

## 4 articles for April 27 Book Group Discussion

Norwegian Seed Vault, Syria safeguards seeds, Seed Library shut down in Pennsylvania, California law amended to permit Seed Libraries. Copies available in library if you cannot open and read on your computer. Carole Poma, FB Seed Librarian, will attend this month's book group. – Dan Hess

### Earth's backup: inside Svalbard's indestructible 'Doomsday' seed vault

The Global Seed Vault is a £6 million bet against climate change. But can it save us from the threat of worldwide famine?

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By [Michael Hodges](#)

- 24 Feb 2017



Global Crop Diversity Trust

**The Global Seed Vault is a £6 million bet against climate change. But can it save us from the threat of worldwide famine?**

A gangly 60-year-old American stands in front of a stark concrete wedge on the scree-littered slope of a mountain deep in the Arctic Circle. The architecture is abstract, the surroundings bleak and windswept. Yet the curly haired man is animated. "There is a passion and intensity in the work we are doing here, an almost religious fervour," says Cary Fowler. "Because we understand why preserving biodiversity is so vital."

Fowler's remit, as executive director of the Global Crop Diversity Trust, is "to ensure the conservation and availability of crop diversity for food security worldwide". Or, more bluntly, to stop the world from starving as

its crop varieties lose the ability to adapt to climate change. So, 1,000 km north of the Norwegian mainland, Fowler's trust is storing the seeds of varieties that may be able to overcome the new conditions. "The work we are doing under here will save diversity that will otherwise become extinct," he says. "That's why it feels so good to walk into this vault. The seeds we store in here are not lost, and that will literally save millions of lives. The alternative is unimaginable – what do you get if you lose your biological foundation?"

And with that he pulls open the steel door and enters the Svalbard Global Seed Vault – an almost unfeasibly remote outpost engaged in the vital business of preserving humankind's ability to put food on its plate.

The Global [Seed](#) Vault opened in 2008 after engineers spent a year drilling and blasting through the sandstone, siltstone and claystone of Platåberget Mountain to create a system of subterranean chambers on the Advent Fjord's southern flank that could store 4.5 million seeds. The \$9 million (£6 million) construction costs were paid for by the Norwegian government, which also contributes a \$150,000 annual grant. The trust – a UN-affiliated body funded privately and by donations from sovereign states (including the UK) – meets other costs and runs the vault, which is why Fowler is in Longyearbyen today. A spectacled, rangy American with tight curls of reddish hair, he has an air of distraction coupled with sudden enthusiasms that suggests a powerful yet abstract intelligence. But he is also supremely practical – as he needs to be, concerned, as he is, with the survival of the human race.

The threat to [food crops](#) from climate change is alarming scientists. "At a recent conference I attended, forest geneticists were predicting that we have already moved seed zones [the altitude bands in which individual plant species thrive] up one zone in the past 50 years," says Dave Ellis from the National Centre for Genetic Resources Preservation in Fort Collins, Colorado. "This is truly astonishing." The band shift shows that higher elevations are getting warmer, affecting which plants can grow there. The Seed Vault offers at least a backup option. "Svalbard is vital to global efforts to preserve the genetic variation found in our crops and their wild relatives," says Tim Wheeler, professor of crop science at the Walker Institute for Climate System Research at the University of Reading, and one of the UK's preeminent experts in the field. "Maintaining this genetic diversity for use in crop-breeding programmes gives us another option in tackling major challenges to our food crops, such as from pests, diseases and climate change."

When the vault opened, media coverage suggested that its mission was biblical – Fowler was a modern-day Noah saving plants rather than animals – or focused solely on the building: the vault as the lair of a [James Bond](#) villain. "It would be kind of neat if they did film one here," Fowler says wryly as we leave the airport. "I'd like to meet the Bond girls."

He got used to what he calls "the usual corporate conspiracies. The claim that we're going to put half of the Norwegian population in the vault, wait out a cataclysmic event and then repopulate the world," sighs Fowler. "Half the population. That's two-and-a-half-million people. There's only one chemical toilet."

