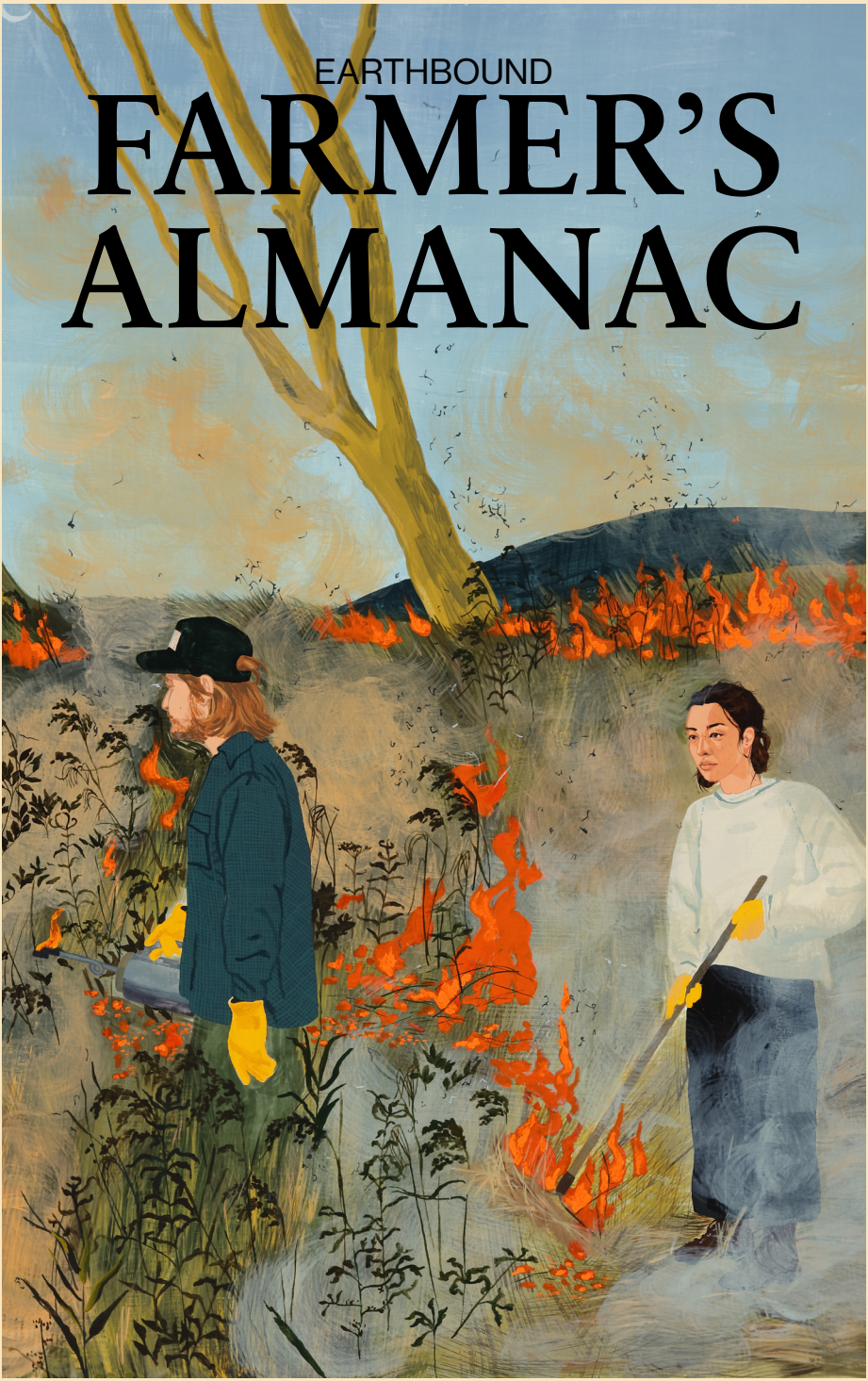
EARTHBOUND

FARMER'S ALMANAC



Diabetes during Collapse

Following Mycorrhizae

Palestinian Maqluba Recipe

The Case for Canteens

Earthbound Farmer's Almanac

2025

Lobelia Commons

Cover illustration by Dianna Settles
Layout and design by sinking city @SinkCityComms

Lobelia Commons is a decentralized network for food autonomy and neighborhood survival based in Bulbancha (so-called New Orleans, LA and its surrounding region).

Note from the Editorial Collective

Destroyed Assad regime tank repurposed as vegetable market.

What does it mean to be earthbound? By what actions do we bind ourselves to the Earth? The answer depends on one's position. It is different at different times and places. The same crisis that severs people from the land is also sweeping an increasing number of us out of housing. This year, we have dedicated the almanac to exploring escape routes from this dictatorship of private property. How do we live together on the land? What works? What doesn't? What movements—possibly from distant places or distant times—might we learn from? How do we build beneficial relations with other beings in our ecosystems, living upon the soil in a way that feeds us while nourishing that soil? In this age of turmoil, solving these problems is a matter of life and death. We've tried to gather in these pages some wisdom, questions, practical guidance and joy from people who have passed this way before us, in hopes we can all find our way home to the land.

But we can't stop there.

For everyone alive today, to be earthbound is first and foremost a matter of warfare. For colonized people, this has always been the situation: To be earthbound de-

spite an empire attempting to tear you from the land requires particular sets of practices and techniques.

For the colonizer, the violence of the colonial relationship has also always led to a severing from the Earth. No matter how much the colonizer's hands are in the dirt, they cannot overcome that apartness except by joining the colonized in the violent rupturing of the colonial order.

In this moment, when the factions of humanity at war with the Earth have escalated their attacks and openly tout their plan to leave the Earth after destroying it, it should be obvious that being earthbound cannot mean burying our heads in the sand. It cannot mean tending little plots we are permitted to own, cultivating some individualistic "connection" to the land while ICE agents round up whole families for deportation and armed drones hover over the heads of children in Gaza.

For our part, if one of our goals with this almanac is discussing and imagining alternate food systems, we have not done enough to think through how these embryonic beginnings might connect with the struggles of millions of migrant farm laborers whose hard labor runs the actual food system. What will it take to counter the apparatus of anti-immigrant myths and state violence being directed against them? How do we move toward a food system run by these workers, in which their knowledge and expertise is neither undervalued nor exploited, but instead allowed to flourish for the benefit of all? We look forward to your submissions of stories, proposals, ideas and experiments addressing these questions for next year's almanac.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Earthbound
2025

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The Earthbound Farmer's Almanac sources writing from the region surrounding Bulbancha and the wider so-called united states of america. The editorial collective includes but is not limited to participants in the activities of Lobelia Commons. Not all of what is printed here strictly adheres to any one of our individual views of the world nor do we have a strictly coherent collective political position.

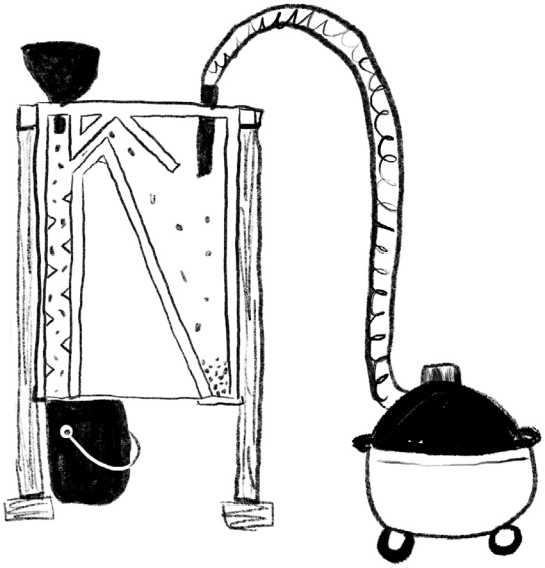
What is included here represents nudges, suggestions and offerings, tethered at times, entangled others, with what we find important in guiding our involvements in the world.

SO YOU WANT TO START A SEED COLLECTIVE

Leeza Chen

Seeds are one of the oldest things us people have ever held in community. At the very least, when stewarding a seed, you are in relationship with that plant. Each year you fulfill a promise to each other, that both beings will be fed and secure, surviving one more season together. At the very best, your community extends to a circle of growers that can commiserate about the weather and give you a handful of seeds when you lose your crop or want to try something new.

We lost 75% of global crop diversity in the 20th century due to changing climate and the push towards industrialization and standardization. Diversity is created and preserved when land is stewarded by many, but in our world where farmland is rapidly being developed, consolidated, and privatized and farmers are being priced out, where does that leave our seeds? We can freeze them, catalog them, get the people excited about heirlooms again–that might slow the loss. But what I've learned from working with seeds is that they're living, changing things, destined to grow around the habits of their environment and their farmer. They don't want to wait: they are thinking about next year. Obstinate in the face of too much definition, a seed will say, "I learn and I change. Though I may taste like a memory, I mark time and time marks me." So if a seed won't let us hold it too tightly, what framework can we build to support it?



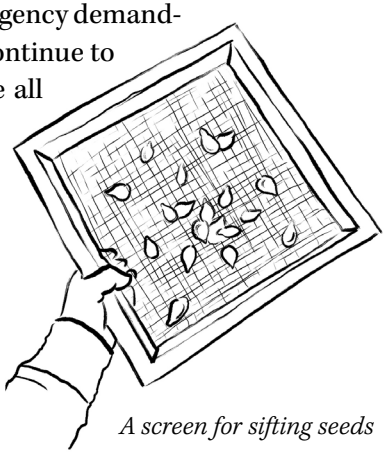
A winnowing machine.

Seeds are meant to be held in community. We need neighbors to ensure genetics don't get too narrow, or that lineages are not lost forever in a single hail storm. We need community to cook with us, to imbue a bean with the worth of a relative. From my view, a culture that helps us hold the value of a seed is more important than any one heirloom can be. Seeds are something we can take with us, whether we are driven off a plot or a continent, they fit in our pocket and continue the thread.

So, if seeds are meant to be collectively held, how do we start a seed collective? First we have to ask ourselves, who are we? And who are our seeds? Many of us are not coming into this work with an ancestral bundle of seeds to steward but with the vague and warm conviction that seeds can give us sovereignty and roots. We want to subvert capitalism, connect to a lineage and bask in nature's abundance. The following is a list of practical questions I learned from helping found a seed collective.

What are your boundaries?

The Appalachian Seed Growers Collective was founded on the heels of a defunct effort to form a South Eastern Seed Network. We had big dreams of creating a web of radical seed people all across the region, but in practice the project had been too decentralized and undefined to generate traction. We decided to zero in, to create a regionally focused collective of about 10 farmers. We wanted to be within a 3 hour driving distance to create meaningful in-person relationships, and we defined active membership as growing an excess of seeds to collectively market. The first thing we learned was to get real about our capacity, to move so much slower than our anxious urgency demanded, and to define a container. While we continue to keep our eyes on the horizon, to imagine all that is possible across the world of seed stewards, in our first fledgling years we give ourselves the grace to accomplish what we have the energy for now.



A screen for sifting seeds

What are you sharing?

We are fiscally sponsored by an allied non-profit and lucky enough to have the capacity to pull grants. We wanted the first thing we shared to be tangible so we used grant money to purchase a set of equipment. Without outside funding you could still gather people around the co-purchasing of a bean sheller, a winnow wizard, a threshing machine or a set of screens. You could host a building day for drying racks and hardware cloth screens. Intangibly, we share knowledge — how to finish seeds in our humid climate, what DIY tools we've invented to thresh in quantity, what pests are hitting us and how to beat them. We help new growers make contact with seed distribution companies and judge what might be a worthwhile contract. As it stands now, seed companies are often the ones telling growers which seeds to produce and how much they are worth. We'd like to flip this on its head by coming together to pack and market our own seeds. You could also share goals and tools for aligning livelihoods and land access with your values; you could

share a culture or a sense of cultural disconnection. Unite yourselves around what you share, that's the glue.

Who are your seeds?

At the center of a seed collective are the seeds you steward. Our collective is regionally focused, as are our seeds. We prioritize regional adaptation, seeds that have been saved in place for at least 3 years. Much like the people in our collective, our varieties also have membership. Based on the experience of the farmers that grow them, we commit to stewarding seeds that we believe perform exceptionally well in our area. It's up to you to ascribe meaning to your seeds, is it: Cultural? Culinary? Craft? Regional? Experimental? We understand that seeds have always been central to our cultural inheritance but the formation of your collective is your moment to define your own culture. Where will your seeds come from?

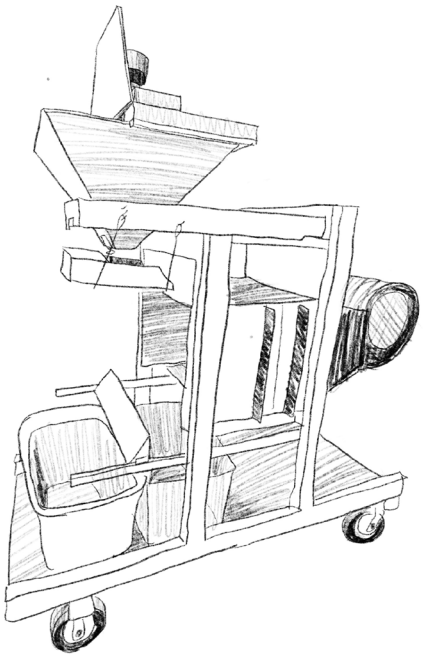
Where are they going?

The explicit purpose of our collective was to open up economic opportunities for seed farmers when there were few in our region. We wanted the tools, knowledge and market opportunities to make seed growing feel financially viable. Initially we focused on leveraging our collective bargaining power, asking seed companies to give us special royalties on our packet sales to honor the work we had done with variety selection. We quickly realized that there is much more money to be made in direct packet sales, if we had the organizing capacity to support marketing, packing and mailing them. To us, more money meant the ability to set aside profit to offer each other up to $500 in crop insurance that a member can appeal to the collective for, in case of failure. The downside of selling small packets ourselves or via seed companies is that it can price out farmers who need to buy in bulk. We all agree that it is our shared value to be a part of a local food system that starts with local seed, but we continue to puzzle over how we can feel adequately compensated for our work and still affordable to farmers. One solution is to focus more on seed sharing. Can each farmer grow enough of one variety to share with the others in the collective, lessening the amount we need to buy from catalogs each year? Your

seeds do not have to be sold to be valuable. A seed collective can focus only on trading within itself, or on growing surplus to be freely gifted. Imagine where you want to share your seeds, and work backwards to create a structure that feels sustainable for you.

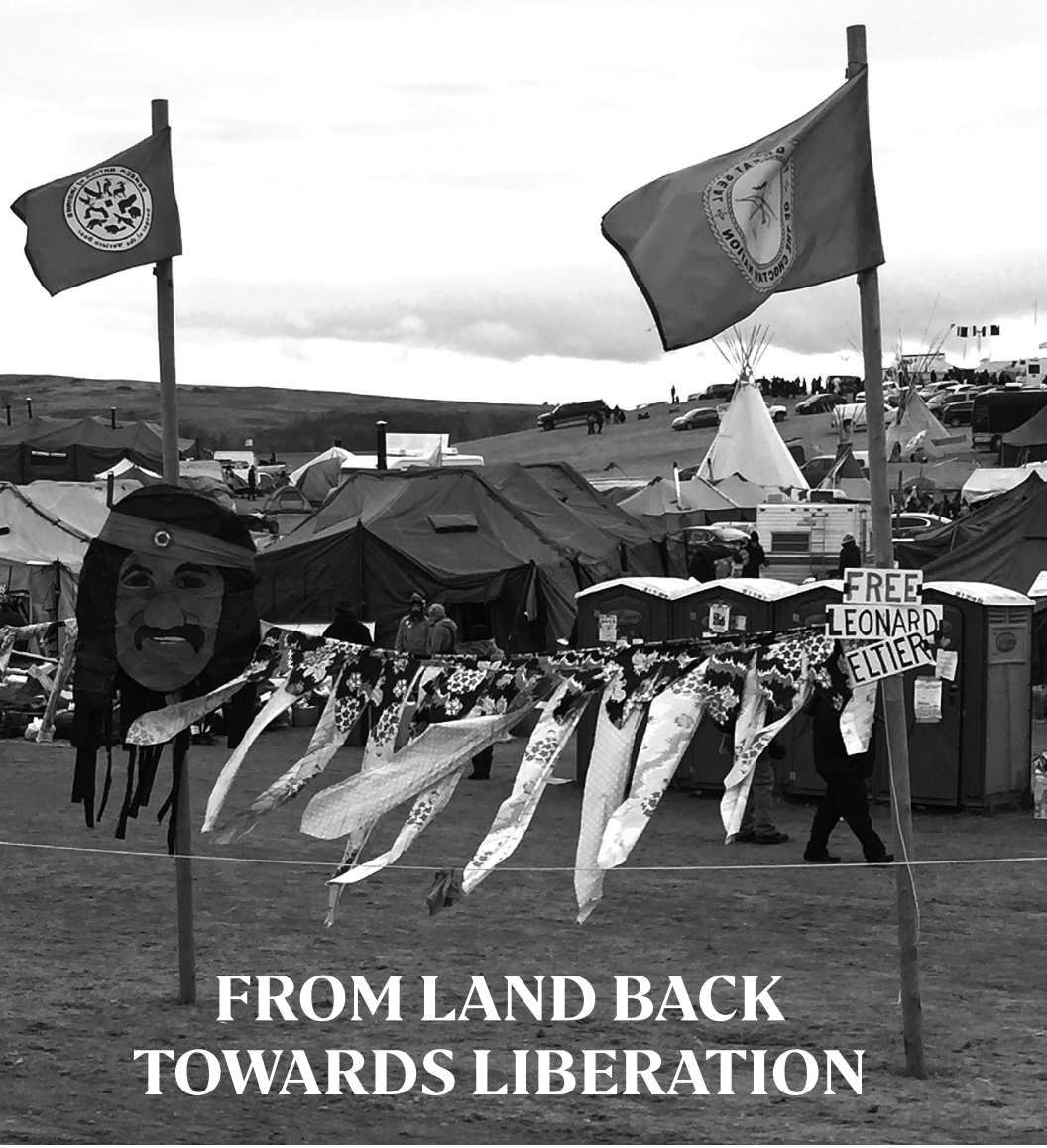
~

When I first got inspired to work with seeds, I felt I was on the outside of this big important thing, and I had no idea how to find my place. Each seed keeper that I have befriended and learned from has made me feel more like I belong, like this could be a lifelong practice. Each seed I save is in dedication to a long line of people and plants that have come before and will come after me. No matter who or where you are, it is your right to be connected to your food, and the seeds that birth them. By simply saving a seed, you are already in community, but it's always more fun to find a friend to share them with.



"I'm still picking Physalis peruviana here in Seattle in mid-January because we still haven't had a hard freeze. These usually get knocked back by late October."

"Winter in Vermont this year feels like a winter from the 90s. Feet of snow and cold. Is it weird that normal feels weird?"



FROM LAND BACK TOWARDS LIBERATION

Anonymous

"For something to be stolen, it must first be owned."

"Land as a sovereign living-being; simply just is. It is beauty and harmony manifested — birthed from the confluence of life and creation."

ORIENTING AND ROOTING

Colonization is a masterful tool of domination — an evil hell-bent on subjugating life and suffocating freedom.

Human beings are an expression of life, like all other beings on earth. At the cradle of humanity, we sprung from the land itself (the very origin of the word Indigenous). We were held in harmonious symbiosis and sacred connection as part of the natural world. This is indigeneity. A sacred understanding and covenant with all of life and all living beings, in a non-hierarchical kinship. A spiritual and cultural rootedness in the land. An indigeneity kept alive today in the prayers, ceremonies, and cultural ways of surviving Indigenous, First Nations, and Aboriginal peoples and their descendants.

Through colonization, most of us have had our innate relationship with the land severed, othering us from nature – disembodying our spirits. Through the apocalyptic expansion of domination in the 'global north', specifically on the lands of what is currently known as Europe, the de-rooting of indigeneity there directly resulted in the subsequent colonization of the rest of the world. These unhealed wounds – festering – created the breeding grounds for the construction of other tools of domination, such as whiteness and white supremacy, capitalism, and cis-hetero-patriarchy, as we know them today. Forgetting their once rooted origins, the once colonized now colonizer, succumbed to the evils of domination and took to expanding globally their insatiable gluttony for power, profit, and control.

A WAR CRY

'Land Back' was coined in the late 2010s, somewhere between Standing Rock and 2018, as a direct response to the fight for indigenous sovereignty on a global scale. 'Land Back' served as a unifying banner and call to action for indigenous people. Otherwise, localized struggles in indigenous communities both off and on the rez, as seen here in the so-called US, would continue to be isolated, easily erasable, making attempts at justice untenable. Easy to remember, 'Land Back' successfully meme-ified the resistance to a very complex and disturbingly

horrendous history of genocidal campaigns by settlers and the US government, to eradicate indigenous peoples and indigeneity at its root. "Conquer the land, destroy its people."

Since 2020 and the George Floyd uprisings, the racial reckoning happening on the left, and the parallel surge in white supremacist violence from the right, 'Land Back' unapologetically demanded of the settler colonial status quo, to not only reconcile with its genocidal history, but to pay reparations in the form of giving the land back to indigenous peoples. This brave assertion, if nothing else, served to challenge the dominant nationalist narratives and revisionist histories taught to us as children, ingrained in the American collective psyche.

But here's the rub. In understanding the history of 'Land Back', I cannot help but cringe at the respectability politics embedded within its origins and purpose. Many supporters and original writers of the 'Land Back' framework operate with an assumption that the U.S. government and nation state can be reformed to be more inclusive and equitable with indigenous nations. The greatest example of this, is how much of the 'Land Back' movement has focused on the capital acquisition of properties near or around current tribal lands, predominantly by tribal governments (a colonial project). 'Land Back' seeks justice, NOT liberation. It upholds the colonial framework of seeking justice within the system and it retains the legitimacy of capital and property.

Simply, 'Land Back' has reached its limits and served its purpose. It has stretched the imagination of those able and willing to hear the war-cry of 'Land Back', raising the collective consciousness, and bringing to the forefront the urgency and needs of Indigenous struggles. However, this is where we must say good-bye to 'Land Back' – at the limitations of its current practical applications – and reorient.

TOWARDS TOTAL LIBERATION

Decolonization is but one claw in the struggle for total liberation. Its necessary counterpart is an indigenizing of our world – which naturally precludes all settler colonial ideologies and frameworks of domination. Indigenizing calls for the sovereignty and liberation of the land

itself, for itself. Indigenizing does not, however, mean the co-optation of Indigenous peoples' cultures or ceremony, but rather a return to the inborn sacred connection between ourselves, each other, all living beings, and life itself.

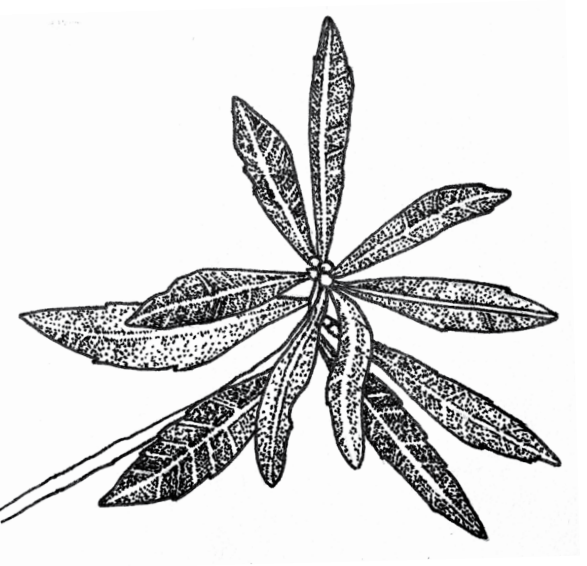
We must move away from the implications 'Land Back' has imbued within our psyche – the most pernicious of these being that somehow the land does not belong to itself and that there is a way to return to a pre-colonial past in the future. The centering of political ideologies, like 'Land Back', lends itself to declawing and promotes infighting for the breadcrumbs and compromises of "justice" within the colonial frameworks of dominance.

We must instead move towards organized action that is practical and strategic, and aims to destroy that which destroys us. Whether it's defending your local 85 acres of junk forest, or putting an end to the pit mines in your backyard, all life and all land should be free.

In the ongoing climate crisis and post-capitalist social collapse, we are experiencing the ramp-up in frequency of devastation and destruction. Everything from unmitigated flooding to superstorms, to all consuming wildfires and mass die-offs of flora and fauna, to extreme crop failure and loss of potable water. In these moments of crisis, besides autonomous mutual aid and care necessary for our survival, we should also skill up and prepare. The colonial nation-states WILL abandon us. As one of many people from the land, we must be ready for our inevitable revolt against them.

"The Earth does not belong to us, We belong to the Earth."

"What we do to the land, we do to ourselves."



Some Indigenous Thoughts on Foraging and Its Frustrations

Jeffery U. Darensbourg

Enrolled member, Atakapa-Ishak Nation of Indians

A common view of foraging is that it is the gathering of useful wild plants, things that exist in something called "nature." However, if you can't find a plant known to have been abundant in your area, you are neither lamenting encroachment on nature nor bemoaning the presence of humans nearby. You are experiencing a lapse in Indigenous land management.

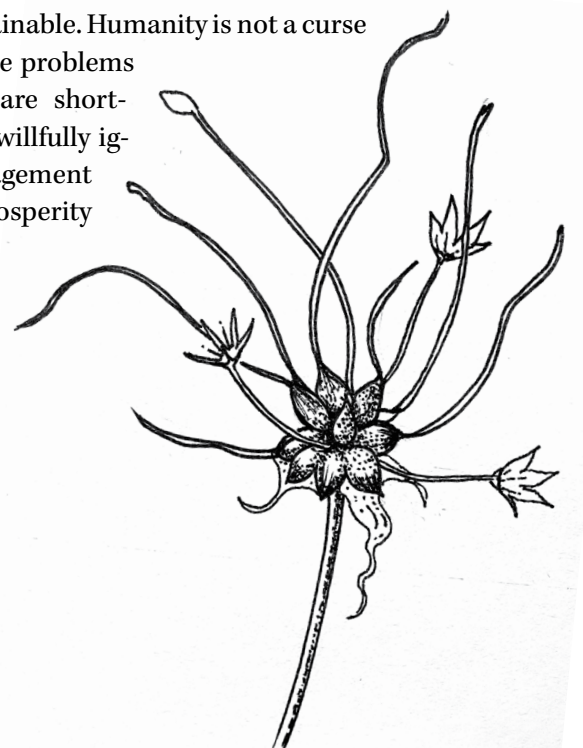
We were not "hunter gatherers," and we did not live in "wilderness." These views are emblematic of colonizer ideologies about our Indigenous Lands in Turtle Island ("the Americas"). Our cities and towns and hunting areas were carefully sculpted, planted, and maintained. We were not "lucky" to live in areas teeming with useful plants and wildlife. We made these situations happen with our own science and engineering.

Some of the things I harvest are still abundant in the Gulf South centuries after the first white person met my Atakapa-Ishak people in 1528.

I can easily find wax myrtle (*Morella cerifera*), bull thistle (*Cirsium vulgare*), or meadow garlic (*Allium canadense*) where I live in Bulbancha, "the place of speakers of other languages," incorrectly known as "New Orleans." But it is often harder to find other plants my Indigenous ancestors had made abundant for our use near our dwellings, such as swamp lotus (*Nelumbo nucifera*), groundnuts (*Apios americana*), and especially rivercane (*Arundinaria gigantea*).

What would become the French Quarter of Bulbancha was a field of rivercane in March of 1699 when the first European invaders arrived, led by Iberville. They witnessed Biloxi People doing a controlled burn of the field. Rivercane is hard to find these days. John DePriest, my Choctaw collaborator, and I often have to travel over an hour away from the city to find it for making flutes, blowguns, and tools. In fact less than 2% of the original rivercane fields exist, and when we find it along well-drained riverbanks, we are not harvesting a wild plant. We are gleaning a volunteer Indigenous crop, engineered over millennia by us, holding on after Indigenous farms have been destroyed and our controlled burns ended.

I miss the rivercane here, and I miss the bison that roamed Louisiana, but most of all I miss our lands as we had them, abundant, shared among all, and sustainable. Humanity is not a curse upon the environment. The problems stem from cultures that are short-sighted, consumerist, and willfully ignorant about proper management of lands for the life and prosperity of all.



A Simple Soup with Indigenous Foods for Spring

Jeffery U. Darensbourg

Enrolled member, Atakapa-Ishak Nation of Indians

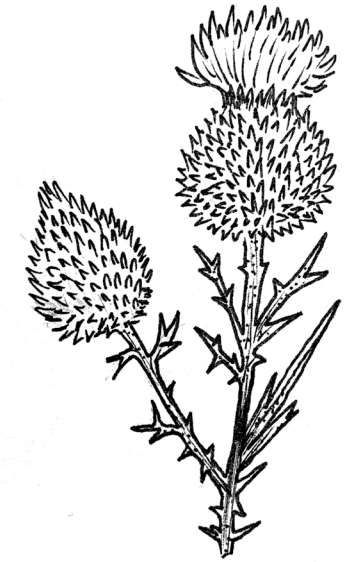
Harvest about 15 wax myrtle leaves from a male or female tree for seasoning. (These can be harvested most of the year where I live.) Use whole.

Procure about 2 cups of diced bull thistle. Sometimes I use a shaved stalk, but the midribs and all other non-thorn parts of the leaves are best for ease of processing. Best when young, in the spring, while still bright green. (Note that harvest times for seasonal plants such as this one and the next have begun to shift due to climate change.)

Harvest about a cup worth or more of meadow garlic, chopped small. It is best to harvest this when it first appears in early spring as it is most tender then. It also varies quite a bit from field to field in terms of texture and taste, so experiment in your area.

Dice two cups of white or red potatoes (skin on) or one giant sweet potato (skin off).

Other ingredients are two cups of dry red lentils, a teaspoon of cayenne pepper, and salt to taste. (Black pepper and a bit of lemon juice are nice touches as well.) Lentils, unlike most legumes I eat, originate across



the Atlantic, but I like their taste, versatility, and ease of cooking. If you want to go full Indigy, use one of the countless types of beans we've cultivated. For that, I might go with navy beans.

