/64d9f3cfcf8d424ba54a740196c26e58>.

*“Agricultural History,” *National Agricultural Library*. United States Department of Agriculture, Accessed October 25, 2020.

<https://www.nal.usda.gov/topics/agricultural-history>.

* denotes a critiqued source not recommended for consumption without further context.

- Altieri, Miguel A. *Agroecology: The Science of Sustainable Agriculture*. 2nd ed. Boulder, CO: Westview Press, 1995.
- Amelinckx, Andrew. "The Pilgrims Had No Idea How to Farm Here. Luckily, They Had the Native Americans," *Modern Farmer*, November 23, 2016.
<https://modernfarmer.com/2016/11/pilgrims-no-idea-farm-luckily-native-americans/>.
- Anderson, M. K. *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*. University of California Press, 2013.
- Andow, David, Theresa Bauer, Mark Belcourt, Paul Bloom, Brenda Child, Jill Doerfler, Amber Eule-Nashoba et al. "Wild Rice White Paper: Preserving the Integrity of Manoomin in Minnesota." In *People Protecting Manoomin: Manoomin Protecting People: A Symposium Bridging Opposing Worldviews*. Mahnomen, MN, White Earth Reservation, pp. 25-27. 2009.
- *Arsenault, Chris. "Only 60 Years of Farming Left If Soil Degradation Continues." *Scientific American*, December 5, 2014, Sustainability edition.
<https://www.scientificamerican.com/article/only-60-years-of-farming-left-if-soil-degradation-continues/>.
- Barker, Debbie. "History of Seed in the U.S. The Untold American Revolution." Center For Food Safety, August 2012.
https://www.centerforfoodsafety.org/files/seed-report-for-print-final_25743.pdf.
- Bennett, M.K. "The Food Economy of the New England Indians, 1605-75." *The Journal of Political Economy*, Food Research Institute, Stanford University, LXIII, no. 5 (October 1955): 369-95.
- *Bidwell, Percy Wells, and John I. Falconer. *History of Agriculture in the Northern United States 1620-1860*. American Economic History. New York: Peter Smith, 1941.
- Cabe, Delia. "Angola State Prison: A Short History." *Journalism School of Columbia University*, April 2010.
- Black, Mary E. "Maidens and Mothers: An Analysis of Hopi Corn Metaphors." *Ethnology* 23, no. 4 (October 1984): 279-88.
- Bolger, Diane. "The Dynamics of Gender in Early Agricultural Societies of the Near East." *Signs: Journal of Women in Culture and Society* 35, no. 2 (January 2010): 503-31.
<https://doi.org/10.1086/605512>.
- Bowring, Finn. *Science, Seeds, and Cyborgs: Biotechnology and the Appropriation of Life*. Verso, 2003.
- Bradford, Jason. *The Future Is Rural: Food System Adaptations to the Great Simplification*. Corvallis, Oregon: Post Carbon Institute, 2019. resilience.org, postcarbon.org.

* denotes a critiqued source not recommended for consumption without further context.

- Breen, Sheryl D. "Saving Seeds: The Svalbard Global Seed Vault, Native American Seed Savers, and the Problems of Property." *Journal of Agriculture, Food Systems, and Community Development* 5, no. 2 (Winter -2015 2014): 39–52.
- Brooks, Lisa. *Our Beloved Kin: A New History of King Philip's War*. Henry Roe Cloud Series on American Indians and Modernity. New Haven: Yale University Press, 2018.
- . *The Common Pot: The Recovery of Native Space in the Northeast*. Indigenous Americas Series. University of Minnesota Press, 2008.
- Bryan Endres, A. "State Authorized Seed Saving: Political Pressures and Constitutional Restraints." *Drake Journal of Agricultural Law* 9 (n.d.): 323–56.
- Bugos, Claire. "The Myths of the Thanksgiving Story and the Lasting Damage They Imbue." *Smithsonian Magazine*, November 26, 2019.
<https://www.smithsonianmag.com/history/thanksgiving-myth-and-what-we-should-be-teaching-kids-180973655/>.
- Cajete, Gregory. "Telling A Special Story." In *Native Science: Natural Laws of In*, n.d.
- . "Native Science and Sustaining Indigenous Communities." In *Traditional Ecological Knowledge*, edited by Melissa Nelson and Daniel Shilling. Cambridge University Press, n.d.
- Cameron, Catherine M., Paul Kelton, and Alan C. Swedlund. *Beyond Germs: Native Depopulation in North America*. University of Arizona Press, 2015.
- Cargill, Kima. *Food Cults: How Fads, Dogma, and Doctrine Influence Diet*. Rowman & Littlefield, 2016.
- Carney, Judith A, and Richard Nicholas Rosomoff. *In The Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World*. Berkeley and Los Angeles, California: University of California Press, 2009.
- Cassidy, Emily S, Paul C West, James S Gerber, and Jonathan A Foley. "Redefining Agricultural Yields: From Tonnes to People Nourished per Hectare." *Environmental Research Letters* 8, no. 3 (September 1, 2013): 034015.
<https://doi.org/10.1088/1748-9326/8/3/034015>.
- Chatelain, Ryan. "Agriculture Secretary: Black Farmers Received 0.1% of COVID Relief Funding Under Trump," *Spectrum News New York 1*, March 5, 2021.
<https://www.nyl.com/nyc/all-boroughs/politics/2021/03/25/agriculture-secretary--black-farmers-received-0-1--of-covid-relief-funding-under-trump>.
- Chapman, Susannah, and Tom Brown. "Apples of Their Eyes: Memory Keepers of the American South." In *Seeds of Resistance, Seeds of Hope: Place and Agency in the*