He laughs, but the doubters pain Fowler. "People all over the world are packaging up their seeds and sending them here for us to conserve," he says. "We are solving a problem, and I think it is a commentary on our times that some people can't imagine that something good and positive is going on."

The Global Seed Vault is not intended to be a "Doomsday" plan, ready to replant the world in the event of a major disaster (although with the seeds of 526,129 crop varieties now safely stored, it could go some way to fulfilling that role). Instead, it operates as a secure storage space for samples of other collections that are at risk. The samples remain at all times the property of the depositors, the only proviso being that the originals must be freely available to researchers and breeders under the terms of the International Treaty on Plant Genetic

Resources. There have been deposits from every continent: 3,710 species in total, from 29 crop institutes representing 226 countries.

Over the past few years the need for a secure storage facility has become ever more urgent. A typhoon in the Philippines in 2006 caused a flood that left the national crop gene bank under two metres of water. "And," adds Fowler, "war in Rwanda, Burundi, the Solomon Islands, Iraq and [Afghanistan](#) has destroyed seed collections – and the Pavlos station in St Petersburg, Russia's biggest field collection, is threatened by property developers."

Ruaraidh Sackville Hamilton, head of the gene bank at the International Rice Research Institute, also in the Philippines, makes the point graphically: "Our facility is [earthquake](#)-proof to force seven, bomb-proof, typhoon-proof, flooding-proof, with multiple backup power supplies, and our seed-handling and storage procedures are designed to keep rice seeds alive for 100 years," he says. "But what if we have a force ten earthquake? What if the dormant volcano three kilometres away erupts and buries us? We will lose our facility." More prosaically, diversity tends to be eroded in far less dramatic ways – a seed bank's power supply failing can be enough to lose a variety.

The disappearance of biodiversity is a slow-motion crisis: it's not the big bang of a nuclear bomb, but rather a gradual process that has the potential to be devastating. How much have we lost already? "We can't say," Fowler admits. "We didn't know for sure how much we had in the first place. But we lose something every day. The public is aware of the loss of a species, but not diversity within a species. Why do things become extinct? There is habitat loss, yes, but also when a species has lost its ability to evolve to meet new conditions. Agricultural survival is in our hands. We chose crops and the raw material is diversity. Lose that and you lose options.



Global Crop Diversity Trust

To reach Longyearbyen you must fly on the world's most northerly scheduled air service. But, at 78°N, most things in the Svalbard's largest town are the world's most northerly, including its church, university campus, bus station, bank, kindergarten, art gallery, cinema, shooting range, supermarket, cashpoint, taxi office, pub and kebab van. During the nightless months from April 19 to August 23, the vista of mountains, fjords and glaciers that greets the traveller arriving on the 62,049 square kilometres of the largely uninhabited Svalbard archipelago is spectral and otherworldly.

A day after WIRED arrives, a group of US senators and congressmen step from a Boeing C-40 bearing the words United States of America in blue along its white fuselage. They are the biparty Commission on Security and Co-operation in Europe (COSCE), the US governmental body tasked with assessing human rights, security and military issues, and climate threats across the 56 states that signed the 1975 Helsinki Agreement. They have brought a box from the National Centre for Genetic Resources Preservation – part of the National Germplasm System operated by the US Department of [Agriculture](#) – that contains the seeds of 537 varieties of 13 food crops.

Among the samples are the seeds of three chilli plants: Wenk's Yellow Hots, Rooster's Beak and San Juan "Tsile". The Americans take a clear delight in delivering a source of hot food to one of the coldest places on Earth (in February it's -23° Celsius). "It protects diversity of food and food security," says senator Benjamin Cardin, the commission's co-chairman. "It is very important for international security."

When approached along a track that dog-legs up a mountain, there are no armed guards outside the vault, just a concrete entrance that resembles the monolith in *2001: A Space Odyssey* – a stark, grey portal that is simultaneously ancient and futuristic.

