

Seeds in the Archive:
Beyond Doomsday, Biopirates, and Vampires

Juliet Saxton
University of Arizona. Department of History
Presented at SSHA, November 19-22, 2026
julietsaxton@arizona.edu

Abstract:

Seeds have been interwoven with human history and practices for thousands of years, which has led to a level of mutuality as humans and seeds co-evolved alongside each other. This relationship has entered a new period where humans have created systems where harm outweighed benefit over the biodiversity of seeds, which has led to responsive human systems to protect and store seeds. These systems are typically labeled seed banks, though this paper explores how concepts like seed “libraries” or “archives” could better address equitable and accessible seed proliferation. Native seeds specifically have been protected in Indigenous practice and culture, whose practices have also declined under the same systems that afflict the seed: colonialism and capitalism. Seed archives and libraries can be an aspect of combating institutional seed practice, both from transnational seed corporations and agribusiness that treat seed as a controllable “raw material” and stagnant seed banks that do not account for seeds’ needs to adapt and be in continual use. By understanding Indigenous groups as the community base for native seeds, this paper explores how these seed libraries and archives can successfully protect seed, share seed, and create connections between different and new communities on the land. This is shown through examining Indigenous history and storytelling and recent histories of seeds archives in Southern Arizona.

Keywords: natural archives, seedbanks, seed vaults, seed libraries, seed archives, storytelling, indigenous sovereignty, Native Seed Search, San Xavier Cooperative Farm, biopiracy

The chiltepin seed anticipates the bird eating it—the seed germinates perfectly in the belly of a bird. This has to be a very particular bird that can resist the capsicum, which registers to us as spice, such as a curve-billed thrasher, whose waste would provide the seed dispersal necessary for the next generation of chiltepin to be born.¹ If you wanted to replicate this, which you can, you would have to get the temperature and moisture right enough to emulate this process, and then like the curve-billed thrasher, play accomplice to the next generation of chili plants. You would be one in a long line of growers going back 7,000 years, which derived most chiles and peppers from domesticating these wild chiltepins.²

Plants have their own means of advocating for their own reproduction and survival; they deploy seed strategies to this end: appealing to predators to spread them, hiding from predators under hard-coated shells, avoiding unfavorable conditions with lengths of dormancy, etc. Humans have long held a relationship of co-evolving together with seed; we are one aspect of seed strategy. We have a mutualistic relationship in which we derive food from seed and in return, maintain seed storage, spread, and cultivation to the next generation. Seeds co-evolve alongside their natural environment, including with the animals and plants surrounding them, adapting to their behaviors. This includes humans; seeds used for food or craft have gone through rigorous adaptations alongside humans, as they were selected, re-produced, adjusted, and adapted to suit human needs. This often aligns with the seed's agenda of proliferation. However, these cycles developed over millennia have been interrupted as biodiversity has begun to plummet. This history has entered a period where human intervention is causing more destruction to biodiversity than benefit.

¹ Joshua J. Tewksbury and Gary P. Nabhan, "Seed Dispersal: Directed Deterrence by Capsaicin in Chillies," *Nature (London)* (London) 412, no. 6845 (2001): 403–4.

² Native Seeds/SEARCH, "How to Grow Chiltepins," n.d., <https://images.nativeseeds.org/pdfs/Chiltepines.pdf>.

Seeds are not separate from human systems of governance. Organizations have emerged to protect, preserve, and share the diversity of native seeds. The system of storage includes vaults, banks, libraries, and laboratories. These storage systems interweave with human actors, replicating their social, political, economic systems. In these places of human intervention, seeds have fewer means to advocate for themselves—trapped in a seed storage unit, a seed would struggle to continue their natural cycle. They cannot orchestrate their escape from a jar in shut fridges, through locked doors, out of the building, and into the ground.

Seeds can also serve as historical sources as they encode environmental information that is region-specific; they tell the story of place. Seed banks and libraries can also be understood as archives. Seeds are unique among natural archives in that they are largely stored for continued use, and their continued use is what fuels their preservation. Seeds hold both a continuation of historical practice and embedded evolutionary history within their body. Examining seed storage as an archive can help integrate a more holistic view of the seed as an extension of culture, community, and history. Seeds, however, are still living and dialogue with archives in unique ways. I approach Arizona's seeds as a place of understanding seeds as sources and seed archives through organizations like Native Seed/SEARCH, San Xavier Cooperative Farm, and Ramona Farm. While native seeds in Arizona are living beings in their own right, they are also the evolutionary products of Indigenous stewardship and cultivation practices, interweaving their agency with Indigenous communities and peoples.

Seeds as the Source

Indigenous communities particularly felt the loss of seed diversity since colonization. In Arizona, this land dispossession began with the Spanish and accelerated through the twentieth

century as the environmental resources themselves receded due to the consequences of allotment, industry, and capitalistic extraction. Rivers ran dry, making farming extremely difficult for Native farmers, which led to a decline in native seed usage and sharing, as “local knowledge slips through the cracks of fragmentation.”³

Current systems exasperating loss of biodiversity are the systems that turn seeds into “raw materials” which can be controlled as commodities. The term “biopiracy” positions patents themselves as a form of piracy. Transnational seed corporations and global agribusiness use intellectual property rights to control seed access and seed regeneration; some companies even produce sterile seeds that cannot reproduce more seed.⁴ Vandana Shiva in *Biopiracy: The Plunder of Nature and Knowledge* describes this as the “the colonization of life itself” as corporations and agribusinesses become ways of continuing colonial expressions of power.⁵ Corporations that brazenly and freely took resources from the third world shortly tighten control over these resources once they are secured. While Indigenous groups diversely express a desire for seeds to be shared and continue their transformative processes, the need for real protections of seed diversity against these corporate giants continues urgently as well.