1. Saute the meadow garlic and bull thistle in a small bit of the oil you like until wilted.

2. Add in the seasoning, potatoes, lentils, wax myrtle, and about 6 or 7 cups of water. (Stock is also a good addition.) Bring to a low boil and then simmer.

3. Cook until the potatoes and lentils are tender, then season again. Serve with corn pone or whatever. Either remove the wax myrtle leaves or just pick them out while eating, with the latter being my preference. Treat them as you would bay leaves. (An alternative method is to make a wax myrtle tea by boiling the leaves for a half hour and then straining for the soup. You do you.)

4. For the carnivores, add some smoked venison sausage or fresh shrimp.

Illustrations by Sunny Lane

correspondence: bubbling springs farm

menominee, WI
12/9/24

Editor's Note: The Earthbound Farmers Almanac asked Mary Ellen Frame about life on Bubbling Springs Farm near Menominee, Wisconsin. Frame helped found the organic farming and housing cooperative in 1971 and lived there until 1981. The following interview has been edited for length and clarity.

By 1968, the idea of communes had become a trend. National magazines featured articles about hippies getting together to form communes, both rural and urban. I didn't consider myself a hippie. They were quoted as saying "Don't trust anyone over thirty." I was over 30. Not necessarily tied to communes was an interest in "going back to the land," a perennial urge among a few of the U.S. urban population. At this juncture the two trends were often combined.

By 1969, I was divorced, had 2 children and was living in Minnesota. Coincidentally, the Gerasimos—friends I had made in Illinois in 1965—also were living in Minnesota. Dottie Gerasimo and I had both grown up on farms in Minnesota, so we shared that background, as well as a dislike of suburban values and interests. Our children were close in age. We continued to get together fairly often, and we talked a lot about this "new" idea. Our idea of an intentional community was sharing work without regard to traditional gender roles, farming organically, raising our own food, conservation of energy and other means to have a positive impact on the environment. We wanted to raise our children in a way that was in line with our values.

One consideration was who would be a part of the group that would constitute the members of the farm. Dottie's family would be included: her mother, Clara, her brother Jim and his wife, Jane, their two daugh-

ters, and brother Joe, who was still in college. On my side, my brother Mike was interested. Our plan was family-based, and included 3 generations.

Dottie and I started looking for land, for an actual place where we could create the farm that was still very theoretical. Ideally there would be tillable land, some trees, a house or barn or shed, and nearby some kind of body of water and it should be within an hour or so of Minneapolis.

In the winter of 1970, we heard about a piece of land for sale. As it turned out, on the January day we went to look at it, the temperature was 20 below, and the land was covered with three feet of snow. We couldn't get very far walking in all that snow, but we did see the buildings: two huge barns, a windmill, machine shed, corn crib. We also saw the open water of the bubbling spring, which gave the farm its name. We were told that there were 30-40 acres of tillable land up top. There were about 100 acres of hardwood forest which had lots of sugar maples, and dying elms—this was the era of Dutch Elm Disease. Below the buildings and ponds, there was a wetland with a trout stream running through it. I don't know whether that day we made our decision, but whenever it was, it didn't take us long to decide that was the right place for us. Then we needed to figure out how we could buy it.

Q. Can you explain the basic framework for the co-op? How did that work, and do you think it was a good way of structuring shared land?

A. First of all there had to be an entity that would have ownership of the land, so we consulted a lawyer. It would be too cumbersome to have all the names on the purchase agreement or deed. One possibility was that we could have formed a co-op. The lawyer suggested we set up a corporation, with each individual or couple issued shares on the basis of the money we would put in. Even with some of us having savings to commit, that would be nowhere near enough. Clara generously offered to mortgage her house for the remainder, and the rest of us promised to pay her a definite amount each month, for which we would get shares in return. Then, if anyone wanted to leave, they could sell their shares, either to the current owners, or to new people that

were approved by the current members. I think this plan worked out very well. It's important to be realistic about business arrangements in such an endeavor.

We all moved there in June, 1971, setting up tents for most of us.

Q. You refer to the land project as a co-op, not a commune, why?

A. It seems many people had, still have, stereotypes about communes. If I'm talking about my life there, I want it to be on my terms. I don't want the stereotypes to block what someone could learn in conversation with me.

Q. What was the initial plan—to farm? To make a profit or for self sustaining? Did the original intention change with time?

A. I don't believe we thought about profit as such. We did have to find ways to make enough money to pay the bills. At some point, maple syrup produced enough to pay the taxes. When we got enough cows to sell milk, we sold it to a cheese factory in Elmwood. Only the money acquired from such joint projects went into the farm account. For each family, we had to provide for our own needs. Most of us had part-time jobs, etc. Jim had a full-time job teaching at the high school in Spring Valley for a few years. We picked up what we could, here and there.

That first year, especially during the summer when there were so many visitors, we had to buy groceries in town. As I recall, we all contributed to that. We bought old machinery at farm auctions.

Q. What was the distinction between communal and personal spaces and infrastructure?

A. That first summer, as I look back, was a sort of a test—for our intentions and for us as a social unit. A lot was happening. Crops and a garden were planted; we acquired livestock; we needed to get some year-round dwellings livable before winter. For Mike, my children and me, we built an apartment in one corner of the big barn. Our plan for living spaces was that each family would have their own dwelling. Initially we envisioned separate houses, but then we changed that to be a larger building with connecting apartments. Initially the living/dining/kitchen area of the basement house was pretty much communal,

being the largest indoor space; later that shifted to the similar space in the barn apartment, and when we built the big house, it was the Gerasimo's or mine where people would cook and eat, or just get together.

Q. How was the land shared after the first phase, especially for newcomers and visitors? What was their stake in it? What was expected of them?

A. During the summer we had a lot of visitors. We all had friends and relatives who came for varying lengths of time. Each afternoon, whoever was cooking dinner did a head count; seldom was it less than 20 people. Some of our visitors were very helpful, working hard along with the members. Some were not really interested in laboring, but they usually didn't stay long.

There were people who spent extended lengths of time, in some cases more than a year, and maybe there was some talk of them becoming owners, but until 1976 there weren't any who actually did join. In 1976, a couple got divorced and one of them moved off the farm. That also was the year that Clara died. Their shares weren't sold to anybody else right away. When I left the farm in 1981, it took a long time for those still there to find someone to buy me out—until 1984.

Q. What did you do for fun or joy, either separately or collectively?

A. Fun and joy? Just being on the farm, surrounded by nature, was much of it, for me certainly, and I think for most of us. Close friendships. I loved the farm work itself. Jumping in the pond at the end of a hot day. Caring for animals. Learning new skills. We had parties, inviting all sorts. The summer solstice party became a big one. People came from other communes and brought friends; we invited friends from our former homes, and University of Wisconsin-Stout faculty, etc. After the first year, we didn't need to invite anyone. People just showed up, mostly bringing food, some musical instruments, some brought tents, or just sleeping bags. If we'd wanted to quit having it, I don't know how we could have.

Q. Did you have weekly or monthly meetings? How were decisions made?

A. We had meetings when we felt the need for them—not on a specific schedule; such a schedule would have been hard to adhere to. However, during good weather, three to five of the adults would gather on the bench on the east end of the barn to have a cup of coffee and discuss what needed to be done that day, plus anything else on our minds. I think that fulfilled much of whatever needs a formal, scheduled meeting might. Also, we had most of our meals together, and talked then.

Decisions about the farm we arrived at by a sort of informal consensus process, and I don't think factions developed around them. (Until the end, when I left the farm.)

Q. Can you talk about gender roles in the 60s and 70s and what that looked like at Bubbling Springs?

A. One of the things that attracted me initially, and I think the other women, to the idea of forming such a community, was that we could reject the roles that were attached to gender in the society at large. We could be independent within a structure that included men, but not be bound by what we'd grown up with. The reality was that growing up, girls learned how to do things from their mothers—cooking, childcare, housekeeping. These skills are needed in any setting. Boys, especially farm boys learned different skills, from their fathers. So women did most of the cooking, though Mike was a good cook, and participated in that.

Mike and Jim knew a lot about farming and building, so they led in those areas. Dottie and I had some farming skills, and everybody learned from each other. The necessities of daily life didn't seem to allow a perfect match with the ideals that people attempt to realize, but we kept trying, still keep trying.


FARMER'S
ALMANAC

scrump

misbelief

Photos by sally singer-stone

FOLLOWING MYCORRHIZAE

Runner Hyphae

I've been growing some arbuscular mycorrhizae recently.

To my neighbor (and just about anyone else I talk to) it looks like I'm growing bags of grass. To be fair that is what it looks like. A bunch of bags of grass.

In the root zone of the grass (its "rhizosphere"), there are a handful of species of arbuscular mycorrhizal fungi (AMF) interacting with the grass. They live both outside and inside of the plant. They are generally mutualists, aiding the plant in their quest for hard-to-get soil nutrients, receiving sugars in return. The relationship that forms between the plant and the fungus is called a mycorrhiza (pl. mycorrhizae).

These relationships are one of the most pervasive mutualisms[1] on the planet, with over ⅔ of all land plants associating with AMF. They have been simultaneously fodder for unmeasurable amounts of click bait and one of the reasons plants were able to move onto land in the first place. Their role in soil ecosystems has been undervalued by modern agriculture and the use of chemical fertilizers and biocides has been a war on these organisms since the dawn of the green revolution.[2] A livable future on Earth requires a revitalization of this ancient relationship, but those that seek to profit off of it may be jeopardizing that.[3] Farmers and gardeners can and should be encouraging diverse and

1 A mutualism is a type of symbiosis (a close, prolonged relationship between two or more organisms) where both/all parties benefit.

2 https://runnerhyphae.substack.com/p/amf-in-the-agricultural-ecosystem

3 https://runnerhyphae.substack.com/p/the-mycorrhizal-products

abundant mycorrhizae where they are, and sharing their experiences with others.

So in the spring I filled these bags with vermiculite, sterilized topsoil and some soil I got from a fence line on our farm. I put seeds of *Schizachyrium scoparium* – little bluestem — in the freshly filled bags. They are a critical species of grass typical of the longleaf pine forests, which I'm interested in getting a better understanding of. I also know it to be a class of plant that happily engages in relationships with these fungi. And that's what I'm here for (the freaky grass panicles are lagniappe).

Floating among grains of sand, kernels of vermiculite and chunks of debris, the spores of the arbuscular mycorrhizal fungi await conditions that signal it's time to germinate. They could be waiting for a more acidic environment as organic matter such as leaves and sticks decompose[4] or for a spring rain to surround the spore in cool moisture. There are a multitude of factors that could contribute to germination, corresponding to the diversity of conditions experienced by species in

4 Hong, S., Gan, P., & Chen, A. (2019). Environmental controls on soil pH in planted forest and its response to nitrogen deposition. Environmental Research, 172, 159–165. doi:10.1016/j.envres.2019.02.020

the Glomeromycota (the phylum of fungi AMF inhabit).[5, 6]

There's probably a handful of species in any given bag and a single plant could have a number of fungal associates.[7] Their spores vary in shape, size and color.[8] Some are ornately decorated yellow and red, pitted like a small moon and are a fraction of the size of a mustard seed.[7]

As the bluestem seed germinates, it sends roots down and around, creeping towards the recently germinated spore. Reaching out with its mycelium[9] for a partner, the fungus gets a little inkling that the grass is coming. It senses a trace amount of flavonoids[10] being released out the tip of the roots like a homing beacon. The fungus extends itself towards the root, branching into several hyphal threads along the way.

As the fungus approaches the plant, it forms special structures to penetrate the root. At the correct time and place (due to fungal signaling), the bluestem forms special gateways[11] which help negotiate the passage of the fungus into the root.

Once inside the plant roots, the fungus begins producing structures for nutrient exchange. Some look like massive live oaks in a single root cell (arbuscules), others a mess of hyphal coils all surrounded in a special membrane produced by the plant. The extremely high surface area of these structures offers the partnership a maximum amount of space to exchange.

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5 Kapulnik, Y., & Douds, D. D. (Eds.). (2000). Arbuscular Mycorrhizas: Physiology and Function. doi:10.1007/978-94-017-0776-3

6 Souza, T. (2015). Handbook of Arbuscular Mycorrhizal Fungi. doi:10.1007/978-3-319-24850-9

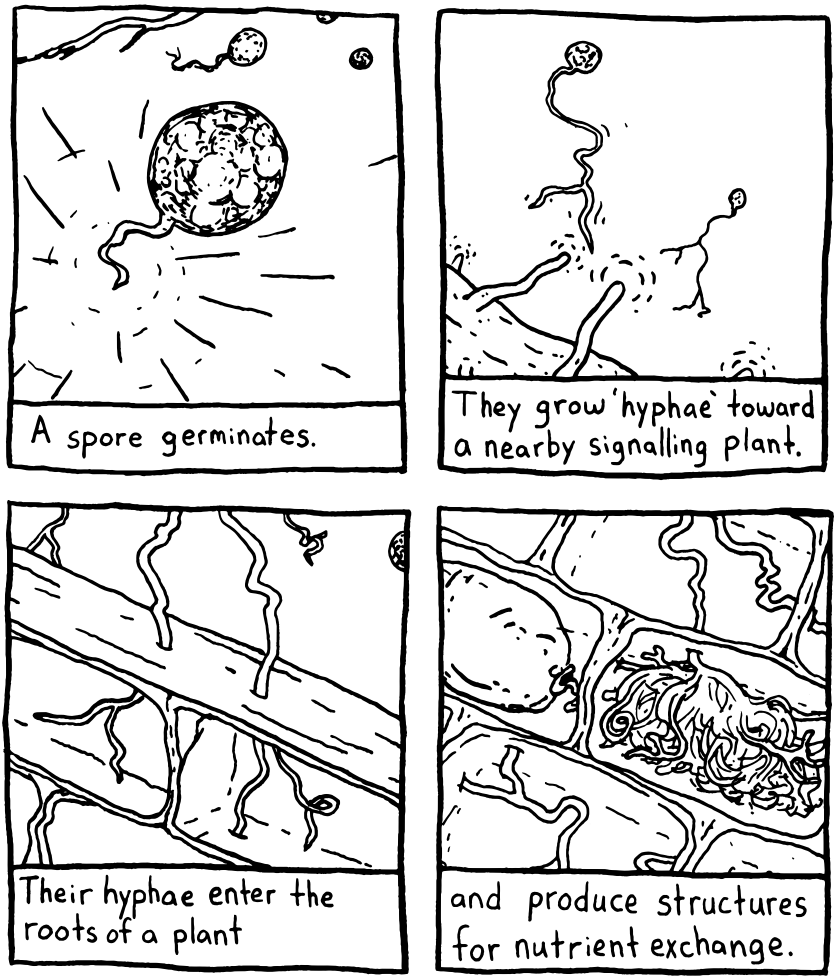
7 Thrall, Peter & Hochberg, Michael & Burdon, Jeremy & Bever, James. (2007). Coevolution of symbiotic mutualists and parasites in a community context. Trends in ecology & evolution. 22. 120-6. 10.1016/j.tree.2006.11.007.

8 Walker, Christopher. (2013). Arbuscular Mycorrhiza in the Living Collections at the Royal Botanic Garden Edinburgh. Sibbaldia. 11. 143-155. 10.24823/Sibbaldia.2013.57.

9 The main "body" of the fungus, comprised of strands of "hyphae" (sing. hypha) — filaments made of chitin. Often takes a sort of web appearance.

10 An important group of substances produced by plants. They impact the color of flowers, help filter UV radiation, ward off pathogens and signal to mycorrhizal fungi and nitrogen fixing bacteria.

11 "Prepenetration apparatuses"



As the little bluestem soaks up that blazing Gulf Coast sun, they photosynthesize sugars — a small amount of which are sent to the roots where it arrives at the mycorrhizae. The fungus accepts the sugars and returns mineral nutrients, primarily phosphorus (P). Phosphorus is hard to find in many soils the world over. I'll tell ya what, there's not a hell of a lot of P in this bag. There's a small amount of topsoil in the substrate[12] which would be the only source.

12 The mix that's filling the bag, for example, potting mix, is a substrate.

Simply put, if the grass is gonna grow well, it's going to do so in cooperation with the fungi.

The roots of the little bluestem are long and branching. They fill the bag, but try as they might, they are only able to absorb water and nutrients within 1 cm of their root, creating a "depletion zone." Our red and yellow spored friend grows through and out from these roots. Their feeder hyphae extend out through the substrate, beyond the depletion zone, branching to become smaller and more deft at acquiring hard to find nutrients than the clumsy bluestem roots possibly could be. Fungal hyphal length typically laps plant root length a hundred fold.[5]

Beyond the rhizosphere, the feeder hyphae hoover up nutrients and transport them to the roots, leaving the grass I'm looking at in front of me lush, vigorous and full. It's taller than I am. There are several bags where the *S. scoparium* looks great. But then there are a bunch that look completely haggard, marking the bags which were either the control, who received no AMF propagules[5] or those that were inoculated with a commercial mycorrhizae product.

The crux here is that the raw soil inoculum includes not only the mycorrhizal fungi we've been focusing on, but also much of the world of the mycorrhizosphere (where the fungus goes that the plant can not) the fungus is keystone to. This would include critical mycorrhizae-affiliated bacteria that live along the hyphae and help make P available to the fungus.[13] So it isn't just the AMF producing these results. But that's for another day.

I'm not surprised the commercial product didn't perform well but I wasn't expecting just how poorly it did. By some measures, it was outclassed by the negative control — the plants growing all alone in sterile soil. There is a general rule of thumb you hear to purchase a mycorrhizae product that includes a diversity of species. This follows sound logic: more diversity will be more likely to find AMF species that play well with the plant species you chose. But it begs the question – who are you putting in your soil? You don't have any idea. Which makes sense, I've been growing these freaks all year and I don't know their names.

They live their entire lives underground, you don't see them (they

don't produce mushrooms), you don't have common names for them. They are obligate symbionts – they can only complete their life cycle by forming relationships with plant roots.

So who are you putting in your soil? No clue, but they are professed to improve plant vigor in all these ways. The positive impact of the arbuscular mycorrhizal symbiosis on the plant involved is well documented.[13]

But that's not the whole story, these symbioses are situated in a history of climate, soil and plant relationships that inform how they behave. The mycorrhizal industries lean heavily on the myriad positive effects of mycorrhizae on your plants. Naturally, ecosystems are quite complex, so there can be some off target repercussions.

To say nothing of the potential weediness of the introduced mycorrhizal fungi and their possible weedy plant outcomes[13], the in vitro[14] production of these commercial products is leading to the domestication and the waning of these organisms' ancestral symbiosis.[15] The inoculum companies are producing fungi that are becoming less and less interested in forming relationships with plants, and when they do form a relationship they are less generous and less beneficial to the plant. This mirrors a regime of modern plant breeding which has favored plants who prefer not to accept the offer of support from the fungi.[16]

Obviously that's a problem, but it's also just total bullshit.

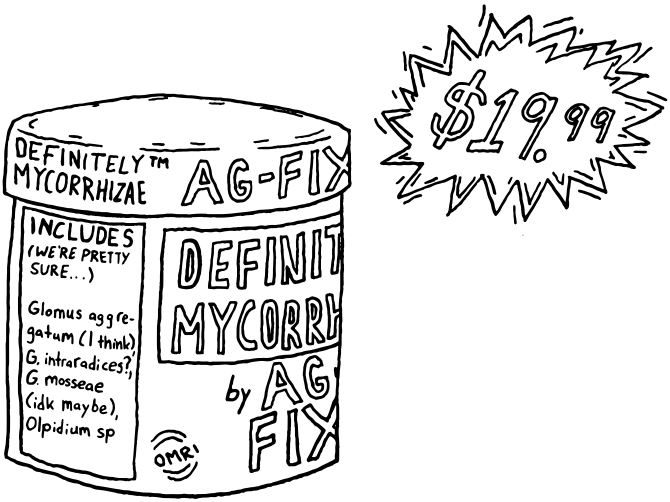
There is an inevitability of sustainability. "Regenerative" agricultural practices are going to be applied at scales, likely with deleterious effects for the ecosystems they aim to regenerate. To save their skin and consolidate their profits, Big Ag will attempt to use what they can from

13 George, N.P. & Ray, J.G. (2023) The inevitability of arbuscular mycorrhiza for sustainability in organic agriculture—A critical review. Front. Sustain. Food Syst. 7:1124688. doi: 10.3389/fsufs.2023.1124688

14 "In vitro" refers to studies performed "in glass", in isolation from their typical biological context.

15 Kokkoris, V & Hart, M (2019) In vitro Propagation of Arbuscular Mycorrhizal Fungi May Drive Fungal Evolution. doi: 10.3389/fmicb.2019.02420

16 Hohmann, Pierre & Messmer, Monika. (2017). Breeding for mycorrhizal symbiosis: focus on disease resistance. Euphytica. 213. 1-11. 10.1007/s10681-017-1900-x.



an ecological playbook and sell back to us what ought to be popular agricultural practices.

The question is, are we going to be sold a product or are we going to make observations of the ecosystems around us and those we tend as gardens? Are we going to incorporate some ecological curiosity in how we inhabit the land or will we be google AI-brained into a false sense of knowing and an eye for an $83 solution.

Producing your own mycorrhizal inoculum is not particularly challenging and there are several great[17] resources[18] to help learn how. I recognize that may not be for everyone, especially when time and labor is tight. But it's worthwhile, fun and will offer a perspective of the soil ecosystem in front of you that's hard to get another way. But if that ain't happening, spend the time you'd be ordering some shit from a celebrated myco-capitalist or an aspiring pharmaceutical company by looking at whatever you call a garden and asking "what the hell is going on here?"

There are lots of practices such as KNF/JADAM and cover cropping that could be interesting to do some trials with that would help you

17 https://invam.ku.edu/trap-cultures

18 https://rodaleinstitute.org/science/articles/how-to-innoculate-arbuscular-mycorrhizal-fungi-on-the-farm-part-1/

learn about microbial life and potentially benefit your plants. Treat a bed one way, treat a similar bed the same but include a practice that interests you. If you can't dedicate a whole bed, work at your scale and spend the time to notice what's going on before and after you start doing the thing.

Or you're maybe into the astounding variety of insects in your garden. Whatever your thing is, there is value in spending time with it, documenting it and sharing it.

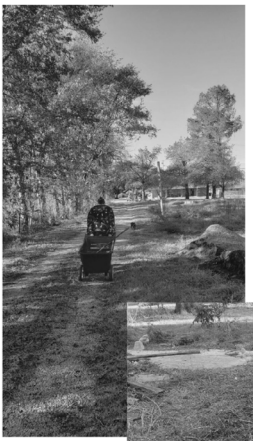
When I started growing a bunch of bags of grass I was hoping to learn a little about this group of fungi that do undeniably cool shit. I now see a potential for ecological research in the struggle for food autonomy and for a partisanship that better understands its place in the ecosystem. The fire sale that is the american university system signals an opening to decentralize access to learning. The confusion sown by politicians and the chattering classes is amplified by the rapid changes found in the living world around us.

My funny bags of grass and a slightly over zealous approach to mycorrhizal research has helped me orient back to Earth in a challenging time. Sharing my findings can hopefully act as a signal flare to those with similar curiosities doing the same and offer a trail of bread crumbs for those looking to find their way too.

We need to start really observing, to be okay in not knowing, to share our experiences and grow with the evolving ecosystem around us. The only thing the glow of the phone shows you in the garden is the mosquitoes sucking your blood.

Runner Hyphae is a monthly newsletter about mycorrhizal fungi, ecology and a way out. Read more at runnerhyphae.substack.com or follow @runnerhyphae on IG.

We believe in slow food...



Dispatch from Raccoon Oak Farm

I sit here writing this piece while staring down Hurricane Francine (and then as I am editing this, in the immediate month post-Hurricanes Helene and Milton, after supporting friends and mutual aid efforts in the area), thinking about 2021's Hurricane Ida. At the time, we

were living in my Houma nation tribal region of the Houma, Louisiana area bayous, over an hour's drive south of Bulbancha/"New Orleans." I was (and am) deeply involved in the community survival work that I was doing and learning there with my people, for the absolute love of my people and my family, and hoping to make a positive impact with the resources, skills, and community support around me. I sit here now – on Ishak and Chitimacha lands, two hours west from the Houma area, thanks to Ishak and Canneci Tinné Apache of Louisiana relationships – a climate migrant, seeking more stable and higher land in order to continue my work further into the future. We are working hard to be able to offer a place of safety and refuge in times of evacuation and disaster, and in better times we are a laboratory for climate adaptation in the face of climate catastrophe, a place for Indigenous wisdoms, art, Queer/Trans love and freedom, and a small petting zoo.

I'm along the Bayou Teche now, instead of Bayou Lafourche or Bayou Terrebonne, and I'm learning the ebbs and flows of this ancient riverbed, the Teche being the older main course of the Mississippi River, thousands of years ago. There is a long history of Houma people fleeing the eastern side of the Atchafalaya Basin and seeking refuge amongst the Ishak people in their lands. I tell myself this when I miss the bayous that the rest of my family still largely live alongside. I try to look with hope at the projects that I am a part of that have been started as a result of a fear of our lands and ways of life being lost. We are our ancestors' wildest dreams for the future at hand… I try to integrate the ancestors, the elders, the present modernity, and the hope for the future with my work. Generational work, indeed.

Earlier this summer, I was stuck on the last bridge over the Atchafalaya Basin for 3 hours in extreme heat, finally squeaking my vehicle down the peak of the bridge, quarter mile by quarter mile, slowly repeating the cycle of overheating, turning off the engine, and waiting to cool down just enough to go again, until I was on the land to cut the heat and feel safer than I did on a breakdown lane on blacktop over reflecting water with no shade on an extreme heat advisory day. Many thanks to my partner for picking me up after hour 1.5 to sit behind the van in our broken-but-functioning other vehicle to cool down in the a/c so I didn't maybe get really hurt or die.

It has really driven home some of the more extreme aspects of climate catastrophe that I deal with every day. Pair that with also just a bit earlier in my journey across the Basin: I was driving past "public works" that further decimate the swamplands and pave over this unique ecosystem, and exacerbate flood zones in the furtherance of extractive oil and gas industries. It's a far cry from their propaganda billboards showing hands with growing plants, proclaiming the restoration of the coastline.

My prairie and native plant restoration work at Raccoon Oak Farm mainly usually looks to the neighbors like I just don't cut my lawn, but I am strategically not cutting my lawn, actually. This first year I have gotten to know what plants are already here living on this land that I co-habitate with my plant relatives, what native flowers are already here and blooming and just need some encouragement, what invasives are present and need to be mitigated, where does light and water land, what WANTS to grow here? (American plum is standing all the way up at that last question.) I am creating patches of where the wildflowers bloomed the most, and protecting those areas, instead of mowing them. I am encouraging the snake kin to house themselves in those areas, and we co-habitate the pathways that I make that wander around the land and infrastructure. I am creating little patches of high grasses where my chickens can hide themselves from predator birds through the day and find all sorts of snacks within to feed themselves better so that their eggs nourish us and our communities. I am supporting systems that support myself and my family in turn, and all of that is a mutual aid with all of the plant and animal relatives that we live with on this acre of land.

The goldenrod bloomed here the week of October 7th. I was told once that means 6 weeks until the first frost. After the blooms fade here, I will leave the plant stems for the native bee and bug relatives to have a home to overwinter in, and when the spring comes, things will get cleared out for the incoming new growths.

Learn more about Raccoon Oak Farm at: https://raccoonoakfarm.carrd.co/

“We have seen about 6 feet of snow fall in the SW adirondacks. Just non stop lake effect snow. One storm dropped over 3 feet in early jan. "Normal" winters are about 3-4 feet. Last year was probably less than a foot total. This time last year I was out working in my silvopasture with barely any snow left. This year I'll be surprised if the snow is gone my mid April.”

"The coldest temperature in my yard so far this winter was 31°F in early December, and that wasn't enough to do the trick. The forecast calls for 30° this weekend, that might end up being the coldest this winter. In a city that was zone 8a just 40 years ago...”

What about the diabetics?_

Autonomous medicine, diabetes, and collapse

Bathtub Insulin Enthusiast

Those of us who seek realistic, immediate responses to ongoing collapse often receive a variety of questions that can be boiled down to "How could we ever, possibly, survive outside of capitalism, ecological extraction, or global trade?"

In some spaces, a classic variant of this line of questioning is: "What about the diabetics?" Usually, I've seen this question asked hypothetically and in bad faith, detached from the very much ongoing insulin crisis—a "gotcha" to shut down the possibility of ever living differently and nothing more. When the question is asked in self interest, or curiosity, well-meaning folks sometimes respond with gestures to autonomous work, mutual aid, and so on; but they rarely offer concrete application of these principles. This rhetorical back-and-forth tokenizes disabled people and accomplishes nothing of value.

I am a prediabetic, off-grid herbalist dropout collaborating with diabetic friends, and I would like to show you what this question means to our lives.

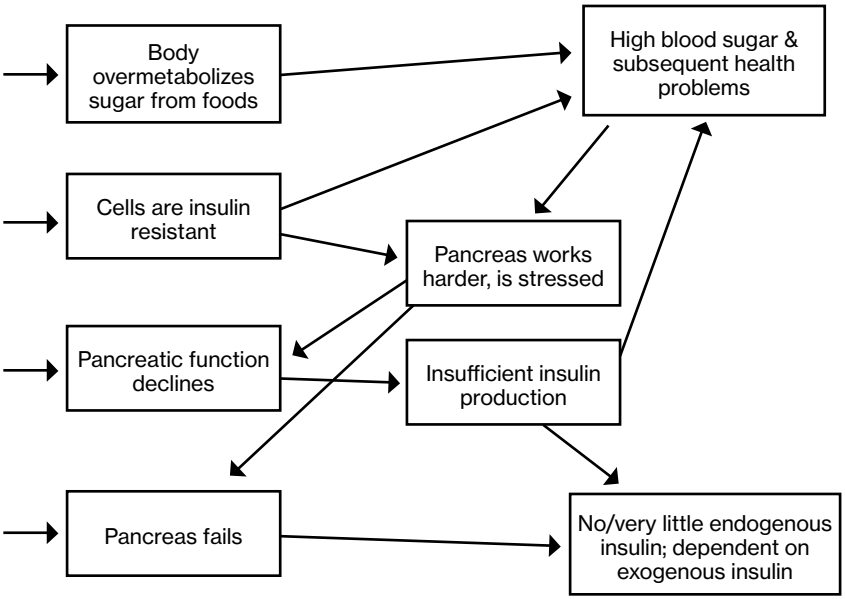
Industrial Western Medicine (IWM) does not imagine a world without itself, and so there are not high-quality evidence-based approaches to navigating diabetes in collapse available in the established scientific literature. When we embark on autonomous medical treatment, we necessarily assume the role of self-researchers: utilizing tradition, anecdote, low-quality scientific evidence, and experimentation. This is a process with pros and cons, but one that we may use together for mutual benefit when we reject hierarchical patient-provider relationships.