On the roof above the portal there is an artwork called *Perpetual Repercussion* by Norwegian artist Dyveke Sanne, a light-box containing triangles of highly reflective, acid-resistant steel, set in a ten-centimetre-deep glass niche, alongside prisms and mirrors. It casts a flickering, abstract pattern across the snow-clad slopes of Platåberget during the perpetual darkness of winter. Once inside, however, the Global Seed Vault is robustly utilitarian. "Essentially," Fowler explains, "it is a long corridor with a very cold room at the end."



Global Crop Diversity Trust

Beyond the portal the concrete walls and floor angle down to another doorway, which leads to the "Svalbard tube" – a dipping enclosure of corrugated steel, its compacted earth-and-Tarmac floor iced over. Melt water from the mountain gushes along the edge of the walkway. We walk through a second doorway into a service area.

Above us racks and conduits take lights, power lines and ventilation ducts into the vault. To our right a single storey cinder-block construction contains two offices. We pass through another entrance and into the main cavern. Immediately the temperature drops. We are in the permafrost. This is Fowler's favourite area. "I think of this as a cathedral," he says, gesturing at the jagged white walls that have been carved from inside a mountain.

He points to the wall opposite the entrance. "We made a bowled area in the rock face. If someone fired a rocket straight down the entrance, or a nuclear blast came along the corridor, it would hit the bowl," he says. "After that there is only one place it can go – back out where it came from." A work by the Japanese artist Mitsuaki Tanabe hangs at the centre of the blast deflector: *A Seed of Wild Rice – MOMI 2008*. Sculpted from stainless steel, it represents "the mother of all rice".

Three doors lead off to subchambers but only the central one is occupied. Inside, the temperature (presently - 18°C) is kept low by a bank of chiller fans that face longways on to five racks of metal shelves varying between 65cm and 125cm wide and each 300cm high.



## Syria returns its mass of seeds to the Arctic 'Doomsday vault'

- World
- 23 Feb 2017

The shelves are stacked by hand – no fork-lift trucks means one less thing to go wrong. It is here in the bitter cold that Fowler addresses the problems of heat: "If you look at the projections of what kind of effect the heat from climate change is going to have, I think we have 20 years before we are in big trouble – and that's modest. Some areas will be affected worse." That is why so many of the samples in front of us now are maize. "If we still have the same varieties of maize in 20 years, we are looking at a 25 percent decrease in production," Fowler says. "The [population](#) is growing, so that would lead to a more than 25 percent decrease per capita. That would be an absolute disaster – we would be watching children starve to death on our TVs again."

Some experts claim that the situation is even more urgent. "We don't have 20 years," says Pamela Anderson, who runs the International Potato Centre (Centro Internacional de la Papa) in Peru. "Developing and disseminating crop varieties takes 15 to 20 years. We now have an active breeding programme in place to develop heat- and drought-resistant potato varieties for the developing world. We are racing against climate change." Others see a more nuanced set of threats. Sackville Hamilton fears we might be "missing the big picture, pandering to the immediate fuss about climate change. I don't mean to downplay the significance of climate change, but [it] is just the latest in a neverending string of challenges we face and have to adapt to."

Similarly Tim Wheeler rejects a precise time frame for two reasons: "First, although using germ plasm from the world's seed banks as a basis for developing new crop varieties better adapted to climate change is important, it is only one element of building an agricultural sector that is more resilient to a [changing climate](#)," he says. "Second, there is no single time-frame where we can say that, beyond it, we are in trouble. This is because the

impacts of human induced climate change on the world's crops will vary from place to place and change over time. For example, in northern Europe we expect a moderate degree of climate change to be beneficial to most crops. However, farmers in many tropical regions will see negative impacts in the next two or three decades."