There has been a general loss of biodiversity. At least commercially, seed variety in the United States went from 307 commercially available corn seeds in the U.S. in 1903 to 12 available corn seeds in 1983. Amy Juan, director of San Xavier Cooperative Farm, describes how elders saw tepary bean seed varieties go from 12 colored varieties to 2 in San Xavier District—though thanks to seed conservation efforts, a wider variety has been regenerated.

Some seeds could have been totally lost. But in cases where Indigenous stewards had managed to save these seeds, it created the opportunity for their regeneration. Ramona Button

³ Vandana Shiva, *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology* (Zed Books, 1993), 12.

⁴ Tania Aguila-Way, “The Zapatista ‘Mother Seeds in Resistance’ Project: The Indigenous Community Seed Bank as a Living, Self-Organizing Archive.” *Social Text* 31, no. 1 (2014): 70.

⁵ Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (South End Press, 1997).

from Ramona Farms describes how in 1976 she found “a few seeds of the white and brown tepary beans in glass jars in a trunk in the old adobe house that I grew up in,” which spurred her into cultivating and helping the tepary bean reproduce again after it had become nearly extinct.⁶⁷ Her daughter, Velvet Button, describes how “the fields with Mom were our daycare. When I was little, I kept seeds in my jewelry box.”⁶⁸ Seeds kept in jars, in jewelry boxes; these seeds’ salvation came from the gentle acts of carefully tucking them away.

Seeds contain genealogies that can continue historical growing practices and simultaneously illuminate the past; as sociologist Ruth Mendum observes: “seeds are each like miniature encyclopedias of collective knowledge, articulating themselves and asserting their subjectivities, wherever and whenever they can.”⁶⁹ Seeds are constantly transforming due to the conditions and environments around them—and by doing so, embedding these transformations into their histories. The weakening of seed story happens alongside the dangerous encroachment of seed normativity. Human practices where ceremony, care, and stories were applied to seed helped preserve the *specific* history of that seed, valuing its diversity and adaption.

Creation stories can be an illuminating aspect of seed story. As Zayaan Khan explains, “stories of creation are important because they highlight the ancestral culture of seed and the enduring importance of oral tradition. This stands in stark contrast to the commoditized industrial culture of seed where it may seem that stories are silenced.”⁷⁰

⁶ Colin K. Khoury et al., “Crop Genetic Erosion: Understanding and Responding to Loss of Crop Diversity,” *New Phytologist* 233, no. 1 (2022): 84–118, <https://doi.org/10.1111/nph.17733>.

⁷ “Meet Arizona Agriculture’s Button Family,” Azfb.Org, October 16, 2019, <https://www.azfb.org/Article/Meet-Arizona-Agricultures-Button-Family>.

⁸ Kelly, “Resilience on the River.”

⁹ Ruth M. Mendum, “Subjectivity and Plant Domestication: Decoding the Agency of Vegetable Food Crops,” *Subjectivity* 28, no. 1 (2009): 331.

¹⁰ Zayaan Khan, “Making Heritage through Seed Stories,” in *Alternative Economies of Heritage: Sustainable, Anti-Colonial and Creative Approaches to Cultural Inheritance* (Routledge, 2025).

S-to:ta Bawĩ, for instance, tells us a story if we listen. The *S-to:ta Bawĩ* is the white tepary bean, a bean domesticated to suit the arid climate and lacking water of the Sonoran Desert. It has a smaller bean size, but historically, it could be dry-farmed on rain. If you attempt to increase the watering with modern watering techniques, you will actually yield less beans.

Jacob Butler is the chair of Native Seeds/SEARCH and District A Council Member for the Salt River Pima-Maricopa Indian Community-- he's an Onk Akimel O'odham, the Garden Director of Salt River Maricopa, and an artist who works with acid etching. Butler addressed how seeds were collected in Native Seed/SEARCH before his tenure, emphasizing how story leads him along a different route of understanding this seed: "We have stories on how these seeds were created...we have stories on how seeds came to the people...if you look at even those creation stories...you know, we say *bavĩ*, you guys say *bawĩ* right? The tepary beans. And they say when the night was created, they threw all of that *to:ta-bavĩ* up into the air, to create the stars, that *jewed ma:kai* threw them up into air to create the stars."¹¹ The white tepary bean was then brought by a lost child who wandered into the stars and gifted the bean to his grandfather: "So that is why the white bean is the child of the Desert People. It is born here and grows here and endures dryness. When it doesn't rain enough, the white bean still comes up. The Desert People will always eat it and live here."¹²

Through these stories we can understand the domestication of the *S-to:ta Bawĩ* as it evolved in relationship with Indigenous people in the arid Sonoran Desert for thousands of years. These stories reveal themselves through other means as well, such as seeds found in

¹¹ Andrew, *Ep. 20: Oidag Stories*. The reference between *bavĩ* and *bawĩ* is referring to how Akimel O'dham spelling and pronunciation differs from Tohono O'dham. Alternatively, the Akimel O'dham spelling can be found as "bafv" as well.

¹² Dean Saxton and Lucille Saxton, *Legends and Lore of the Papago and Pima Indians*, (Tucson: University of Arizona Press), 1973. This refers to the Tohono O'dham (Desert People) but these stories are shared in different forms among other groups of O'dham, like the Akimel O'dham.

archaeological sites and packrat middens. These stories differ from stories about seeds that travelled long distances such as *Hu:ñ* who was given by Corn Man.