Claims marked with *asterisks are either anecdotal or drawn from

synthesis too diffuse to enumerate here.

Diabetes mellitus is best understood as a group of several related diseases involving high blood sugar caused by some sort of disruption with how the hormone insulin is produced or utilized. Insulin binds to insulin receptors in our cells, allowing the cells to accept sugar from the blood and turn it into energy–like a key opening a lock. A long story very short, sugar that stays in the blood is not getting into our cells to power our bodies. If no sugar makes it into our cells, we will die. Secondary complications arise as sugar in the blood makes the blood thicker. This stresses the heart muscle and vein membranes, causing cardiovascular problems and issues like slow wound healing. These secondary complications can also be fatal.

It is currently unknown by western science what causes diabetes; though a few vectors increase risk, such as genetics, 2nd generation antipsychotic medication, poor diet, and alcohol use. While body weight is often discussed around diabetes, correlation between high weight and diabetes is not as high as some imply and causative relationships are not proven.



For this piece it is most important to understand that some cases of diabetes begin with or necessitate dependence on injected (exogenous) insulin; whereas other cases of diabetes, or prediabetes, can be managed without exogenous insulin but will progress to insulin dependence along variable but known paths if untreated (see graphic).

IWM treats diabetes in three main ways:

1. Therapeutic diet
2. Hypoglycemic medications, such as metformin
3. Exogenous insulin

While IWM broadly tries to prevent prediabetes and non-insulin-dependent diabetes from becoming insulin-dependent, it still assumes exogenous insulin will be available should patients require it in the future. We do not have that luxury.

Insulin must be refrigerated. It is harder for homeless and broke off-grid people to keep insulin than it is to get it. State and NGO medical access programs are location-based and expect patients to remain within a small geographical area: this can be life-threatening, as we understand the homelessness crisis increasingly as a climate refugee crisis. Thus, we have two viable treatment options: therapeutic diet, and herbs with hypoglycemic or otherwise supportive actions.

To be workable, the strategies currently available to us still require a sufficient amount of endogenous insulin—meaning they are not feasible as complete treatment for insulin-dependent diabetics. Some biohacking groups seek to produce insulin at a localized community scale. However, many of the current active projects have the vulnerability of reliance on access to industrially-produced organic solvents and machined lab equipment. Insulin from animal sources, such as the bovine and pig insulin used for much of the 20th century, may be a more feasible route in scenarios of fast-paced industrial collapse.

Food- and herb-based treatment strategies are immediately available, though continued autonomous research is necessary. Early intervention in diabetes and prediabetes can prevent insulin dependence, and these strategies can support safer insulin rationing in scarcity or

acute crisis.* Holistic intervention may be able to mitigate secondary complications, buying time for other solutions and improving quality of life.

The goal of a therapeutic diet for diabetes is to limit blood sugar spikes and thus demand on the pancreas. Limiting simple carbohydrates, which are metabolized most quickly into glucose, is a keystone. Proteins have very limited impact on blood glucose levels, but very high protein diets seem adequate for maintaining energy.* Combining carbohydrates with oils (unsaturated fats) can blunt glycemic response. Saturated fats can increase insulin requirements and spike blood sugar, though this could vary by individual. IWM-prescribed therapeutic diets sometimes make no distinction between lean/light and fatty/dark meats,* but some people have strong glycemic responses to pork, beef, and duck.*

Maintaining a therapeutic diet can be prohibitively expensive, although it is somewhat easier in warmer seasons with significant foraging. Many people who attempt therapeutic diets struggle to maintain adequate nourishment,* thus risking weight loss/weight cycling related health problems. Snack foods and foods that are easy to prepare are particularly difficult: communal support in procuring and preparing food is extremely meaningful in making therapeutic diets successful.

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* Claims marked with *asterisks are either anecdotal or drawn from synthesis too diffuse to enumerate here.

The table below shows foragable and cultivated foods we have appreciated, which we encourage farmers and food foresters to consider as a means of extending solidarity. All foods were selected for nutrient and caloric density, taking into account production/procurement effort and yield in addition to stated reasons.

Foods	Reason
Hearty greens (dandelion, dock, collards, turnips, nettles, etc.)	High fiber; can be used to bulk out meals instead of starches
Legumes (domesticated beans, mouse beans, peanuts)	High in protein, unsaturated fats.
Tree nuts (walnuts, chestnuts, hazelnuts, hickory, acorns)	High in protein, unsaturated fats. Good snacks!
Eggs (duck & chicken)	High in protein, unsaturated fats; low saturated fats
Fish (catfish, crawdads)	Unsaturated fats
Lean meats (rabbit, some fowl)	High in protein, lower in saturated fats
Sweet potatoes	Higher protein/lower carb than white potatoes
Sunflowers	Source of unsaturated fats (as oil, nut meal, snacks!)
Mushrooms	Relatively high protein, nutrient-dense

Herbal support can take different forms based on individual circumstance. Relevant herbs may have direct hypoglycemic effects or help combat insulin resistance, support the pancreas and digestive system (which can help regulate blood sugar in at least some cases*), or support other body systems strained by diabetes.

When assessing candidate herbs for direct intervention, we of course seek references to diabetes, but more commonly found are references to pancreatic enzymes or simply general use as bitter tonics. Often these herbs (or their chemical constituents) can then be found in research directly relating to diabetes (via PubMed, LibGen, etc.), or in articles focusing on enzymes that fit into our understanding of metabolic needs.

I have the most personal experience with goldenseal and its constit-

uent chemical berberine (which is also produced by plants in other bioregions). Goldenseal is used in Indigenous medical traditions, settler folk medicine, and various historical iterations of academic western medicine as a tonic bitter that is supportive to the pancreas, and scientific inquiry suggests that berberine is hypoglycemic, supports insulin production, and reduces insulin resistance, though it also points out that berberine in its pure form is toxic and poorly absorbed., However, herbalists generally consider goldenseal to be quite safe. Medical herbalist Dr. Richard Whelan suggests goldenseal should not be used while pregnant or breastfeeding, is not for children, and to proceed with blood pressure monitoring in people with hypertension. I've found 1:2 weight:volume fresh goldenseal root tincture made with 75% ABV ethyl alcohol at normal tonic doses to acutely relieve or apparently prevent symptoms associated with hyperglycemia in myself on several occasions; though, I have yet to find an opportunity to test this with a glucometer.

Goldenseal is also notable as a slow-growing woodland plant in need of protective attention. Practicing mutual aid with this plant where bio-regionally appropriate may be necessary to both of our continued survival.

Indirect or holistic intervention is best drawn from a wider herbal knowledge base and tailored to individuals in context. The following table contains plants we have used or heard of being useful in managing diabetes directly or managing secondary complications. As a starting point, I recommend looking them up in some of the references provided below and/or using Google Scholar in conjunction with Sci-Hub or Anna's Archive to seek scientific articles about these plants.

Note: Medicinal benefits of various plants sometimes vary at the species level of western scientific taxonomy, while others are used interchangeably at the genus or even family level. Investigation into herbal references and careful experimentation with plants closely related to these native to your bioregion may yield useful results!

Category	Specific plants	Comments
Antidiabetic/hypoglycemic	Goldenseal (*Hydrastis canadensis*), Devil's club (*Olopanax horridus*), insulin plant (*Chamaecostus cuspidatus*), Cyperus rotundus, fringetree (*Chionanthus virginicus*)	Other sources of berberine such as Oregon grape (*Berberis aquifolium*) may also be useful.
Anthocyanin (red-blue pigment) cardiovascular tonics	Blueberries, tart cherries (*Prunus cerasus*), hawthorn berries (*Crataegus spp.*), hibiscus, rooibos (*Aspalathus linearis*)	Most red-purple foods contain anythocyanins.
Connective tissue-supportive mucilages	Solomon's seal (*Polygonatum spp.*) and Solomon's plume (*Maianthemum spp.*), mullein root (*Verbascum thapsus*)	Can support some cardiovascular tissues and joint issues common as secondary diabetes complications.
Indicated for pancreatitis	Juniper (*Juniperus communis*), rose gentian (*Sabatia angularis*), wormwood (*Artemisia absinthium*)	Especially notable in type 3c diabetes.* Possibly helpful for people at risk for diabetes through pancreatic strain and/or preventing the progression of diabetes.
Misc. digestive bitters	Dandelion, burdock (*Arctium lappa*), vervain (*Verbena spp.*)	Can support nutrient absorption and effective digestion; especially notable in type 3c diabetes.

There is still a lot of work to be done and much more to figure out. If you are curious about joining autonomous medical efforts, please do. Those of us engaged in this process—from herbalists to biohackers to DIY pharmacists—are neither know-nothing bathtub drug peddlers, nor a far-off force of qualified professionals working behind the scenes to save everybody in the future. We are overwhelmingly just very desperate people trying very hard. *We need more hands and minds.*

Some resources for beginner herbalists:

An Anarchist Free Herbal: Beginners guide to autonomous medicine 3rd edition

The Herbal Medicine Maker's Handbook by James Green

A Cree Healer and His Medicine Bundle by David Young, Robert Rodgers and Russell Willier

The Earthwise Herbal: A Complete Guide to New World Medicinal Plants by Matthew Wood

Online resources: rjwhelan.co.nz and henriettes-herb.com and phytochem.nal.usda.gov

Psst! These books are free on Library Genesis, Anna's Archive, or the Internet Archive.

correspondence: blacklidge community collective

tucson, AZ
2/15/25

Q. What is the Blacklidge Community Collective and what sort of things happen there?

A. BCC is a lot of things I suppose, but at base it is a building that houses various autonomous and experimental resources, programs, and projects. I often stumble over this question because we do believe we are trying to approach things a bit differently than how we often get described, which is a community center or an anarchist social center. Neither of those descriptions are totally off-base but they aren't really accurate either. For one, our priority is not to serve some abstraction called the community. It was started and is maintained largely because those of us really invested in the space need spaces and resources to pursue our passions and our needs. Many of us live in the neighborhood or close by. Where community comes in is that we wager that through organizing ourselves to do those things while simultaneously remaining as open “to the outside" or to people who are not "us" as we can, we will form new bonds and start to become a community ourselves, and we will end up becoming more involved with the communities around us and linking up with new people who are also acting and organizing themselves from some of the same impulses. In my opinion this is an existentially different approach than many community and social centers whether they are run by churches, nonprofits, or politi-

cal radicals. This approach has real world implications and I think it's evident once you enter the space and get immersed in it yourself.

Q. What does it take to run the space? How many people make it happen? How are tasks shared, decisions made, etc.?

A. This is always shifting and changing according to the needs of the people and projects in the space, but right now I'd say there's roughly a core of about 30 people invested enough in the space to regularly attend meetings and participate in some level of decision making. Generally we make a lot of decisions on an informal and ad hoc basis and try to extend trust to people in the space to just check in with a few people or directly relevant projects before making decisions. Usually that's enough to figure out if an idea needs to be brought to a general meeting or not. But the structure right now is there are Projects and Working Groups. Projects are largely autonomous initiatives that need to house themselves in the building for one reason or another; often they spring out of relationships formed in the space but could theoretically exist without it. Some projects are the Archives Commune, the Tucson Mesh Network, the Church of Safe Injection Tucson, or the Distributed Medical Device Manufacturing group. Working Groups are committees established to coordinate or take on tasks directly relevant to running the space. So there is a programming committee, a finance and admin committee, there's a committee for our weekly dinners, facilities management, etc.

The structure is that each WG and Project is expected to send at least one representative to the monthly general meetings to give a monthly update about how things are going and to check in about any needs, new ideas, or bring up any issues that need addressing by the whole space. Of course this doesn't always happen smoothly but it's maintained pretty well since 2019! We also have various text loops to coordinate all of these groups and handle immediate issues that can't wait until the meetings. Although in person or over the phone conversations are highly prioritized since text loop discussions have serious limitations to their ability to solve complex problems for many reasons. We also have 2 levels of individual responsibility. There are

keyholders and members. Keyholders are anyone who needs autonomous access to the space and are nominated and then vouched for by at least 2 people. Usually these are people who are volunteers for some of the bigger projects like the harm reduction group that need to come in and grab supplies for their delivery program. Members are people who have been to at least three meetings and are members of a working group or project. These people hold "voting" decision making power for really important or contentious decisions. I can think of only a couple times since 2019 that we have ever had to seriously consider invoking that rule–it's something we attempt to avoid as much as possible. Which at the end of the day reflects the internal culture we like to cultivate at the space. Showing respect to each other even if we disagree, working to cooperate rather than compete. We aren't trying to recreate a certain kind of competitive democracy, where everyone's trying to win others to their perspective. That in my opinion is ultimately individualistic and "war by other means." Discussion should be enthusiastic but ultimately an effort to find a common ground or path when necessary and make as much space for multiple paths as logistically possible. I'm not saying we always do it perfectly, but it's the most successful attempt I've ever personally been a part of.

Q. What sorts of challenges are y'all facing and how are you learning or adapting in response?

A. Well a big one is the precarity inherent in renting a space. Our long term goal is to buy a building but as property values skyrocket in Tucson, being able to find something we can afford in the general vicinity of where we have been over the years is increasingly difficult. We have had to move out of the space we were in for 5 years because of a NIMBY developer leveraging some influence over city code enforcement. If we are doing things right, we will make enemies. Some of them powerful. Owning a building won't solve all of that but it will definitely give us a little more resilience than having a landlord.

Another problem all the time is issues of conflict. This is especially harder to handle with newer people getting involved that haven't shared the same trajectories as a lot of us. Sometimes the conflict just reveals we shouldn't work together, but sometimes it probably could have been handled in such a way that left a little more space for resolu-

tion. But it's difficult to sum up problems of conflicts in such abstract terms, especially in political circles when it can feel like insecurities and personal rifts get politicized and abstracted so quickly there's no resolution possible. I think we have done better than a lot of groups but we always have room for improvement. I think the biggest thing I'd say is that direct conversations and time and space being a priority in conflicts is key, and so much of the time tensions can just be allowed to exist. It's ok if we don't all agree or don't all like each other all the time, we shouldn't be forming a new friend circle. Our ambitions and priorities should be bigger than that.

photo by Tohmi Barrett

"March 10th"

Tika Simone

The phone | itches | routinely | these days
It | cannot be soothed | with sweet looks | or | sweet eyes
The phone | is burning | out | of its shell
Begging | for | a rest

Turn | me | off | it says | forget | about your skin | and be | in your bones | tonight
You | have twenty more minutes before the end of the world
Don't you want to be alone laying under the sunset field
Don't you want to know everyone is thinking of you and you all on your own

Scratching only activates the pleasure which only prolongs the pain
Haven't you learned anything from poison
Can you see your reflection in the crane fly
How it thinks the window is the sky
How it will surely by next morning die

This is not making a personality
This is digging out the root with a pallbearer

This sliding a willow cutting into the open hole that is left from the bulldozer
Spiritual boon today for counting all the trees
Welcome my friend to how good it feels
To count several times the many many trees

Lessons from the beaver: How and why to coppice willow

Sammy Tangir and Michiko Bown-Kai

We jokingly call it "basketvision" – once you've had the opportunity to weave your own basket, suddenly you notice the woven world all around you. The act of creating sends ripples of awareness into our relationship with this everyday item. Woven into the basket are not only the lessons we have learned from the willow but the memories of the time spent in community, all of us brought together through a shared desire to weave. I find myself stopping to appreciate every bas-

ket I come across, wondering about the weaver and what stories they have woven into their creation.

Basket weaving is an ancient practice used in the most basic parts of everyday life: harvesting food, organizing a pantry, carrying personal items, and holding our treasures for safekeeping. There is an intimacy deepened ever further by being able to create something from a plant you have been in relationship with since its first leaves unfurled. Unlike so many of the items in our lives today, with a basket it is possible to know its full story: planting and cultivating the willow, harvesting and preparing the materials, and the act of weaving itself. In a world where so much is produced through extraction, theft, and abuse, willow basketry enables us to create something useful and beautiful with a renewable resource and a couple simple tools.

Coppicing

Coppicing is the practice of harvesting from a plant by cutting all of the growth down to the ground. It might seem funny to cut down something you want to grow, but coppicing means that each year you can harvest fresh 'first-year' growth, branches that are nourished by an established root and therefore grow long and tall and yet are thin enough to be woven by hand into a basket. These first year shoots also have brighter bark colors that can be really eye-catching. What starts as a single stick can turn into 10, 20, even up to 60 sticks from the same root system!

Coppicing willow reminds us that humans are woven into the natural world; the more we interact with and use willow, the more abundantly the willow grows. Beavers have known this all along: willow is one of their go-to foods and, whether intentionally or not, they coppice it too! If a coppiced willow is left for over a year, the willow can become too branchy and thick for weaving, but it can always be cut back at any size to encourage first year shoots to grow from the base or "stool."

How to identify willow/choose a plant:

When you think of willow you likely picture a giant weeping willow tree. The willow we seek for weaving is not from a tree (those branches tend to crack), but various forms of shrub willow. The best willow for

weaving usually grows multiple stems (which is encouraged by coppicing) and will have thin leaves, usually 2-3 times longer than they are wide, most often alternately arranged on the stem. Shrub willows grow 3-6 feet tall, and can be found growing along the side of a river, waterbody, electricity corridor or dotted throughout a wet meadow or roadside ditch. Search for multi-stemmed shrubs with new growth rather than thick woody stems. The branches should be able to bend around your finger with ease and without kinking.

It's not only willow! Other trees will respond similarly to coppicing like red-osier dogwood (*Cornus sericea*), Alder (*Alnus sp.*) and even european buckthorn (*Rhamnus cathartica*) to name a few. We love willow and bendy-ness is their superpower, but these other plants can be used similarly too. Find what is abundant around you and give it a try!

How and when to harvest

It is the kindest and most gentle to gather willow for cuttings once the leaves have fallen in the autumn. This is a sign that the plant has

become dormant and is no longer sending energy into the shoots to grow. Scout them out in the summer, mark your shrubs and come back when the leaves drop. The most ideal branches to gather are straight and without any branches coming off of them. Cut the sticks cleanly with snips low to the ground so more can grow from that spot next spring. While harvesting, we often use different coloured string/ribbons to label the different varieties and write down the color code on a sheet of paper.

Tools needed

-Garden snips

-Rope to tie up your bundle

-Strings or ribbon for tagging/recording where you coppiced the willow if you're sourcing from multiple places

-For storage, we often bundle the sticks using packing tape and label using a sharpie

-A tarp to wrap around the bundle or to lay down inside a vehicle for transportation – minimizes general dirt/mess

After you have finished your harvest you can:

Make cuttings so that you can cultivate your own willow patch. Sticks at least 1.5cm thick can be saved for propagation. Keep cuttings in a cool spot where they won't dry out and stick them in the earth once the ground has thawed.

Dry the sticks to use for later basket weaving. Leave them somewhere with decent airflow to dry. Sticks can be stored for a long time before being soaked to make a basket with. We recommend sorting the harvest by length using a process called "drafting" where all of the harvested sticks are placed into a container (large garbage bins work great) and only a handful of the tallest sticks are pulled out of the container and placed in their own pile. As you continue this process you will end up with several piles of sticks all sorted according to length. This will

be very helpful in the weaving stages where consistency in willow ensures a higher quality basket. Or, let the sticks dry out partially and weave "semi-green."

There are lots of books and online resources to support you in learning about how to weave but we recommend checking out a local skillshare or folk school where you can learn in community.

Recommended Resources:

Hana Van Aelst on youtube @hannavanaelst

The Complete Book of Basketry Techniques by Sue Gabriel and Sally Goymer

You can find us on instagram: @squirrelandbeaver

correspondence: bloomington cooperative living

bloomington, IN
12/17/24

Q. How many people live in the co-op?

A. 84.

Q. What is the ownership structure?

A. Bloomington Cooperative Living is composed of five houses that are held together under the same nonprofit. It is cooperatively held as a group equity co-op, which means that no one is required to buy in a share.

In New York style co-ops, you buy a share and that gives you the right to access an apartment. Most of the value of these sorts of split-equity or share-based co-ops is that they give you something to speculate on: Your share increases over time and you can sell it later. But if the goal is just to provide housing and access to housing and collective resources for people, you can bypass that in the form of a group equity co-op.A group equity co-op means that you pay a monthly membership fee, which is as cheap as possible and which gives you access to a room or a living space in the co-op without having to borrow money or get family money to buy a $20,000 share or something like this. You just pay something that looks like rent, but it's somewhat cheaper because there's nothing speculative about it.

We have found that the 501c3 nonprofit is a really powerful structure for holding cooperatives because it is still fairly loose in terms of what its goals have to be. But if you're providing affordable housing, which is defined as something like three quarters of the members earning 80% of the area median income or less, then you qualify as providing

a nonprofit service and can structure your cooperative as a 501c3.

In other words, most collective land projects already are meeting the qualifications for being an affordable housing 501c3. And then you get the ability to have all these tax privileges. We've been able to get property tax exemptions most years for most of our houses, in addition to not paying taxes on our building supplies, et cetera.

Q. What decisions are made as a group and what does the process look like?

A. The core decision-making body of the co-op is the General Assembly, in which as many members of all five houses as possible meet every month to make financial and general decisions about the co-op.

Because it's a 501c3, we also have a board of directors, who are not the decision-makers for the co-op but include representatives from each house as well as other supportive neighbors who believe politically in the mission of the co-op. So the board of directors really offers a reservoir of resources and energy to support the General Assembly.

In addition, every house has house meetings weekly except the week of General Assembly. On the house level, you coordinate the chores, most financial spending, et cetera. In a town where the affordable housing threshold is $800 or less in monthly costs, our monthly costs are something like $600 a month, which includes both utilities and a cooperative food purchase. That means that supplies for breakfast and lunch are always around. Chores include members of the house cooking collective dinners, usually six nights a week, which creates a really important space for ongoing sociability, coordination, and care in the house that also is a kind of support for the house meeting structure. And it means that people who are working can come home and most nights someone else will have already prepared a large dinner that they can just sit down and eat or have it set aside for later.

One of the tasks that regularly rotates—because these are all rotating chores and tasks—is what we call the chore-eographer. The chore-eographer takes on a kind of directing role temporarily to make sure that the chore distribution is functioning and that people are able to have their needs met with their chores, if they need to take a day off from a

chore, etc. It's a coordinating role that regularly rotates in each house. Generally speaking, I believe that most houses have two chore slots assigned to each member per week. That means that an 18-person house has 36 chore slots. If two people are cooking dinner six nights a week, that means that 12 of those slots, or one third, go to cooking. And the rest of the slots go to things like cleaning various spaces, handling that week's house food purchase, or taking on different kinds of secretarial roles with tracking money, etc.

Q. What is your orientation towards the family? What is life like for kids? How do you raise children together?

A. So from our perspective, the cooperative is a collective and communal space, but it's not a commune in the kind of strong American sense of the term from the 60s or 70s. It's not an income sharing organization, and it's goal is to push economic pressures to the margins, not to directly or voluntaristically abolish them from the beginning.

The goal is to reduce the stress that the need to work, the need to make money, the need to cook, puts on individuals, friends, families, and in the space that's opened up by relieving that stress, be able to offer residents the time and the ability to experiment with new forms of life. So we're totally flexible on all these things.

There's been now, I think, a couple babies born in Bloomington Cooperative Living houses to couples renting one or two rooms. At one of our houses in particular, we were able to experiment with building suites where we said that anyone who's in a caring relationship—caring for elders or caring for children—could get these cheaper suites that are two bedrooms, a playroom and a bathroom. I think the total cost for those is like $850 a month, which is quite good for Bloomington for an entire little apartment, but it doesn't have its own kitchen. So people in those suites have a lot of the benefits of privacy or downtime for their children, but on the other hand, are still participating in the kind of core functions of social reproduction in the house, which include cooking and shared food purchases.

Q. What do you do for fun or joy, either separately or collectively?

A. The nice thing is that BCL functions as a very convivial communal

space that is not based purely on interpersonal friendships. It's large enough that it's a larger communal context that includes many different friend groups. That means people are constantly just doing their own sorts of fun things with their particular group of friends, both inside and outside the co-op. But BCL—in the same kind of logistical spirit that it handles food purchases with—also attends to regular communal festivities, which include most summers renting pontoon boats on the local lake and organizing an all-BCL lake day.

Q. How permeable is the boundary between the space y'all inhabit and the outside world? Are you able to invite neighbors and guests? Are there any security measures that need to be taken?

A. It's extremely permeable. That ranges from kind of formal permeable arrangements that include the fact that many people pay to board at the houses without living there, which means that they might participate in the chore structure and they kick into the food budget and then are able to show up at collective dinners and eat. There's lots of other scenarios where others can eat too. It's not that you have to pay to eat, but boarding is a way to say that you're regularly using a BCL house to both see your friends and also eat there five nights a week.

That's a way that people constantly enter the spaces. But BCL is also part of a wider fabric of communal and autonomous projects in Bloomington, so there's permeability between those projects and also between BCL and many other communities in Bloomington.

Q. How do you engage with capital? To what extent is your community able to self-sustain?

A. The model of cooperatives organized as 501c3s, I think, is quite self-sustaining on its own terms in that people, if they didn't have access to something like this, would almost certainly have to pay rent. And so what this does is create a physically better, communally richer, economically cheaper context in which people are able to live together. Instead of people having to budget $800 a month for a bedroom, they are able to budget $600 including food, and then have access to all these other resources. So in that way, it's self-sustaining.

We literally are one of the biggest providers of affordable housing, es-

pecially affordable housing that is still expanding, in Bloomington. So we have a positive relationship with a number of progressive lenders who are committed to growing the number of affordable bedrooms in Bloomington.

Q. Tell us about a time you had a conflict OR tell us one thing that has worked for y'all/one piece of advice for resolving group conflict.

A. Most conflict is resolved on the house level, though one of the functions of the board is to offer support and mediation in the case of conflicts to make sure that there's a kind of backstop for conflicts so that a house doesn't get consumed in the case of a serious one. The major thing that comes up is people being unable to pay their membership fees. We've been able to construct pretty elaborate ways to absorb losses from people not paying their fees while also reminding people that when they're not able to pay, it's essentially their friends and housemates who are covering their membership fee, because when we lose income, it's not lost profit, it's only the money that's required to keep everything going.

At the very beginning of BCL, there was a history of filing evictions and court processes, but as the organization developed and became more politically engaged and aware of critiques of the carceral system and the court system, we've been able to go almost a decade now without any eviction. Instead, we use a mixture of generosity and care extended to people who are unable to pay in with setting boundaries around when others are actually hurt or impacted by someone not paying to cover costs.

Otherwise, one of the problems with what we do is that resolving other kinds of conflicts really requires a mix of very experienced long-term residents. That's a process where people develop the confidence over time to intelligently deal with conflicts, but it's not something that can be rushed. It's a process of people developing confidence in the co-op over time, and that sometimes means that we are overstretched or don't have the people necessary to solve a conflict.

Okra Seed "Bean" Dip

Serves: 2-3 people

Did you know that okra seeds are edible? Even after the pods have gotten too woody to eat, you can eat the seeds. In fact, okra seeds contain a lot of nutrients: 21.1% protein and 18% fat/oil by weight. Don't be surprised if you see okra seed oil on a grocery store shelf in a few years — okra is one of the hardiest, most heat-loving, climate-adapted crops and the oil is high quality. You most likely won't see whole okra seeds at the grocery store any time soon, because aside from fat and protein in the kernel, the outer hull of the seed contains a lot of fiber, which is why this recipe involves a long cooking time. We encourage experimentation on methods for manually separating the hulls and kernels, either by cracking & sifting or cooking, mashing & straining. Let us know what you come up with at lobeliacommons@protonmail.com

Ingredients

2 cups fresh okra seeds

6 cloves garlic

¼ cup cooking oil, butter or fat

1½ cup shredded cheese

Salt to taste

1 medium onion (optional)

1 cup chopped sweet peppers (optional)

1-3 small hot peppers (optional)

1 medium sized tomato (optional)

1 large avocado

Ginger (optional)

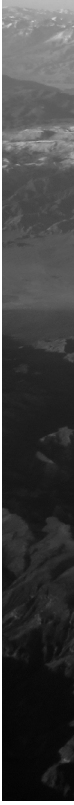
Turmeric (optional)

Lemon juice (optional)

Spices: (Black pepper, mustard seed, cumin seed, fennel seed, basil (any), oregano, moringa leaf, hoja santa, kadi patta)

Instructions

1. Harvest a couple dozen okra pods. Unlike conventional okra harvest, you don't want fresh pods that break easily and which must be harvested every few days. Wait till the pods reach full size but well before they die and begin to dry out. Seeds will range in color from white to yellow to brown to black as they mature; all are fine for this recipe as long as they haven't dried out like you would to store seed for planting.



2. Break open the okra pods and collect all the seeds. This dip uses 2 cups, feeds 2-3 people.

3. Boil the okra seeds for 90 minutes. They're edible at this stage, with a texture like a tiny pea with a bit of a thick skin. (Okra "peas" aren't slimy and work well in soups & stews.)

4. Heat a large skillet, add any whole dry spices such as fennel seed, cumin seed, black peppercorn, mustard seed, kadi patta (curry leaves), etc. Once the spices are toasted and before they start to burn, add about 1/4 cup of cooking oil, butter or animal fat.

5. Add a handful of garlic, either finely diced or if you've got fresh ginger or turmeric, use a food processor to make a garlic-ginger-turmeric paste and add that to the hot oil.

