



about

Glitch 2024 was created through the Environmental Justice in Tech Fellowship.

The Environmental Justice in Tech Project is a collection of resources dedicated to imagining the future of environmentally just technology. We explore the history, current efforts towards, and lack thereof environmental justice in technology development and engage with environmental justice mapping initiatives.

This work investigates questions of environmental harm, climate tech development, social issues, and the intersection of the environmental and social impact of new technologies while envisioning and proposing more equitable and environmentally resilient futures.

This edition of Glitch was curated by the 2024 Environmental Justice in Tech summer fellows Josephine Ewoma and Arpan Somani.

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Editors Note

Some kind of cosmic beaver...

In the summer of 2021, four of us set out to one of the last available campsites within a few hours drive of New York City. Little Pond Campground in Andes, NY played host for a weekend, offering a shaded drive-in site, a firepit and a backdrop of its namesake pond. Arriving in the late afternoon, we hastily set up our tents and meandered onto the 3 mile Little Pond Trail to graciously accept what the last few hours of daylight had to offer.

The contrast of pink azalea's against the green leaves of the surrounding trees. A small field of fern, all tilting in unison toward the Sun. A standalone flat rock, large enough for the Vitruvian Man to sprawl out. A clearing through the brush that would capture the envy of Windows XP. Our overly enthusiastic reactions to the smallest of nature's gestures subtly betrayed our desperate need to flee city life for a weekend.

The saunter continued until we reached a small swamp, elevated several feet above a parched creek. Endcapping the creek was a beaver dam, an engineering marvel trapping the swamp in place and allowing a rivulet to escape down toward our campsite where the usual tropes soon followed - dusk beers by the water, a cast iron cooked meal of steak and veggies, and gooey marshmallows on the campfire.

We later retreated to our tents, hidden by tree cover, under the stars, as engineers prepared for their night shift. I remember dozing off to the sound of a large pencil being sharpened, wood shavings falling to the forest floor.



Beavers build dams through a fascinating and intricate process that starts with selecting an ideal site, usually in shallow, slow-moving water where there is an ample supply of trees and shrubs. The initial and crucial step involves felling trees, which beavers accomplish using their strong, sharp incisors. Beavers gnaw around the base of a tree in a circular motion, creating a cone-shaped cut until the tree eventually falls.

Once the trees are felled, beavers transport the logs and branches to the dam site. They use their powerful jaws and forepaws to drag or carry these materials through the water and overland if necessary. At the dam site, beavers start by laying the largest branches and logs in the water, often positioning them parallel to the current. These larger pieces form the foundation and main framework of the dam.

With the framework in place, beavers proceed to weave smaller branches, twigs, and sticks into the structure, creating a dense lattice that can withstand the pressure of flowing water. To ensure the dam is watertight and stable, they pack mud, rocks, and vegetation into the gaps between the branches and logs. Beavers use their paws to pat down these materials, meticulously sealing the dam to prevent water from seeping through.

Beavers regularly maintain and repair their dams, inspecting them for leaks and weak points and adding new materials as needed. This continuous upkeep ensures that the dam remains effective at controlling water flow, creating the deep ponds that beavers rely on for protection from predators, for building their lodges, and for storing food. The ponds and wetlands resulting from beaver dams also benefit the environment by providing habitats for various species, improving water quality, and aiding in groundwater recharge. Through their dam-building activities, beavers play a vital role in shaping and sustaining their ecosystems.



In the summers of 2001 through 2012, I attended an overnight Hindu summer camp, nestled in the woods outside of Rochester, NY. Though I only spent two weeks of each summer doing yoga, learning prayers and Hindu philosophy, making friendship bracelets and singing campfire songs - the compounded experience across 10+ years has stayed with me, the learnings weaving in and out of the narratives of my life. This year, I've found myself returning to thoughts of the Four Yugas.

In Hinduism, the concept of time is cyclical, with the universe following an endless blueprint of creation and destruction, rinse and repeat. Every cycle is divided into four ages, known as Yugas - distinct eras representing a gradual decline in righteousness, morality, and virtue.