This story begins with *hu:ñ* (corn) travelling from far away to come north to the desert, and in this specific corn seed's case, to the ancestral people of Southern Arizona and Northern Mexico. You can tell this story in a few ways. Corn man came from afar and gave *hu:ñ* to the O'odham; the story can depend on whose telling it, but Corn Man came to marry a woman, and he either succeeded or didn't succeed, but more importantly he gifted *hu:ñ* before he left. The woman stayed with him, "and when she came home, she knew the songs that made the corn grow."¹³ This is the local story of this variety of corn--*hu:ñ* grows and matures within 60 days and can be grown with the monsoon rain water in 'ak ciñ (wash) method (flood farming).¹⁴ *Hu:ñ* also has songs that accompany the planting. Efforts like San Xavier Cooperative Farm and Tohono O'odham Community Action have pushed to bring back this planting and seed culture back to the present, though there were times where Danny Lopez, leader, singer, and educator said of *hu:ñ* songs, "you don't hear it anymore, only for social occasions, because people don't plant anymore."¹⁵ Here decline in cultivation practices can be *heard*.

Butler goes on to detail how Corn Man's story encodes seed practice in how the Corn Man gave freely, and he "didn't dictate who he could be friends with after that," but despite this, "nowadays we say, this is our corn and no one else has the right to grow it but us." That's not how Butler describes understanding seeds, "why do we say that we can claim ownership over them? Why do we say we can dictate what this living being has the right to do and who it has the right make a relationship with?" He also rejected language around "allowing" seed to be used and "owning" seed.

¹³ Tohono O'odham Community Action et al., *From I'toi's Garden* (Blurb, 2010). This story is from Chona in *Papago Woman*.

¹⁴ Tohono O'odham Community Action et al., *From I'toi's Garden* (Blurb, 2010), 275-285.

¹⁵ Tohono O'odham Community Action et al., *From I'toi's Garden* (Blurb, 2010), 283.

These seeds can be understood as ancestor, but also as child. Butler describes how O'odham 60-day hun (corn) lost some of its strength by being given *too much* water and developing in 70-80 days. He describes this as “babying” the seed like a child. Short term efficiency of accessible water through irrigation can be a cause of longer-term unsustainability. The current water systems in Arizona are a short-term illusion maintained by extractive structures. “Babying” the seed in this way is raising a child too soft for such a difficult future. Amy Juan from San Xavier Cooperative Farm also emphasizes that they cannot be “spoiling our seeds. They also need to be tough. They need to come along with us into the future.”¹⁶

Butler also discusses certain elders not recognizing the black tepary bean seed, as white tepary beans hold a stronger place in living memory. He expressed that “we say these seeds are our relatives, but they are our kids too. We have an obligation to raise them and care for them, and when they come home, to accept them.”¹⁷ Amy Juan also stresses the importance of bringing these seeds home from seed banks and repositories so that “we can grow them the way we were taught and that these seeds are raised them with the same values as us, because there are ceremonies, there are songs.”¹⁸ The long history of seed adaptation alongside Native people can be detailed through story, practice, and through the seeds themselves. This story is still being written. As Butler said, “when seeds move on, they change, just like people.”

For the Indigenous activist in Chiapas as well, defense of maize diversity is explicitly tied to the struggle for history in Indigenous communities. A Tzotzil delegate said at the National Forum in Defense of Mexican Corn: “We are fighting to know our history, to rescue our culture, because we are well aware that a people who know their history shall never be condemned to

¹⁶ Privacy on the Ground, *Amy Juan on Food and Seed Sovereignty and Why the Knowledge Embedded in the Tiny Tepary Bean Is More than “Data,”* aired July 29, 2024, 1:00:48.

¹⁷ Andrew, *Ep. 20: Oidag Stories*.

¹⁸ Privacy on the Ground, *Amy Juan on Food and Seed Sovereignty and Why the Knowledge Embedded in the Tiny Tepary Bean Is More than “Data,”* aired July 29, 2024, 1:00:48.

repeat it, and shall never be defeated.”¹⁹ This movement reasserts a claim not only over seeds but sets seeds as a part of a larger resistance claim to historical agency. A Tzotzil activist from the highlands of Chiapas refers to corn as both ancestral practice and connection, and as part of them as a personhood literally, that they are “men and women of corn” as their “forefathers and foremothers created us from corn.”²⁰

Seed is not only a deeply embedded past and present practice, not only a source of food security and based in land/water sovereignty, not only a material, like pottery, closely associated with Indigenous use, but even more personally, the seed is a member of the tribe, it's an embodied lineage. It can come home. Velvet Button describes her mom, Ramona of Ramona Farms, communicating with elders who had not seen the tepary bean for a long time, who said, “you are bringing my mother home again.”²¹

Seed Archives

The logic of the seed bank is to hold on to genetic material for future use. The Svalbard Seed Vault, cheekily referred to as a “doomsday” vault in the Arctic, stores about 1.3 million seeds from around the world. This represents the strain of seed storage that focuses on “vault” or “bank” storage in which seeds are removed and preserved as a risk management technique. At points of seed extinction or disaster, the Svalbard Seed Vault will offer a point of redundancy. The depositor still maintains ownership of the seeds. While having multiple points of redundancy matters for all climate resilience, the Svalbard Seed Vault poses several issues with seed banking.