It is that impact on the world's poorest that most concerns Fowler. He moves on to a box deposited by the International Centre for Agricultural Research in the Dry Areas in Aleppo, Syria. It contains samples of *Lathyrus*. "It's a sweet pea," Fowler says. "You will find it as an ornamental plant, but in Ethiopia, Somalia, India and Bangladesh it is a food crop. It's incredibly hardy, the most drought-proof crop in Ethiopia, and still lives when everything else dies. Two years ago I was with a farmer in Ethiopia and there were fissures on his land that you could put your arm in, up to the elbow, and this plant was still flowering. It is pest-resistant, survives floods and has the highest protein content of any food legume. A very important crop for poor people."

In many cases, *Lathyrus* may be the only crop that survives a particularly severe shortage of water, but therein lies another problem. "The plant contains a neurotoxin that becomes concentrated during a drought," Fowler reveals. "You can dissipate the toxin with water, but it's a drought – you don't have water." Those who use the legume as their primary food source "will be permanently paralysed from the legs down. Paralysis or starvation: it is a terrible choice, and it outrages me. These are the poorest people in the world." Yet the seeds that are held here, and those kept by the Syrian researchers attempting to develop low-toxin varieties, may hold the key to a future where hundreds of thousands of the world's poor do not have to make this "terrible choice".

If Fowler sounds like a crusader it's because he is – for him his work is a social obligation as much as a scientific endeavour.



Global Crop Diversity Trust

Born in Memphis, Tennessee, in the racially segregated American south, Fowler first developed his fascination with agriculture on his grandparents' farm. But his desire for social justice was forged the hard way, as a white middle-class high-school student who joined the often-violent Civil Rights marches of the 60s. "I was there at Martin Luther King's last speech, the 'I've seen the promised land, I may not get there with you' one," Fowler recalls. "It was my first experience of real charisma. When he walked in the room – wow! You just felt it. Being involved in the Civil Rights movement, we were very visible. In a way, white southerners saw us as worse than the [black] enemy. We were traitors." Fowler received death threats for some years after. "One was particularly evocative," he says. "They said they were going to put me on the end of a firing squad and I would be the first to go."

I just thought, 'Why would I be the first to go if they put me on the end?'"

Fowler refused to serve in Vietnam. "I was a conscientious objector, among the first people allowed to escape jail, and I did alternative service in a hospital," he says. His radicalism helped to shape his passion for agriculture. "They were both very strong tendencies," he says. "I look back at the Civil Rights struggle and think no one would question that now. But when I first started to encounter issues around agriculture at university, I realised there was other work I could do to help people, and things started to come together."

Formerly a professor and director of research at the Norwegian University of Life Sciences in Ås, Fowler has spent the last 30 years working in conservation and crop diversity. Consequently, he sees the vault as more than a resource that offers hope to the hungry; the seeds are also "an incredible library of life", he says. "These varieties tell an amazing story of the evolution of civilisations and cultures – the adaptation of crops over the last 12,000 years. It is also a cultural resource, a botanical artwork.

The varieties are intertwined with different cultures. The reason we have all these varieties is because people saw the differences and valued the differences: they wanted corn and maize for making beer and for medicine and for bread. Some varieties were chosen simply because a particular person thought they were pretty.

You wouldn't get crop diversity if you didn't have human diversity. It's impossible to tell the history of human beings without this – take this part away and you can't write the history."

To illustrate his point, he highlights a variety of maize called podded corn. "You can find archaeological remains of this corn from South America all the way up to Canada," he says. "It is associated with petroglyphs [rock etchings] of a hunchbacked flute player called Kokopelli. In Native American mythology he is a god of fertility and seducer of young girls. It was only after researchers discovered that the seeds originated in South America that it was realised the tribe had been sending medicine men to the far corners of their known world. The corn they took was used for medicinal and religious purposes. Kokopelli wasn't a hunchback; he was carrying a bag of corn. And we have that variety here in Svalbard."

Norwegian seafarers first visited Svalbard in the 12th century. Whaling and hunting were the main industries until the 19th century, when the discovery of coal led to the creation of two permanent townships: Longyearbyen, now home to 2,600 people, and Barentsburg, to the west, present population 500. Both towns were developed as mining centres, Longyearbyen by the Norwegians and Americans, Barentsburg by the Russians.