Satya Yuga is known as the Golden Age, a time of peace and harmony. This is followed by Treta Yuga, the Silver Age, where spirituality still reigns but greed and desire begin to emerge. Next is Dvapara Yuga, the Bronze Age, representing an even balance between good and evil, marked by continuous conflict. And finally Kali Yuga, the Dark Age, is an era where spirituality is at its lowest and materialism, its highest. It's said we are living in Kali Yuga right now which means the cycle is meant to reset at some point - the universe destroyed and recreated with a new Satya Yuga.

While I'm agnostic to the cyclical nature of time as defined by Hinduism, it's hard to argue that we are not in Kali Yuga today. The signs are exigent, our morality seemingly declining along with the resources and natural bounty of our planet. So why does my religion ask us to be good, to do good, if destruction is inevitable? Why do we continue the struggle for environmental, social and economic justice? These religious teachings, what I thought were supposed to be guiding principles for living a righteous life, are braided into my doubts. It's in these moments of contradiction, conundrum and confusion that I return to the beaver.



A beaver destroys trees in order to transform them into something new, something generative. An individual tree's microclimate is sacrificed to serve the beaver's (arguably) greater purpose - to create new ecosystems and develop the foundations for other life to thrive. But if we observe the beaver in its first stage, gnawing at and felling trees, we might only see destruction. Out of context, the beaver is a destroyer of trees, a feller of forests.

I think back to our current era, our Kali Yuga. Maybe giving credence to this time in isolation of what came before, and what will come after, only serves to feed our feelings of doubt and helplessness. This narrow, timebound perspective, prevents us from seeing the full journey of our world. The tree is not just obliterated by the beaver; it is transformed anew, a foundation for the next microuniverse to be created. Kali Yuga does not mean we lack agency due to the inevitable fate of our world. It means the opposite - within our power, within every cycle, we lay the foundation for what comes next.

The submissions featured in Glitch 2024 are evoked from this thesis. A lyrical dialogue between a scientist and a Quechua deity, a storymap that explores narratives of environmental and reproductive justice in Houston, audio postcards that provide digital safeguards for Indigenous protectors of land in Colombia. These are but a few of the explorations you will witness in Glitch 2024.

As you navigate the poems, stories and art in this zine, I ask you to envision some kind of cosmic beaver, meant to stave off the powers of immorality and greed, to build technology that uplifts the indigenous ways of our world, and to prepare the framework from which the next Satya Yuga will grow.



Arpan Somani
Glitch 2024 Editor

A Rhythm of Responsibility

Danielle Wallin

Earth is our mother,
God is our father,
White buffalo is our sign,
To right the wrong,
To tune the world to a different song.
For music is a primal technology,
That connects us to the flow of ecology.
Music to bridges the gaps,
Created by our convenient yet destructive apps.

A harmony made by love,
A hymn of belonging,
A rhythm of responsibility,
To reap the seeds of wisdom from the past,
To sow a future made to outlast.

The limbs of the trees,
Reach out to grasp me.
I reach back
As in that act,
I acknowledge the fact
Of the sacred Pact
That unites us all in the Great Abstract.
I am you,
You are me.
Together we coexist,
Not very differently, if you take a step back to
reminisce.
You take care of me,
As I take care of you.
Our fates intertwined.
This sacred truth, our conscious breath of life.
The interconnected seam
Of every living being,
Weaving the tapestry
Of our reality.

From the oceans far and wide,
Teaching us devotion's guide,
Following the moon's smooth glide,
To shape the tides that coincide.

From the land we cherish and pride,
Reminding the world not to divide
Acts of reciprocity
Foster the spirit of generosity.

The lessons learned bring us closer
To filling Earth's cup runneth over
May we stand in virtue's light
And seek the truth with deep insight.



gazing at heaven grazers

Lazarus Letcher

I'm walking through the bosque, alternating my gaze between the sky and my screen, trusting that my dogs will keep me on the trail. A sweet and unfamiliar trill fills my ear. My eyes snap to my phone, where my [Merlin App](#) identifies the call of a summer tanager. I look back up, tracing the sound with my ears and eyes, and see a brilliant splash of red amongst the green cottonwoods—an almost tropical-looking interloper in the desert. My hand flies to my heart. The rush of finding a lifer never gets old.