¹⁹ Aguila-Way, “The Zapatista”, 82.

²⁰ Aguila-Way, “The Zapatista,” 76-77.

²¹ Ronna Kelly, “Resilience on the River: How an Arizona Farmer Combines Tribal Traditions with Modern Practices | Growing Returns,” accessed December 11, 2025, <https://blogs.edf.org/growingreturns/2019/09/16/resilience-on-river-arizona-velvet-button/>.

The term “seed bank” is often used as a stand-in for any seed storage unit in literature; but diving deeper into the delineation between different seed storages can illustrate how the “banking” of seeds creates a system that fixes seeds in time, separates them from community, and like a financial bank, “implies creditors, debtors, and the building of reserve.”²² Zayaan Khan, a seed archivist in South Africa, describes “the way these banks create exclusive ‘scientific’ spaces that are often inaccessible to the people who have cared for the same seed for millennia; and critique of the way seed banks appear to hold a seed at a particular moment in time.”²³ Separation from location and community is a key aspect of the Svalbard Seed Vault and other seed banks. Seeds banks utilize a “a form of *ex situ* conservation, that is, where material is kept somewhere other than its original environment.”²⁴ This could have utility, for instance, in moments of conflict where local seed storage is destroyed.

But seeds are not fixed in time or removed from culture and people. The goal of seeds is not to preserve themselves for genetic research, but to spread successfully. Seeds cannot become dead items, like traditional archival material, where it is frozen in time solely for future research. Journalist John Seabrook describes how seed banks can become “museums,” “zoos,” or even “morgues.”²⁵ This echoes Amy Juan from San Xavier Cooperative Farm describing the seeds separated from her culture: “Those seeds that have been in freezers for 30 plus years. Knowing that they are still alive, there’s still some vitality there, a lot of time they are treated like museums, you know, like this collection of seeds, but they are still very much alive, and all of those seeds have families and communities that they came from.”²⁶

²² Mary Fawzy, “In South Africa, a Seed Librarian Seeks Ancestral Knowledge,” *Atlas Obscura*, April 7, 2022, <https://www.atlasobscura.com/articles/south-african-seeds>.

²³ Khan, “Making Heritage,” 120.

²⁴ Sara Peres, “Saving the Gene Pool for the Future: Seed Banks as Archives,” *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 55 (February 2016): 98.

²⁵ John Seabrook, “Sowing for Apocalypse,” *Annals of Agriculture, The New Yorker*, August 20, 2007, <https://www.newyorker.com/magazine/2007/08/27/sowing-for-apocalypse>.

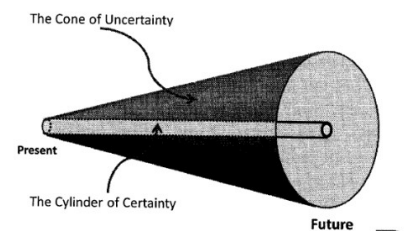
²⁶ Privacy on the Ground, *Amy Juan*.

Ex situ seed banks store not “cultural” or “even biological” diversity, but “simply genetic diversity.”²⁷ Thom van Dooren describes this as “diversity has become purely a numbers game. More types equals more diversity.”²⁸ He contrasts this with seed storages that focus on the “biosocial” which is “the way in which humans are inextricably entangled with various non-humans in both the cultivation of crops and the making of agricultural socialities, knowledges and practices.”²⁹

I draw parallels on the International Biological Program’s Human Genome Diversity Project collecting genetic material of “disappearing primitive” groups and sponsoring the Joint Meeting on Plant Exploration and Conservation in 1967 which approached preservation of seed biodiversity with an *ex situ* approach.³⁰ This project involved pursuing “isolated” Indigenous people’s blood, hair, and skin samples—which was met with protest from Indigenous groups describing this as “biopiracy” and as “The Vampire Project” sucking up Indigenous blood and genetic material.³¹ There is a dangerous coloniality of power in prioritizing scientific future research over Indigenous’ presents.

Understanding seed storage in the structure of seed banks can exclude seeds to the future, while shifting to viewing seed storage as archives can exclude seeds to the past—the flaw of this is that it does not dialogue with the present. This was made most tangible in the literal flooding of the Svalbard Seed Vault due to permafrost melt. It was not a possibility the Seed Vault had prepared for—one flaw about climate-adaption planning that will always be present is the

Planning for Increasing Uncertainty



²⁷ Thom van Dooren, “Banking Seed: Use and Value in the Conservation *Culture* 18, no. 4 (2009): 378.

²⁸ Dooren, “Banking Seed,” 378-9.

²⁹ Dooren, “Banking Seed,” 375.

³⁰ Peres, 100; Sara Peres draws this comparison.

³¹ “‘Vampire Project’ Draws Fire From Indigenous Groups,” *Cherokee* *Culture* 18, no. 4 (1995): 100. *Figure 1, “Adaptation and Mitigation of Global Climate Change in Arid Lands”*

inability to predict the window of change.³² As we move forward into the future, the uncertain variables will increase so our models grow more unstable the further ahead we predict. Models for the future have to account for variability and flexibility.