6. Add finely chopped onion, peppers, maybe a tomato, fry for about a minute.

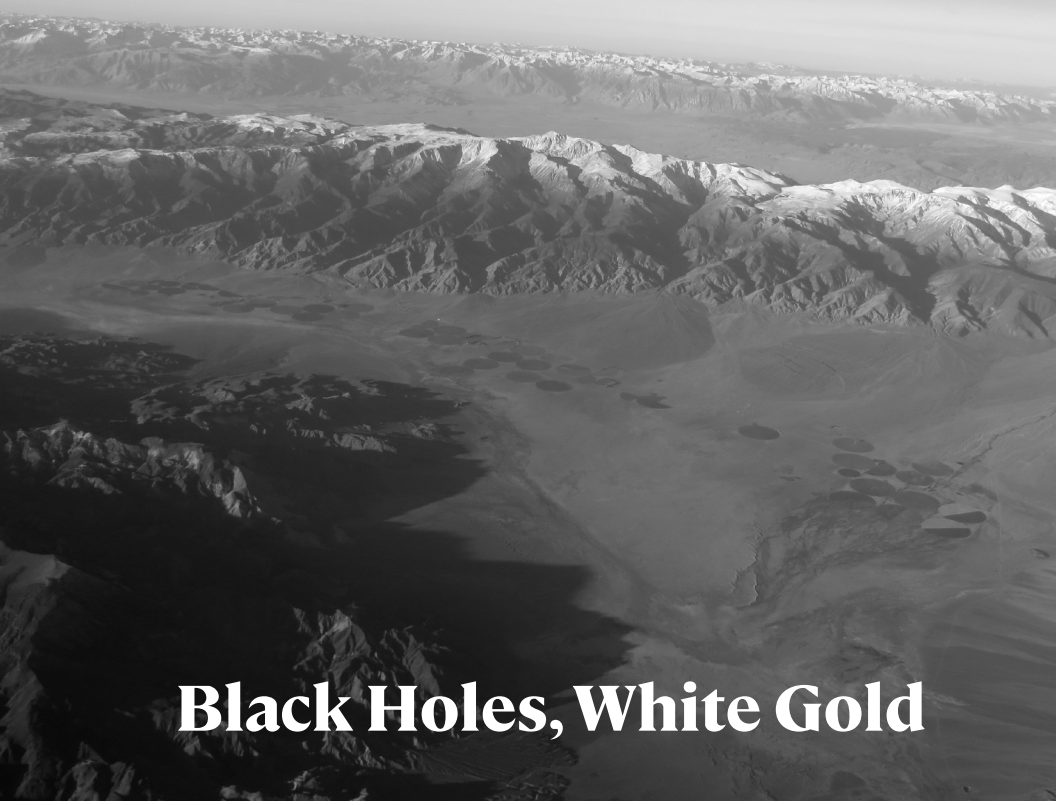
7. Drain the boiled okra seeds and add them to the skillet. Add some salt too.

8. Use a masher or fork to mash the seeds while they cook. Continue to stir and mash as needed for about 20-25 minutes. (Optional: during this step, slowly add 4-6 cups of fresh moringa leaves or other light cooking green.)

9. Add fresh herbs or greens – moringa, basil, oregano, rosemary, sage, epazote, hoja santa, whatever you're feeling.

10. Add a bit of water or stock for a refried-bean-like consistency and cook on low until the consistency is right. Add salt to taste.

11. Sprinkle about 1½ cup of shredded cheese on top. Garnish with finely minced fresh basil leaves, a sliced



Black Holes, White Gold

Lithium mining, the Silver Peak Range and botanical documentation as resistance.

Peri Lee Pipkin

On the western edge of Nevada lies the least populated county in the state, Esmeralda. Coyote songs drift through windswept sagebrush and rusty red mesas glow under a blanket of glittering stars across the dark night sky. Here, in the rain shadow of the White Mountains, the geologically-mesmerizing Silver Peak Range reaches its snow capped peaks 9,450 feet into the air and stretches its valleys of salt and sand into the desert expanse below. This area has since time immemorial been home to the Nüümü (Northern Paiute), Nüümü Witü (Eastern Mono/Monache), Newe Sogobia (Western Shoshone), and Timbisha Shoshone people.

Now, however, a newcomer to the region has plans that could dramatically reshape this remote mountain range and both human and

wildlife access into the area. An Australian-owned mining company called Ioneer wants to build a 7,000-acre lithium and boron mine and processing facility named for a prominent ridgeline, Rhyolite Ridge. I came to work here in the Silver Peak Range as a botanist because the lithium-boron deposit the company plans to mine underlies a single-site endemic, federally endangered plant species—that is, a plant that grows nowhere else on earth outside its 10-acre footprint. *Eriogonum tiehmii*, known as Tiehm's buckwheat, is a perennial clumping wildflower with yellow, pom-pom-like flowers and fuzzy gray-green leaves that blooms in abundance through the spring. The Indigenous name for this plant has been lost, but Shoshone tribal members are working to unearth it, stressing the plant's cultural importance in ceremony and medicine. Eriogonum tiehmii grows next to a sacred place called Cave Springs, which has provided important water sources for wildlife and sensitive ecosystems and also houses petroglyphs. Cave Springs is in a greater valley that is the traditional place of vision quests and its historical significance extends into both the Indigenous and settler communities of the area.

Ioneer wants to build its 1,000-foot-deep, open-pit mine and industrial facility within 20 feet of this cultural site and this rare, federally-endangered plant, and the footprint of the mine and processing facilities would engulf the entirety of the sacred valley. Construction of this mine would fragment, degrade, and destroy surrounding habitat critical to the survival of *Eriogonum tiehmii*, whose extremely narrow range makes it vulnerable to extinction. In addition to disturbance from the mine and development of the 200-acre industrial processing facility, new roads would be cut and 150-ton trucks would be traveling through the area up to 1,050 times daily, creating massive quantities of dust and nitrogen deposition through vehicle emissions that would critically imperil *Eriogonum tiehmii*, its habitat, and its pollinators. To control dust, the company proposes to irrigate the roads with water from the nearby Fish Lake Valley, where the groundwater is already 172% overdrawn by agriculture. This threatens the valley's groundwater-dependent salt marshes and playas, its migratory birds and other wildlife, and the rare and endangered plants who live there. It's important to note that lithium, a critical mineral highly-sought after for electric vehicle batteries and devices, is an abundant mineral, and not

restricted to this specific location at Rhyolite Ridge.

The way I see it, rare plants are among the most vulnerable members of our ecological communities, which are interwoven with our human communities and traditions. They are foundational in our stories of and attachments to place. These plants play key ecological roles but are often overlooked and deprioritized, so as a botanist, I feel deeply that standing up to protect the voiceless is critical unless we want to lose these plants and places that we love and respect. My work in the Silver Peak range involved creating a floristic inventory and documenting how land use change has impacted the ecology of the place we see today. A floristic inventory is a voucher-based list of all plants occurring in the area, meaning plants are collected and pressed to later be identified. Without this documentation, developers and land managers work on the assumption that nothing of ecological or cultural value exists there, and approve areas for development, especially in regions with land managers hostile to ideas of conservation and socially-equitable land management. This is how we lose species to extinction, and how culturally-significant landscapes get decimated. This isn't to say a landscape is only valuable and worth protecting if it has biological diversity or cultural significance, but at this point in the triage that is the defense of ecological integrity in the West, it's where we as conservation botanists are focusing our attention.

Nevada is the least botanically-documented state in the western U.S., and botanists often refer to it as a "botanical black hole." During the three short years that I worked in the Silver Peak Range, I added over 300 plants to the known taxa list of the region, 54 of which are "sensitive species," meaning they are rare or vulnerable to extinction. That doesn't mean I'm the first person to know these plants were here; this just means that there were hundreds of plants in the region unknown by the folks who have the power to decide whether these mountains continue to exist as mountains or whether they become giant holes in the earth.

The situation here at Rhyolite Ridge is one that is seen over and over again in the West, and especially in the deserts—a financially lucrative resource takes precedence over important cultural and ecological sites. This type of violence and disregard for land has continued since

the first settlers came west in a trail of dust and blood. It is evident as companies bulldoze the landscape for solar panels and cover pristine desert with glimmering symbols of progress, destroying contiguous habitat instead of shading parking lots, canals, or rooftops. It's evident as cattle are let to trample sensitive desert ecosystems, and as geothermal developers pump sensitive, groundwater-dependent ecosystems and springs dry.

Genocide arrived immediately with the settlers of the region, with mining and cattle grazing on its heels. This led to the draining of many wetlands filled with irises, yerba mansa, and orchids to make way for alfalfa farming. Water sources where herds of pronghorn and bighorn sheep gathered were destroyed or contaminated. But even though the landscape has changed drastically over the past century and a half, the deserts remain the least developed and last unbroken stretches of land and habitat in the continental U.S., critical to wildlife migratory pathways and rural cultures. Now, however, planned development threatens to change the landscape even further. As of September 2024, the BLM office in the region has slated 47% of Esmeralda County for industrial-scale solar development. Every relatively flat or gently-sloped area in the county has been offered up to the bulldozers.

In the face of this planned destruction, botanical collection can convey regional botanical diversity and compile baseline biological data. The specimens have been cited in lawsuits and hold up in court and can potentially slow or derail projects.

Botany, like all sciences, has a dark and problematic history. However, the language of science unites folks across the world with precise language. Without this language, it's nearly impossible to officially document these plants with the intention of pushing back against the destruction growing across the West like a cancer. I'm not saying it's the only way, and I wish there were more ways. And I must stress that in regard to the Latin name, there is no hierarchy of names. We should and must call plants by the names our grandmothers taught us, the names the uncountable languages and cultures over millennia have called them, the names we've learned from teachers near and far. The names we call plants and creatures from our hearts or in our dreams have limitless reaches and reasons. But when we stand up to the state and the meat grinder that is capitalism in order to protest destruction, we need the specific name the Latin binomial offers in order to pursue litigation, which seems to be one of the more effective ways to pull the reins on capital-driven development.

As of now, botanical documentation in the Silver Peak Range has illuminated the presence of several endangered species. Because of these plants, and inaction on the part of the land management agency, progress on the Rhyolite Ridge mine has been tied up in litigation. However, in the fall of 2024, the mine was approved by local BLM officials, as this land management office is particularly unaccountable and hostile to conservation efforts. A new lawsuit has been filed by the Center for Biological Diversity and the Western Shoshone Defense Project demanding protection of ecologically, botanically, and culturally sensitive places.

In short, botanical documentation has slowed the bulldozers, and the fate of the area is still up in the air. This model of documentation has, however, been successful in assisting the protection of other areas such as Avi Kwe Ame, a newly designated national monument in Southern Nevada. One of the first steps in protecting this area from solar development was a bioblitz—a short-term event where people col-

laboratively document as much biodiversity as possible. Actions like these can potentially umbrella-protect sites of cultural importance as well.

Although a changing climate absolutely brings precarity to the region and divestment from fossil fuels is important, sensitive plant species in the West are more urgently under threat from habitat loss than from climate change alone. In the Silver Peak Range, that habitat loss is being driven by renewable energy development. It is necessary that we think critically about the environmental impacts of renewable energy and avoid the dichotomization of green energy and conservation. "Green" energy cannot be "green" if it destroys the land and the endemic species that call that land home. "Green" energy cannot be "green" if it prioritizes industry over actual ecosystems. Green" energy cannot save the planet by destroying it.

As industry pushes for more extraction in the Silver Peak Range and beyond, botanists and others must step up to protect our most vulnerable, be it an endangered plant species or intact specialized habitats. With that I implore those of you in any habitat and climate and place with an eye or fondness for the natural world, to document, to witness, and to speak up for the voiceless, from the smallest slime mold to the tallest tree. The type of baseline botanical documentation I'm advocating doesn't require a degree, or academic or federal backing. It doesn't even really require collecting specimens directly, as photographing and uploading observations to iNaturalist can be a strong tool for rapidly communicating the presence of rare biodiversity. The skill of noticing details and knowing plants and places in this way is translatable to land defense in other regions. I hope that by adding the tool of botanical documentation to your toolkit, it might provide some fodder in fights elsewhere. In the West, the battle between industry and socio-environmental justice takes place on public land. In other places, naturalists can still work to document plant and animal species as a land defense tool by learning the endangered and sensitive species of an area and documenting them when possible.

Collaboration is extremely important: we need multi-angled approaches when protecting places, and botanical documentation is only one of the tools in the tool belt. We need botanists, biologists, law-

yers, archaeologists, community members, public speakers, teachers, learners, listeners, and more to work to prioritize the defense of land and all that a place holds, from ancestral stories to creature burrows to rare flowers.

Photo by Jim Morefield (licensed with CC 2.0)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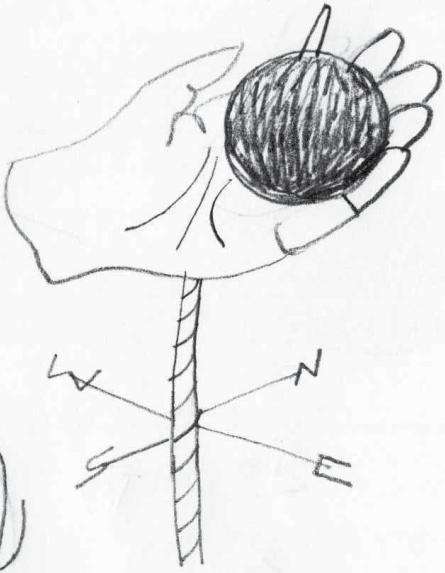
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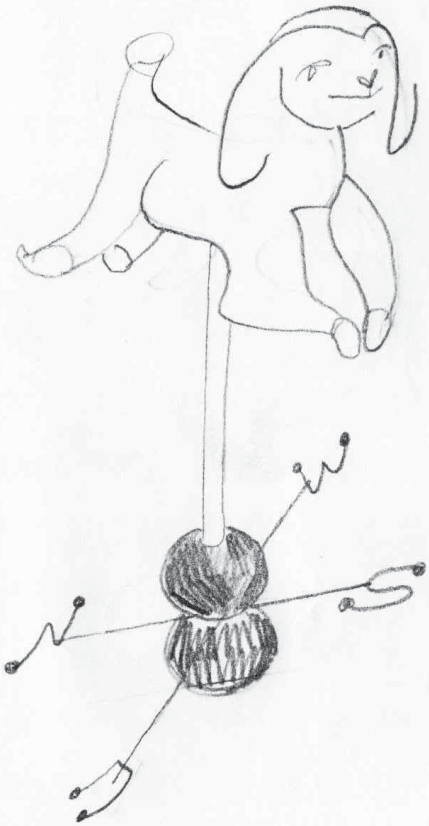
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landless & jaded

Dear Landless and Jaded,

Okay so me and the crew that comes together like once a year to try to make the land project happen ultimately continue over and over again to not really be able to make it happen because of money issues. Totally classic. So like one of us starts dating this person we don't know, and they're dating for like a month so you know, very safe very reliable situation obviously, and this person says that they want in on the land project and they come from some money so we're all kind of like totally unable to say no because basically our main financial issue finally has a solution. So there's this weird energy where we're all a little bit stressed out about the elephant in the room which is that this relationship really hasn't gone anywhere yet but our buddy is just head over heels in love and has no idea how to even begin to worry about the very obvious risk, and we just can't say no to our land project golden goose.

We start having land hunting meetings with each other again and this new person that my friend is dating and the vibes are just completely wrecked like super dire, super awkward, and we just sort of can't figure out why but when we speak to this person about what could be a really cool life project, they just kind of seem angry and unimpressed and critical all the time.

How do we handle a close friend's partner being a part of a land project that they already have resentment about before the land is even gotten?

**

Dear Lovestruck by Association,

I see only one way this could work – take the money and run. Ask them to donate funds outright to your crew without any legal right to the land or decision making power. Also considering: In the case of a bad breakup, will they walk away gracefully or stir shit up?

If a clean break doesn't seem likely, dump them. Inevitably, living our lives in community will be just as complicated interpersonally as it is logistically. A lack of trust and shared ethic will undermine the commune as surely as a lack of funds, and it'll hurt more.

How do we commit to a life in common as we bob about in the oft-changing tides of romantic love? Are we prepared to cohabitate with our friends' lovers or to live across the pumpkin patch from our own exes? When is the right time to jump on the collective dream, when to be cautious?

If you find the answers, let me know,

l&j

Dear Landless and Jaded,

I'm a pitbull from New Orleans. My owner, Box Spring, relocated us to a spiritual retreat/land project where the grass seems a little greener but the air is just a little too crisp. I used to live in the French Quarter where there were lots of good smells: fried chicken bones, crawfish boil, guava vape. It was a simple life. The new place is nice on the surface, filled with altars and spaces to meditate, the land has a mystical energy that's hard to describe. But there's an underside to it I'm only beginning to understand.

At first I didn't know what to make of Box Spring's involvement. They've been asked to participate in some more "sub-

versive" activities, things that involve questioning the social order, rejecting traditional roles and what I thought were Box Spring's values. On the one hand I see why Box Spring is intrigued by this lifestyle, but it's proving to be more intense than I'm used to.

I miss the rock pile.

Sincerely,

Stressed about Subversion

**

Dear Stressed Subversive,

Sit tight, little dog, the best is yet to come. That class action lawsuit payout from the vape company could keep y'all in kibble all year long and these new friends may be just the ones to build you a chicken coop during the next egg shortage. Notice your fears and hone your subversive skillset anyway. There was never a good and easy life for you among the staggering tourists, only a deadly illusion – like the Kentucky-fried wishbone that shatters in your throat.

Be brave,

l & j

Dear Landless and Jaded,

So I got stuck at this supposed WWOOF spot that is literally IN Brooklyn. Like, in a guy's backyard. He's not even growing anything. He said he's still in his first year of observation before beginning his permaculture design process. I'm mostly helping him build a shed so far. It's really my fault for not asking more questions but it's not like I didn't video chat with him first. In retrospect, he was kind of dodging my questions about what he was growing and pivoting to how perfect the location is – you can walk to a subway station, you can have whatever NYC has to offer, and so on. Landless & Jaded, what do I do? I told all

my friends back home that I was gonna get all swole and tan doing farm work and here I am on Saturday night sitting on this guy's couch watching Ink Master with him because it's too expensive to go out. I'm eating leftover spaghetti he made in a big batch two days ago and hasn't touched since. He prefers to get things from Uber Eats that he doesn't share with me. I've been messaging this cute looking blueberry farm in Vermont but they don't have an opening for another month. Landless, what do I do??

Stuck & hungry in Bushwick

**

Dear Stuck & Hungry,

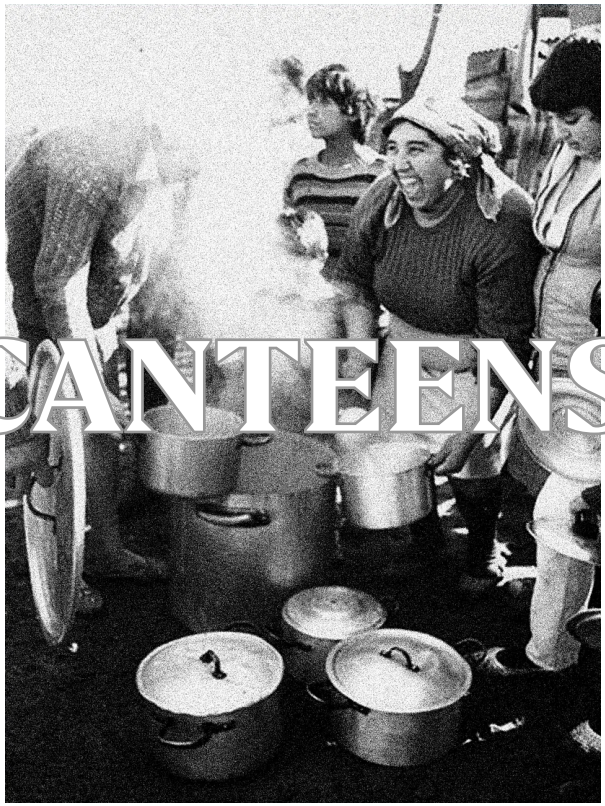
I think we both know you gotta get out – you're better than spaghetti backwash and all you're cultivating with this loser is bad taste and a sickly blue light sheen. Harvesting blueberries in Vermont sure sounds cute but you better ask the right questions this time and stick to 'em.

Don't make me drive up there,

l & j

So you went and got yourself a horrible farm boss/lover landmate/anti-mentor/endearing wingnut sitting on 100 acres with no next of kin? I get it; **I'm here for you.**

Send cries for help, horror stories and tales of hope to lobeliacommons@protonmail.com with "landless & jaded" in the subject line to be considered for publication in the advice column for 2026.



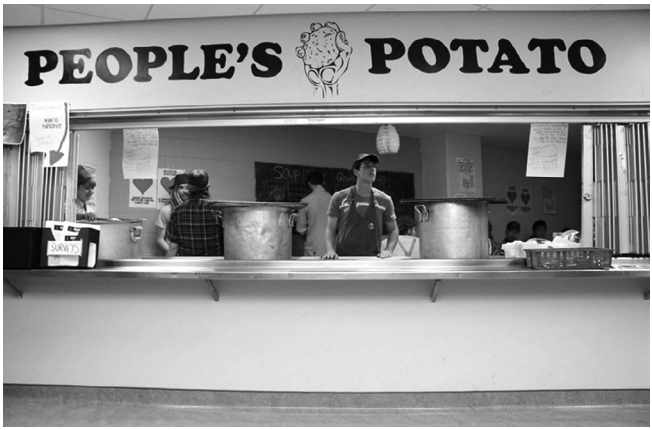
CANTEENS

a deep food participant

Starting in 2006, there's been a global cycle of uprisings that's challenged global capitalism and our world's rulers. The real opening for this sequence was in Oaxaca City in 2006 which has been called the Oaxaca Commune. Starting in Oaxaca, one of the characteristic dimensions of these uprisings has been that they've had to take collective charge of the problems of social reproduction, which is to say that after an initial period of uprising (potentially looting grocery stores, et cetera), it becomes key for revolutionaries, alongside the people in a city that has risen up, to organize feeding each other and sustaining the movement in a very logistical way. While they've been called differ-

ent things in different countries around the world, basically the word for this practice is “canteen.”

The canteen is an organized, collective kitchen that is freely available for use by anyone who comes through. It tends to produce large amounts of food, both for residents in general and for active participants in these uprisings, addressing the question of hunger and making sure that the instability imposed on the political system does not become an instability for the people, in the form of hunger. Canteens also tend to become organizing spaces – ranging from the experience of the ollas comunes (literally 'communal cooking pots'), the collective kitchens of Chile in Santiago, to the university based canteens that have functioned for years in Quebec, including The People’s Potato at Concordia and Midnight Kitchen at McGill (both are places of daily organizing throughout the school year but also are loci of organizing during strikes).



So not only is this a space that addresses the belly in the most basic way, making sure that people aren't hungry, it can also become a space of political contact between farmers and growers who want to support uprisings due to their shared grievances and other urban participants. That’s been the case, for example, at canteens during the movement against pension reform in 2016 in France, when farmers in the autonomous zone (called the ZAD) delivered tractor loads of potatoes and other foods to the canteens that were feeding both young people

and older trade unionists who were involved in strikes and blockades. Kristin Ross describes how this unfolded at an even larger scale in the same region during the May 1968 revolt, when farmers fed the Nantes Commune.

I had a life-changing experience during the insurrection in Greece. Following the murder of Alexis, a young comrade on Dec. 6, 2008, the entire country rose up against police violence and the theft of their future by what was later called "the Troika" of EU capitalist institutions that were imposing austerity in Greece. During this revolt, not only were most police stations attacked or destroyed, but many of the country's banks and grocery stores were also sacked and destroyed. So at some point, especially in the areas most convulsed by the insurrection, the canteens that were set up, such as in the core occupied spaces of Athens and Thessaloniki, were absolutely central to the social space and the maintenance of the insurrection.

I participated in the occupation of the Economics School in Athens, where even as food stores were emptied out across the country, the canteen was open most hours of the day, with hundreds of people passing through and eating as if they were in a capitalist cafeteria but without any of the barriers or alienation – and basically as a space of rest or recuperation between clashes. Even on the very last days when the insurrection faced this fundamental contradiction, which was that the country, due to its paralysis by the people rising up, was running out of food, the canteen continued to serve – even when it was just small slices of feta cheese. I remember the taste of that thin slice even now. Even amid scarcity, you could go through the line and still be able to eat something.

This was a very beautiful kind of moment and way to think about the spaces we create together during moments of rupture. It also speaks to the fundamental contradictions of our era – the canteen and these spaces of social reproduction are absolutely key to revolutions, and yet if we are not breaking out of the barriers imposed by the capitalist economy, we will suffer limits inherited from a food system built around the profit motive and not around meeting people's needs directly. We have to use these experiences as impulse to deepen our experiments building food autonomy.

correspondence: comitê chico mendes

acre state, brazil
12/9/24

First off, we want to thank you for your interest in learning more about the Chico Mendes Committee (o Comitê Chico Mendes) and the struggle in the Amazon. We are very happy to know that y'all are promoting food autonomy in the southern US and that you wish to share our story through your almanac. It's an honor to contribute this exchange.

Q: What's the history of the Committee and what's an 'empate'?

A: The Chico Mendes Committee was founded in 1988, soon after the assassination of Chico Mendes, a seringueiro (rubber tapper) and environmental activist that struggled for the preservation of the Amazon and for the rights of the people of the forest. Our work is to give continuity to his legacy, acting in areas such as environmental education, political mobilization and the strengthening of traditional communities.

The 'empate' is a peaceful resistance tactic created by the seringueiros of the Amazon to stop deforestation and predatory exploration. It consisted of forming human barriers in the forests to prevent machines and workers from destroying the areas of rubber trees, which are essential to sustain these communities.

Q: What's the relationship of the Committee with the land they occupy?

A: Our relationship with the land is profoundly ancestral and collective. The communities that we represent and support have an intimate connection with the forest, which is seen as mother and the source of life. It's from the forest that we take our sustenance – like the ex-

traction of latex and the collection of nuts – always with respect and preservation, guaranteeing that future generations can also live from her.

Our front office is located in Rio Branco, the capital of Acre and we have our projects focused on youth and women from the Chico Mendes Extractive Reserve[1].

Q: What's the orientation of the Committee towards autonomy and the social structures of the surrounding area?

A: Our focus is to strengthen the autonomy of local communities, promoting sustainable practices and organizing movements that help protect their rights. We work in partnership with other organizations and seek to influence public politics to guarantee the preservation of the forest and well-being of the people who live in it. We provide training in activism, leadership and communication for these groups.

Q: How do you handle internal conflicts in the occupation?

A: Like any movement, the empates and occupations have faced internal challenges, mainly in the face of external pressures. We resolve conflicts through collective dialogue, always prioritizing unity to face major challenges, like the destruction of the forest.

Q: What is a typical day like in the occupation?

A: In the empates, a typical day began early, with families organizing themselves to form barriers. Everyone, including children, participated peacefully, carrying the strength of knowing that they are protecting something greater than themselves: the forest and their future. Nowadays our way of acting is different, understanding that our strengthened presences in spaces of debate and construction are also forms of contemporary empate.

We want to thank you very much again for the opportunity to share our story.

1 An "extractive reserve" is a specific Brazilian legal designation to protect land for traditional, sustainable resource harvesting and small-scale agricultural practices. The Chico Mendes Extractive Reserve is managed to sustain the latex-harvesting livelihoods of the seringueiros and covers nearly one million hectares of Amazon biome in the state of Acre.

Deep Food Reportback

Truck

In late August of last year, around 60 people convened at the food autonomy-focused Deep Food gathering in southern Indiana. The gathering was centered on mass cooking and sustainable agriculture – to build a culture of abundant reciprocity beyond the survival based mutual aid programs many of us already engage in. A mix of formal and informal workshops were held over the course of the 10-day program. These ranged from in-depth lectures on mycology and ant-based wildcrafting, to dinner table reflections on North American land projects. Each day we shared three communal meals. The act of sharing food facilitated our teaching, learning, and celebration. The land on which the gathering took place stands alone as an oasis of thoughtful cultivation, in a region otherwise dedicated to the destructive monotony of mono-cropped soy and corn. At Deep Food, we took a lesson from the land, that sustained energy can allow us to build outposts of collectivity, both spiritually and materially. This relationship to food stands in stark contrast to the extraction often levied by industrial farming and the drudgery of food service.

For the final meal of the gathering, I cooked maqluba in honor of the many martyrs of Palestine. Maqluba, which translates to “upside down,” is a Palestinian rice dish. The dish is prepared across the Levant, typically for special occasions. After Trump designated Jerusalem the capital of so-called Israel, Palestinian demonstrators gathered at the Damascus Gate near Al-Aqsa Mosque. Among them were Khadija Khweis and Hanadi al-Halawani, who prepared and served maqluba on the front lines. The dish became a symbol of defiance, referred to as the "dish of victory" or "dish of spite." Every Sunday throughout December of 2017, protesters brought large pots of maqluba to share, eating the meal together while facing down Israeli police. Serving the dish soon became a weekly tradition for protesters and families at the mosque. Maqluba was also shared at many pro-Palestine campus occupations, during the 2024 United States student intifada. Behind the barricades, collective kitchens often served as central points of newly collectivized life. Maqluba was eaten while fighting off police, pro-Israel counter protesters, and faculty. After my own arrest during the student movement, maqluba was my first meal outside jail walls. When I cooked this final meal at Deep Food, it was to honor the resilience of those who continue to fight, those who have been lost, and the ways in which food can act as a node in a web of struggle.

Maqluba

Serves 30-40 People

This dish among many other recipes will be featured in the upcoming Deep Food Cookbook. The book will feature recipes meant for feeding large groups of people, gatherings, protests, action camps, parties and food distros. It will also feature many food preservation and fermentation techniques.

This is one of many variations of this dish; it is often made with lamb, goat or fish (it can also easily be made vegan). I had never prepared it before, and I encourage others to cook it, whether for the first time or the hundredth.