Until recently, I viewed birding as an activity for old and white people. Like many Black Americans, I didn't grow up romping around in nature that much, even though I loved it. [According to the National Park Services](#), less than 2% of annual park visitors are Black folks, even though we make up 14% of the population. My guess is the lack of park space or green space near BIPOC neighborhoods, and for those of us descended from enslaved Africans, an inherited understanding that being outside is deeply tied to exhaustive labor. For instance, my dad is the first generation not born on a plantation or a farm; for him and many Black folks of his generation, separation from "the outdoors" is more about an intentional separation from the hardships of the fields. I see my ability to reconnect with nature as a privilege and part of my work to connect with my ancestors and my spirituality.

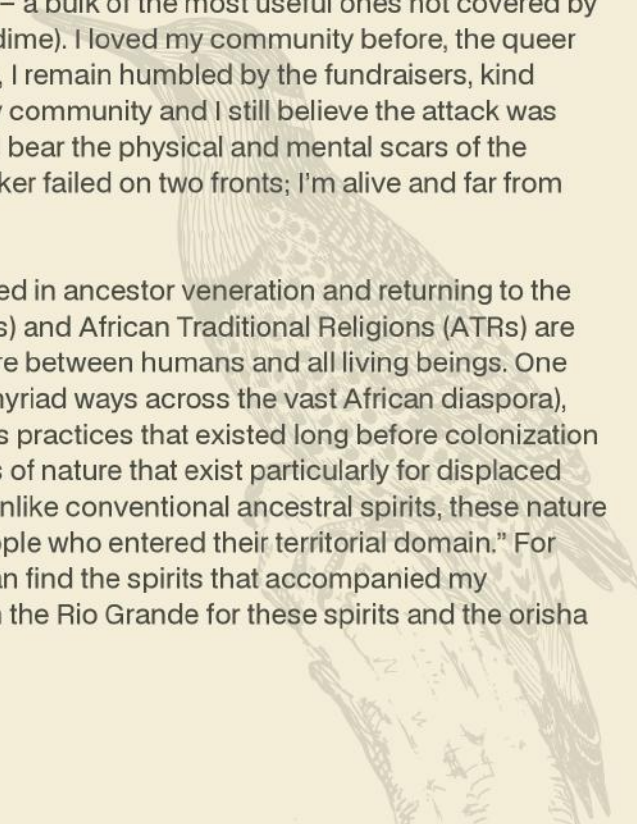
For a decade, I've been honored to be a guest on Tiwa Pueblo lands in Albuquerque, New Mexico. For most of my days here, I've trekked to the bosque, the lush forest surrounding the Rio Grande in our mountainous desert. Adding birding to my daily sojourns has added an entirely new dimension to the trails my feet know so well and deepened my spiritual connection to this place and my ancestors across the Atlantic and at the bottom of the Atlantic.

I would've chuckled if you had told me a year ago that birding would be a core part of my spiritual practice and reconnecting with my ancestors. But a year ago, I was trapped by intrusive thoughts and fear following a murder attempt.

I still don't quite have the words to fully explain how terrifying it is to be sitting on your couch one minute and running from eight bullets launched from an AK-47 the next. The entire shooting was captured on multiple videos, and between those and the bullet holes dotting my property, I'm not sure I'd believe my flashbacks were real. One of the first cops on the scene told me to buy a lottery ticket; he didn't often speak to people after shootings involving military-grade weapons.

I've engaged in so many different modalities of healing since the shooting – a bulk of the most useful ones not covered by insurance or the victims' reparation fund (from which I still haven't seen a dime). I loved my community before, the queer and trans chosen family I had built over the last decade. After the shooting, I remain humbled by the fundraisers, kind words, care packages, donations, and offers of protection sent my way. My community and I still believe the attack was motivated by my identities, a hate crime meant to isolate and terrify. While I bear the physical and mental scars of the attack, I have never felt more connected and less alone in my life. My attacker failed on two fronts; I'm alive and far from alone.