- Conservation of Biodiversity*, edited by Virginia Nazarea, Robert E. Rhoades, and Jenna Andrews-Swann. Tuscon: University of Arizona Press, 2013.
- Chaya, Monya S. “Women as Key Agents of Change to Agriculture, Food and Nutrition,” *Farming First*, July 4, 2019.
<https://farmingfirst.org/2019/07/women-as-key-agents-of-change-to-agriculture-food-and-nutrition/>.
- *Center on Budget and Policy Priorities. “Chart Book: SNAP Helps Struggling Families Put Food on the Table.” Accessed February 19, 2021.
<https://www.cbpp.org/research/food-assistance/chart-book-snap-helps-struggling-families-put-food-on-the-table>.
- Clarke, Adele, and Donna Haraway. *Making Kin Not Population*. Chicago: Prickly Paradigm Press, 2018.
- Clement, Grace. “The Ideal Types of Care and Justice.” In *Care, Autonomy, and Justice: Feminism and the Ethic of Care*. Westview Press, 1996.
- Cole, Teju. “The White-Savior Industrial Complex - The Atlantic,” March 21, 2012.
<https://www.theatlantic.com/international/archive/2012/03/the-white-savior-industrial-complex/254843/>.
- “Cooperative Gardens Commission 2020 Report.” Cooperative Gardens Commission, 2020.
- Crittenden, Alyssa N., and Stephanie L. Schnorr. “Current Views on Hunter-Gatherer Nutrition and the Evolution of the Human Diet.” *American Journal of Physical Anthropology* 162 (2017): 84–109. <https://doi.org/10.1002/ajpa.23148>.
- Cronon, William. *Changes in the Land: Indians, Colonists, and the Ecology of New England*. New York: Hill and Wang, 1983.
- *Crosby, Alfred W. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*. Cambridge, UK: Cambridge University Press, 1986.
- *———. *The Columbian Exchange: Biological and Cultural Consequences of 1492*. Contributions in American Studies 2. Westport: Greenwood Press, 1972.
- “Culture of the Earth: The Archaeology of the Ornamental Plant Nursery and an Antebellum Slave Cabin at Thomas Jefferson’s Poplar Forest.” *Poplar Forest Department of Archaeology and Landscapes*, 2010.
- Daniel, Pete. *Dispossession: Discrimination Against African American Farmers in the Age of Civil Rights*. University of North Carolina Press, 2013.
- Dauids, Dorothy. “A Brief History of the Mohican Nation Stockbridge-Munsee Band.” Stockbridge-Munsee Historical Committee, Spring 2004.

<https://mohican.com/mt-content/uploads/2015/10/a-brief-history-of-the-mohican-nation-stockbridge-munsee-band-2004.pdf>.

Dean, Sam. “The Etymology of the Word ‘Corn.’” *Bon Appetit*, July 11, 2013.

DeJohn Anderson, Virginia. “King Philip’s Herds: Indians, Colonists, and the Problem of Livestock in Early New England.” *The William and Mary Quarterly* 51, no. 4 (October 1994): 601–24.

DeLucia, Christine. “Terrapolitics in the Dawnland: Relationality, Resistance, and Indigenous Futures in the Native and Colonial Northeast.” *New England Quarterly* XCII, no. 4 (December 2019): 548–83.

———. “The Memory Frontier: Uncommon Pursuits of Past and Place in the Northeast after King Philip’s War.” *The Journal of American History* 98, no. 4 (2012): 975–97.

Deppe, Carol. “Freelance Plant Breeding.” Edited by Irwin Goldman. *Plant Breeding Review* 44, no. 1 (2021).

Deppe, Carol, and Makenna Goodman. “Food in Uncertain Times: How to Grow and Store the Five Crops You Need to Survive.” *Chelsea Green Publishing* (blog), 2020.