Seed libraries, on the other hand, create systems that adhere to the seed as a living organism, and to the cultures surrounding them as still living. Zayaan Khan explores seed reclamation in archives through Seed Biblioteek, a seed library in South Africa. She practices a conception of seed libraries which “has no connotations of financial exchange. Instead... relies on a system of lending.”³³ These seed libraries include “diverse seeds stories” and requires “custodians” to “return seed or exchange knowledge, service or another act of reciprocity.”³⁴ She also accentuates that seeds’ ability to adapt require continued “living, place-based seed relationships.”³⁵

Seed repositories like Native Seed/SEARCH and “Mother Seeds in Resistance/ Sme’tsunubil ta shekel Yu’um” in Chiapas are described as seed banks but function as living seed archives, in which storage is utilized alongside lending, growing, regeneration, rematriation, and repair.³⁶ While ““Mother Seeds in Resistance” is described as a seed bank, it functions on many principles Zayaan Khan describes in distinguishing a seed library, such as being reliant on community reproduction and lending.

This seed library combats Mexico's agribusiness expansion that occurred throughout the twentieth and twenty-first century. Indigenous varieties are under threat, not just from

³² Naomi Oreskes, “The Arctic Seed Vault Shows the Flawed Logic of Climate Adaptation,” *Scientific American*, October 1, 2024, <https://www.scientificamerican.com/article/the-arctic-seed-vault-shows-the-flawed-logic-of-climate-adaptation/>.

³³ Fawzy, “In South Africa.”

³⁴ Khan, “Making Heritage,” 118.

³⁵ Khan, “Making Heritage,” 120.

³⁶ “Mother Seeds in Resistance - Schools for Chiapas,” accessed December 11, 2025, <https://schoolsforchiapas.org/advances/sustainable-agriculture/mother-seeds-in-resistance/>.

agribusiness and policy, but even cross-pollination that contaminates native seeds.³⁷ “Mother Seeds in Resistance” constructs “safe houses” for the preservation of native seed.³⁸ While protecting the seeds from contamination is important, the collective and communal elements of the seed archive are essential as well. The seed archive and communal *milpa* (corn field) are in “a process of continuous exchange.”³⁹

One group that intervened in seed diversity loss was Native Seeds/SEARCH. Native Seeds/SEARCH, founded in 1983 by Gary Paul Nabhan, Karen Reichhardt, Barney Burns, and Mahina Dree, is an organization that gathers and preserves native seeds, sells seeds, distributes seeds to schools, and provides free seed to Native Americans and seed libraries.⁴⁰ Around 1,800 seeds are maintained in a storage refrigerator and around 50 Indigenous tribes are represented.⁴¹ These seeds are retrieved through working with Indigenous communities and working with the land (such as one seed set being found in a cave).

Native Seeds/SEARCH has been able to protect countless seed diversities and create moments of reunion and reconnection for Indigenous people. Angelo Joaquin Jr., member of the Tohono O’odham Nation, described an incident where an elder asked if NSS had “spotted” lima beans that she remembered her grandfather growing, though she had not seen them in 25 years. When a staff member found the beans and offered it to her freely, Joaquin described her as visibly taken aback saying that the seeds “represented a tangible connection to her youth, her grandfather and her ancestors.”⁴² This is one of the most significant possibilities now lining the

³⁷ Aguila-Way, “The Zapatista,” 76.

³⁸ Aguila-Way, “The Zapatista,” 78.

³⁹ Aguila-Way, “The Zapatista,” 79.

⁴⁰ Mariana Dale, “Arizona’s Tepary Beans Preserve A Native Past, Hold Promise For The Future,” Food For Thought, NPR, February 21, 2018, <https://www.npr.org/sections/thesalt/2018/02/21/586420523/arizonas-tepary-beans-preserve-a-native-past-hold-promise-for-the-future>.

⁴¹ Dale, “Arizona’s Tepary Beans.”; Native Seeds/SEARCH, “Indigenous and Heirloom Seeds: Stewardship, Sovereignty and Legal Protection,” YouTube, May 7, 2024, <https://www.youtube.com/watch?v=GKiSI808Oe4>.

⁴² Joaquin. “From Chiltepinés to Chivas.”

future of Native Seeds/SEARCH which is rematriation. Indigenous stewards guarded and gifted these seeds to NSS, which has the ability to return seed to families.

Still, this group was a seed archive originally created by non-natives with lapses in representation that strained trust in the community. Like many non-profits, the “lack of involvement and direct involvement” could partially be attributed to lack of funding, resources, and staff; but these tensions point to the importance of careful and thoughtful action prioritizing direct involvement and representational power.⁴³ Angelo Joaquin Jr joined the board of Native Seeds/SEARCH in the 1990s, eventually leading the organization as Executive Director from 1995 to 2000.⁴⁴ He also held positions as Native American Outreach Coordinator and Diabetes Project Director. He worked with seeds holistically, understanding the dual aspect of seeds as “scientific and cultural.”⁴⁵ He understands the O’odham as scientists in their own right, experimenting with seed, not in a lab but in fields over generations to produce arid-adapted species. The O’odham growers also attached “songs, prayers, ceremonies, and other relative activities to these seeds.”⁴⁶

Jacob Butler emerged as the second Indigenous chair of Native Seeds/SEARCH (NSS). In the podcast, Tohono O’odham Young Voices, Jacob Butler discussed with Tina Andrew his experience joining Native Seeds/SEARCH. After being asked to join, he mentions community tensions around NSS being high enough that he felt the need to seek out different perspectives, to weigh his options. He spoke to an elder who experienced grievances and articulated that Native

⁴³ Tina Andrew, *Ep. 20: Oidag Stories Part 1*, episode 20, Tohono O’odham Young Voices, aired May 12, 2022, 1:28:53.