My spirituality has morphed and shifted over the years but is primarily rooted in ancestor veneration and returning to the practices of my African ancestors. Many African Diasporic Religions (ADRs) and African Traditional Religions (ATRs) are deeply rooted in the natural world, understanding the interconnected nature between humans and all living beings. One concept I carry close to my heart is the basimbi (spelled and understood myriad ways across the vast African diaspora), but essentially nature spirits for nomadic people. Rooted in Kongo religious practices that existed long before colonization and the decimation of the trans-Atlantic slave trade, basimbi are the spirits of nature that exist particularly for displaced people. Religious scholar Sylvester A. Johnson describes them, saying, "Unlike conventional ancestral spirits, these nature spirits served as spiritual adoptive parents or ancestors to any strange people who entered their territorial domain." For those of us forced from Africa's shore, I find it profoundly soothing that I can find the spirits that accompanied my ancestors across the vast Atlantic in the bosque. I've left flower offerings in the Rio Grande for these spirits and the orisha Oshun for years.



Surviving spectacular violence requires, in my experience, a deep well of spirituality. The violence didn't end with my shooter, my next-door neighbor's arrest. It continues with every court hearing, with seeing and interacting with his family I still live next door to (who believe the devil was responsible, not him), with random people on the internet claiming I'm a "crisis actor" deadset on taking away their guns. The first time I went birding was after one of the endless hearings about my case. After staring at the man who tried to kill me on a tiny Zoom screen, I was scrambling for regulation. My partner and I headed south to take in the Sandhill Crane migration. We snagged some binoculars on the way.

We made it to the [Bosque del Apache National Wildlife Refuge](#), my blood pressure dropping as we turned off the highway and towards the verdant patches heralding a desert oasis. "I didn't know there was such a big lake here," I said to my partner, raising my binoculars toward what I thought was water.

"Holy shit."

What once was blurry, undulating water turned out to be hundreds of Sandhill Cranes paused on their winter migration. It was my first time birding, and I was hooked.

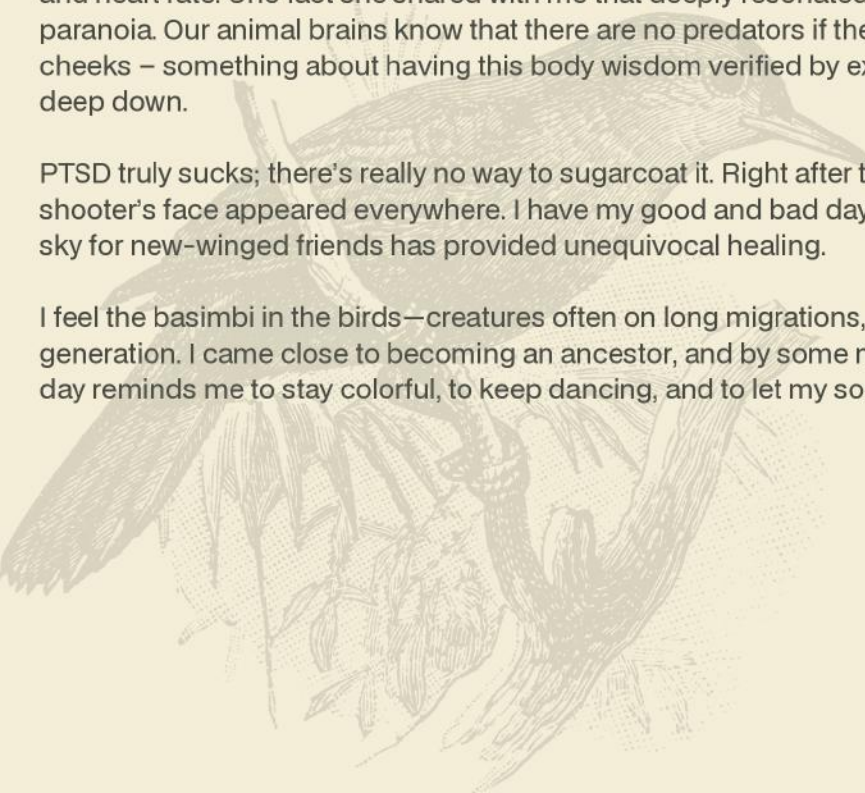
Shortly after, I downloaded the free apps eBird and Merlin, both of which are run out by the [Cornell Lab of Ornithology](#) and are godsend to novice and experienced birders alike. These apps are a brilliant example of enlisting everyday citizens to help with scientific research. eBird launched in 2002, and by 2021, over one billion birds had been observed. The datasets they collect are enormous with the magic of participatory science and not just relying on experts. Early on, I tried to clock a seagull I saw as just a random one and got a gentle message from a volunteer asking me what led to my observation – it turns out I was claiming to know a bird that had, quite literally, never been seen in my neck of the woods. I'm grateful to all the scientists and more seasoned birders who keep these apps running and my knowledge growing.