Ingredients

For the Broth

4 small chickens, about 2.5 pounds each, cut into quarters

6 tablespoons oil

2 medium onions sliced

Photo by Tasnim News Agency, CC BY 4.0, https://commons.wikimedia.org/w/index.php?curid=130866873

10 cloves garlic

1 teaspoon ground black pepper

2 tablespoon coriander powder

2 sticks cinnamon

8 cardamom pods

6 tablespoons Baharat 7 spice blend (equal parts coriander, allspice, cumin, cloves, black pepper, cinnamon, and nutmeg)

A few bay leaves

Water to cover, to cook the chicken

4 teaspoons salt

For the Rice

2 large head cauliflower

3 eggplants sliced

6 cups Jasmine rice

4 tablespoons Baharat spice mix

3 teaspoons salt

6 large yellow onions julienned

4 tomatoes sliced

12 cups chicken broth (reserved from cooking the chicken)

Garnish

2 pomegranates

2 bunches parsley

Instructions

Broth

Add the chicken to a large pot with oil and onions, then sauté until the onions are soft and chicken begins to brown.

Add the spices: whole garlic, black pepper, cinnamon, coriander, cardamom, Baharat, bay leaf and mix.

Add water to cover and salt. Let it boil and skim off any foam that forms and discard. Let it cook for about 30-40 minutes until done.

Once the chicken is cooked, strain and set aside the broth.

Rice and Vegetables Prep

Soak rice for 30 minutes in cold water, then strain and add the Baharat spice mix and salt to the pot of rice. Mix well and set aside.

Chop the cauliflower into medium size florets and cut them into ½-inch thick rounds.

For the eggplants, you can peel them or leave the skin. Cut into ½-inch rounds and place on top of a paper towel.

Sprinkle a small amount of salt on top of each eggplant round to draw out the moisture, let sit about 10 minutes

Caramelize or sauté onions to your liking.

Lightly fry the rest of the vegetables to ensure they are not undercooked in the rice as well as adding a bit of texture.

Assembly Notes

You can make this using several pots, or in a hotel pan in order to make enough for large groups.

You can use wax paper along the sides of the pot in order to insure the rice does not stick, although this may reduce the crisp on the rice many desire.

I also keep the whole sticks of cinnamon, cardamom, and bay leaf in the chicken-onion mixture for added aromatics.

Add tomato slices, sliced eggplant to bottom of pot or hotel pan. Alternate layers of rice, caramelized onions, chicken and cauliflower throughout the rest of the pot or hotel pan.

Now once your maqluba is assembled, make sure to add HOT broth. You don't want this to be warm or cold.

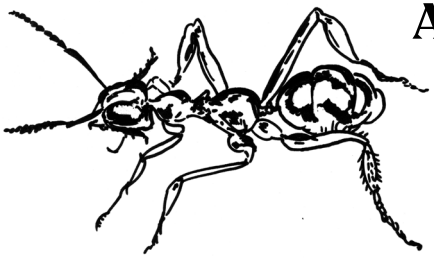
Bring pot to a boil on the stove medium-high heat, then cover and lower the heat until the rice is fully cooked, anywhere from 15-25 minutes. The rice on top should be fluffy and cooked.

If you are using a hotel pan, heat oven to 350 degrees, and place hotel pan with lid in oven for 40-45 minutes.

Flip the pot or pan on to a large tray or pan and hit the bottom of the pot with a spoon or other metal cooking utensil (I shattered the wooden spoon I was using at Deep Food).

Top with pomegranate seeds and chopped parsley.

Serve and enjoy with many comrades, strangers, lovers, family etc.



Ant Eating

amante

We weren't interested in cosplaying survivalism. Still not clear whether we could collect enough to subsist on anyway. No, we just fucking love ants. To learn more about them, we set about finding ways to eat them.

First we dolloped honey in a bowl and left it where we'd seen them traveling. Nothing. Antscanada, the ant-keeping youtuber with a sometimes-forgivable god complex, uses a vacuum cleaner to suck up stray ants without physically harming them. The few online posts about ant collection also advocate the vacuum strategy. We did eventually get our hands on a dust buster, but by then we were tired and running low on rocks to turn over, only coming upon nests of itty bitty ants.

We had the most luck seeking out nests, opening them up, and scooping the soil into tupperware. The easiest way to find nests was by overturning flat rocks, or by digging through pine duff from embankments. The ants don't crawl away as fast as you'd think; we lined the rim of the tupperware with vaseline just in case.

Either way, you're left with the problem of separating ants from soil and debris. If you find yourself in this situation, or if you want to save the ants for later, freeze them. This makes it easier to maneuver the ant-laden soil. Freezing the mixture won't always kill the ants– after an hour or so in the sun, they'll return, sluggish and confused, to some state of consciousness. Again we tried several different methods, including a seed separator, but ultimately we resorted to tweezing them out of the dirt one by one. This proved to be tedious but effective.

Common black ants are sour. This distinct sour flavor comes from the formic acid housed in their modified ovipositors (the same organ

bees and wasps use to sting, basically a giant lady dick).

What is to be done with ants depends on how many you are able to collect. We didn't get very many, and we had a lot of people to feed. We wanted people to really encounter what they were eating; the texture, look, and taste. For our purposes we simply served them whole. However the best thing to do is to roast them right out of the freezer at a high temperature for a snack or garnish. Alternatively, they can be roasted at a low temperature and ground into sumac-like paste.

At Deep Food, our host's mother had eaten many ants during the decades she lived in East Africa. In East Africa, groups of ant gatherers roll a wide leaf into a straw and insert it into an anthill. Others, positioned close by, drum a pattern on pieces of wood laid atop the soil. The ants react to the percussion as if it were rain and swarm out of their tunnels, into the ant hunter's trap. Her son relayed this method, and her memories of huge fry pans sizzling with ants testified to its efficacy. We probably can't replicate this method exactly in North America. To draw out different species in different habitats, with varying social practices and social memories, will take different rhythms. Learning these songs would do more than get us more to eat… it would teach us to speak ant.

"Passalong (after tyler)"

Katherine Duckworth

I am carefully burying a section of sugar cane.
Careful, because the man who gave it to me
is dead. Careful, with that record.

What have we done to the miraculous existence
of sugar? (and when he used the broadcast
method, he was asked to re-sow the field)

Days before, I found the photograph

of the back property; a host of daffodils
at the legs of kitchen chairs scattered
in the yard, as they did for family portraits

then. Buttercups, we called the same stand, radiating
away from the row, a century later.

It is early February, and no one can remember
when they are supposed to come up again.

correspondence: lazy black bear

paoli, IN
12/26/24

Q. What was your initial intention with the land? Can you talk about if that's changed with time?

A. There's this wonderful thing about this place and most people may not even recognize it even when they're in the midst of it: There's a circle of black walnut trees, pretty pronounced circle, and it's not that common a tree in southern Indiana, at least not in a stand with so many so near to each other.

That space defined by those trees has been a gathering place since before either Linda or I got here. At one time it was the volleyball court. We used to have these fabulous parties and then at different times it's been different things, but mostly now it is the circle where people gather and sit and exchange information and draw strength from the circle and draw your power and relief from the comfort of the group.

Q. What are your current intentions or projects for this space?

A. That is a question that lingers and it is out in the open now. I had a cancer diagnosis this year, and Linda has a terminal disease called life—as do I, as do we all—and so we know our time is not forever.

We're trying to figure out how to get a transition in place from Linda and I to whatever comes next. Originally, Linda and I had thought there would be a person or persons living here who would be the logical people to pass it on to, but over the past several years that scenario has just not manifested. We've been sort of waiting for that right person or persons to come along, and then we realized we've already got a perfectly good transition vehicle and it checks all the boxes of what

we want. We want people who know us and love us and care about this place. We want to be able to have them make the decisions about what happens based on what they know of our intention, our love, and our passion. Then we want to figure out how to gradually turn it over to them while making sure that we're taking care of it in the process.

Our nonprofit, Shagbark, can do all those things so that's what we're currently looking at. .

When I retired from forest protection work as the director of Heartwood back in 1999, a very generous human being named Lloyd Clayton did me the extraordinary kindness of giving me a gift of $20,000 as a retirement package, just said do whatever the hell you want with it and do something fun. What I did, of course, was start another not-for-profit. I figured let's use this money to establish a framework for having events here at the farm in ways that will meet our needs but also help build a sense of community. So we established Shagbark with friends living close by. We put the word out to our friends and our network of activists and colleagues saying we are going to make our space available for weekend retreats, workshops, dance, weddings, whatever, what kinds of things would you like to see and we'll let it go from there. Eventually we got to know David Haberman who was the professor in the religious studies department at Indiana University, but also taught ecology and spirituality courses. He arranged to get some of the instructors from the permaculture course that he'd taken in North Carolina to come up here and do a two-week permaculture course open to IU students and a limited number of non-IU participants. He loved this place and it just seemed like a good fit and then we did that for nine years.

That was the main thing that grew out of Shagbark was that through our connection with the university—it was the first accredited permaculture course offered through a major university anywhere in the United States. It allowed us to expand our facilities: the cabins, the solar shower, the composting toilets, the stage, the dining hall, the outdoor kitchen—all those things grew organically as we figured out what we needed to meet the needs of the group and then what we could build using a lot of locally sourced materials. We had the permaculture students design some of the projects and that's been very gratifying to

see: They're investing their love and their vision in the land and seeing it immediately pay off.

Q. Do you see this place as part of a social movement? Could you talk about Heartwood and Heartwood's relationship to this place?

A. Heartwood is this regional network of forest protection organizations and individuals— across 18 states, maybe, but primarily in seven or eight states— and the place that it was founded was here at the Lazy Black Bear.

This place has been involved intimately, intricately, in every way possible with the forest protection movement since at least 1985. Heartwood grew out of our initial involvement with forest protection work with a proposal to build off-road vehicle trails on 56 miles of an area here in Orange County called Little Africa. We enjoyed a remarkable success in organizing by the seat of our pants with not a clue of what we were doing. We won a resounding victory, and the Hoosier National Forest became the first in the country completely closed to off-road vehicles. From there, we went after the forest plan. We got the forest plan thrown out, got a new forest plan put in. Then we shut down the logging program on the Hoosier National Forest for 30 years — they got to finish the sales that were already under contract but no new sales.

We then saw that the same thing was going on in all these forests around us, so that's where Heartwood came into being. We said we're gonna find our friends, we're gonna find our network, we're gonna find our family. We're gonna build a community of people who say: no, it's not how much and by what method you're gonna cut our National Forest, it's you are not going to cut our National Forest. And if you're willing to take that stance, and whatever other stances we can agree on down the road— we are Heartwood, the heartland hardwood forest.

The people who live in that forest, for the most part, were people who'd gotten burned by the 60s and 70s and decided to just go find a little hideout in the woods and make art or grow organic food. Then suddenly a lot of them wind up next to National Forest clear cutting. And suddenly there's Heartwood all the way from the Arks to the Appalachians, from the deep south to the lake states, from the river bottoms of Texas to the coast of Massachusetts—that's where the Heart-

wood forest grows, and we found the people and we put together this network and it was extraordinarily powerful. Within ten years of our founding we had shut down all logging in seven or eight National Forests. We had it all shut down legally, none of it permanently.

Q. Could you describe one conflict that you worked through here with other people that were doing this project, or give a piece of advice for people sharing their lives with each other?

A. One of the keys is recognizing conflict immediately. Don't say, we'll deal with that later. Never say, that can wait, when you're talking about a misheard statement, a question about somebody's intent, a question about somebody's loyalty, or their integrity, whatever it is, that stuff needs to be dealt with. Because, yes, it may blow up right in your face as soon as you raise it, but guess what? The longer you wait, the more dire the consequences, if it is something of importance. And the chances are, if you deal with it early enough, and everybody enters into it from a place of, yeah, I can accept some criticism, yeah, but say, like, we got to talk about this.

TAROTSCOPES

2025 • *Xiamara Chupaflor*

LIBRA

flying squirrel

DEFINE YOUR POWER- 10

This particular starting over again IS NOT a failure but instead a robust opportunity to rely on the wisdom of the actions you must take. The best results are achieved with a steady sword and a sober heart and mind. Meet urgency with gentleness and pain with care. Engage thoroughly with meaningful medicinal messiness within yourself and with others. Find your power in the mirror of conflict and see all challenges to their finish. There is wisdom in a slow burn and renewal found just before the end of your patience. Great comfort will come with tending to the urgency that pain demands with making space for many truths. Many challenges may lie ahead but the foundation you have worked so tirelessly to build will support you through anything you may come up against. Gratitude is stronger than disappointment. You get to choose how you experience each moment, so choose with gratitude as often as you choose to wait for the rainbow after the storm.

SCORPIO

raccoon

AN EMERGING TRUTH- 11

Speak truth to all that has been unspeakable, to all that lay dormant and hiding. Ask for help. Vulnerability isn't a choice this time around, however, surrender is. Will you wait to be alive only when life is going your way? Grief is a gift that lets you know that your heart is working. Joy and beauty are in abundance all around you and are your best weapons against the pain of obsession. Justice exists in the process of the unknown. Love exists alongside the fragile pace of trust. The lessons of liminal space, of waiting for everything to unfold as they should, make the reward all that much sweeter. While you are waiting, don't let your mind run away with your heart. Instead, try something new. Leash your restless spirit and take it on a long walk. Find power to move forward in tangible awareness of the present moment, there you will find the key to unlock the door you wish to pass through.

SAGITTARIUS

bat

CREATIVE DOMINANCE- 10

Learn how to harness and cultivate and make your sensitive nature work for

you. What may appear as a nightmare is actually a road map. Your wishes will be granted so be careful and be specific. You are breaking a long cycle of defeat and disappointment. Step courageously into your power and relinquish your attachment to everything that was and move towards the fantastic rebirth of the unknown. Courage comes from new beginnings and sweet connections. Abandon comfort and embrace a leap forward. Let the chips fall where they may and follow your heart wherever it takes you. Gratitude and satisfaction go hand in hand.

CAPRICORN

capybara

RECONCILING SORROWS WISDOM - 7

Soften a hard heart by making friends with your grief. Grief is the source of your wisdom, not an excuse. A mountain exists without crowding anyone out; take up as much space as you want and allow others the same courtesy. Respect your anger by learning when to let it go. Lowering your defenses doesn't mean that you aren't protected. Imagination needs action that creates the alchemy to carry on. Decisions should be made to relieve your burden but not to avoid your feelings or your accountability. True maturity and wisdom lie in your ability to actually be compassionate with yourself and vulnerable with others. Speak freely and speak from the heart and watch your relationships blossom

AQUARIUS

mole

LET IT COME DOWN- 11

Rebuild the structures of your life to include sacred ritual. Commit! Commit to relationship and rebuilding of foundations of joyful reciprocity. Look upon life with a deep reverence and the wisdom of an open heart. When your world has been reduced to rubble, learn to rebuild trust through letting others help. Let connection quiet sorrow and shift your perspective. Movement will create opportunities for hope and desire to emerge. There is much strength to be found in the inconcrete world. It is time to start building and crossing bridges. Allow ideals to lead the way. Renew your commitment to your respect. Make your pain kneel before you in reverence to your resilience. Emerge, the world is waiting for you.

PISCES

nutria

UNFOLDING INSPIRATION- 6

Resilience is the foundation from which you will operate. Change is your best friend. You don't have to tend to your altar of sorrows every day; instead integrate wisdom. IT IS TIME TO MOVE ON. Trust that you can participate in inspired col-

laboration. Trust that you can return to safety each day. Take your lessons as they come or be humbled over and over again. You have everything you need to be brave and soft. Celebrate your achievements by being formidable in the present moment. Break a curse by taking a risk. Mitigate the risk of high expectations with good boundaries. No one else has the keys to your freedom but you.

ARIES

chipmunk

MARVELOUS CATASTROPHE-6

Acknowledge what is not working any longer. Listen to what your body is telling you. Connect your body to your heart. Your head will follow once you put down your guard and get to work on all that you have been avoiding. Don't let it come down on its own; instead light a match and set it on fire. Leave empty victories to fools and watch your world blossom. Your body is a temple, treat it as the sacred vessel that it is. Don't second guess your plans. When in doubt ask for help. Manage big emotions with fun. Laughter is almost just as important as water and air. Restore ruptures by reconciling the heart with the mind. What appears to be a rupture is in fact an opening to a portal. When you reach the edges of your limits you can always return back home to yourself.

TAURUS

prairie dog

CONSCIOUS CONNECTION- 7

Actions will always speak louder than words. Doing more and saying less will allow for inspiration to grow without pressure of observation. Tend to magic daily. Everything is your muse. Choose who you will be instead of waiting for others to be who you want them to be. Joy is in falling in love with what the truth has to offer. Turn any desire for control into will power. Comfort will be more likely to find you on an adventure. Don't resist the generosity and kindness of others or the expansion of connection. Bring spirit into inspired action through trying the same thing differently. Choose your words carefully and treat others kindly, it will make a difference.

GEMINI

porcupine

UNDERSTANDING FAITH- 2

Dissatisfaction is not always evidence of failure. Make the best of a lonely feelings by connecting with your internal magic. Give your inner child the things you were denied at the beginning of your life. A new start will unveil itself very slowly. Release your desire to control outcomes and receive the victories of the present. Sit with big emotions

quietly but resist the desire to withdraw from sweetness. Sustain love through steady intentional care. Let your mind throw a tantrum while you let your heart lead the way. Get lost and find your way back to yourself.

CANCER

muskrat

CELEBRATE CHANGE- 7

Have faith in your many achievements. Distinguish the difference between confusion and mystery. Curiosity is your courage when fear of the unknown threatens progress. Keep some secrets for enjoyment and hold your tongue when you are unsure. Giving yourself more time to contemplate will help you get relax into what is uncomfortable. Cooperation gathers power, support will come from surprising places. Gather knowledge and be open to what you don't know. Change is inevitable, celebrate often.

LEO

marmot

DIVINE TIMING- 8

Build a foundation on the strength of your achievements. Treat yourself like you treat your friends. Don't put yourself down when something doesn't go as planned. Make holy mundane tasks. Imbibe less of what slows you down; substance, relationships, energy. Ask for help, reciprocity is a resource you have in abundance. Save money for a rainy day. Save yourself from the projections of others by tending to your own work. Boundaries will change the course of events. Don't get too attached to any particular plan. Your heart is the map, honor what you need and go from there.

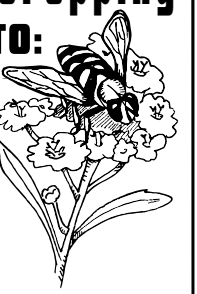
VIRGO

beaver

SPIRITUAL INSTINCTS- 8

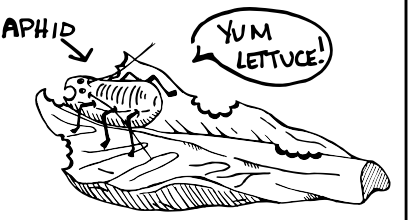
Your heart will lead you to the work you are meant to complete. Hope is a skill you must cultivate. Practice listening. Practice noticing kindness. When met with a crossroads veer towards love; what you love and where it is reciprocated. Every action is sacred, every little thing noticed, a message. Your imagination is a gift full of resource. Let the little victories support hope for the future. Do not resist vulnerability. Do not resist your intuition. Let the knowledge of something bigger than yourself overwhelm you and comfort you. Lay down your sword and remain in curiosity about what you don't know and let choices unfold as they should.

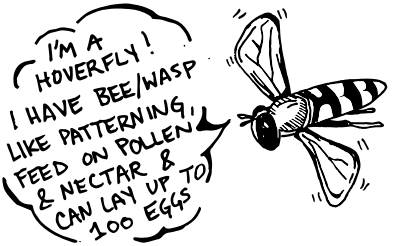
Quick'n DIRTY Intercropping HOW TO:

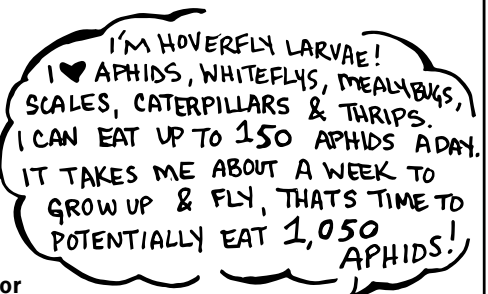


Intercropping, also known as"conservation biological control", is an organic pest management technique that attracts beneficial insects to feed on unwanted insects who eat crops. Here we will illustrate the basics of intercropping sweet alyssum into lettuce crops for aphid control.

Aphids can be very destructive to crops. Organic farmers use a flower called sweet alyssum planted throughout a crop to attract hoverflies who lay eggs in lettuce leaves. Their larvae feed on aphids, creating a mutually beneficial pesticide free aphid control!



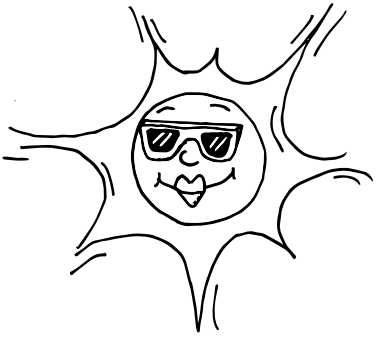




Lettuce grows for 39-49 days before harvest. If alyssum is direct seeded the plants only begins to flower right before lettuce is harvested, leading to ineffective intercropping. Sweet alyssum plugs are about $19.50 per 1000 plugs, they are usually flowering at transplant and are hoverfly ready!

The amount of alyssum needed will vary depending on how large your planting area is. An average ratio 1-2 alyssum plants to every 50 lettuce plants is the minimum amount to plant for effective intercropping with separate insectary beds and lettuce beds.

There are two intercropping techniques, one uses separate alyssum rows (insectary beds) and lettuce rows (crop beds) in lines next to each other. The other is called additive intercropping, where alyssum and lettuce are planted in the same rows with each other; 1 alyssum planted every 5 lettuce plants. Additive intercropping can lead to a bit of competition with slightly smaller plants, both alyssum and lettuce, but not to a significant amount in harvest.



ACROSS

1 Family less commonly known as deadnettle, or a genus within same containing a lot of prized herbs, including "diviner's ____"

5 Main character of a Bengali trilogy that starts with the"Pather Panchali," or a Simpsons character that got canceled

8 Its first PM was Patrice Lumumba

11 "____ master's life is one continuous mistake." --Dogen

12 John who played Gomez Addams and adopted Sean who played Samwise Gamgee

14 Carson's (publicly homophobic) predecessor on late night TV

15 Actually a large genus (Taraxacum), known mostly for a species considered invasive on Turtle Island and whose English folk-name is "piss-a-bed"

17 Scholl, who wrote a book about the White Rose student resistance group in Nazi-era Munich

18 Change of clothes?

19 "To make a thief, make an owner; to create crime, create ___." --Odonian saying

20 Earthen loaf dish for making (veggie)-pâté, etc.

21 Also called "bitter buttons," moderately toxic plants with a history of use as an anthelmintic (remedy for intestinal worms) and insect repellent

23 Repeated three times, it's a song by MJ and the worst Beatle

24 Frozen wasser

25 Two equally stressed syllables in a row, in scansion/analysis of poetic meter

26 3rd attempt to end a ltr. [sic]

27 Exalted horses

28 'Do that might hold a pick

30 Kind of web feed, or the paramilitary group linked to the Hindu nationalist BJP and the "world's largest far-right organization by membership"

31 Letters represented by vultures in Egyptian hieroglyphs, or that represent infinite cardinal numbers

34 Pro-__ (some tourneys)

36 Common vegetable first cultivated for its oily seeds, and whose name derives from milky latex exuded by cut stems. World production was 27 million tons in 2022.

38 Home security company Google bought into in 2020 so it could more widely install Nest "smart home" devices and train AI "against homeownership risks"

39 Soft pitch

42 River and lakes in so-called New York whose name derives from the Abenaki word for staghorn sumac

43 You can tell it apart from shit, unless you're a dummy (as the saying goes)

45 Where a panda goes into, eats, shoots and leaves?

46 Examined

48 Sensitivity in dealing with others

49 Family suggested by the shape of this puzzle, and to which 15-, 21-, and 36-across, and 9- and 28-down belong

50 __ Suárez, conquistadora known for desperately beheading several Mapuche leaders that were prisoners during an early siege of Santiago. There's a park and a metro station named for her in the modern city.

51 __ Janeiro

52 Qtys.

53 Dev. to stay "clear" of

54 Mechanic's alternative to metric (Abbv.)

55 Namesake of crappy west coast coffee chain now owned by German billionaires whose family businesses profited from forced labor under the Nazis

DOWN

1 Political family of modern Egypt

2 Kind of rhododendron with toxic nectar that can be used to produce "mad honey," as in Black Sea and Himalayan traditions; also Australian rapper Iggy

3 Landed class

4 Title character of a sci-fi book by Mormon author Orson Scott Card that predicted the virtualization and gamification of warfare, and is on the US Marine Corps suggested reading list

5 "Yours/To you" (French

6 Burgundian grape family members

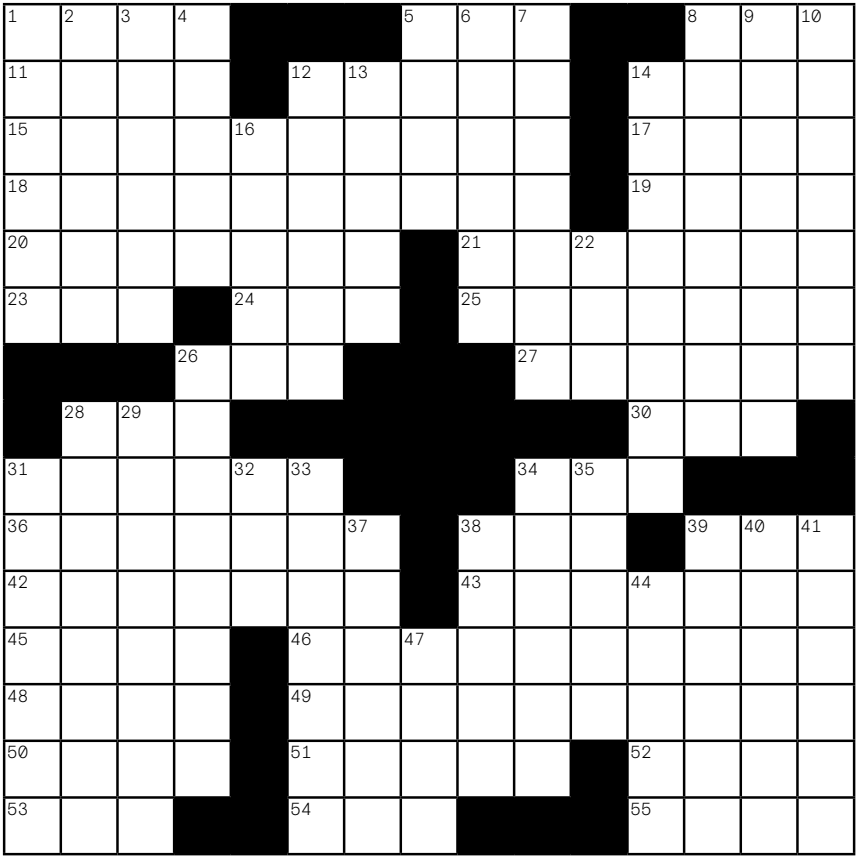
7 Loosens, like a trucker hat

8 Water carrying women who slew their husbands in Greek myth

9 Genus Ambrosia (also called "burrobrushes") whose pollen are notorious allergens

10 Plants in Brassicaceae that produce piquant leafy greens

A seed's a star



12 Album before "Now Is the Time" and "Jagged Little Pill"

13 Word after camp or construction (plural)

14 Pale lagers associated with a Czech city

16 Members of a Great Lakes tribe largely destroyed or absorbed by the Haudenosaunee during the 17th century Beaver Wars

22 [This is] "___ your grandmother's marijuana" (Surgeon General's warning)

26 The US military air-dropped 2.1 million of these frosted-things-in-foil on Afghanistan during its 2001 invasion

28 Common name for lots of plants in genus Erigeron that produce daisy-like flowers and were believed to ward off pests when dried (probably all Brown Sugar Cinnamon too)

29 "Have you ____ your steps?" (Question to someone that lost something)

31 Ancient name for the home region of Alfred Dreyfus (who had an affair), as well as the University of Strasbourg, a 60s Situationist hotbed

32 Attila or Bleda, e.g.

33 Multiplicative constants

34 Stick (to)

35 Highest pt. on Crete

37 "Green" search engine that uses ad revenue to plant trees, and is in cahoots with Microsoft

38 "Who ___ you?" (Rhetorical question)

39 2013 Lil Wayne song ft. Drake & Future

40 Fatty acid ester present in vegetable oils and soaps

41 Most naked

44 For real, like a permanent gold tooth

47 Chiwere speakers of the plain

from the

GROUNDWATER

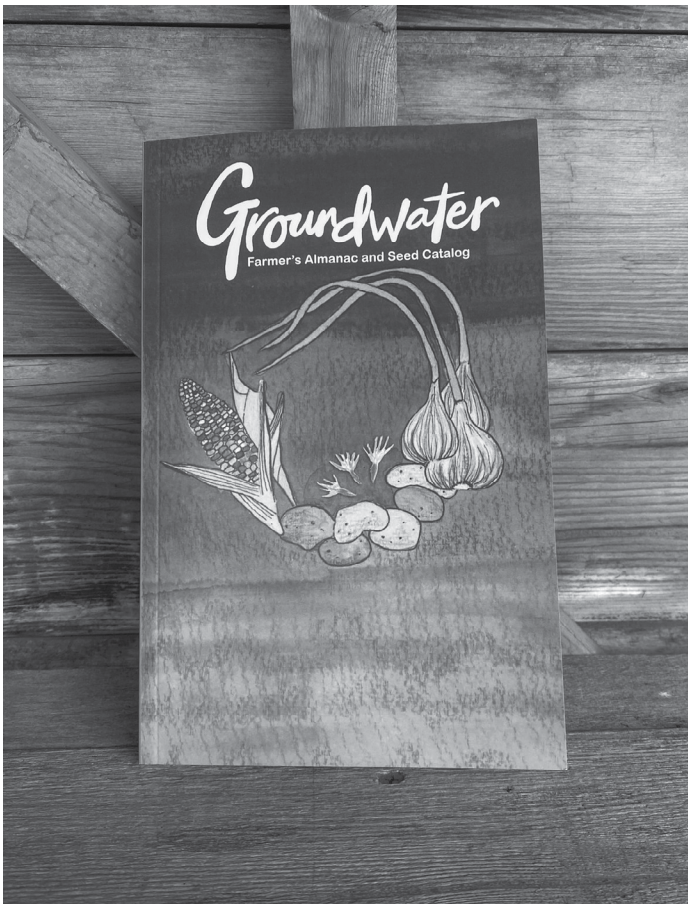
ALMANAC
& SEED CATALOG

An almanac is an entanglement of ideas, intentions, observations and also a dream. A dream of what it means to trace the lines from the past into the future. That future is a frame we can peak into like putting your head through an empty window, maybe shouting something out, pointing out some feature but never stepping entirely through.