Dockery, Chris. “Heirloom Seed and Story Keepers: Arts-Based Research as Community Discourse in Southern Appalachia.” *Journal of Appalachian Studies* 20, no. 2 (Fall 2014): 207–23.

DOUNIAS, E., and A. FROMENT. “From Foraging to Farming among Present-Day Forest Hunter-Gatherers: Consequences on Diet and Health.” *The International Forestry Review* 13, no. 3 (2011): 294–304.

Eisenstein, Charles. *Sacred Economies: Money, Gift, and Society in the Age of Transition*. Berkeley, California: North Atlantic Books, 2011.

“Ending Violence Against Native Women.” Indian Law Resource Center, n.d.

<https://indianlaw.org/issue/ending-violence-against-native-women#:~:text=To%20the%20Indigenous%20Woman...be%20prosecuted%20by%20tribal%20governments>.

Engel, Jordan. “The Deforestation and Colonization of the United States.” *The Decolonial Atlas* (blog), November 3, 2014.

<https://decolonialatlas.wordpress.com/2014/11/03/the-deforestation-and-colonization-of-the-united-states/>.

Evans, Sarah. “Is Prison Labor the Future of Our Food System?” *Food First*, September 7, 2018. <https://foodfirst.org/is-prison-labor-the-future-of-our-food-system/>.

*Food and Agriculture Organization of the United Nations. “Crop Biodiversity: Use It or Lose It,” October 2010. <http://www.fao.org/news/story/en/item/46803/icode/>.

- Gaines, Patrice. “USDA Issued Billions in Subsidies This Year. Black Farmers Are Still Waiting for Their Share.” NBC News, October 28, 2020.
<https://www.nbcnews.com/news/nbcblk/usda-issued-billions-subsidies-year-black-farmers-are-still-waiting-n1245090>.
- Garthwaite, Kayleigh. “It’s Not the Hungry Who Gain Most from Food Banks – It’s Big Business” *The Guardian*, March 25, 2019, sec. Opinion.
<http://www.theguardian.com/commentisfree/2019/mar/25/big-business-food-banks-subsidise-reputation>.
- Grivno, Max. “Antebellum Mississippi,” *Mississippi History Now*. Mississippi Historical Society, July 2015.
<http://www.mshistorynow.mdah.ms.gov/articles/395/antebellum-mississippi>.
- Gourley, Katie. “IT STARTS WITH A SEED: EXPLORING PLACE-BASED SOCIO-ECOLOGICAL CARE AND ALTERNATIVE ECONOMIES IN COMMUNITY SEED SAVING INITIATIVES.” MA Diss., Harvard University Graduate School of Design, 2019.
- Gray, Margaret. *Labor and the Locavore*. Berkeley and Los Angeles, California: University of California Press, 2014.
- Gravalese, Stephanie. “This Chef Is Buying Land To Help Black Farmers Preserve Their Foodways.” *HuffPost*, July 2020.
https://www.huffpost.com/entry/40-acres-and-a-mule-black-farmers_1_5f0cb666c5b63cbc5eae62d7.
- “Guidelines for Considering Traditional Knowledges in Climate Change Initiatives,” Climate and Traditional Knowledges Workgroup, September 2014.
<http://climatetkw.wordpress.com/>.
- Haraway, Donna. “Companion Species, Mis-Recognition, and Queer Worlding.” In *Queering the Non/Human*, xxiv–xxvi. New York: Ashgate Publishing, 2008.
- . *Manifestly Haraway*. University of Minnesota Press: Minneapolis, 2016.
- . *Staying With The Trouble: Making Kin in the Chthulucene*. Experimental Futures: Technological Lives, Scientific Arts, Anthropological Voices. Durham and London: Duke University Press, 2016.
- Harcourt, Wendy, Ingrid L. Nelson. *Practising Feminist Political Ecologies: Moving Beyond the “Green Economy.”* London, UNITED KINGDOM: Zed Books, 2015.
<http://ebookcentral.proquest.com/lib/bard/detail.action?docID=2041740>.
- Held, Lisa. “The COVID Gardening Renaissance Depends on Seeds - If You Can Find Them.” *Civil Eats*, February 22, 2021.

<https://civileats.com/2021/02/22/the-covid-gardening-renaissance-depends-on-seeds-if-you-can-find-them/>.

Helicke, Nurcan Atalan. "Seed Exchange Networks and Food System Resilience in the United States." *Environmental Studies*, no. 5 (2015): 636–49.

Helmer, Jodi. "Be Prepared for a Possible Seed Shortage." *Modern Farmer* (blog), January 18, 2021. <https://modernfarmer.com/2021/01/be-prepared-for-a-possible-seed-shortage/>.