⁴⁴ Angelo J Joaquin Jr., “From Chiltepines to Chivas, It’s Been a Wild Ride! A Farewell from Executive Director, Angelo J. Joaquin, Jr.,” *Angelo Joaquin Files*, December 10, 2025, https://cdn.shopify.com/s/files/1/0157/0808/files/Angelo_Joaquin_Files.pdf?v=1619812298.; Arizona Experience, “Angelo Joaquin Jr. on Native Seeds SEARCH,” March 20, 2013, Youtube, 5:40, <https://www.youtube.com/watch?v=xZOo884Qx7E>.

⁴⁵ Arizona Experience, “Angelo Joaquin Jr.”

⁴⁶ Arizona Experience, “Angelo Joaquin Jr.”

groups had been hurt by NSS competing with Indigenous community gardens and farms for grants. The elder mentioned they pretended to have deep involvement with tribes without that being the case. While there was a stronger earlier presence, over the years, this felt less and less true, and that they even “talk about having the blessing of the community and in reality it was just one family that went out there and wanted to check out Native Seeds/SEARCH, and then they wrote a big article and made us sound all, like, spiritual.”⁴⁷ Amy Juan of San Xavier Farm also describes how, while Native Seed/SEARCH presents themselves as experts, these seeds were acquired through Indigenous buy-in, sometimes ill-rewarded. An elder described to Juan how when they were twelve years old, Gary Nabhan came to their community, knocking door to door, asking for seeds. He left with buckets of seeds with the promise that he would gift his book in return—which that elder never saw.

Butler also discusses what he views as miscommunications or differently understood past events. There were rumors that Native staff weren’t paid and were treated as “token natives” or that seeds were stolen away in the night by people sneaking into fields. Butler says that he pursued these claims to verify and found that letters and past notes refuted the rumors. He sees these two points of conflict as not true. Regardless of if these incidents never happened, or even if one singular incident happened, these things are felt. They represent either real incidents or still very real ruptures in community trust and communication that must be restored by the group that seeks to leverage Indigenous resources, time, and history.

Still, the elder who held these grievances, in the end, encouraged Butler to step up and hold Native Seeds/SEARCH responsible. He felt that if Butler worked for Native Seeds/SEARCH that he “would probably have a different understanding of what they were doing

⁴⁷ Tina Andrew, Ep. 20: Oidag Stories Part 1, episode 20, Tohono O’odham Young Voices, aired May 12, 2022, 1:28:53.

and feel more confident in what they do.” Butler worked to address what he viewed as a pressing issue, lack of representation for Indigenous people, by bringing people in.

This period around 2020 represented a shift in organizational policy. Juan describes the difficulty of rematriation with Native Seed/SEARCH until this point. She describes how elders worked for over 15 years of correspondence to bring seeds home, but that, because care was not seen as guaranteed, the seeds never came home. In 2020, during COVID, food insecurity became an even larger driver of bringing these seeds home. After this shift in 2020, San Xavier district has had access to a collection they can access and grow from.

Native people were brought on to decision making enshrined in policy around 2021, as Native Seeds/SEARCH saw the need for overt policies that put Native people into decision making positions. This living document detailed new policies that required at least 50% permanent representation from Indigenous groups on the Board of Directors, created a clear process for seed rematriation and restrictions, and defined tribal relationships.⁴⁸ A Seed Policy Committee was formed that addressed issues and created policy, which was a fully Indigenous committee. Butler expressed in 2022 that while he does ‘know there is a lot of issues people have with Native Seeds/SEARCH, but without them we would have suffered an even greater loss.’⁴⁹ Still, Jacob Butler sets a new tone that could be what Native Seeds/SEARCH needed: direct engagement, debate, and transparency.

But Butler also offers ways of understanding seed care. Ownership of seeds can start to become convoluted and a result of a non-native way of recording information and understanding ownership. Early records showed that workers would collect name, location, and tribal affiliation which “does not do justice to the provenance of that seed.” These records do not tell the full

⁴⁸ Native Seeds/SEARCH, “Indigenous and Heirloom Seeds.”

⁴⁹ Andrew, *Ep. 20: Oidag Stories*.

ancestry and lineage of seeds. Due to interconnected trade networks, seeds did not belong to singular tribes, but they were interwoven into threaded networks that connected tribes spanning across wide sects of land. These seeds would become changed by these journeys, to these micro-regional changes, to the cultural practices of each group, to the well-worn hands that placed them in the ground. By accepting the concept of singular ownership, that one tribe could claim control over a seed, people were “putting more authority to what this non-indigenous person wrote on a piece of paper than our own historic traditional teachings and how those seeds were told how they came to be and how they were passed on and those trade systems and relationships that we had.”

The strategies being employed by various groups to create successful collaborations between Indigenous and non-Indigenous groups and between different Native community groups include representational power in decision making, adaption to Indigenous provenance strategies, and a focus on direct involvement in collaboration. These systems can be adapted to recognize the kind of provenance Butler and other Indigenous community members describe, that seeds can maintained alongside their stories, their multipluralistic connections, and without colonial concepts of ownership in which there is a ““intellectual commons . . . in which knowledge of biodiversity’s utility is not commodified.””⁵⁰ This can be one part of expanding ethical collaboration that Zayaan Khan describes:

Collaboration is hyper important—seeds and pantry are towards a liveable future through a liveable present, unlocking and evoking ancient knowledge that is extinct, forgotten, reclaimed. It would not exist without collaboration. People travel far and wide with their seeds, they leave their home and donate their entire collection. They inherited an instrument or jewelry made of seed and pass it on to

⁵⁰ Aguila-Way, “The Zapatista,” 80.

the library. It also depends on others to perpetuate seed, to collect seed, to test seed.⁵¹

Conclusion: Ancient Futures

Seed libraries can offer a place where locality creates autonomy and redundancy. While *ex situ* vaults or banks can protect seed in the case of emergencies, it does not offer the same integrated continuation of practices that actually sustains seed diversity that can be found in local *in situ* settings and among seed library systems that offer an open and shared access bridging communities. Through emerging practices in seed banks like Native Seed/SEARCH and Indigenous farms like Ramona Farms and San Xavier Cooperative Farm, experimentation in how to preserve seed, in both form and cultural context, can show improved future practices.