A farmer is an entanglement of identities, actions, objectives and also a conversation. A conversation of what it means to trace the lines from the past into the future. That future is a frame we can peak into like putting your head through an empty window, maybe shouting something out, pointing out some feature but never stepping entirely through.

Once in the past I was passed an almanac by a farmer. What I found in those pages was the start of a conversation or the end of a dream. Pointing towards the future by talking of the past. I looked through my frame and wondered what intentions I had for my actions. What observations and objectives did I want to shout out through the vastness of time.

And that's a small part of the (abstract) story of my small part in helping start the Groud-



water Farmers Almanac and Seed Catalog here in nibthaska along side the ni shude*.

It's also hope that you too might see an almanac for your community through the view from your frame. All you need to do is write somethings and ask your friends to as well and the rest will most likely take care of itself, more or less. We're cheering you on!

* Nebraska, Missouri River

January

All data specific to New Orleans, LA

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:57am	5:12pm	12:04pm	10h15m
6		6:58am	5:16pm	12:06pm	10h18m
13		6:58am	5:22pm	12:09pm	10h23m
15		6:58am	5:23pm	12:09pm	10h25m
21		6:56am	5:29pm	12:11pm	10h32m
29		6:53am	5:36pm	12:13pm	10h42m
31		6:52am	5:37pm	12:13pm	10h45m

TREE OF THE MONTH	Trifoliate orange, *Poncirus trifoliata*
JUST DUCKDUCKGO IT	Pedal-powered Grain Mil

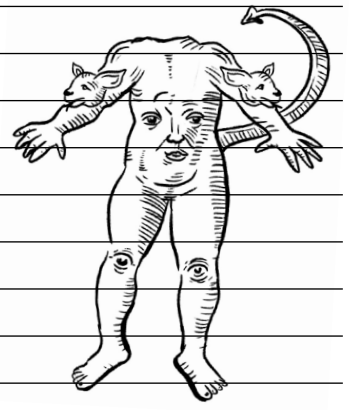
JANUARY 17, 1847

William Foster of the "Donner Party" shoots and kills Eema and QuéYuen, two Miwok men that had come as part of a rescue mission with another settler that had gone ahead for help and returned to the starving group to guide them.

Farm notes from Bayou Food Forest (south louisiana)

- *Built some new raised beds*
- *Big polar vortex, coldest night of the winter, forecast low of 19°F. Lots of work to protect the tropicals:*
- *Bananas: three different methods, 1. cut high, cover with tarp, place extension cord and heatlamp inside, 2. cut at a few feet high, bury in mulch, cover with tarp, 3. cut at a few feet, cover with tarp (ran out of mulch)*
- *Avocados: cover small ones with barrels, bigger ones with tarps, biggest one make a tarp ring and put the wood-burning stove inside, set alarm to add wood every 4 hours through the night*
- *Citrus: cover with tarps*
- *Dragonfruit cuttings on the heat mat, under the electric lights along with soil blocks full of spring seedlings and a bunch of tiny moringa trees*
- *Potted tropicals: if you're cold they're cold BRING THEM INSIDE*

Notes



February

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:51am	5:38pm	12:13pm	10h46m
5		6:49am	5:42pm	12:14pm	10h52m
12		6:43am	5:47pm	12:14pm	11h3m
15		6:41am	5:50pm	12:14pm	11h08m
20		6:36am	5:54pm	12:13pm	11h17m
27		6:29am	5:59pm	12:12pm	11h29m
28		6:28am	5:59pm	12:12pm	11h31m

All data specific to New Orleans, LA

TREE OF THE MONTH	Black Locust, *Robinia pseudoacacia*
JUST DUCKDUCKGO IT	Freedom Farm Cooperative

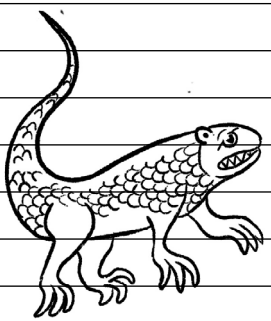
FEBRUARY 23, 2017

National Guard and cops arrest 46 protesters and clear the remaining camp at Standing Rock. The Dakota Access Pipeline is completed in April and oil begins flowing through it by mid-May.

Farm notes from Bayou Food Forest (south louisiana)

- *Planted 3 Marrisard chestnuts on tent row, seed-grown, sprouted 2020*
- *Finally installed hot water for dishes in the semi-outdoor kitchen. Game changer.*
- *Potted up chestnut trees, several fig varieties, mulberries, avocados from nursery tree-beds*
- *Bananas we cut in january are all sprouting already*
- *Controlled burn of about ½ acre to an acre of grassland to make room for new diverse forest of willow, sycamore, oak, river birch, pawpaw, persimmon and more – ran the garden hoses all the way out there to make it easy.*
- *Loquat fruit forming! Still tiny.*
- *Frequent 'enemy cat' aka 'fancy cat' spottings, Catfish very upset. Helped her chase him away but he's lurking out there.*
- *Big fig propagation, 150+ cuttings, 6 different varieties into a mound bed in the nursery*
- *Gifted 1 fig, 12 moringa, 4 prickly pear, 7 dragonfruit to several new homes*

Notes



March

	DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
	1		6:27am	6:00pm	12:12pm	11h33m
	6		6:21am	6:04pm	12:11pm	11h42m
	14		7:12am	7:09pm	1:09pm	11h56m
	15		7:11am	7:09pm	1:09pm	11h58m
EQUINOX	20		7:03am	7:11pm	1:07pm	12h7m
	22		7:02am	7:14pm	1:06pm	12h11m
	29		6:54am	7:18pm	1:04pm	12h23m
All data specific to New Orleans, LA	31		6:51am	7:19pm	1:04pm	12h27m
TREE OF THE MONTH			Ponderosa Pine, *Pinus ponderosa*			
JUST DUCKDUCKGO IT			Vâltoare			

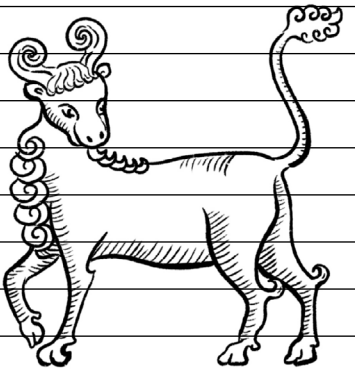
MARCH 8, 1968

In a speech, USAID administrator William Gaud gives name to "Green Revolution" to describe the widespread adoption of hybridized crops, fertilizers, pesticides and mechanization of farming beginning from around 1940.

Farm notes from Bayou Food Forest (south louisiana)

- *Aloe & Sorrel flowering in nursery pots. First pawpaw seeds sprouting.*
- *Planted dragonfruit, prickly pear, & icecream bean in raised bed*
- *First seminole pumpkin sprouts!*
- *Planted out lots of seedlings: 20+ moringa, peppers, watermelon*
- *Noticed first sweet potato vines sprouting, probably came up a few days ago*
- *New nursery floor completed, looks great*
- *Picked up a free greenhouse from facebook marketplace – nightmare to disassemble, gonna be a lot of work to put back together, needs new plastic.*
- *Planted 12 pawpaws in burned area*
- *Planted 2 jujube along banana row*
- *Planted 3 American chesnuts in nursery bed #2*
- *Planted 9 pawpaw & asian persimmon seedling in nursery bed #2*
- *Planted 14 swamp chestnut oaks in the burned area*
- *Planted 13 persimmons along pipeline willows*
- *Planted 4 pawpaws and 3 persimmons in willow forest*
- *Planted swamp chestnut oak at NW corner of C-pond*
- *Planted 2 swamp chestnut oaks behind driveway beds by library*
- *Planted 8 pawpaws north of driveway*
- *Planted 4 swamp chesnut oaks in the burned area and 1 by C-pond*
- *Planted 6 willows in the burned area*
- *Satsuma blossoming*
- *Loquat & fig fruits forming*
- *Thistles flowering*
- *Finished the floor on the cabin loft*

Notes

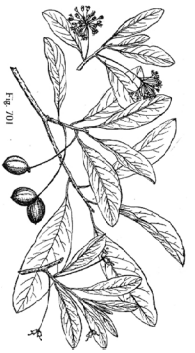


April

APRIL 1820	Scottish artisan laborers (namely loom weavers) strike and riot in demand of better working conditions, universal suffrage, and against the Corn Laws which raised the price of bread -- known as the Radical Rising this movement took inspiration from the American and French Revolutions.

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:50am	7:19pm	1:03pm	12h29m
4		6:46am	7:21pm	1:03pm	12h34m
12		6:37am	7:26pm	1:00pm	12h48m
15		6:34am	7:28pm	1:00pm	12h54m
20		6:29am	7:31pm	12:59pm	13h2m
27		6:22am	7:36pm	12:57pm	13h13m
30		6:19am	7:38pm	12:57pm	13h18m

All data specific to New Orleans, LA

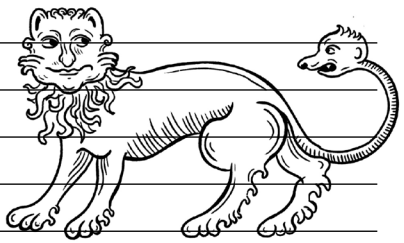


TREE OF THE MONTH	Swamp Tupelo, *Nyssa biflora*
JUST DUCKDUCKGO IT	Bousillage

Farm notes from Bayou Food Forest (south louisiana)

- *First ripe blackberries.*
- *Potted up lots of pawpaw, persimmon and cypress. Propagated elderberry and prickly pear.*
- *Announced the yearly sweet potato giveaway*
- *First moringa visibly breaking dormancy (five weeks later than last year)*
- *Some of the oats have begun their milky stage!*
- *Sent out the first free sweet potato slips of this year's giveaway*
- *Azolla acquired, azolla obsession begins to grow*
- *Public tree giveaway at the nursery, distributed persimmons, pawpaw, cypress and sycamore.*
- *First turmeric sprouts spotted*
- *Watered everything and weeded*
- *Weed-whacked all day*
- *Found some very blue bird eggs in a nest in one of the cypresses we planted*
- *First ripe mayhaws from the trees planted in 2022*
- *Spotted stunning buck moth caterpillars (Hemileuca maia) on the mayhaw*

Notes



May

All data specific to New Orleans, LA

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:18am	7:38pm	12:57pm	13h20m
4		6:16am	7:39pm	12:57pm	13h23m
12		6:10am	7:45pm	12:56pm	13h35m
15		6:08am	7:47pm	12:56pm	13h39m
20		6:05am	7:51pm	12:56pm	13h45m
26		6:02am	7:54pm	12:57pm	13h51m
31		6:01am	7:57pm	12:58pm	13h56m

MAY 5, 2010

During a massive anti-austerity protest in Athens, 3 people die in a Marfin-Egnatia Bank branch that is set ablaze. Later, bank officials are charged for negligent homicide due to fire safety failures.

TREE OF THE MONTH	Hollyleaf Cherry, *Prunus ilicifolia*
JUST DUCKDUCKGO IT	Mud-puddling

Farm notes from Bayou Food Forest (south louisiana)

- *First ripe fig "adriatic" type, variety unknown*
- *CLIMATE CHANGE, "real feel" tops 100°F first time this year*
- *Spotted amazing red moth hanging out on the squash vine, was amazed by its swag and fashionable demeanor, looked it up later, its larval stage is the squash vine borer. Well played, stylish moth.*
- *Tornado warnings in the area, craziest windstorm we've had in six years here, toppled a bunch of shallow-rooted fig trees.*
- *Friend came from Nola to help prop em up and stake them for more stability – tree health seems unaffected.*
- *First banana flower spotted! Already has some fruits showing, probably popped a few days ago*
- *Noticed mysterious tiny eggs on white sapote leaves*
- *Figured out what's making all the cypress trees go brown: pine colaspis beetle, looks bad but doesn't seriously damage the trees according to LSU Ag center*
- *High temps hitting 90's already*
- *Rains have brought out the critters - caught a big friendly Speckled King Snake, it hung out with us for a while, also a buncha big red crawfish running around*

Notes

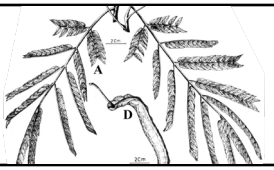
June

All data specific to New Orleans, LA

DAY OF MONTH	MOON	SUN-RISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:01am	7:58pm	12:58pm	13h56m
2		6:00am	7:58pm	12:58pm	13h57m
11		6:00am	8:02pm	1:00pm	14h2m
15		6:00am	8:04pm	1:00pm	14h3m
18		6:00am	8:05pm	1:01pm	14h4m
SOLSTICE 21		6:01am	8:05pm	1:02pm	14h4m
25		6:02am	8:06pm	1:03pm	14h4m
30		6:03am	8:06pm	1:04pm	14h2m

JUNE 17, 2006

The *Asamblea Popular de los Pueblos de Oaxaca* declares itself to be the governing body of Oaxaca and reoccupies the city's zócalo, one month after the start of protests spurred by violent police repression of a teachers' union strike in May.

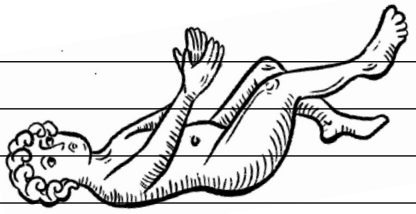


TREE OF THE MONTH	Mimosa, *Albizia julibrissin*
JUST DUCKDUCKGO IT	Gardening on salvia/driving on salvia

Farm notes from Bayou Food Forest (south louisiana)

- *Tent worms are getting bad in the mulberries again – time to hit em with the soapy molasses spray*
- *big rainbow!*
- *Direct-seeded sunflowers sprouting*
- *Found weird bird-poop lookin' caterpillar guys eating the white sapote, took 'em off*
- *Main fig crop coming in – no coincidence the raccoons are showing up again*
- *First harvest of brazillian starfish peppers, squash and watermelons fruiting well and looking good, none ripe yet*
- *Transplanted approx 85 LSU purple fig trees out of nursery beds into pots*
- *Realized the bird-poop-caterpillar is the larval stage of the largest butterfly in North America, the swallowtail. New protocol: relocate from white sapote to sacrificial trifoliate orange.*
- *Baked the fig cake from 2021 Earthbound almanac – added crumbled pecans on top to the recipe, so good*
- *Acquired rare seeds: so called "60-day" pigeon pea, 5-htp source plant griffonia simplicifolia, baobab.*
- *Watched some birds building a nest in a banana clump*
- *Filmed the raccoon family coming to get the figs*
- *Propagating azolla into various ponds, also the american lotus seedlings are looking great, should be ready to transplant soon.*
- *Getting a big bowl of figs about every day*
- *Found a buncha big juicy tobacco hornworms on the ground cherries*
- *First big hot pepper harvest!*

Notes



July

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:04am	8:06pm	1:04pm	14h2m
2		6:04am	8:06pm	1:04pm	14h2m
10		6:08am	8:05pm	1:05pm	13h57m
15		6:10am	8:04pm	1:06pm	13h53m
17		6:11am	8:03pm	1:06pm	13h51m
24		6:15am	8:00pm	1:06pm	13h45m
31		6:20am	7:55pm	1:06pm	13h35m

All data specific to New Orleans, LA

JULY 29, 1969

The New York Chapter of the Young Lords starts a "garbage offensive" in East Harlem one day after forming, to address deficient trash pick up in their neighborhood. They push trash into the middle of 3rd Avenue and set some piles ablaze.

TREE OF THE MONTH	Kapok, *Ceiba petandra*
JUST DUCKDUCKGO IT	English Ivy laundry detergent

Farm notes from Bayou Food Forest (south louisiana)

·*Starts with the worst heatwave of the year. Heat index above 110 for several days*

·*Fig season full swing, some of the big trees are dropping so many that the air smells like fermenting fruit near them*

·*First okra harvests*

·*Butterfly season is on – lots of giant swallowtail and viceroy.*

· *Planted 60-day pigeon peas in various spots*

·*Spotted a butterfly drinking from a ripe fig with a proboscis like a long straw, looked it up it's a hackberry emperor aka Asterocampa celtis.*

·*first seminole pumpkin harvest, dozen+ squash, loads more forming on the vines*

·*Big moringa leaf harvest, trees are super bushy rn*

·*Azolla & american lotus looking good in their new home in the aquatic plant section of the nursery (kiddie pool w bubbler)*

·*Nursery census (potted plants only, didn't count the tree beds)*

61 potted figs
25 elderberry
4 japanese red sweet potato
6 pawpaw full size pots
~100 seedling pawpaw and persimmon in family pots
9 cold hardy avocado
1 caribbean avocado
11 persimmon in solo pots
1 mulberry
14 cypress
35 pecan
41 dragonfruit
37 aloe vera
14 potted bananas
25 spineless prickly pear
1 pineapple
4 white sapote
1 lemon
2 moonflower morning glory
3 marisard chestnuts

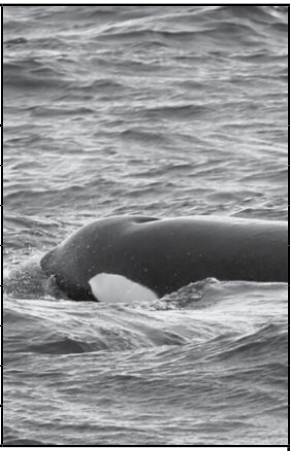
·*Tree frog population booming – counted 15+ on one big banana leaf. Great recovery after last year's drought.*

Notes

August

All data specific to New Orleans, LA

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:20am	7:55pm	1:06pm	13h34m
9		6:25am	7:48pm	1:05pm	13h23m
15		6:29am	7:43pm	1:04pm	13h13m
16		6:29am	7:42pm	1:04pm	13h12m
23		6:33am	7:34pm	1:02pm	13h
31		6:38am	7:25pm	1:00pm	12h47m



TREE OF THE MONTH	Cornelian Cherry, *Cornus mas*
JUST DUCKDUCKGO IT	Orca salmon hat trend

AUGUST 29, 2021

Sixteen years after Katrina, Hurricane Ida makes landfall in south Louisiana with 150-mph sustained winds and 931 mbar central pressure. It causes at least 92 deaths in the US.

Farm notes from Bayou Food Forest (south louisiana)

·*It is very hot.*

·*Packed up some farming books & a nice harvest of Seminole Pumpkins for the seed saving workshop and left town to teach & learn agroecology at Deep Food in southern Indiana (see pg 85 reportback)*

· *Finally took down the bamboo shade covering over the nursery treebeds; the bananas in the beds provide way more shade than necessary already*

· *First orange satsumas, a little underripe but good and falling off the tree after big rains*

Notes

September

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:38am	7:24pm	1:00pm	12h45m
7		6:42am	7:17pm	12:58pm	12h35m
14		6:45am	7:08pm	12:55pm	12h22m
15		6:46am	7:07pm	12:55pm	12h21m
21		6:49am	6:59pm	12:53pm	12h10m
EQUINOX 22		6:50am	6:58am	12:52pm	12h8m
29		6:53am	6:49pm	12:50pm	11h55m
30		6:54am	6:48pm	12:50pm	11h54m

All data specific to New Orleans, LA

Ginkgo, *Ginkgo biloba*

JUST DUCK-DUCKGO IT

Exploding seed pods make Sir David Attenborough laugh

TREE OF THE MONTH

SEPTEMBER 8, 2008

A 21-month tree-sit to block the University of California, Berkeley from cutting down a grove of west coast live oaks to build a student athletic training center ends. The tree holding the last tree-sitters is cut down a few hours after they are coerced into descending.

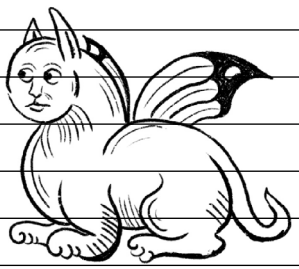
Farm notes from Bayou Food Forest (south louisiana)

- *Peak okra harvest beginning*
- *Planted five muscadine grapes all around the nursery posts to become living shade structures*

4 varieties: Carlos (self fertile), summit, sugar gate, and supreme.

- *First attempt making tempeh with banana leaves to wrap it – worked good tastes great*
- *Tried out the new battery-powered backpack sprayer – did foliar spray of 'fermented plant juice' and calcium extract from clam shells*
- *Made a real nice hotsauce with salt, garlic, muskmelon, datil peppers and brazillian starfish peppers*
- *Bean update, the beans have climbed past the lattice, into the willow tree and up twenty feet to the top. Whoa.*
- *BIG SNAKE up high in the papaya tree.*

Notes



October

All data specific to New Orleans, LA

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:54am	6:47pm	12:49pm	11h52m
6		6:57am	6:41pm	12:48pm	11h43m
13		7:01am	6:33pm	12:46pm	11h31m
15		7:03am	6:30pm	12:45pm	11h27m
21		7:07am	6:24pm	12:44pm	11h17m
29		7:13am	6:17pm	12:43pm	11h3m
31		7:14am	6:15pm	12:43pm	11h

TREE OF THE MONTH	Yaupon Holly, *Ilex vomitoria*
JUST DUCKDUCKGO IT	Village grandpa's cooking

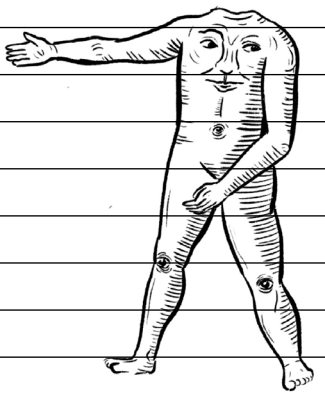
OCTOBER 1876

The Great Famine of 1876-1878 begins in British-ruled India following a severe drought and crop failure. As many as 9 million people die, mostly due to administrative and policy failures by the British who are trying to cut welfare expenses and continue to export millions of tons of grain from India. The crisis prompts a wave of migration of Indians across the empire in indentured servitude.

- *Took moringa leaves and turmeric root to market*
- *Open harvest day, folks came by to harvest moringa and went home with bags of it*
- *Watched a big white heron walking around eating snakes and lizards*
- *Taro is doing well, dug up a big clump and spread it around to a bunch of new spots.*
- *Turned the back of old broke down ford ranger by the nursery into a pond for the American Lotus and other aquatics*
- *Pecan season is on, found some huge ones by the gas station*
- *First ripe banana of the year*
- *Passionfruit propagation, started 20+ from cuttings*

Farm notes from Bayou Food Forest (south louisiana)

Notes



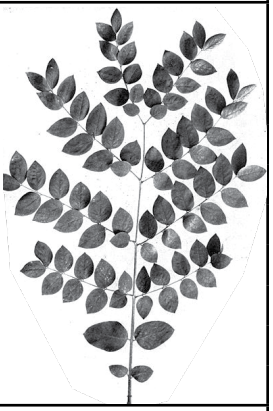
November

NOVEMBER 17, 1983

The Ejercito Zapatista de Liberación Nacional (EZLN) is founded during a meeting of urban revolutionaries from the north formerly of the FLN (Fuerzas de Liberación Nacional) and Maya leaders in Chiapas.

DAY OF MONTH	MOON	SUNRISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		7:15am	6:14pm	12:43pm	10h59m
5		6:18am	5:11pm	11:43am	10h53m
11		6:23am	5:07pm	11:44am	10h44m
15		6:26am	5:05pm	11:44am	10h38m
20		6:31am	5:03pm	11:46am	10h31m
28		6:37am	5:01pm	11:48pm	10h24m
30		6:39pm	5:01pm	11:49pm	10h22m

All data specific to New Orleans, LA



TREE OF THE MONTH	Kentucky Coffee Tree, *Gymnocladus dioicus*
JUST DUCKDUCKGO IT	How much farmland does Bill Gates own?

Farm notes from Bayou Food Forest (south louisiana)

- *Won 5 nice stainless steel tables at auction, gotta pick up in TX but will be great for the nursery, kitchen, and herb processing areas.*
- *Finally painted the house watermelon colors – green on the north and south and pink on the east and west.*
- *Successful food forest 101/dye pot workshop event, about a dozen people came. Kids stoked to dye fabric in the acorn pot. Food forest class included sunlight mapping by two methods (estimating sun movement by hand or with a solar pathfinder), discussion on ecological succession, types of plant growth strategies, a walk around the food forest, and some historical grounding in the Haitian Revolution and peasant struggles.*
- *A tiny grey kitten appeared from nowhere at the start of the class, meowing frantically.*
- *Passionfruit cuttings from Oct doing so well we did another round – noticed a bunch of big fruits on the vine, still green tho long ways to go. Hoping the la nina predictions for a mild winter are true.*

Notes

December

DAY OF MONTH	MOON	SUN-RISE	SUNSET	SOLAR NOON TIME	DAY-LIGHT HOURS
1		6:40am	5:01pm	11:49am	10h21m
4		6:42am	5:01pm	11:50am	10h19m
11		6:47am	5:02pm	11:53am	10h15m
15		6:50am	5:03pm	11:55am	10h13m
19		6:52am	5:05pm	11:57am	10h12m
SOLSTICE 21		6:53am	5:06pm	11:58am	10h12m
27		6:55am	5:09am	12:01am	10h13m
31		6:57am	5:11pm	12:03am	10h14m

All data specific to New Orleans, LA

TREE OF THE MONTH Eastern Cottonwood, *Populus deltoides*

JUST DUCKDUCKGO IT Wassailing

DECEMBER 15, 1988

Seringueiro Chico Mendes' 44th birthday. One week later he is murdered by Darci Alves da Silva, the son of a rancher that Chico had organized against to prevent the rancher's purchase of a tract of rubber reserve.

Farm notes from Bayou Food Forest (south louisiana)

- *Big cabbage come-up. Farmer friend had the hookup for 800 brassica starts a local farm was tossing as extras. Got a carload, spent two weeks finding spots to plant them.*
- *Seeded oats as groundcover & for milky oats*
- *Tiny grey kitten is called Mosquito. And Nugget. And Bunny. We nurse her back to health and find her a new home.*
- *First freeze scares – moved some plants inside a couple times but it wasn't necessary. Only the sweet potatoes and a few exposed bananas show some frost damage. Other cold-susceptible plants including moringa, pigeon pea, longan, hoja santa, white sapote, avocado, citrus, papaya, icecream bean were all totally fine.*
- *Picked up a $1000 tree order – 18 citrus, 6 avocado, 6 persimmon, 2 olive, 1 blueberry*
- *Avocado flower buds just beginning to form, no open flowers yet.*
- *First pigeon pea harvest a few days before BFFmas*

LOOKING BACK:

- *2024, which was BFF's sixth year growing food, brought our biggest harvests yet for:*
- *figs*
- *sweet potatoes*
- *seminole pumpkins*
- *moringa*
- *chili peppers*
- *First ever crops of loquats & pigeon peas*

Monthly illustrations by Bog @robindrawing

Notes

A List of Perennial Vegetables

Note that this is a global inventory of perennial vegetables. Some of these species are, or could become, serious weeds outside of their native range. We present this list to provide a jumping off point for those looking to learn more of the possibilities of a perennial agriculture. For much more down this rabbit hole, check out Edible Forest Gardens vol. 1 & 2 by Dave Jacke with Eric Toensmeier.

EXTREME COLD (USDA Zones 1-3)

nodding wild onion (Allium cernuum), showy & common milkweed (Asclepias syriaca, A. speciosa), red valerian (Centranthus ruber), Maximilan sunflower (Helianthus maximiliani), sunchoke (Helianthus tuberosus), duckweed (Lemna spp.), ostrich fern (Matteuccia struthiopteris), watercress (Nasturtium officinale), mountain sorrel (Oxyria digyna), yampah (Perideridia gairdnerii), rhubarb (Rheum x cultorum), arrowhead (Sagittaria latifolia), cattail (Typha spp.), water meal (Wolffia spp.)

COLD TEMPERATE (USDA Zones 4-7)

perennial leek (Allium ampeloprasum), multiplier onion (Allium cepa aggregatum), walking onion (Allium cepa proliferum), nodding wild onion (Allium cernuum), Welsh onion (Allium fistulosum), ramps (Allium tricoccum), garlic chives (Allium tuberosum), groundnut (Apios americana), udo (Aralia cordata), river cane (Arundinaria gigantea), showy & common milkweed (Asclepias syriaca, A. speciosa), asparagus (Asparagus officinalis), yellow asphodel (Asphodeline lutea), sea beet (Beta vulgaris maritima), Turkish rocket (Bunias orientalis), camass (Camassia spp.), fragrant spring tree (Cedrella sinensis), red valerian (Centranthus ruber), good King Henry (Chenopodium bonus-henricus), chicory (Cichorium intybus), colewort (Crambe cordifolia), sea kale (Crambe maritima), jinenjo (Dioscorea japonica), Chinese yam (Dioscorea opposita), sylvetta arugula (Diplotaxis muralis, D. tenuifolia), Caucasian spinach (Hablitzia tamnoides), Maximilan sunflower (Helianthus maximiliani), sunchoke (Helianthus tuberosus), daylily (Hemerocallis spp.), wood nettle (Laportaea canadensis), duckweed (Lemna spp.), lovage (Levisticum officinale), biscuit root (Lomatium spp.), leaf goji (Lycium chinense), gumbo leaf mallow (Malva moschata), ostrich fern (Matteuccia struthiopteris), mulberry (Morus alba), watercress (Nasturtium officinale), American lotus (Nelumbo lutea), Chinese lotus (Nelumbo nucifera), water celery (Oenanthe javanica), mountain sorrel (Oxyria digyna), yampah (Perideridia gairdnerii), fuki (Petasites japonicus), running bamboo (Phyllostachys spp.), clammy ground cherry (Physalis heterophylla), longleaf groundcherry (Physalis longifolia), ground cherry (Physalis pruinosa), pokeweed (Phytolacca americana), giant Solomon's seal (Polygonatum commutatum), Himalayan rhubarb (Rheum australe), turkey rhubarb (Rheum palmatum), rhubarb (Rheum x cultorum), staghorn sumac (Rhus typhina), French sorrel (Rumex acetosa), sheep sorrel (Rumex acetosella), buckler-leaf sorrel (Rumex scutatus), arrowhead (Sagittaria latifolia), running bamboo (Sasa kurilensis), scorzonera (Scorzonera hispanica), running bamboo (Semiarundinaria fastuosa), skirret (Sium sisarum), Chinese artichoke, crosnes (Stachys sieboldii), dandelion (Taraxacum officinale), New Zealand spinach (Tetragonia tetragonioides), linden, lime, basswood (Tilia spp.), cattail (Typha spp.), stinging nettle (Urtica dioica), water meal (Wolffia spp.)