Hennessy, David A., Yuyuan Che, and Hongli Feng. "Rising Seed Costs & a Tale of Two Very Different Seeding Rates." *Michigan Farm News*. Accessed January 15, 2021. <https://www.michiganfarmnews.com/rising-seed-costs-a-tale-of-two-very-different-seeding-rates>.

Hofstadter, Richard. "The Myth Of The Happy Yeoman." *American Heritage* 7, no. 3 (April 1956). <https://www.americanheritage.com/myth-happy-yeoman>.

Holt-Giménez, Eric. "Food Security, Food Justice, or Food Sovereignty?" *Institute for Food and Development Policy*, Food First Backgrounder, 16, no. 4 (Winter 2010).

Howard, Philip. "Global Seed Industry Changes Since 2013." *Philip H. Howard* (blog), December 31, 2018. <https://philhoward.net/2018/12/31/global-seed-industry-changes-since-2013/>.

"Identifying and Countering White Supremacy Culture in Food Systems." Durham, North Carolina: Duke Sanford World Food Policy Center, September 2020.

Ikuta, Benjamin. "Genetically Modified Plants, Patents, and Terminator Technology: The Destruction of the Tradition of Seed Saving." *Ohio Northern University Law Review* 731 (2009).

Isenberg, Andrew. *The Destruction of the Bison: An Environmental History, 1750-1920*. Cambridge University Press, 2020.

———. "The Returns of the Bison: Nostalgia, Profit, and Preservation." *Environmental History* 2, no. 2 (April 1997): 179–96.

Johnson, Rhiannon. "13-Year-Old Anishinaabe Water Advocate to Speak at United Nations." *CBC News*, December 14, 2017. <https://www.cbc.ca/news/indigenous/autumn-peltier-anishinaabe-water-advocate-un-1.4448454>.

Jones, David S. "Virgin Soils Revisited." *The William and Mary Quarterly* 60, no. 4 (2003): 703–42. <https://doi.org/10.2307/3491697>.

Karstensen, Rebecca. "The History of Seed Saving." *Indiana University Bloomington*, October 25, 2017. <https://blogs.libraries.indiana.edu/wyliehouse/2017/10/25/the-history-of-seed-saving/>.

- Kloppenborg, Jack. "Seeds, Sovereignty, and the Via Campesina: Plants, Property, and the Promise of Open Source Biology." Department of Community and Environmental Sociology of the University of Wisconsin-Madison, November 2008.
- . "Social Theory and the de/Reconstruction of Agricultural Science: Local Knowledge for an Alternative Agriculture." *Rural Sociology* 56, no. 4 (Winter 1991): 519–48.
- *Kretchmer, Harry. "Global Hunger Fell for Decades, but It's Rising Again." *World Economic Forum*, July 23, 2020.
<https://www.weforum.org/agenda/2020/07/global-hunger-rising-food-agriculture-organization-report/>.
- Lustgarten, Abraham. "How Climate Migration Will Reshape America." *The New York Times*, September 15, 2020, sec. Magazine.
<https://www.nytimes.com/interactive/2020/09/15/magazine/climate-crisis-migration-america.html>.
- Luthin, Jessamy R. "From Wanted to Weeds: A Natural History of Some of New England's Introduced Plants." *Maine Agriculture* 49, no. 2 (2015): 132–49.
- MacDonald, James M, Penni Korb, and Robert A Hoppe. "Farm Size and the Organization of U.S. Crop Farming," *United States Department of Agriculture*, August 2013, 61.
- Macht, David. "Calendula or Marigold in Medical History and in Shakespeare." *Bulletin of the History of Medicine* 29, no. 6 (1955): 491–502.
- Manning, Richard. *Against The Grain: How Agriculture Hijacked Civilization*. New York: North Point Press, 2004.
- McCune, Letitia M. "The Protection of Indigenous Peoples' Seed Rights during Ethnobotanical Research." *Society of Ethnobiology*, *Ethnobiology Letters*, 9, no. 1 (2018): 67–75.
- Merchant, Carolyn. *Ecological Revolutions: Nature, Gender, and Science in New England*. H. Eugene and Lillian Young Lehman Series. Chapel Hill: University of North Carolina Press, 2010.
- . *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: Harper & Row, 1983.
- Mertz, Leslie A. "The Exchange of Plant and Animal Species Between the New World and Old World." *Cengage*, accessed October 19, 2020.
<https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/exchange-plant-and-animal-species-between-new-world-and-old-world>.