The mine shafts were dug horizontally into the sides of the mountains and there they remain, carved into the dark cliffs. The timber and iron structures are preserved by law, as are the wooden supports and pulleys that lead down to the old coal quays near the airport. It was the combination of Svalbard's isolation and low temperatures coupled with the mine shafts that first attracted Fowler's interest: the mines offered a prebuilt route into the permafrost. It was only after a miner pointed out that coal mines were prone to explosions, collapsing and flooding – and full of toxic gas – that he realised a new tunnel would have to be created. In 2004 he went to the [Norwegian](#) government ministry that controls Svalbard to request one.

Although the project would involve several agencies, it was Fowler who secured support for the seed vault. "They didn't know much about seeds," he recalls of the Norwegian officials. "They listened quietly for 20 minutes. I said, 'This is one of the most valuable natural resources on Earth. The foundation of agriculture.' They said, 'And you say that Svalbard is the best place in the world to do it?'"Yes,' I answered, 'it is.' They thought for a moment. 'Then how can we say no?'"

Fowler very nearly didn't see his project come to fruition: in 2004, when plans for the vault were advancing, he nearly died in a cycling accident near Oslo. Then, after already overcoming cancer twice (he had melanoma in 1972 and was told that he wouldn't survive more than six months, and had seminoma in 1982), he was diagnosed with basal cell carcinoma last year. "I had a bad form of a good cancer this time," he says calmly. "I was committed to my work beforehand, but even more so afterwards – you become aware of your mortality, of time."

And it is just that – time – that Fowler has bought the world.



Global Crop Diversity Trust

The vault is virtually indestructible beneath the permafrost – even if the power were to fail, the collection would remain cold enough to avoid deterioration. And, at 130 metres above sea level, the complex is secure from flooding even if the direst predictions of polar-melt come true. Seeds can survive for hundreds, in some cases potentially thousands, of years without germinating or losing their capability for life. Fowler was recently confirmed as executive director for another five years and, with the ongoing commitment of the Norwegian government, he sees Svalbard's future as assured for generations. "There is no reason to believe that the tunnel and vault rooms will not be there 1,000 or 10,000 years from now," he observes. "As structures go, this one could easily outlast the pyramids. And we have established a trust fund, invested conservatively, that will generate sufficient income to finance operations in perpetuity. The annual operating expenses are very modest, and thus [the finances are] actually quite small and easily manageable." Depositors, like Sackville Hamilton, agree: "I cannot conceive of a more secure system," he says. "The risks of losing this critically important diversity are now infinitesimally small."

At the ceremony to hand over the US politicians' seeds, Fowler gives a speech in front of Tanabe's wild-rice sculpture. The speech is shorter than he intended, as it becomes clear that the visitors' chinos and earmuffs will not stave off the cold, and even their crop haired security men in tan raincoats ("We're here," one says, "to make sure there are no issues, *sir*") shuffle from foot to foot. So Fowler sticks to the basics, pointing out that we live in an interconnected world and, if we are to survive as it gets hotter, we must save our biodiversity and share our resources. To drive home his point, he offers the example that most of the highly productive rice grown in the US today originates from a variety developed in Turkey.

Afterwards, the assembled politicians seem a little awed by Fowler's presentation. "Americans enjoy their food and they enjoy the efficiency of agriculture today," senator Cardin admits. "But I don't think they understand the importance of diversity or that US farmers benefit from an insect-resistant seed developed in Turkey."

We just take it for granted that food will be on our table. And the truth is that we cannot do that."

For Cary Fowler, it's another small step towards a bigger target. After marching with Martin Luther King, refusing to serve in Vietnam, campaigning for the poorest of the poor and surviving cancer three times, maybe saving the world's food resources isn't that big a stretch for him.