COOL MARITIME (USDA Zones 8-9)

perennial leek (Allium ampeloprasum), multiplier onion (Allium cepa aggregatum), walking onion (Allium cepa proliferum), nodding wild onion (Allium cernuum), Welsh onion (Allium fistulosum), garlic chives (Allium tuberosum), ramsons (Allium ursinum), groundnut (Apios americana), wild celery (Apium prostratum filiforme), udo (Aralia cordata), asparagus (Asparagus officinalis), yellow asphodel (Asphodeline lutea), saltbush (Atriplex halimus), water parsnip (Berula erecta), sea beet (Beta vulgaris maritima), "Western Front" kale (Brassica napus), wild cabbage (Brassica oleracea),

"Colocha" (Brassica oleracea), "Tree Collards" (Brassica oleracea acephala), Gai Lon (Brassica oleracea alboglabra), "9 Star" perennial broccoli (Brassica oleracea botrytis), branching bush kales, "Dorbentons" kale (Brassica oleracea ramosa), Turkish rocket (Bunias orientalis), camass (Camassia spp.), achira, edible canna (Canna edulis), fragrant spring tree (Cedrella sinensis), red valerian (Centranthus ruber), good King Henry (Chenopodium bonus-henricus), chicory (Cichorium intybus), taro (Colocasia esculenta), colewort (Crambe cordifolia), sea kale (Crambe maritima), cardoon (Cynara cardunculus), globe artichoke (Cynara scolymus), Chinese yam (Dioscorea opposita), sylvetta arugula (Diplotaxis muralis, D. tenuifolia), Caucasian spinach (Hablitzia tamnoides), Maximilan sunflower (Helianthus maximiliani), sunchoke (Helianthus tuberosus), daylily (Hemerocallis spp.), wood nettle (Laportaea canadensis), lovage (Levisticum officinale), biscuit root (Lomatium spp.), leaf goji (Lycium chinense), gumbo leaf mallow (Malva moschata), bush banana, Austral doubah (Marsdenia australis), ostrich fern (Matteuccia struthiopteris), mulberry (Morus alba), watercress (Nasturtium officinale), American lotus (Nelumbo lutea), Chinese lotus (Nelumbo nucifera), water celery (Oenanthe javanica), nopale cactus, tuna (Opuntia ficus-indica, O. robusta, O. streptacantha), oca (Oxalis tuberosa), mountain sorrel (Oxyria digyna), yampah (Perideridia gairdnerii), fuki (Petasites japonicus), runner bean (Phaseolus coccineus), lima bean (Phaseolus lunatus), running bamboo (Phyllostachys spp.), goldenberry (Physalis peruviana), pokeweed (Phytolacca americana), root beer leaf, hoja santa (Piper auritum), giant Solomon's seal (Polygonatum commutatum), Himalayan rhubarb (Rheum australe), turkey rhubarb (Rheum palmatum), rhubarb (Rheum x cultorum), staghorn sumac (Rhus typhina), French sorrel (Rumex acetosa), sheep sorrel (Rumex acetosella), buckler-leaf sorrel (Rumex scutatus), arrowhead (Sagittaria latifolia), Chinese arrowhead (Sagittaria sinensis), running bamboo (Sasa kurilensis), scorzonera (Scorzonera hispanica), running bamboo (Semiarundinaria fastuosa), skirret (Sium sisarum), yacon (Smallianthus sonchifolia), potato (Solanum tuberosum), Chinese artichoke, crosnes (Stachys sieboldii), dandelion (Taraxacum officinale), New Zealand spinach (Tetragonia tetragonioides), linden, lime, basswood (Tilia spp.), "Ken Aslett" mashua (Tropaeolum tuberosum), cattail (Typha spp.), stinging nettle (Urtica dioica), izote (Yucca guatemalensis)

HOT AND HUMID (USDA Zones 8-9)

perennial leek (Allium ampeloprasum), multiplier onion (Allium cepa aggregatum), walking onion (Allium cepa proliferum), nodding wild onion (Allium cernuum), Welsh onion (Allium fistulosum), garlic chives (Allium tuberosum), groundnut (Apios americana), river cane (Arundinaria gigantea), showy & common milkweed (Asclepias syriaca, A. speciosa), asparagus (Asparagus officinalis), Turkish rocket (Bunias orientalis), achira, edible canna (Canna edulis), fragrant spring tree (Cedrella sinensis), taro (Colocasia esculenta), colewort (Crambe cordifolia), globe artichoke (Cynara scolymus), air potato (Dioscorea bulbifera), Chinese yam (Dioscorea opposita), sylvetta arugula (Diplotaxis muralis, D. tenuifolia), sunchoke (Helianthus tuberosus), daylily (Hemerocallis spp.), arrowroot (Maranta arundinacea), moringa (Moringa oleifera), African moringa (Moringa stenopetala), mulberry (Morus alba), watercress (Nasturtium officinale), American lotus (Nelumbo lutea), Chinese lotus (Nelumbo nucifera), nopale cactus, tuna (Opuntia ficus-indica, O. robusta, O. streptacantha), lima bean (Phaseolus lunatus), goldenberry (Physalis peruviana), pokeweed (Phytolacca americana), root beer leaf, hoja santa (Piper auritum), "Day Neutral" winged bean (Psophocarpus tetragonobolus), arrowhead (Sagittaria latifolia), Chinese arrowhead (Sagittaria sinensis), chayote (Sechium edule), yacon (Smallianthus sonchifolia), cattail (Typha spp.), stinging nettle (Urtica dioica)

ARID AND HOT (USDA Zones 8-10)

edible seed acacias (Acacia holosericea, A. murrayana, A victoriae), hardy agaves (Agave parreyi, A. chrysantha, A. deserti, A. utahensis, A. palmeri), tropical agaves (Agave salmiana, A. tequilana), garlic chives (Allium tuberosum), pigeon pea (Cajanus cajan), palo verde (Cercidium microphyllum), chaya (Cnidoscolus chayamansa), bull nettle (Cnidoscolus palmeri), cholla (Cylindropuntia acanthocarpa),

gamote (Cymopteris spp.), moringa (Moringa oleifera), African moringa (Moringa stenopetala), mulberry (Morus alba), nopale cactus, tuna (Opuntia ficus-indica, O. robusta, O. streptacantha), runner bean (Phaseolus coccineus), lima bean (Phaseolus lunatus), cache bean (Phaseolus polysanthus), Livingstone potato (Plectranthus esculentus), marama bean (Tylosema esculentum), izote (Yucca guatemalensis),

MILD MEDITERRANEAN (USDA Zones 8-10)

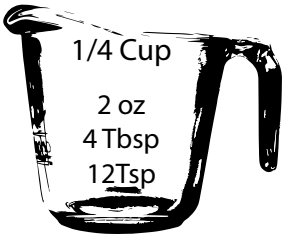
perennial okra (Abelmoschus esculentus), edible seed acacias (Acacia holosericea, A. murrayana, A victoriae), hardy agaves (Agave parreyi, A. chrysantha, A. deserti, A. utahensis, A. palmeri), tropical agaves (Agave salmiana, A. tequilana), perennial leek (Allium ampeloprasum), multiplier onion (Allium cepa aggregatum), walking onion (Allium cepa proliferum), Welsh onion (Allium fistulosum), garlic chives (Allium tuberosum), wild celery (Apium prostratum filiforme), water hawthorn (Aponogeton distachios), udo (Aralia cordata), asparagus (Asparagus officinalis), yellow asphodel (Asphodeline lutea), saltbush (Atriplex halimus), water parsnip (Berula erecta), sea beet (Beta vulgaris maritima), "Western Front" kale (Brassica napus), wild cabbage (Brassica oleracea), "Colocha" (Brassica oleracea), "Tree Collards" (Brassica oleracea acephala), Gai Lon (Brassica oleracea alboglabra), "9 Star" perennial broccoli (Brassica oleracea botrytis), branching bush kales, "Dorbentons" kale (Brassica oleracea ramosa), Turkish rocket (Bunias orientalis), camass (Camassia spp.), achira, edible canna (Canna edulis), babac (Carica pentaloba), fragrant spring tree (Cedrella sinensis), red valerian (Centranthus ruber), good King Henry (Chenopodium bonus-henricus), chicory (Cichorium intybus), chaya (Cnidoscolus chayamansa), taro (Colocasia esculenta), colewort (Crambe cordifolia), sea kale (Crambe maritima), chipilin (Crotolaria longirostrata), figleaf gourd, chilacayote (Cucurbita ficifolia), cholla (Cylindropuntia acanthocarpa), cardoon (Cynara cardunculus), globe artichoke (Cynara scolymus), chufa (Cyperus esculentus sativus), jinenjo (Dioscorea japonica), Chinese yam(Dioscorea opposita), cush cush yam (Dioscorea trifida), sylvetta arugula (Diplotaxis muralis, D. tenuifolia), lablab bean (Dolichos lablab), water chestnut (Eleocharis dulcis), enset (Ensete ventricosum), Caucasian spinach (Hablitzia tamnoides), Maximilan sunflower (Helianthus maximiliani), sunchoke (Helianthus tuberosus), daylily (Hemerocallis spp.), cranberry hibiscus (Hibiscus acetosella), sweet potato, boniato (Ipomoea batatas), lovage (Levisticum officinale), leaf goji (Lycium chinense), gumbo leaf mallow (Malva moschata), bush banana, Austral doubah (Marsdenia australis), moringa (Moringa oleifera), African moringa (Moringa stenopetala), mulberry (Morus alba), watercress (Nasturtium officinale), American lotus (Nelumbo lutea), Chinese lotus (Nelumbo nucifera), water celery (Oenanthe javanica), nopale cactus, tuna (Opuntia ficus-indica, O. robusta, O. streptacantha), oca (Oxalis tuberosa), mountain sorrel (Oxyria digyna), yampah (Perideridia gairdnerii), fuki (Petasites japonicus), runner bean (Phaseolus coccineus), lima bean (Phaseolus lunatus), cache bean (Phaseolus polysanthus), running bamboo (Phyllostachys spp.), goldenberry (Physalis peruviana), ground cherry (Physalis pruinosa), root beer leaf, hoja santa (Piper auritum), Livingstone potato (Plectranthus esculentus), "Day Neutral" winged bean (Psophocarpus tetragonobolus), Himalayan rhubarb (Rheum australe), turkey rhubarb (Rheum palmatum), rhubarb (Rheum x cultorum), French sorrel (Rumex acetosa), sheep sorrel (Rumex acetosella), buckler-leaf sorrel (Rumex scutatus), scorzonera (Scorzonera hispanica), skirret (Sium sisarum), yacon (Smallianthus sonchifolia), pepino melon (Solanum muricatum), potato (Solanum tuberosum), hausa potato (Solonostemon rotundifolius), Chinese artichoke, crosnes (Stachys sieboldii), dandelion (Taraxacum officinale), New Zealand spinach (Tetragonia tetragonioides), linden, lime, basswood (Tilia spp.), "Ken Aslett" mashua (Tropaeolum tuberosum), mashua (Tropaeolum tuberosum), cattail (Typha spp.), ulluco (Ullucus tuberosus), stinging nettle (Urtica dioica), izote (Yucca guatemalensis),

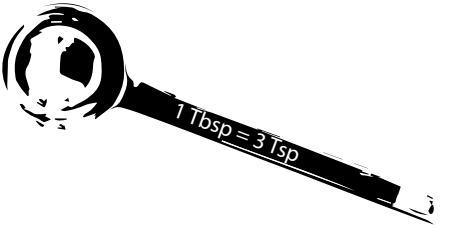
LOWLAND MONSOON AND HUMID TROPICS (USDA Zones 10-12)

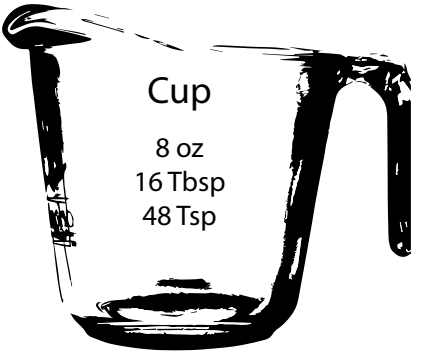
perennial okra (Abelmoschus esculentus), edible hibiscus (Abelmoschus manihot), baobab (Adansonia digitata), tropical agaves (Agave salmiana, A. tequilana), Welsh onion (Allium fistulosum), garlic chives

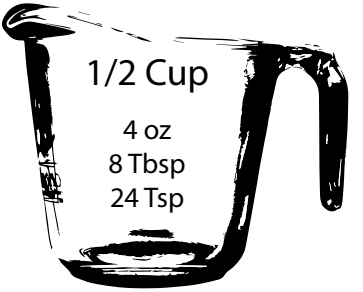
(Allium tuberosum), giant taro (Alocasia macrhorrhizos), sissoo spinach (Alternanthera sissoo), water hawthorn (Aponogeton distachios), water yam (Aponogeton madagascarensis), breadfruit (Artocarpus altilis), jakfruit (Artocarpus heterophylla), clumping bamboo (Bambusa spp.), Malabar spinach (Basella alba), pigeon pea (Cajanus cajan), achira, edible canna (Canna edulis), papaya (Carica papaya), water hornfern (Ceratopteris thalyctroides), tepijelote (Chamaedora tepijelote), chaya (Cnidoscolus chayamansa), bull nettle (Cnidoscolus palmeri), spurge nettle (Cnidoscolus stimulosus), ivy gourd, perennial cucumber (Coccinia grandis), taro (Colocasia esculenta), cholla (Cylindropuntia acanthocarpa), clumping bamboo (Dendrocalamus spp.), white yam (Dioscorea alata), air potato (Dioscorea bulbifera), Asiatic lesser yam (Dioscorea esculenta), cush cush yam (Dioscorea trifida), lablab bean (Dolichos lablab), water chestnut (Eleocharis dulcis), gorgon plant (Euryale ferox), clumping bamboo (Gigantochloa spp.), African jointfir (Gnetum africanum), jointfir (Gnetum gnemon), Okinawa spinach (Gynura crepioides), cranberry hibiscus (Hibiscus acetosella), water spinach (Ipomoea aquatica), sweet potato, boniato (Ipomoea batatas), duckweed (Lemna spp.), guaje (Leucaena esculenta), cassava, yuca, manioc (Manihot esculenta), arrowroot (Maranta arundinacea), bitter gourd (Momordica charantica), moringa (Moringa oleifera), African moringa (Moringa stenopetala), mulberry (Morus alba), banana, plantain (Musa x paradisica), watercress (Nasturtium officinale), clumping bamboo (Nastus elatus), Chinese lotus (Nelumbo nucifera), nopale cactus, tuna (Opuntia ficus-indica, O. robusta, O. streptacantha), lima bean (Phaseolus lunatus), root beer leaf, hoja santa (Piper auritum), Livingstone potato (Plectranthus esculentus), "Day Neutral" winged bean (Psophocarpus tetragonobolus), winged bean (Psophocarpus tetragonobolus), Chinese arrowhead (Sagittaria sinensis), katuk (Sauropus androgynous), chayote (Sechium edule), hummingbird tree (Sesbania grandiflora), highlands pitpit (Setaria palmifolia), eggplant (Solanum melongena), hausa potato (Solonostemon rotundifolius) African yambean (Sphenostylis stenocarpa), fluted gourd (Telfairia occidentalis), Haitian basket vine (Trichostigma octandrum), Australian arrowgrass (Triglochin spp.), water meal (Wolffia spp.), belembe/taioba (Xanthosoma brasiliense), cocoyam (Xanthosoma saggitifolium), violet-stem taro (Xanthosoma violaceum), izote (Yucca guatemalensis)

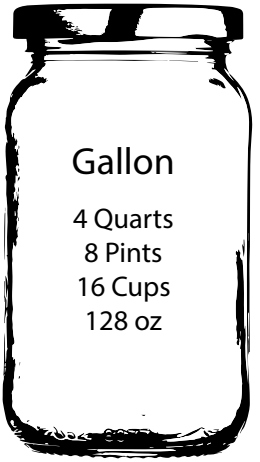
CONVERSIONS

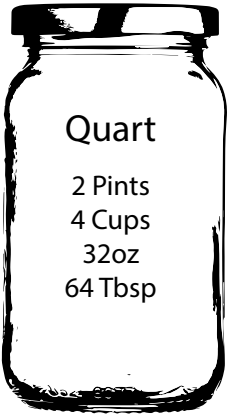


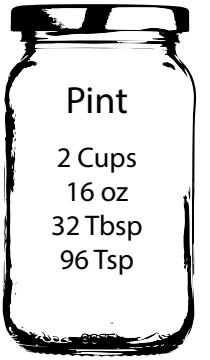










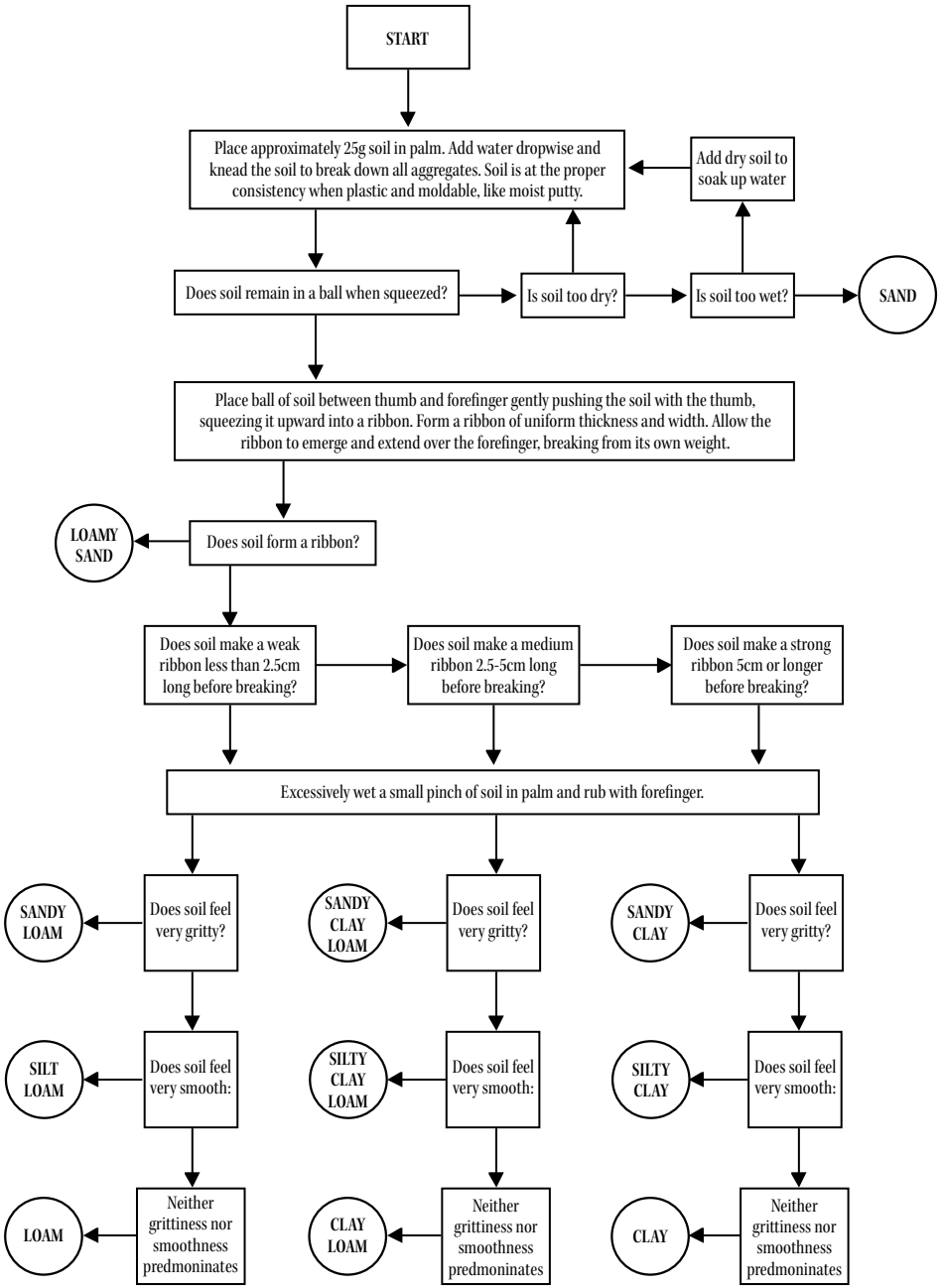


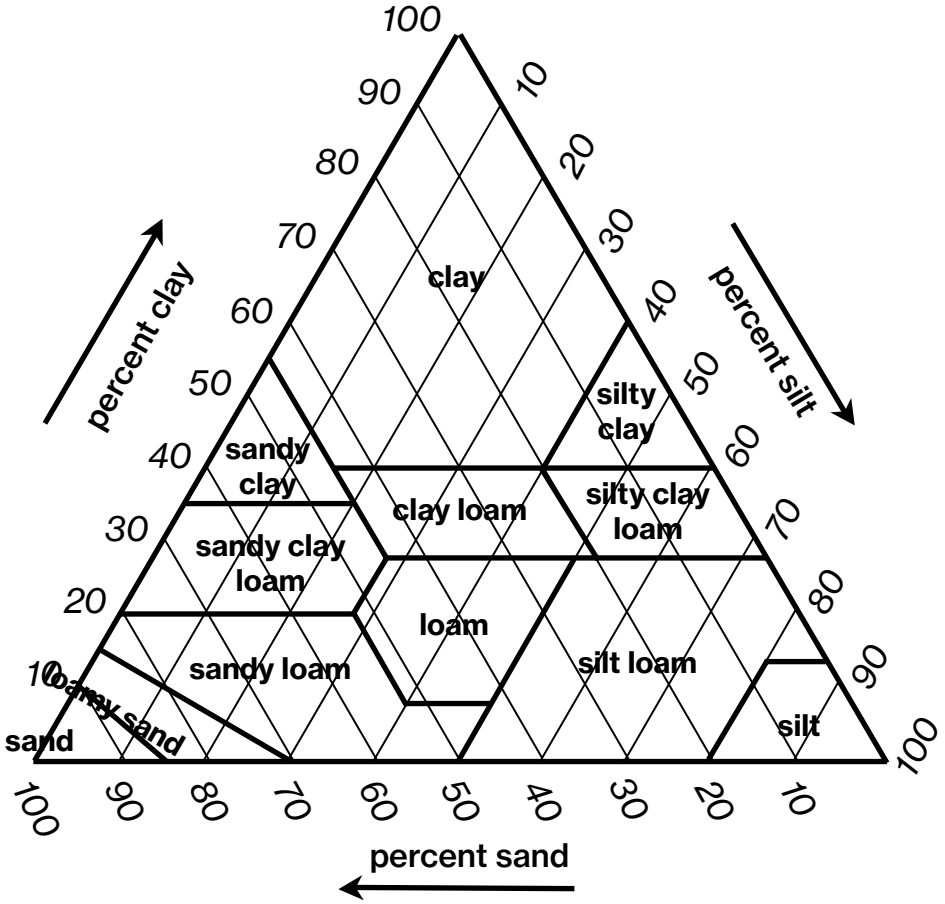
CONVERSIONS

Temperature	° F to ° C	(° F-32) x .556
	° C to ° F	° C(1.8) + 32

To Change	To	Multiply By
Inches	Feet	.0833
Inches	Millimeters	25.4
Millimeters	Inches	.03937
Feet	Inches	12
Meters	Feet	3.281
Feet	Yards	.3333
Yards	Feet	3
Yards	Meters	.9144
Meters	Yards	1.094
Miles	Kilometers	1.609
Kilometers	Miles	.6214
Square Inches	Square Feet	.00694
Square Feet	Square Inches	144
Square Feet	Square Yards	.11111
Square Yards	Square Feet	9
Cubic Inches	Cubic Feet	.00058
Cubic Feet	Cubic Inches	1728
Cubic Feet	Cubic Yards	.03703
Cubic Yards	Cubic Feet	27
Cubic Inches	Gallons	.00433
Cubic Feet	Gallons	7.48
Gallons	Cubic Inches	231
Gallons	Cubic Feet	.1337
Gallons	Lbs of Water	8.33
Lbs of Water	Gallons	.12004
Ounces	Pounds	.0625
Pounds	Ounces	16
Inches of Water	Lbs/Square Inch	.0361

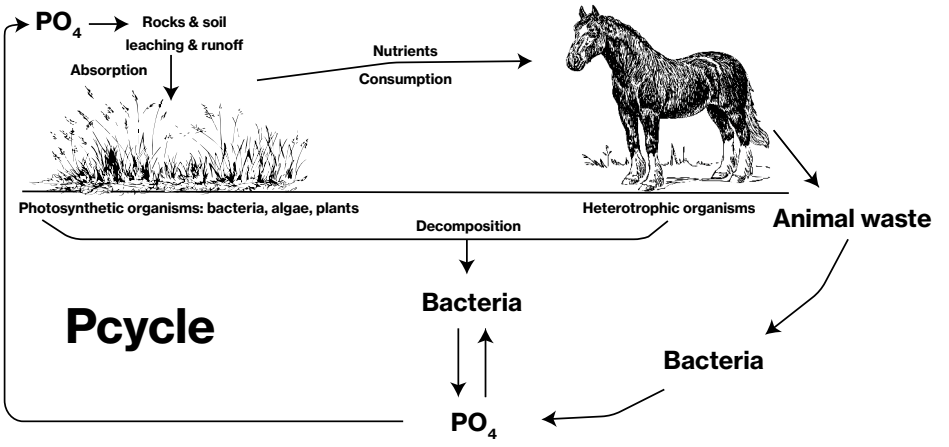
Home Test for Soil Type




100
90
80
70
60
50
40
30
20
10
percent clay
percent silt
percent sand
clay
silty clay
sandy clay
clay loam
silty clay loam
sandy clay loam
loam
silt loam
sandy loam
loamy sand
sand
silt

Essential Plant Nutrients

Nutrient	Ions Absorbed by Plants
Structural elements	
Carbon, C	CO_2
Hydrogen, H	H_2O
Oxygen, O	O_2
Primary nutrients	
Nitrogen, N	NO_3^-, NH_4^+
Phosphorus, P	$H_2PO_4^-$,HPO_4^{-2}
Potassium, K	K^+
Secondary nutrients	
Calcium, Ca	Ca^{+2}
Magnesium, Mg	Mg^{+2}
Sulfur, S	SO_4^{-2}
Micronutrients	
Boron, B	$H_2BO_3^-$
Chlorine, Cl	Cl^-
Cobalt, Co	Co^{+2}
Copper, Cu	Cu^{+2}
Iron, Fe	Fe^{+2}, Fe^{+3}
Manganese, Mn	Mn^{+2}
Molybdenum, Mo	MoO_4^{-2}
Zinc, Zn	Zn^{+2}



Typical nutrient content, moisture content, and weight of manure

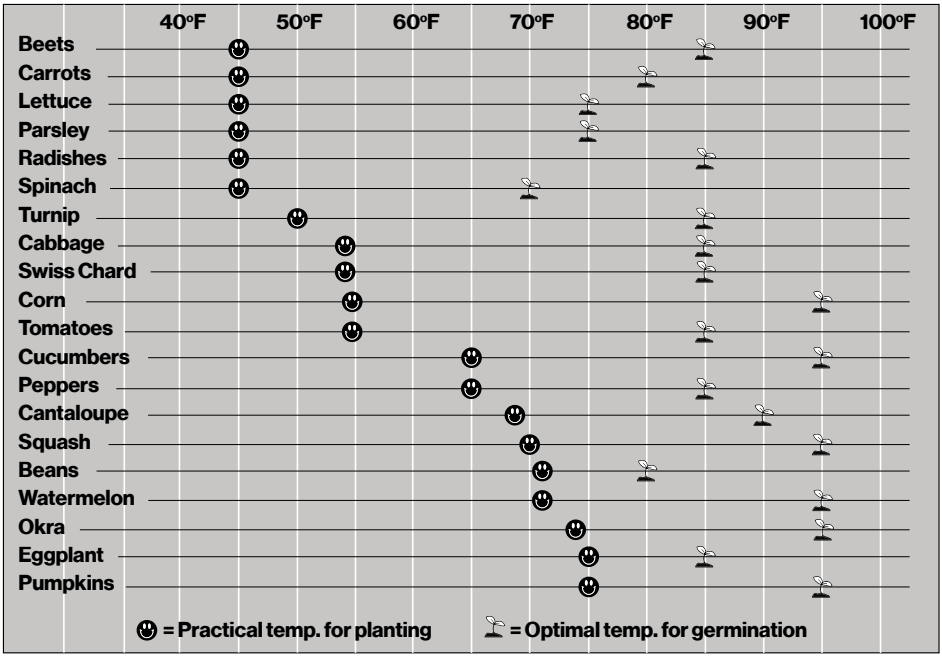
Type of Animal Manure	N	P[2]	K	Moisture, percent	Weight, lb/cu yard
	lb per ton as is [1,2]				
Chicken with litter	73	28	55	30	900
Laying hen	37	25	39	60	1,400
Sheep	18	4.0	29	72	1,400
Rabbit	15	4.2	12	75	1,400
Beef	12	2.6	14	77	1,400
Horse	9	2.6	13	63	1,400
Dry stack dairy	9	1.8	16	65	1,400
Separated dairy soilds[3]	5	0.9	2.4	81	1,100

[1] Manure analyses are usually reported in terms of P and K, while fertilizer labels are phosphate (P_2O_5) and potash (K_2O). To convert from P to P_2O_5, multiply P by 2.3. To convert from K to K_2O, multply K by 1.2.

[2] These values assume that manure has been protected from rain.

[3] Separated dairy solids are produced when dairy manure is pumped over a screen, separating the soilds from the rest of the manure.