Exploring seed storage as a community-based archive, native seeds also settle into larger conversations involving their Indigenous accomplices. Native seeds are tied deeply to Indigenous community-based groups, the people who co-evolved with that seed over enough time for it to be regionally adapted. Seed archives and libraries can be an aspect of combating institutional seed practice, both from transnational seed corporations and agribusiness that treat seed as a controllable “raw material” and stagnant seed banks that do not account for seeds’ needs to adapt and be in continual use. By understanding Indigenous groups as the community base for native seeds, we can explore how these seed libraries and archives can successfully protect seed, share seed, and create connections between different and new communities on the land. As Indigenous people acted as accomplices to these native seeds, non-native growers and seed protectors have the chance to be accomplices to their Indigenous neighbors. As Gary Nabhan pointed out in

⁵¹ Belle et al., “Experimentations,” 30.

Enduring Seeds, “the more garden plots these seeds are grown in, the higher the probability they will survive.”⁵²

Seed archives create a space for communities to suspend space between the past, present, and future, seeing the seed as ancestor and child. The seed is also deeply embodied in the present, both in practice and in between people. Different people and nations are threaded together by seeds. Seeds get people into the field, sharing and storing knowledge in the present. Seed archives also hold the future, a future that is always changing and adapting. Zayaan Khan refers to seed practices as “ancient futures, particularly with the seeds, a future beyond our lives.”⁵³ Seeds literally contain historical information and lineage but also offer present practical continuation—it’s food. It’s the future. It’s a child in that next step of lineage. This embodied familial identification with seeds adds dimensions to the relationship that many Indigenous communities articulate with seed care.

Amy Juan says of seed rematriation processes occurring recently that “I like to think we’ve shown people outside our community that we’re here and we’re ready... we have farmers, we have land, we are educated not just as farmers, but also in human rights, in law, in nutrition... It’s time. We are ready to reclaim who we are.”⁵⁴ Passing down seeds has been a form of resistance—to reclaim the seed is to reclaim the land and water that can facilitate that seed, to reclaim the seed is to reclaim the historical growing practices disrupted by capitalism and colonialism, to reclaim the seed is to reclaim the food that facilitates longer lives. It’s past, present, future resistance. Like Vandana Shiva in *Biopiracy*, I cannot help but think of the Palestinian poem, “The Seed Keepers” final lines:

⁵² Gary Paul Nabhan, *Enduring Seed: Native American Agriculture and Wild Plant Conservation*, with Internet Archive (San Francisco: North Point Press, 1989), 102.

⁵³ La Vaughn Belle et al., “Experimentations with the Archive: A Roundtable Conversation,” *Feminist Review* 125, no. 1 (2020): 17–37.

⁵⁴ Privacy on the Ground, *Amy Juan*.

I do not fear your tyranny

I do not despair ever

for I guard one seed

a little live seed

That I shall safeguard

and plant again.⁵⁵

Bibliography

⁵⁵ Shiva, *Biopiracy*, 41.

- Aguila-Way, Tania. "The Zapatista 'Mother Seeds in Resistance' Project: The Indigenous Community Seed Bank as a Living, Self-Organizing Archive." *Social Text* 31, no. 1 (2014): 67–92.
- Andrew, Tina. *Ep. 20: Oidag Stories Part I*. Episode 20. Tohono O'odham Young Voices. Aired May 12, 2022. 1:28:53.
- Arizona Experience, dir. *Angelo Joaquin Jr. on Native Seeds SEARCH*. 2013. Youtube, 5:40. <https://www.youtube.com/watch?v=xZOo884Qx7E>.
- Azfb.Org. "Meet Arizona Agriculture's Button Family." October 16, 2019. <https://www.azfb.org/Article/Meet-Arizona-Agricultures-Button-Family>.
- Belle, La Vaughn, Zayaan Khan, Holly A Smith, and Julietta Singh. "Experimentations With the Archive: A Roundtable Conversation." *Feminist Review* 125, no. 1 (2020): 17–37.
- Bennett, Jane. "Political Ecology." In *Vibrant Matter: A Political Ecology of Things*. Duke University Press, 2010.
- Caswell, Michelle. *Urgent Archives: Enacting Liberatory Memory Work*. Taylor & Francis Group, 2021. <http://ebookcentral.proquest.com/lib/uaz/detail.action?docID=6587276>.
- Cherokee Observer* (Parkhill, Okla., United States). "'Vampire Project' Draws Fire From Indigenous Groups." April 30, 1995.
- Dale, Mariana. "Arizona's Tepary Beans Preserve A Native Past, Hold Promise For The Future." Food For Thought. *NPR*, February 21, 2018. <https://www.npr.org/sections/thesalt/2018/02/21/586420523/arizonas-tepary-beans-preserve-a-native-past-hold-promise-for-the-future>.