I thought whipping my phone out on my spiritual sojourns through nature would detract from the experience. Still, since I have over 130 birds clocked using these apps, this technology has vastly expanded my connection to the natural world around me and my spirituality. The cliché "to know me is to love me" deeply resonates with my birding experience. What once looked like uniform lumps in the sky singing the same tune have transformed into a brilliant and diverse symphony of unique, awe-inspiring birds. Once I know their names, I do deep dives on their migration patterns, mating rituals, and often the legends and mythology surrounding them.

For my birthday this year, my partner gifted me an incredible course on [Bird Kinship](#) with the Weaving Earth Collective. I knew birding had been healing for me, but I learned the science of backing it up and practicing mindfulness to deepen this healing and connection further. One of the facilitators, [Tammah Watts](#), author of *Keep Looking Up: Your Guide to the Powerful Healing of Birdwatching*, shared the numerous physical benefits of birdwatching, like lowering blood pressure and heart rate. One fact she shared with me that deeply resonated was that listening to bird calls in the afternoon lessens paranoia. Our animal brains know that there are no predators if the birds are singing. Tears started slowly flowing down my cheeks – something about having this body wisdom verified by experts was so reassuring that I knew how to heal myself deep down.

PTSD truly sucks; there's really no way to sugarcoat it. Right after the shooting, my head was constantly on a swivel, and my shooter's face appeared everywhere. I have my good and bad days, but shifting this hypervigilance to help me search the sky for new-winged friends has provided unequivocal healing.

I feel the basimbi in the birds—creatures often on long migrations, with ancient dances passed from generation to generation. I came close to becoming an ancestor, and by some miracle, I survived. Seeing the birds, my ancestors, every day reminds me to stay colorful, to keep dancing, and to let my song carry.