- Merritt, Keri Leigh. "Land and the Roots of African-American Poverty." *Aeon*, March 11, 2016. <https://aeon.co/ideas/land-and-the-roots-of-african-american-poverty>.
- Mihesuah, Devon. *Recovering Our Ancestors' Gardens: Indigenous Recipes and Guide to Diet and Fitness*. Revised. At Table Series. Lincoln NE: University of Nebraska Press, 2020.
- Mishan, Ligaya. "The Activists Working to Remake the Food System." *The New York Times*, February 19, 2021, sec. T Magazine. <https://www.nytimes.com/2021/02/19/t-magazine/food-security-activists.html>.
- Mohican Agriculture. "Mohican Nation Agriculture," accessed September 21, 2020, Bowler, WI. <https://rainerscott.wixsite.com/mohicanagriculture>.
- Montgomery, David R. *Dirt: The Erosion of Civilizations*. Berkeley and Los Angeles, California: University of California Press, 2008.
- Moore, Antonio. "Who Owns Almost All America's Land?" *Inequality.org*, February 15, 2016. <https://inequality.org/research/owns-land/>.
- Moore, Jason. *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. PM Press/Kairos, 2016.
- Morehouse, Lisa. "Farming Behind Barbed Wire: Japanese-Americans Remember WWII Incarceration." *National Public Radio*, February 19, 2017, sec. The Salt. <https://www.npr.org/sections/thesalt/2017/02/19/515822019/farming-behind-barbed-wire-japanese-americans-remember-wwii-incarceration>.
- Morgan, Jennifer L. *Laboring Women: Reproduction and Gender in New World Slavery*. Philadelphia: University of Pennsylvania Press, 2004.
- Moss, Michael. *Salt Sugar Fat: How the Food Giants Hooked Us*. New York: Random House, 2013.
- National Association of Plant Breeders (NAPB). "What Is Plant Breeding?" Accessed February 20, 2021. <https://www.plantbreeding.org/content/what-is-plant-breeding>.
- Neptune, George. "Naming the Dawnland: Wabanaki Place Names on Mount Desert Island." *Chebacco: The Magazine of the Mount Desert Island Historical Society* 16 (2015): 92–108.
- Newkirk II, Vann R. "The Great Land Robbery: This Land Was Our Land." *The Atlantic*, September 2019. <https://www.theatlantic.com/magazine/archive/2019/09/this-land-was-our-land/59474>.
- Newman, Chris. "Small Family Farms Aren't the Answer." Medium, July 9, 2020. <https://heated.medium.com/small-family-farms-arent-the-answer-742b6684857e>.

- . *Wèlànkontèwakàn 'haki, a Story of Indigenous Agriculture*. Self-Published, 2020.
<https://www.patreon.com/sylvanaqua/posts>.
- . “Yes, Organic Farming Will Kill Us All.” Medium, February 18, 2017.
<https://medium.com/newco/yes-organic-farming-will-kill-us-all-12d900979cf2>.
- Nhanenge, Jytte. “Ecofeminism: What It Is and Why It Is Important.” In *Ecofeminism: Towards Integrating the Concerns of Women, Poor People, and Nature into Development*, 117–77. Lanham, Md: University Press of America, Inc., 2011.
- Nixon, Rob. “Introduction.” In *Slow Violence and the Environmentalism of the Poor*, 1–54. Cambridge, Massachusetts: Harvard University Press, 1954.
- Nye, Gillian. “The Flower of the Sun.” Roots Herbal Apothecary, May 2012.
<http://www.rootsoriginals.com/media/print/lighthouse-peddler5-12.html>.
- O’Brien, Jean M. *Firsting and Lasting: Writing Indians out of Existence in New England*. Indigenous Americas Series. Minneapolis: University of Minnesota Press, 2010.
- O’Keefe, James H., and Loren Cordain. “Cardiovascular Disease Resulting From a Diet and Lifestyle at Odds With Our Paleolithic Genome: How to Become a 21st-Century Hunter-Gatherer.” *Mayo Clinic Proceedings* 79, no. 1 (January 1, 2004): 101–8.
<https://doi.org/10.4065/79.1.101>.
- “Our GM Food Fears Aren’t Irrational.” *Wall Street Journal*, November 8, 2013, sec. Opinion.
<https://online.wsj.com/article/SB10001424052702304527504579167700690265822.html>.
- Palmater, Pamela. “Shining Light on the Dark Places: Addressing Police Racism and Sexualized Violence against Indigenous Women and Girls in the National Inquiry.” *Canadian Journal of Women and the Law* 28, no. 2 (2016): 253–84.
- Pearsall, Sarah. “Recentering Indian Women in the American Revolution.” In *Why You Can’t Teach United States History Without American Indians*, 57–70. University of North Carolina Press, 2015.
- Penniman, Leah. *Farming While Black: Soul Fire Farm’s Practical Guide to Liberation on the Land*. United States of America: Chelsea Green, 2018.
- Phillips, Catherine. *Saving More Than Seeds: Practices and Politics of Seed Saving*. Burlington, VT: Ashgate Publishing Company, 2013.
- Puig de la Bellacasa, Maria. *Matters of Care: Speculative Ethics in More Than Human Worlds*. Posthumanities 41. Minneapolis: University of Minnesota Press, n.d.