**This article was first published in the November 2010 issue of WIRED magazine**

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## Syria returns its mass of seeds to the Arctic 'Doomsday vault'

Svalbard's Global Seed Vault stores duplicate seeds from across the globe, protected for future generations in the event of natural or manmade disasters

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By [Liat Clark](#)

- 23 Feb 2017



Global Crop Diversity Trust

Almost 50,000 seeds are today being ferried to a [global vault](#) in a mountain, on a remote island in the Arctic Circle. The shipment, part of an effort to secure [food](#) diversity for future generations, includes donations from Syria's own seed bank just two years after it had to make a withdrawal from the Svalbard vault to help it keep up with its Middle East agricultural breeding programme in the midst of civil war.

“[It] shows that despite political and economic differences in other areas, collective efforts to conserve crop diversity and produce a global food supply for tomorrow continue to be strong,” Marie Haga, executive director of the Crop Trust, which helped with the shipment, said. She added that the countries making the deposit - Benin, India, Pakistan, Lebanon, Morocco, the Netherlands, the US, Mexico, Bosnia and Herzegovina, Belarus and the UK - collectively account for a quarter of the world's population, demonstrating how the global community is in agreement on the need for the Svalbard Global Seed Vault. “Crop diversity is a fundamental foundation for the end of hunger.”

The vault can hold up to 4.5 million varieties of crop, with 500 seeds from each variety being stored. This amounts to a capacity of 2.5 billion seeds. It is designed to withstand trauma from bombs and natural disasters, protecting its goods for up to 100 years from the time of deposit. It works as a kind of "external backup" of the seed banks that already exist across the globe, like Syria's International Center for Agriculture Research in the Dry Areas (ICARDA).

Individual banks store as diverse a collection of seeds native to their region as possible, but then send duplicates to Svalbard. ICARDA, which moved from Aleppo to Beirut in 2012 as a result of civil war, requested a withdrawal of [130 boxes of seeds in 2015](#) - it had originally deposited 325, containing 116,000 samples. It is now returning some of those seeds.

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“We are demonstrating today that we can rely on our genebanks and their safety duplications, despite adverse circumstances, so we can get one step closer to a food secure world,” Aly Abousabaa, director general of ICARDA, said in the same statement.

- Conservation
- 16 Feb 2017

The Global Seed Vault was created in 2008 and is located 800 miles from the North Pole on the Norwegian island of Svalbard. It preserves the genetic data of seeds that are also stored in 1,700 banks across the world, and its current tally after today's shipment will hit 930,821. These local deposits can be accessed readily, whereas Svalbard supplies should only be requested as the last solution in the event of natural or human disasters.

It was set up in the wake of a number of disasters that made the need for a secure facility urgent: "War in Rwanda, Burundi, the Solomon Islands, Iraq and Afghanistan has destroyed seed collections - and the Pavlos station in St Petersburg, Russia's biggest field collection, is threatened by property developers," Cary Fowler, then executive director at the Global Crop Diversity Trust told WIRED in 2010.

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## Department of Agriculture cracks down on seed libraries

- By Naomi Creason, The Sentinel
- Jul 31, 2014



CARLISLE — It was a letter officials with the Cumberland County Library System were surprised to receive.

The system had spent some time working in partnership with the Cumberland County Commission for Women and getting information from the local Penn State Ag Extension office to create a pilot seed library at Mechanicsburg’s Joseph T. Simpson Public Library.

The effort was a new seed-gardening initiative that would allow for residents to “borrow” seeds and replace them with new ones harvested at the end of the season.

Mechanicsburg’s effort had launched on April 26 as part of the borough’s Earth Day Festival, but there were plenty of similar efforts that had already cropped up across the state before the local initiative.

Through researching other efforts and how to start their own, Cumberland County Library System Executive Director Jonelle Darr said Thursday that no one ever came across information that indicated anything was wrong with the idea. Sixty residents had signed up for the seed library in Mechanicsburg, and officials thought it could grow into something more.