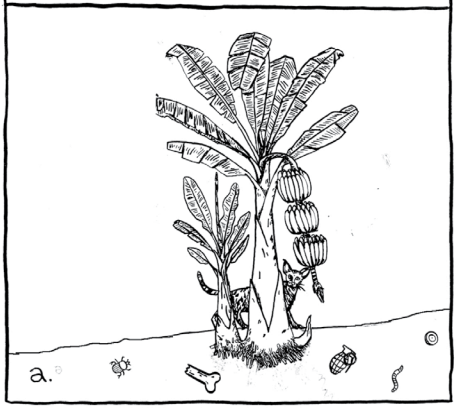
Soil Temperatures for Germination

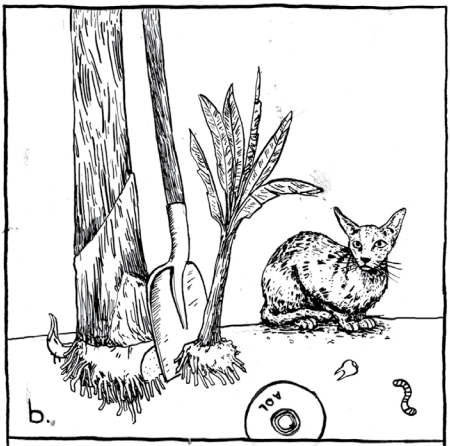


DESTITUTE DOLE

BANANA PROPAGATION

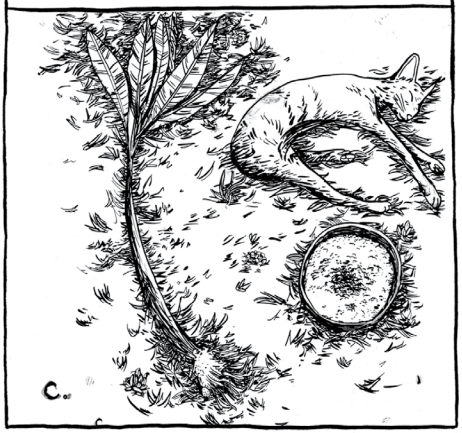
Cloning a banana plant is less of an operation then it sounds like. The banana is busy cloning itself anyway - left to its devices, one plant will form a circular clump, spreading year after year.

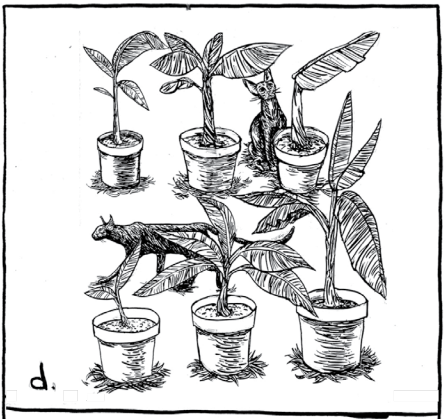




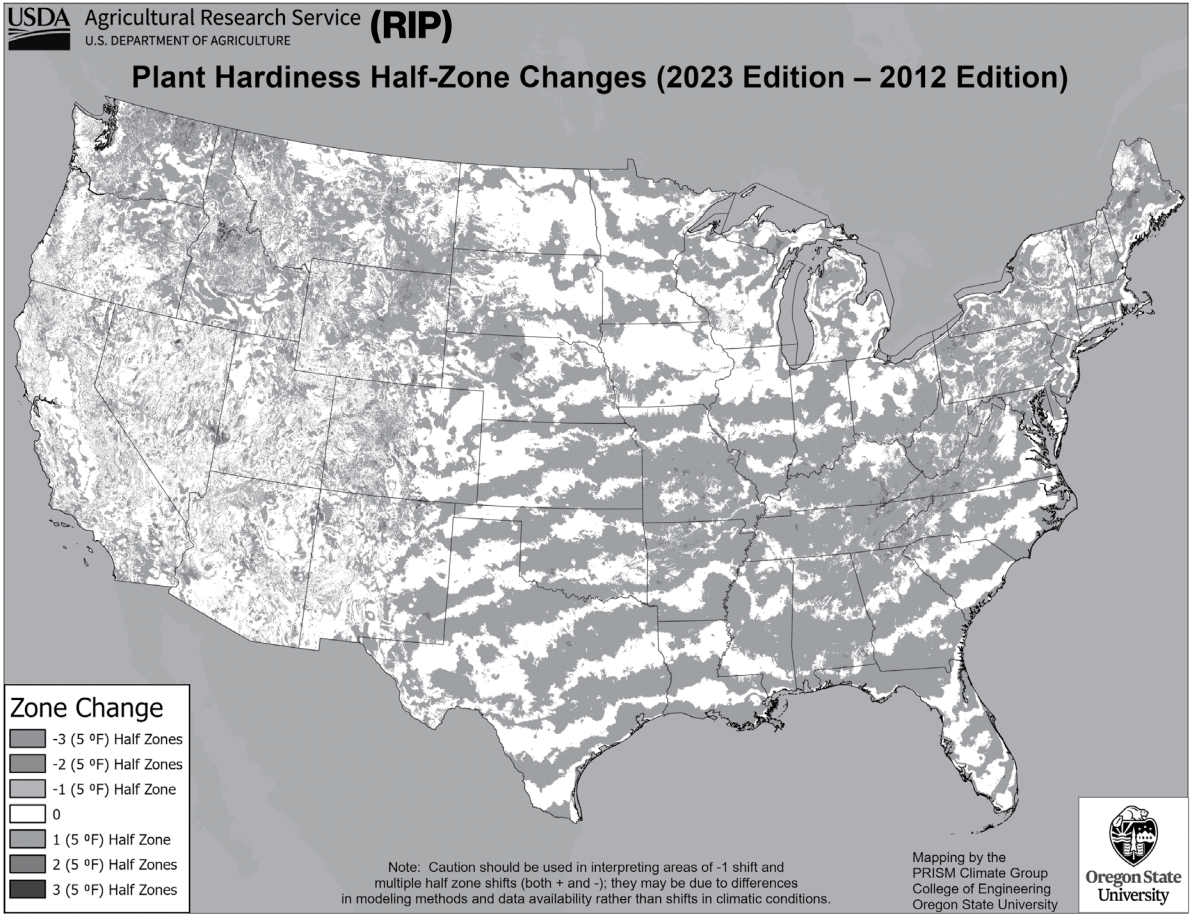
Baby bananas are called pups. A sharp shovel is used to seperate them from the larger clump.

As long as one or two roots stay connected to the pup, success rates are very high.



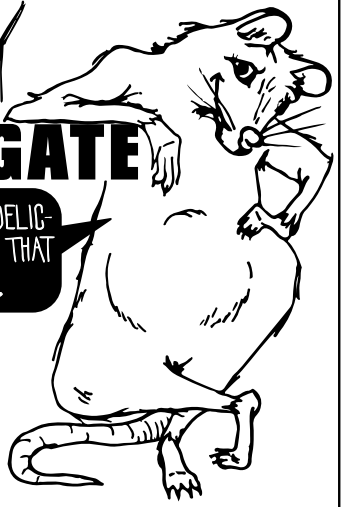


A little math: start with 10 banana plants. Take 5 clones or pups from each per year. At the end of year 5, you've got... 77,760 banana plants.


USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
(RIP)
Plant Hardiness Half-Zone Changes (2023 Edition – 2012 Edition)
Zone Change
-3 (5 ºF) Half Zones
-2 (5 ºF) Half Zones
-1 (5 ºF) Half Zone
0
1 (5 ºF) Half Zone
2 (5 ºF) Half Zones
3 (5 ºF) Half Zones
Note: Caution should be used in interpreting areas of -1 shift and multiple half zone shifts (both + and -); they may be due to differences in modeling methods and data availability rather than shifts in climatic conditions.
Mapping by the PRISM Climate Group College of Engineering Oregon State University
Oregon State University

Quick'n DIRTY

HOW TO: PROPAGATE



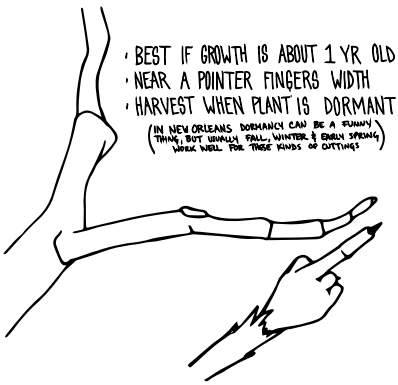
YOU KNOW THAT FIG TREE ACROSS TOWN WITH THE MOST DELICIOUS PURPLE FIGS? WHAT IF THERE COULD BE MORE OF THAT SAME DELICIOUS TREE!? GUESS WHAT, THERE CAN BE.

LET'S = PROPAGATE!

PROPAGATION IS A WAY PLANTS (AND OTHER ORGANISMS) INCREASE IN NUMBERS. LEARNING PROPAGATION ALLOWS US TO MAKE NEW PLANTS FROM A PLANT THAT IS ALREADY ADAPTED AND THRIVING IN A SPECIFIC ECOREGION. THERE ARE MANY DIFFERENT METHODS OF PROPAGATION, ONE WAY IS BY TAKING CUTTINGS.

THERE ARE TWO TYPES OF CUTTINGS THAT CAN BE HARVESTED FROM THE FIG TREE; HARDWOOD OR SOFTWOOD. WHILE BOTH SHOULD BE CUT BELOW A NODE, BETWEEN 6-10" IN LENGTH AND THE BRANCH SHOULD BE STIFF ENOUGH THAT IF BENT WILL SNAP. ONE IS HARVESTED IN A STAGE OF DORMANCY AND THE OTHER VIGOROUS GROWTH!

HARDWOOD



- BEST IF GROWTH IS ABOUT 1 YR OLD
- NEAR A POINTER FINGERS WIDTH
- HARVEST WHEN PLANT IS DORMANT

(IN NEW ORLEANS DORMANCY CAN BE A FUNNY THING, BUT USUALLY FALL, WINTER & EARLY SPRING WORK WELL FOR THESE KINDS OF CUTTINGS)

SOFTWOOD

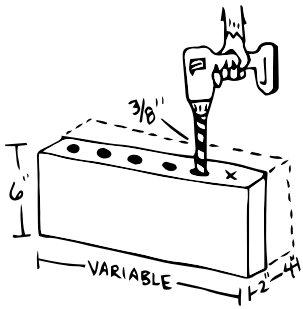
HARVEST FROM VIGOROUS NEW GROWTH IN THE SPRING (POSSIBLY SUMMER TOO IN NEW ORLEANS), BEST CUT IN MORNINGS WHEN PLANT IS FULL OF WATER.


NODES
JOINTS WHERE NEW GROWTH GROWS OUT OF!
IMPORTANT TO FIND TO INSURE NEW ROOT AND LEAF GROWTH!
6-10"
AFTER COLLECTING THE CUTTINGS PUT THEM INTO POTTED SOIL OR WATER AS SOON AS POSSIBLE, DON'T LET THEM DRY OUT. MAKE SURE MORE OF THE CUTTING IS BELOW THE SOIL. THIS WILL DEDICATE MORE AREA TO ROOT GROWTH AND KEEP THE PLANT FROM DRYING OUT. IT IS BEST TO HAVE BALANCED SUN AND SHADE, SO THEY DON'T DRY OUT OR ROT.
NODES
MAJORITY OF CUTTING BELOW SOIL
WHEN PROPAGATING IT IS ALSO ADVANTAGEOUS TO THINK ABOUT THE PLANT YOU ARE CUTTING FROM. START A CONVERSATION WITH WHOEVER LIVES THERE, MAYBE THE TREE HAS HISTORY! HAVE A CONVERSATION WITH THE TREE (ALOUD OR IN YOUR HEAD, WHATEVER FEELS BEST), LET IT KNOW YOU'D LIKE TO HARVEST CUTTINGS, BRING IT COMPOST OR MULCH, PROMISE TO TAKE CARE OF THE CUTTINGS AS BEST YOU CAN, LISTEN, THANK IT. IN BUILDING RELATIONSHIPS WITH PLANTS, WE DISRUPT AND DECONSTRUCT COLONIAL AND CAPITALISTIC ECOLOGY PRACTICES, WHICH IS IMPERATIVE!

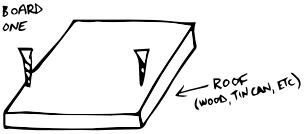
HOW TO: MASON BEE HIVES

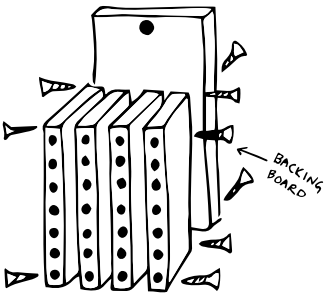
Quick'n DIRTY #2

There are 130 species of Mason bees (Osmia) out of the thousands of pollinators throughout North America. The Mason bee is part of the Apidae bee family, which also includes the most familiar pollinator the honey bee (Apis melifera). Unlike honey bees who are a collective social bee, in hives of tens of thousands, the Mason bee is solitary. They pollinate plants up to a 300 feet radius of where they nest and an individual Mason bee has much higher pollination rate than an individual honey bee due to the way they carry pollen, on their lower abdomen rather than on the backs of their legs. Mason bees nest in small holes most commonly in trees or logs that were already created by woodpeckers and insects. They forage throughout the warm months, mate with a male (who only lives for up to 2 weeks to mate then dies), gather about a pea size amount of pollen for each egg, lay the egg next to the pollen, find mud to build up a protective barrier (where the name mason comes from). She will do this in succession in about two tubes and lay about 15-20 eggs in her life span of 6 weeks, then dies. The baby bees pupate and are fully developed by the fall, hibernate through the winter then emerge from their coccoons in the spring. If you would like to invite more pollinators to your home but might not want or have space to have a full fledged bee hive, making Mason bee habitats are a great low maintenance way! There are many different ways to make a Mason bee hive, here are two examples...

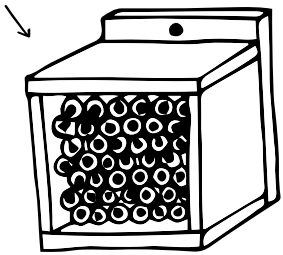


WITH A 3/8" DRILL BIT, DRILL HOLES ON 2" OR 4" FACE OF 2x6" OR 4x6" PIECES OF WOOD. SPACE HOLES 3/8" APART. DRILL HOLES ALL THE WAY THROUGH. SCREW TOGETHER ALL 2x6" BLOCKS. SCREW ON A BACKING BOARD THAT IS TALLER THAN BLOCKS FOR ONE WAY TO HANG OR MOUNT.





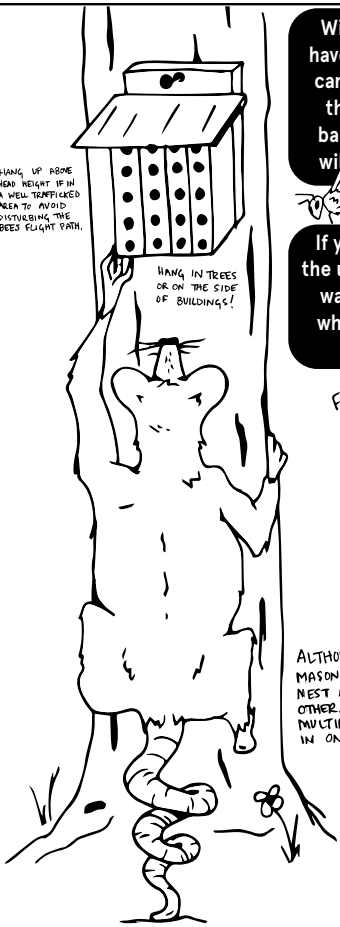
ANOTHER METHOD USING PAPER STRAWS OR HOLLOW BAMBOO (DONT USE PLASTIC, IT WONT BREATHE!). STRAWS OR BAMBOO CUTTINGS CAN BE BUNDLED INTO A WOODEN FRAME.

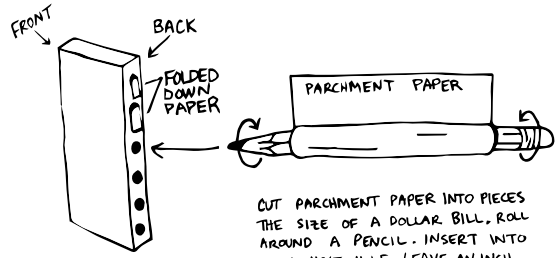


IF YOU DONT MAKE A ROOF BE SURE TO HANG THE HIVE UNDER AN AWNING, TO PROTECT IT FROM MOISTURE THAT MAY CREATE AN ENVIRONMENT AT RISK OF MOLD, FUNGUS & PESTS.

With any Mason bee hive method, if it appears that the holes have been built up and bees are no longer nesting in them, they can be cleaned out for future Mason bee inhabitants. Take off the backing piece, drill out the mud, or take out straws and bamboo cuttings, clean them or replace with fresh ones. This will also help protect the bees from mites and fungal threats.

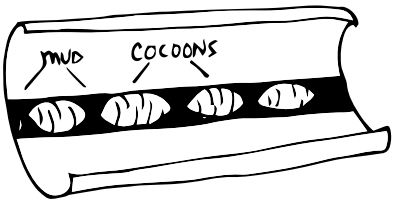
If you'd like to get even nerdier with Mason bees... and due to the unpredictability of an ever quickly changing climate, another way to insure that the bees are emerging from their cocoons when there is an abundant food source, is to line the wooden holes (or bamboo cuttings) with paper.





CUT PARCHMENT PAPER INTO PIECES THE SIZE OF A DOLLAR BILL, ROLL AROUND A PENCIL. INSERT INTO EACH HIVE HOLE. LEAVE AN INCH HANGING OUT THE BACK & FOLD OVER. (THIS IS WHERE YOU WILL PULL IT OUT WHEN IT GETS COLD).

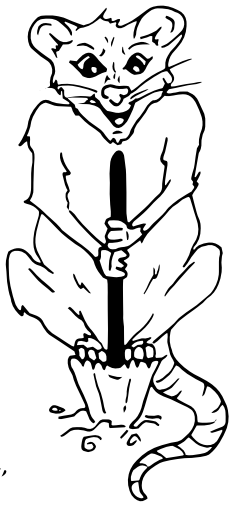
ALTHOUGH SOLITARY MASON BEES LIKE TO NEST NEXT TO EACH OTHER. CAN HANG MULTIPLE HIVE BOXES IN ONE AREA.



Then, In the winter after all the eggs are laid and cocoons have developed open the back of hive. Pull out each roll of paper. Open and collect the healthy cocoons. Place in a breathable cardboard box and place in a refrigerator. Leave in the fridge until there is no fear of another cold snap. When warm, Make a hole in the side of the cardboard box and place in a shaded, dry area. The bees will emerge from their cocoons within the box, leave from the opening, begin foraging and start their life cycle!

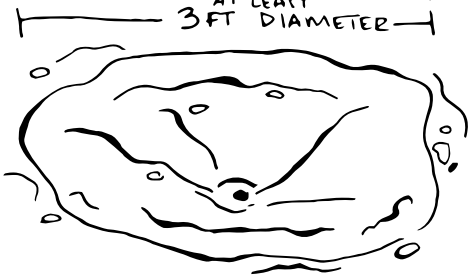
Quick'n DIRTY #3

HOW TO: BIO CHAR



BIOCHAR IS CHARCOAL PIECES MADE FROM ORGANIC MATTER THAT HAVE PORES THAT RETAIN NUTRIENTS IN THE SOIL. THE CARBON COMPOUNDS FORM LOOSE CHEMICAL BONDS WITH SOLUBLE PLANT NUTRIENTS, LIKE AMONIA & NITROGEN, THAT ARE EASILY WASHED FROM SOIL BY RAIN LEAVING PLANTS DEFICIENT. BENEFICIAL MICROBES ALSO LIKE TO LIVE IN THESE CHARCOAL MOTELS! USING BIOCHAR IN COMBINATION WITH COMPOST CAN GREATLY IMPROVE PLANT HEALTH & NUTRIENT RETENTION IN SOIL.

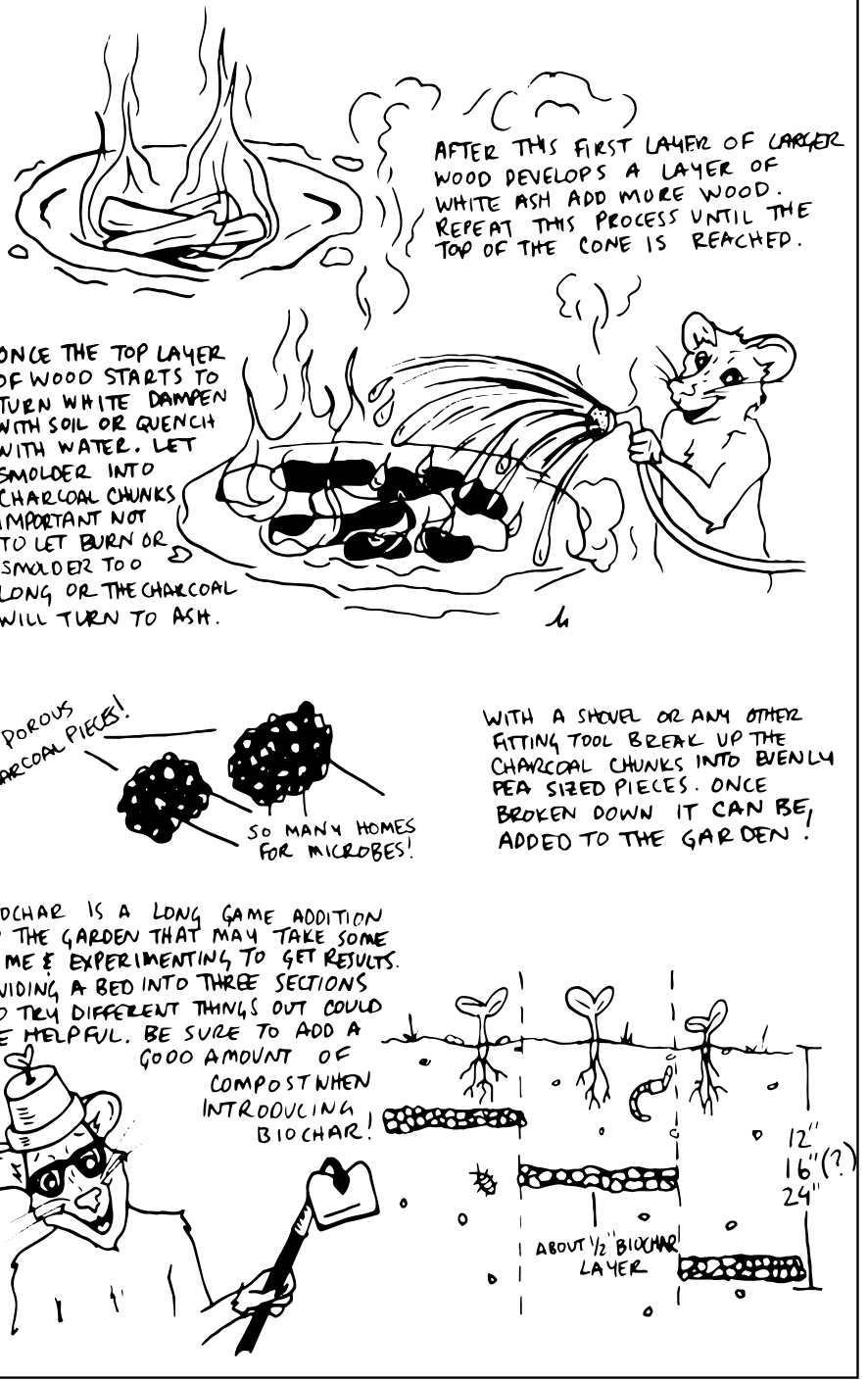
THERE ARE DIFFERENT METHODS TO MAKE BIOCHAR, HERE IS THE CONE METHOD.



IN AN OPEN, CLEAR AREA DIG A CONE SHAPED PIT. SIZE CAN VARY BASED ON NEED. THE CONE SHAPE RESTRICTS OXYGEN FLOW TO THE FIRE SO THAT IT BURNS SLOWLY.

FOR THE CONE METHOD USE DRY TWIGS & LOGS. BEST IF ALL WOOD BEING USED HAS A SIMILAR LEVEL OF DRYNESS SO IT ALL BURNS AT A SIMILAR RATE. THE DRIER THE WOOD, THE LESS SMOKE DURING BURN & MORE BIOCHAR FOR AMOUNT OF WOOD.

LIGHT THE FIRST LAYER OF TWIGS ON FIRE ONCE IT IS BURNING STRONLY, ADD LARGER PIECES OF WOOD.


AFTER THIS FIRST LAYER OF LARGER WOOD DEVELOPS A LAYER OF WHITE ASH ADD MORE WOOD. REPEAT THIS PROCESS UNTIL THE TOP OF THE CONE IS REACHED.
ONCE THE TOP LAYER OF WOOD STARTS TO TURN WHITE DAMPEN WITH SOIL OR QUENCH WITH WATER. LET SMOLDER INTO CHARCOAL CHUNKS IMPORTANT NOT TO LET BURN OR SMOLDER TOO LONG OR THE CHARCOAL WILL TURN TO ASH.
POROUS CHARCOAL PIECES!
SO MANY HOMES FOR MICROBES!
WITH A SHOVEL OR ANY OTHER FITTING TOOL BREAK UP THE CHARCOAL CHUNKS INTO EVENLY PEA SIZED PIECES. ONCE BROKEN DOWN IT CAN BE ADDED TO THE GARDEN!
BIOCHAR IS A LONG GAME ADDITION TO THE GARDEN THAT MAY TAKE SOME TIME & EXPERIMENTING TO GET RESULTS. DIVIDING A BED INTO THREE SECTIONS TO TRY DIFFERENT THINGS OUT COULD BE HELPFUL. BE SURE TO ADD A GOOD AMOUNT OF COMPOST WHEN INTRODUCING BIOCHAR!
12"
16" (?)
24"
ABOUT ½" BIOCHAR LAYER

It's Going Down *is a digital community center for anarchist, anti-fascist, autonomous anti-capitalist and anti-colonial movements across so-called North America.*

itsgoingdown.org

twitter: **@IGD_News**

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CLASSIFIEDS

DEEP FOOD 2025

AUGUST 3 - 10

Paoli, IN

partisangardens.org/deepfood

a 10-day intensive communal learning environment focused on growing, cooking, eating, preserving, planning, thinking about and celebrating food

Bayou Food Forest is a project to transform 11 acres of former monoculture in SW Louisiana into a site of intense food production and perennial & fruit tree propagation.

Sometimes seeking volunteers, if interested, please email Indianbayoufarm@protonmail.com.

Useful skills include: gardening, carpentry, electrical, irrigation, cooking, photo/video, art/design.

Insta: **@bayou_foodforest**

Earthbound?

We're cultivating crews in the PNW.
Summer intensives and/or
long-term worker collective members,

cedarmoon.us/earthbound

Cedar Moon tends unsettling earth
with the Sacred Lands Alliance & TLC Farm,
on Atfalati and Clackamas lands: Portland, OR

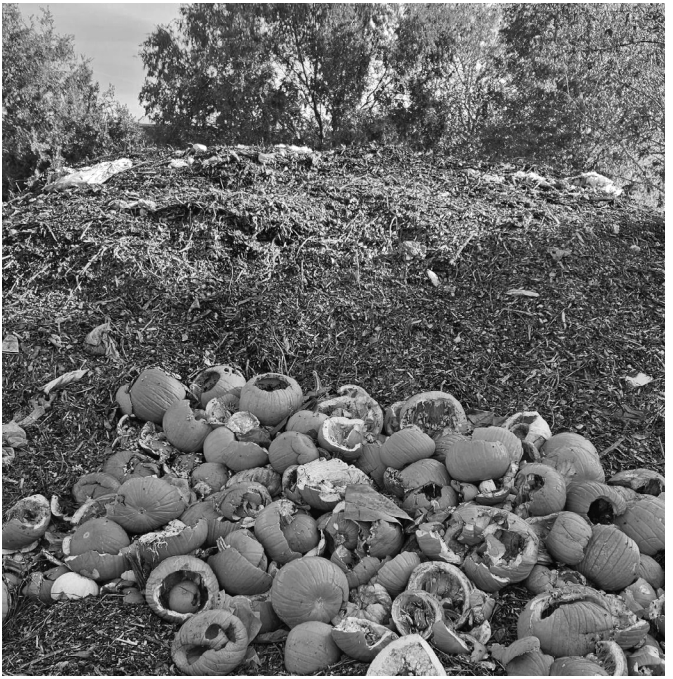
CEDAR MOON

We appreciate everyone who contributed to make this fifth issue of the Earthbound Farmer's Almanac possible. We hope to be back next year so if you're reading this and excited to contribute to future issues, send pitches to lobeliacommons@protonmail.com with "2026 Almanac:" and the pitch topic in the subject by **July 31st, 2025.**

If you'd like to learn more about Lobelia Commons and the projects we're working on, check out @lobeliacommons on social media.

Free PDFs of all issues of the Earthbound Farmer's Almanac can be found online at **earthbound.farm**.

"rot or blet" by sally singer-stone



"com penere" by sally singer-stone

2025

EARTHBOUND

FARMER'S ALMANAC

This is a farmer's almanac for the end of a world and the beginning of many others.

The evolving crises all around us and reigning institutions' desperate attempts to appear in control at any cost make it clear that we must build the tools for our own autonomy and survival. There are alternatives to the antics of hoarding preppers and consumerist gimmicks. Instead, redefining our relationships with our water, foods, and medicines will determine our ability to continually resist, subvert, and create.

The way forward, out of this mess, will mean charting a new course informed with ancestral knowledges developed through generations of struggle against land theft, exploitation, and enslavement. We will have to work together—constructing and re-constructing the ability to sustain and care for each other. This almanac is for developing the necessary knowledge, infrastructure and practices.

The old farmer's almanac presented conventional wisdom. This almanac is a place for experimentation, for finding new forms and retrofitting old ones, for sharing stories of lived efforts toward a collective exit from this colonial nightmare, this separateness from the Earth.

Sunrise/Sunset and Moon Phases

Historic Dates

DIY Builds

Tarotscopes

Recipes

Plant Guides

Climate Weirdings

Correspondences