- Pulsipher, Lydia Mihelic. "The Landscapes and Ideational Roles of Caribbean Slave Gardens." In *The Archaeology of Garden and Field*. Philadelphia: University of Pennsylvania Press, 1994: 202-222.
- SeedLinked. "Regional Seed Companies Map." Accessed February 16, 2021.
<https://www.seedlinked.com/regional-seed-companies-map/>.
- Rhoades, Robert E. "When Seeds Are Scarce: Globalization and the Response of Three Cultures." In *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*, edited by Virginia Nazarea, Robert E. Rhoades, and Jenna Andrews-Swann. Tuscon: University of Arizona Press, 2013.
- Rosenzweig, Mark R. "The Demand for Children in Farm Households." *Journal of Political Economy* 85, no. 1 (1977): 123-46.
- Rountree, Helen C. "Powhatan Indian Women: The People Captain John Smith Barely Saw." *Ethnohistory* 45, no. 1 (Winter 1998): 1-29.
- Royalle, Candy. "Ali Cobby Eckermann's Poetry: Inspiring Those of Us Who Feel like Outsiders." *The Guardian*, 2017.
<https://www.theguardian.com/books/2017/mar/04/ali-cobby-eckermanns-poetry-inspiring-those-of-us-who-feel-like-outsiders>.
- Rubiano, María Paula. "Centuries After Their Loss and Theft, Native American Seeds Are Reuniting With Their Tribes." *Atlas Obscura*, September 8, 2020.
<http://www.atlasobscura.com/articles/native-seed-rematriation>.
- Sakellaridis, Faye. "Ecofeminism: Women's Rights Are Nature's Rights." *Synergetic Press* (blog), July 10, 2020.
<https://www.synergeticpress.com/ecofeminism-womens-rights-are-natures-rights/>.
- Salmón, Enrique. "Kincentric Ecology: Indigenous Perceptions of the Human-Nature Relationship." *Ecological Society of America*, Ecological Applications, 10, no. 5 (October 2000): 1327-32.
- Santiago, Amanda Luz Henning. "The Online Seed-Swapping Communities Bringing the Internet Back to Nature." *Mashable*, October 4, 2018.
<https://mashable.com/article/online-seed-swapping-communities/>.
- Schaal, Barbara. "Plants and People: Our Shared History and Future." *PLANTS, PEOPLE, PLANET* 1, no. 1 (2019): 14-19. <https://doi.org/10.1002/ppp3.12>.
- Schaffer, Kay, and Sidonie Smith. "Conjunctions: Life Narratives in the Field of Human Rights." *Biography*, Personal Effects: The Testimonial Uses of Life Writing, 27, no. 1 (Winter 2004): 1-24.

- Scott, James C. *Against the Grain: A Deep History of the Earliest States*. New Haven: Yale University Press, 2017.
- “Seed Giants vs. U.S. Farmers.” *Center for Food Safety and Save Our Seeds*, 2013. https://www.centerforfoodsafety.org/files/seed-giants_final_04424.pdf.
- “Seed Saving & Seed Sovereignty Fact Sheet.” *First Nations Development Institute*, 2015. <https://www.firstnations.org/wp-content/uploads/publication-attachments/2015-Fact-Sheet-11-Seed-Saving-and-Seed-Sovereignty.pdf>.
- Seeds of Hope, a Short Documentary on the Native American Seed Sanctuary*. SEEDSHED, Farm Hub, 2018. <https://hvfarmhub.org/seeds-hope-now-available-online-streaming/>.
- Sellars, Sarah, and Gary Schnitkey. “Growth Rates of Fertilizer, Pesticide, and Seed Costs over Time.” *farmdoc Daily*, University of Illinois at Urbana-Champaign, 6, no. 130 (July 12, 2016). <https://farmdocdaily.illinois.edu/2016/07/growth-rates-of-fertilizer-pesticide-seed-costs.html>.
- Senier, Siobhan. “Commentary: Sovereignty and Sustainability in Mohegan Ethnobotanical Literature.” *The Journal of Ecocriticism* 6, no. 1 (Spring 2014).
- “Sharecropping in Mississippi.” *PBS*. In “American Experience. Accessed November 8, 2020. <https://www.pbs.org/wgbh/americanexperience/features/emmett-sharecropping-mississippi/>.
- Shiva, Vandana. “The Stolen Harvest of Seed.” In *Stolen Harvest: The Hijacking of the Global Food Supply*, 79–93. Culture of the Land. University Press of Kentucky, 2016.
- Slaughter, Joseph. “A Question of Narration: The Voice in International Human Rights Law.” *Human Rights Quarterly* 19, no. 2 (May 1997): 406–30.
- Spretnak, Charlene. “ECOFEMINISM: OUR ROOTS AND FLOWERING,” 10.
- Staller, John E. “An Introduction to Maize Cobs and Cultures.” In *Maize Cobs and Cultures: History of Zea Mays L.*, 1–8. London New York: Springer Heidelberg Dordrecht, 2010.
- Steinauer-Scudder, Chelsea. “The Seeds of Ancestors: A Day at SoulFireFarm.” *Emergence Magazine*, 2021. <https://emergencemagazine.org/essay/the-seeds-of-ancestors/>.
- Subramaniam, Banu. *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity*. Urbana, Chicago, and Springfield: University of Illinois Press, 2014.
- Svalbarði Polar Iceberg Water. “What Seeds Are in the Svalbard Global Seed Vault?” Accessed January 25, 2021. <https://svalbardi.com/blogs/news/what-seeds-are-in-the-svalbard-global-seed-vault>.