COLONIALISM IS A GLITCH IN TIME

IMPERIALISM IS A GLITCH IN TIME

CULTURE ARE GLITCHES IN TIME

COLONIALISM IS A GLITCH IN TIME

IMPERIALISM IS A GLITCH IN TIME

ALL FORMS OF SUPREMACY

CULTURE ARE GLITCHES IN TIME

COLONIALISM IS A GLITCH IN TIME

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ALL FORMS OF SUPREMACY

CULTURE ARE GLITCHES IN TIME

COLONIALISM IS A GLITCH IN TIME

Resistencia y Alegría

Asenette Ruiz



scan for storymap

WE DESERVE

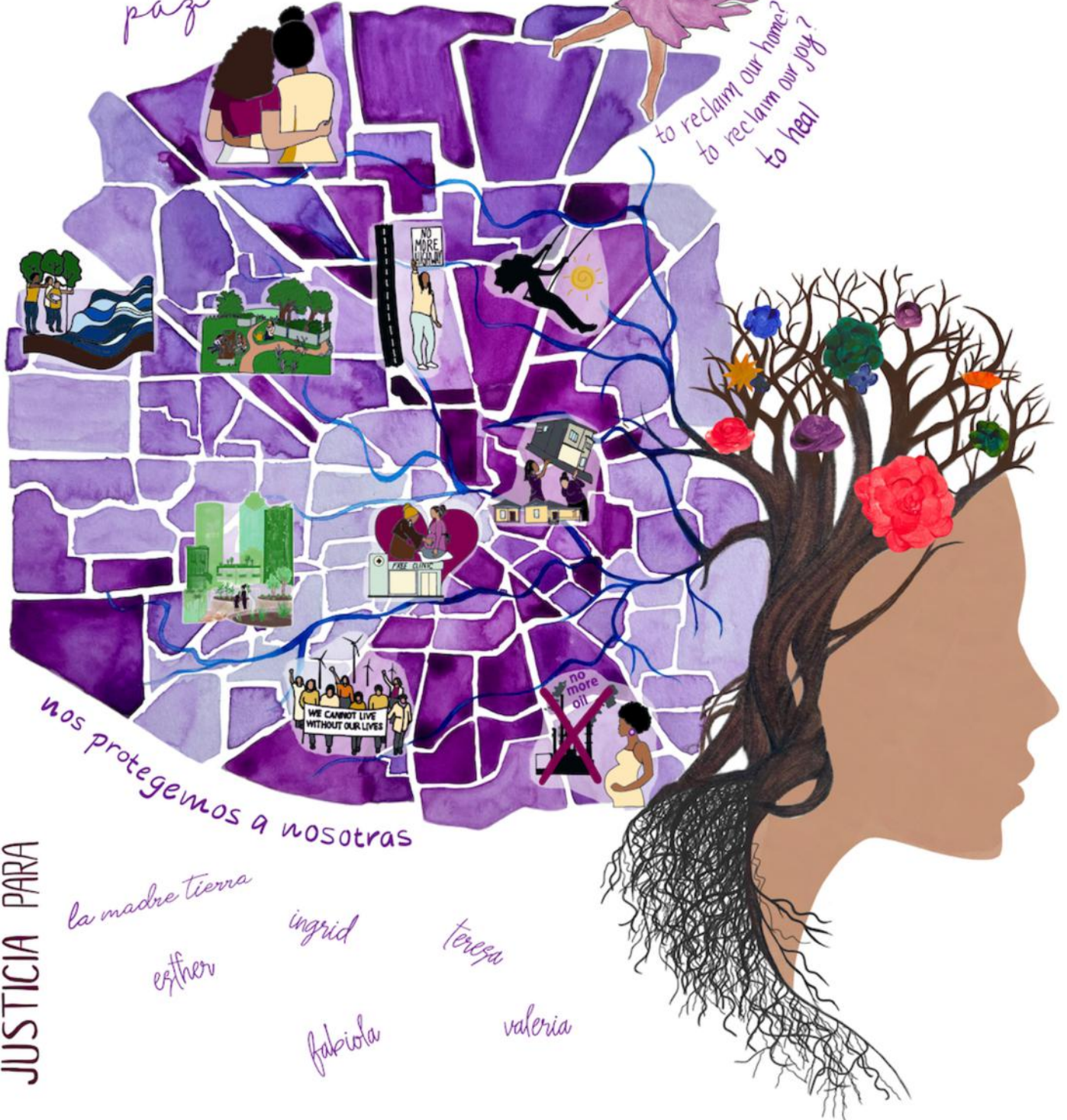
*to live
healthy lives*

safety

What could it look like?