That was, until, the library system received a letter from the Pennsylvania Department of Agriculture telling them they were in violation of the Seed Act of 2004.

“We did talk to the county extension office before establishing the seed library,” Darr told Cumberland County commissioners at their meeting Thursday morning. “We were never apprised of the Seed Act.”

The commissioners were equally flabbergasted by the change of events, as well as with how the agriculture department handled the investigation — sending a high-ranking official and lawyers to a meeting with the library.

Darr explained that the Seed Act primarily focuses on the selling of seeds — which the library was not doing — but there is also a concern about seeds that may be mislabeled (purposefully or accidentally), the growth of invasive plant species, cross-pollination and poisonous plants.

The department told the library it could not have the seed library unless its staff tested each seed packet for germination and other information. Darr said that was clearly not something staff could handle.

“This is not our core mission,” she said. “We thought we were doing a good thing in helping the Cumberland County Commission for Women (who requested the idea and the library’s participation).”

Darr said she believes the library system’s proximity to Harrisburg, as well as media coverage of the seed library, prompted the Department of Agriculture to act in this case.

She said the department indicated to her that it would continue to crack down on seed libraries that have established themselves in the state.

Some of the commissioners questioned whether that was the best use of the department’s time and money, but commissioner Barbara Cross noted that such **seed libraries on a large scale could very well pose a danger.**

**“Agri-terrorism is a very, very real scenario,” she said. “Protecting and maintaining the food sources of America is an overwhelming challenge ... so you’ve got agri-tourism on one side and agri-terrorism on the other.”**

**Cross said it made sense that the department would want to tackle the issue now while the efforts were small.**

**Though the seed library is no longer an option, Darr said the department has left it open to the library to host “seed swap” days where private individuals can meet and exchange seeds. As long as the library system itself is not accepting seeds as donations, Darr said such an event would meet the requirements of the act.**

MECHANICSBURG — Libraries aren’t traditionally associated with Earth Day, but the Joseph T. ...



<http://seedstock.com/2016/09/20/california-amends-law-to-protect-seed-libraries-ability-to-freely-share-noncommercial-seeds/>

## California Amends Law to Allow Seed Libraries to Freely Share Noncommercial Seeds

September 20, 2016 | Jennie Park

Marking the most recent victory in a growing nationwide movement to promote the legality of seed libraries, The Seed Exchange Democracy Act (Assembly Bill 1810) was signed into law in California on September 9, 2016. The bill amends the “seed law” chapter of the state’s Food and Agricultural Code to expressly exempt seed libraries from onerous seed testing and labeling requirements. While necessary to protect buyers and consumers of commercial seeds, the impracticality of these requirements for community seed libraries would effectively cause them to shutter. California follows Minnesota, Nebraska and Illinois as the fourth state in the last 18 months to adopt laws favorable to seed sharing libraries.

Neil Thapar, a food and farm attorney at the Sustainable Economies Law Center (SELC) in Oakland, California who helped launch and draft the bill, explained how seed libraries work. “Seed libraries are essentially community-based initiatives where people can borrow seeds, plant them, and at the end of the season take back some seeds to replenish the seed stock at the library for other people to borrow.” He continues, “There really isn’t any ownership over those seeds. They’re held and stewarded by the library, but they’re shared freely throughout the community.”

According to David King, Chair of the Seed Library of Los Angeles (SLOLA), who advocated for AB 1810 alongside Thapar, the two key aims of all seeds libraries are to increase biodiversity through local seed saving and sharing, and to alleviate food insecurity. “I recall my grandfather saving his own seeds, and I recall those seeds were passed on to other people, to other generations,” says King. “And we’ve lost that. My generation didn’t hand down seeds to their children—we got off the farm, we quit gardening. But now as an older person I see the loss of diversity and I know the only way we can get it back is to grow these seeds, and care for these seeds as much as we would care for our dogs or cats, or even our children. It’s a sacred duty, it’s a sacred trust.”