- Sze, Julie. *Environmental Justice in a Moment of Danger*. Oakland, California: University of California Press, 2020.
- Takle, Eugene S., David Gustafson, Roger Beachy, Gerald C. Nelson, Daniel Mason-D’Croze, and Amanda Palazzo. “US Food Security and Climate Change: Agricultural Futures.” *Economics: The Open-Access, Open-Assessment E-Journal* 7, no. 2013–34 (2013): 1. <https://doi.org/10.5018/economics-ejournal.ja.2013-34>.
- Theobald, Brianna. “A 1970 Law Led to the Mass Sterilization of Native American Women. That History Still Matters.” *Time*. Accessed September 15, 2020. <https://time.com/5737080/native-american-sterilization-history/>.
- Thomas, Mathieu, Julie Dawson, Isabelle Goldringer, and Christophe Bonneuil. “Seed Exchanges, a Key to Analyze Crop Diversity Dynamics in Farmer-Led on-Farm Conservation.” *Genetic Resources and Crop Evolution* 58, no. 3 (2011): 321–38.
- *Tickell, Joshua, and Rebecca Harrell Tickell. “Kiss the Ground.” Benson Productions, April 2020.
- Time, Indian. “A Matrilineal Society: The Mohawks.” *Indian Time*. Accessed January 10, 2021. <https://www.indiantime.net/story/2009/05/21/culture/a-matrilineal-society-the-mohawks/2236.html>.
- Todd, Zoe. “Fish, Kin and Hope: Tending to Water Violations in Amiskwaciwâskahikan and Treaty Six Territory.” *University of Chicago Press Afterall* (n.d.): 102–7.
- Toussaint, Kristin. “There’s a Disturbing Nexus of Organic Food and White Supremacists.” *Fast Company*, January 13, 2021. <https://www.fastcompany.com/90593995/theres-a-disturbing-nexus-of-organic-food-and-white-supremacists>.
- Tuck, Eve, and K. Wayne Yang. “Decolonization Is Not a Metaphor.” *Decolonization: Indigeneity, Education & Society* 1, no. 1 (n.d.): 1–40.
- Universite de Geneve. “Seeds Inherit Memories from Their Mother: Maternal and Environmental Control of Seed Dormancy Is Carried out through Novel Epigenetic Mechanisms.” *ScienceDaily*, March 26, 2019. <https://www.sciencedaily.com/releases/2019/03/190326105610.htm>.
- Vantrease, Dana. “Commod Bods and Frybread Power: Government Food Aid in American Indian Culture.” *The Journal of American Folklore* 126, no. 499 (Winter 2013): 55–69.
- Varanasi, Anuradha. “Is Organic Food Really Better for the Environment?” *State of the Planet: Earth Institute at Columbia University* (blog), October 22, 2019. <https://blogs.ei.columbia.edu/2019/10/22/organic-food-better-environment/>.