paz

*to reclaim our home?
to reclaim our joy?
to heal*



nos protegemos a nosotras

JUSTICIA PARA

la madre tierra

esther

ingrid

teresa

fabiola

valeria

ALL CAPS WILL HELP PEOPLE GET THE PICTURE OF COURSE WHY DO YOU ASK WHEN HAS IT EVER FAILED /
delayed deferred yet here a monument constructed for and from what is not / **WOW FROM ELLIPSE TO
SPHERE TO CUBE TO PIXEL** / apprentice yourself before the plant the cloud the rock the dark the dark the
darkness / **BOO!** / it is alright we will simply technology ourselves out of these conundra / YT GUY SMILING
LIKE DON'T HATE ME OR ELSE / **respect dignity listening interdependence blah blah we underst& we get it
oh do you do you really we will certainly see about that** / **AIR WATER L& ARE NOT PROPERTY OR EVEN
THINGS THEY ARE PATTERN BELONGING** / seeds are so smart intelligent as all hell more brilliant than you
will ever be but let us not compare & thereby rob ourselves of joy / DO YOU EVEN REMATRIATE BRO /
basquiat style painting barbershop quintet 1970s album cover dall-e is cool what else can ai (ml) do /
TIMESCALES SPACESCALES DEEP TIME DEEP SPACE DECELERATE DEEP CELEBRATE / be impure be profane
be nothing be swarm be wetlands be plural be vernal pool for migratory flocks be mortal / **CAN PUBLIC
SPIRITUALITY BE NON-PERFORMATIVE CAN SPIRIT BE DESERVED OR DEMONSTRATED SHOW ME TELL ME
SHOW TELL LIKE YOU DO & HAVE DONE AGAIN ONCE MORE** / decolonize imagination decolonize cemeteries
/ **LIVING WAGE AS THANK YOU FOR YOUR SOCIO PSYCHO SPIRITUAL EMOTIONAL MATERIAL LABOR** / yet
another so-called poetic intervention not-so-casually mentioning cobalt the d.r.c. the h&s of women &
children mining on the cheap for precious blue dust charge so really take your whole spirituality thing & get
out of my sight / TECHNOLOGY IS NEVER NEUTRAL I REALLY CANNOT BELIEVE IT MUST BE SAID BUT I WILL &
I AM NOT I YOU ARE NOT YOU I AM SPEAKING TYPING IN A MANNER OF SPEAKING TYPING THAT IS
METAPHORICAL BECAUSE THIS IS EXTRACTION IS ABSTRACTION & IS BOTH OKAY & NOT AS IN NONDUAL AS
IN IT IS ULTIMATELY NEITHER BUT HEY PPL GET SCHRÖDINGER'S CAT WRONG EVERY TIME SO WHAT DO I
KNOW / **gorilla glass is a barrier** / **YOU LOOK AT THE WRONG LIGHT AMONG MANY & YET THIS IS A FINGER
POINTING TO THE MOON & WHAT A SHAME TO HAVE TO SAY SO SIGH** / my youth group went to the
evangelist highway revival to have our souls saved en masse & all i got was a misplaced religious
nationalism / **"CONNECTION" AS UNQUALIFIED GOOD HAHAHAHAHAH** / tradition need not be rote
repetition let us groove with raw beating yearning tender gentle heart of stale dogma / **CURLICUES OF A BIG
LARGE BANG BOOM STREAMING INDIE GAUZY SLEAZE FOR NANOPENNIES AS 9 ROBES HOGTIE PRIMORDIAL
SOUP YES SLIPPERY INDEED** / offering is a two-way street at an absolute minimum / **TEXTING FROM INNER
SANCTUM TO WARN OF HAZARDOUS WATER** / alignment is now can be now why not now if not now ugh
come on / **WE ARE CORKS IN OCEAN TRENCHES HELD AT THE BOTTOM** / **someone think of the children ok
how about now no no one okay then that is that i guess** / **AWARENESS NOURISHES THE ENTIRE ORBIT OF &
IN ITS RADIANCE** / baseline shifts lead to phrases like "the new abnormal" / **ADVERTISING THE SUBTLETY OF
A PLEASURE IS A CLIMATE RED FLAG** / yes nonlinear i mean where is the line the border the clear boundary
you see none to be found look around but no squinting be soft touch ease receive just just just just just /
PAN- WITHOUT "SOCIETAL CONDITIONING" / **no seasons only fluid & uprooted** / **EXPRESS THE STILLNESS
HEALED** / place is liberation & context is freedom & fruits are tearing into fabric & alienation is teacher is
fear & carried away is what happened to them & non sequitur rupture & connectivity with respect to
freshwater ecology is the closest thing we have to sacred & CRISPR is literary criticism / **FARMED FOR DATA
AND FEELING LUCKY** / **no i have never heard of jenny holzer thank you her work sounds intriguing**