Thapar and King cite the Pennsylvania Department of Agriculture’s notice to the Simpson Seed Library in Mechanicsburg, PA in 2014 as inspiring their efforts to become involved in the campaign to amend California seed law. The notice informed the library that it was in violation of the state’s Seed Act of 2004, which required routine testing of large quantities of seeds according to commercial testing guidelines. As the library lacked the resources to comply, it was reduced to distributing only seeds

that were commercially packaged, or hosting swap days where individuals could exchange seeds with each other without donating them to the library.

The incident in Pennsylvania sent shockwaves across seed libraries nationwide, and prompted King and SELC to delve into existing seed laws in states across the country, including California.

“Most of those laws that govern seeds were considered between the 1930s and 1950s,” explains King. “Nobody at that time envisioned the idea of a seed library. They were written in answer to the fact that you had hucksters giving farmers bad seeds, or old seed, just trying to make a quick buck. So the seed salesman makes his money, but the farmer is left with a crop that’s not saleable and so he’s ruined. That was part of why the law was written to exclude almost any transfer of seed from person to person. So the laws just don’t fit the current situation.”

King adds that particularly problematic for seed libraries in California was AB 2470, adopted into law in 2014, which forbade sharing of seeds from farther away than three miles unless they were tested and labeled under commercial standards. AB 1810’s passage allows for noncommercial seed sharing to occur anywhere in the state without the need to comply with commercial testing and labeling regulations.

The bill encountered some speedbumps along the way. “It ended up being more controversial than we expected,” says Thapar. Potential threats posed by seed sharing were raised, including the introduction and proliferation of weed seeds or invasive plant species, illegal sharing of patented seeds, low seed viability or germination percentages, and contamination or cross-pollination of seeds.

King and Thapar contend that cross-pollination is the only realistic concern for seed libraries, since many libraries have open membership and participants come with varying levels of experience. But both explain that most seed libraries aspire to educate people as to how to properly plant and save seeds. “That’s the promise and the opportunity of seed libraries,” says Thapar. “Master gardeners oftentimes work with or offer advice to seed libraries, and the libraries offer people, mostly who aren’t farmers, which is most of the people in our country, the opportunity to reconnect with that skill and that familiarity with how plants grow. And the idea is that people are going to make mistakes; it’s not that there will not be some cross-pollination that will happen in the garden of someone who then takes that seed to a seed library. It’s that the effect of that cross-pollination is not going to be a threat to agriculture, and is going to at the same time be a great learning experience for that person about how to hand-pollinate better the next year.”

With over 500 seed lending libraries now open worldwide, and many of those in the U.S., SELC encourages individuals in other states to become actively involved in researching and, if needed, amending laws to support unencumbered seed sharing. As for state laws already favorable to seed sharing, Thapar notes, “The only ones I know of that I would say are ‘good’ as-is are in North Carolina

and Alabama. North Carolina has an existing exemption for nonprofits, so that would support most seed sharing, because most seed sharing that happens in an organized fashion is usually hosted by some sort of nonprofit. And in Alabama, they have a really great exemption for anybody who sells up to \$3,000 worth of seeds that they grew themselves, annually. So they exempt not just seed sharing, but if you sell a small quantity or small dollar value of seeds, you are also exempt from some of the provisions of the law.”

SELC moderates a Seed Law Toolshed, an open-source, crowdsourced database with links to state seed laws. Thapar encourages everyone to check out and contribute to the database.

Those interested in tracking seed sharing advocacy efforts nationwide can follow the development of law and policy on SELC’s “Save Seed Sharing Campaign” website.

Finally, Thapar underscores the vital role of community organizations and individuals in shaping law and policy on seed sharing. “The value that lawyers add [in grassroots efforts] are as technical advisers or advocates that can read legislative language or have experience doing policy and can offer some kind of strategy for setting up a legislative campaign,” Thapar says. “Generally, my take on policies based on the experience I’ve had in the last few years is that it’s more effective when people who are actually going to be harmed by or benefit from the policy advocate for it.”