- Vernooy, Ronnie, Bhuwon Sthapit, Gloria Otieno, Pitambar Shrestha, and Arnab Gupta. "The Roles of Community Seed Banks in Climate Change Adaptation." *Development in Practice* 27, no. 3 (2017): 316–27.
- Vileisis, Ann. *Kitchen Literacy: How We Lost the Knowledge of Where Food Comes from and Why We Need to Get It Back*. Island Press, A Shearwater Press, 2008.
- Vine, Deloria, Jr. "Kinship with the World." In *Spirit and Reason: The Vine Deloria Jr. Reader*. Fulcrum Publishing, 1999.
- Vizenor, Gerald. *Survivance: Narratives of Native Presence*. U of Nebraska Press, 2008.
- Wall Kimmerer, Robin. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Canada: Milkweed Editions, 2013.
- Wall, Wendy. "Gender and the 'Citizen Indian.'" In *Writing the Range*, 202–29, 1997.
- Wang, Joy Y. "A Seed Library for Heirloom Plants Thrives in the Hudson Valley." *The New York Times*, October 6, 2010, sec. Home & Garden.
<https://www.nytimes.com/2010/10/07/garden/07seed.html>.
- Wayland, Drew. "Black Farmers Breathe New Life into Agriculture in the South," *Civil Eats*, October 30, 2020.
<https://civileats.com/2020/10/30/black-farmers-breathe-new-life-into-agriculture-in-the-south/>.
- Wills, Joe. "Food Security vs. Food Sovereignty: The Right to Food and Global Hunger," in *Contesting World Order?: Socioeconomic Rights and Global Justice Movements*, Globalization and Human Rights (Cambridge: Cambridge University Press, 2017), 94–150, <https://doi.org/10.1017/9781316809921.004>.
- Willis, John C. *Forgotten Time: The Yazoo-Mississippi Delta after the Civil War*. Charlottesville, Virginia: University of Virginia Press, 2017.
- W. E. B. Du Bois. "Chapter 7: Of the Black Belt." In *The Souls of Black Folk*, Chicago: A. C. McClurg and Co., 1903. Accessed
<https://etc.usf.edu/lit2go/203/the-souls-of-black-folk/4446/chapter-7-of-the-black-belt/>.
- . "The Freedmen's Bureau." *The Atlantic*, March 1, 1901.
<https://www.theatlantic.com/magazine/archive/1901/03/the-freedmens-bureau/308772/>.
- Welch, Kevin, and James Veteto. "Food from the Ancestors: Documentation, Conservation, and Revival of Eastern Cherokee Heirloom Plants." In *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*, edited by Virginia Nazarea, Robert E. Rhoades, and Jenna Andrews-Swann. Tuscon: University of Arizona Press, 2013.

- Whyte, Kyle. "Critical Investigations of Resilience: A Brief Introduction to Indigenous Environmental Studies & Sciences." American Academy of Arts & Sciences, 2018.
- . "Is It Colonial Deja Vu? Indigenous Peoples and Climate Justice." Edited by Joni Adamson, Michael Davis, and Hsinya Huang. *Earthscan Publications*, Humanities for the Environment: Integrating Knowledges, Forging New Constellations of Practice, November 2016, 88–104.
- . "Food Sovereignty, Justice and Indigenous Peoples: An Essay on Settler Colonialism and Collective Continuance." Edited by A Barnhill, T Doggett, and A Egan. *Oxford Handbook on Food Ethics*, 2017.
- . "Indigenous Women, Climate Change Impacts, and Collective Action." *Hypatia: Journal of Feminist Philosophy* 29, no. 3 (2014): 599–616.
- Wills, Joe. "Food Security vs. Food Sovereignty: The Right to Food and Global Hunger." In *Contesting World Order?: Socioeconomic Rights and Global Justice Movements*, 94–150. Globalization and Human Rights. Cambridge: Cambridge University Press, 2017. <https://doi.org/10.1017/9781316809921.004>.
- Wozniacka, Gosia. "Does Regenerative Agriculture Have a Race Problem?" *Civil Eats*, January 5, 2021. <https://civileats.com/2021/01/05/does-regenerative-agriculture-have-a-race-problem/>.
- Wynter, Sylvia. "1942: A New World View." In *Race, Discourse, and the Origin of the Americas*. Washington and London: Smithsonian Institution Press, n.d.
- Xiu Fen Shona, Loong. "The Eco-Native: Constructing a Self-Serving Ecological Other." *Folio Journal*, October 16, 2017. <https://foliojournal.wordpress.com/2017/10/16/the-eco-native-constructing-a-self-serving-ecological-other/>.
- Yong, Ed. "What America Lost When It Lost the Bison." *The Atlantic*, November 18, 2019. <https://www.theatlantic.com/science/archive/2019/11/how-bison-create-spring/602176/>.
- Zamora, Margarita. "Gender and Discovery." In *Reading Columbus*, 152–79. Latin American Literature and Culture. Berkeley and Los Angeles, California: University of California Press, 1993.
- Zentner, Emily. "What Happened To The Property Of Sacramento's Japanese American Community Interned During World War II?" *CapRadio*. June 4, 2019. <https://www.capradio.org/135196>.