- Davis, Rachel. "Fruits of Our Labor: Exploring the Impacts of a Nonprofit Seed Bank on Indigenous Communities in the Southwestern United States Davis." Northern Illinois University, 2022.
- Dooren, Thom van. "Banking Seed: Use and Value in the Conservation of Agricultural Diversity." *Science as Culture* 18, no. 4 (2009): 373–95.
<https://doi.org/10.1080/09505430902873975>.
- Fawzy, Mary. "In South Africa, a Seed Librarian Seeks Ancestral Knowledge." *Atlas Obscura*, April 7, 2022. <https://www.atlasobscura.com/articles/south-african-seeds>.
- Hill, Christinia Gish. "Seeds as Ancestors, Seeds as Archives: Seed Sovereignty and the Politics of Repatriation to Native Peoples." *American Indian Culture and Research Journal* 41, no. 3 (2017): 93–112.
- Jacob Butler | Salt River Pima-Maricopa Indian Community. January 10, 2023. <https://srpmic-nsn.gov/government/council/butler/>.
- Joaquin Jr., Angelo J. "From Chiltepinos to Chivas, It's Been a Wild Ride! A Farewell from Executive Director, Angelo J. Joaquin, Jr." *Angelo_Joaquin_Files*, December 10, 2025.
https://cdn.shopify.com/s/files/1/0157/0808/files/Angelo_Joaquin_Files.pdf?v=1619812298.
- Kelly. "Resilience on the River: How an Arizona Farmer Combines Tribal Traditions with Modern Practices | Growing Returns." Accessed December 11, 2025.
<https://blogs.edf.org/growingreturns/2019/09/16/resilience-on-river-arizona-velvet-button/>.

Khan, Zayaan. "Making Heritage through Seed Stories." In *Alternative Economies of Heritage: Sustainable, Anti-Colonial and Creative Approaches to Cultural Inheritance*. Routledge, 2025.

Khoury, Colin K., Stephen Brush, Denise E. Costich, et al. "Crop Genetic Erosion: Understanding and Responding to Loss of Crop Diversity." *New Phytologist* 233, no. 1 (2022): 84–118. <https://doi.org/10.1111/nph.17733>.

Maliva, Robert, and Thomas Missimer. "Adaptation and Mitigation of Global Climate Change in Arid Lands." In *Arid Lands Water Evaluation and Management*, edited by Robert Maliva and Thomas Missimer. Springer, 2012. https://doi.org/10.1007/978-3-642-29104-3_39.

Mendum, Ruth M. "Subjectivity and Plant Domestication: Decoding the Agency of Vegetable Food Crops." *Subjectivity* 28, no. 1 (2009): 316–33.

"Mother Seeds in Resistance - Schools for Chiapas." Accessed December 11, 2025.

<https://schoolsforchiapas.org/advances/sustainable-agriculture/mother-seeds-in-resistance/>.

Nabhan, Gary Paul. *Enduring Seeds : Native American Agriculture and Wild Plant Conservation*.

With Internet Archive. San Francisco : North Point Press, 1989.

<http://archive.org/details/enduringseedsnat0000nabh>.

Native Seeds/SEARCH. "How to Grow Chiltepins." n.d.

<https://images.nativeseeds.org/pdfs/Chiltepines.pdf>.

Native Seeds/SEARCH. "Indigenous and Heirloom Seeds: Stewardship, Sovereignty and Legal Protection." YouTube, May 7, 2024. <https://www.youtube.com/watch?v=GKiSI808Oe4>.

Nazarea, Virginia D, Robert E Rhoades, and Jenna Andrews-Swann. *Seeds of Resistance, Seeds of Hope: Place and Agency in the Conservation of Biodiversity*. University of Arizona, 2013.

Oreskes, Naomi. “The Arctic Seed Vault Shows the Flawed Logic of Climate Adaptation.” *Scientific American*, October 1, 2024. <https://www.scientificamerican.com/article/the-arctic-seed-vault-shows-the-flawed-logic-of-climate-adaptation/>.

Peres, Sara. “Saving the Gene Pool for the Future: Seed Banks as Archives.” *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 55 (February 2016): 96–104.
<https://doi.org/10.1016/j.shpsc.2015.09.002>.

Privacy on the Ground. *Amy Juan on Food and Seed Sovereignty and Why the Knowledge Embedded in the Tiny Tepary Bean Is More than “Data.”* Aired July 29, 2024. 1:00:48.

Saxton, Dean, and Lucille Saxton. *Legends and Lore of the Papago and Pima Indians*. University of Arizona Press, 1973.

Seabrook, John. “Sowing for Apocalypse.” *Annals of Agriculture. The New Yorker*, August 20, 2007. <https://www.newyorker.com/magazine/2007/08/27/sowing-for-apocalypse>.

Shiva, Vandana. *Biopiracy: The Plunder of Nature and Knowledge*. South End Press, 1997.

Shiva, Vandana. *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology*. Zed Books, 1993.

Tewksbury, Joshua J., and Gary P. Nabhan. “Directed Deterrence by Capsaicin in Chillies.” *Nature* 412, no. 6845 (2001): 403–4. <https://doi.org/10.1038/35086653>.

Tewksbury, Joshua J., and Gary P. Nabhan. "Seed Dispersal: Directed Deterrence by Capsaicin in Chillies." *Nature (London)* (London) 412, no. 6845 (2001): 403–4.

<https://doi.org/10.1038/35086653>.

Tohono O’odham Community Action, Mary Paganelli Votto, and Frances Manuel. *From I’itoi’s Garden*. Blurb, 2010.