*italics are not weakness they are leaning in with beautiful words cosmos rhythm heartmind entrainment somatic mouthfeel the still
small voice within is that a bird do you hear the bird oh opening window yes a bird calling into presence we are in awe such
serendipitous dance web of creation relative curandera neighbor medicine lover herbalist friend potion sibling salve sister healer
brother breathing mother seer father sage whisper your solutions anonymously to your guides your prayer your call is important to us
though we are not actually here at the moment per se if you could leave your name number detailed message we will get back to you
yes you my sweet as soon as we can yes ever so soon we will return to you to caress your face look into your eyes stroke your hair
soothe your weary soul and apologize saying we will not give you what you do not deserve in the eyes of haha well like in the eyes of
who exactly is the question like who or what is justice for if not to not exist and to be obliterated by the divine order of arbitrary merit &
so what is holy cannot fall from such a great height you see too big to successfully fail as Earth is oft-mistaken for ancient game
whereas it is more accurately an enchantment to commit to you see to love despite to love despite to love despite to love even though
to love so deeply and unreasonably yes it is true it is trite but it must be repeated with feeling that love is justice & is that not why we
are in any predicament that we are in so to speak to some degree*

Ben Burmeister

Ritual and Relationship

Lovinia Summer

Excerpts from the Cachoeiran Manuals:

Establishing Intra- Cachoeiran Trade Connections

In the shift from death to life, from coercion to care, many things changed. Chief among the things that stayed the same was the human need for things beyond what their regions could provide. Aluminum, salt, steel, and glass were still needed for things like medicine, science, exploration, and occasionally leisure.

In the past, I believe most of the protocols contained in this handbook could be automated. If a hospital ran out of syringes, a monitoring algorithm would send a notification to a manufacturer an ocean and two continents away, where the request for materials would be logged, ranked, and scheduled for delivery. It was efficient, cold, and precise, a system beautiful for a world order that valued separation.

Today, in our bumbling and gurgling infant of a civilization, most manufacturing occurs within Region. In my home, Region 24-ENG, our manufacturing consists of sixth-generation Creto printers which are capable of assembling and disassembling most basic and in-demand products. Like most regional manufacturing, our machines mostly make other machines, tools, or goods for which maintenance of uniformity is critical for function. Artisanal unions have siphoned off the assembly and disassembly of certain goods such as clothing, household wares, and anything else that falls within the aesthetic realm. Still, Artesans and factories alike need materials, many of which are not geo or bio-available in our region. To fill these needs requires collaboration with neighboring or distant regions operating under Cachoeira Principles of Collaboration and Care.

This process of relationship building and collaboration in a globalized civilization with many enemies is a tenuous one. As of this writing, approximately thirty-five percent of the world's population has adopted Cachoeira's Principles and become dedicated to building a new world order. Most of this thirty-five percent is located in Regions governed by localized urban-rural blocks, which are governed in turn by even further localized neighborhood collectives. The other sixty-five percent are negotiating societal collapse or gasping for breath under strict authoritarian rule. Even within the geographic regions where the other principles and governments dominate, Cachoeira is gaining ground. Small Nodes within these non-Cachoeiran regions have self-organized and operate openly or in secret depending on the nature of their surrounding government.

This network of Cachoeiran nodes opens up a bio and geo diverse supply chain that benefits all regions and areas.

Given the fractured and fluid nature of those who adopt Cachoeira, the diversity in linguistic and cultural practice, and of course the ever present pressures of more authoritarian nation-states to snuff out our way of life, it is important to have a process to build trust between Regions and Nodes. Cachoeira exists in opposition to extractive and life-muting world orders. As such, many of the more authoritarian states and collapsing societies are eager to map our network of supply in order to cripple our livelihoods for their gain. Though our principles lean towards openness, the pressures of these enemies demand secrecy.

To accommodate these needs, we have developed a set of rituals in trust building, accountability, and communication to facilitate globalized networks for meeting the needs of the Cachoeiran principled. The following pages are a section of the manual I've written detailing processes for Intra-Cachoeiran trade.

Protocol

Regions and Nodes should use the Bishop Lawrence Communications Network for secure messaging. Protocols for accessing the BLCN are available in a previous manual I wrote entitled Setting Up Your Cachoeiran Node or Region.

Step 1: Initial Outreach

Outreach to a sibling Cachoeiran Region or Node with whom you have not previously connected should begin with an informal request for contact, the request should include the node or region identification tag and of course should be signed with the linguistic equivalent of the latin word "colere." This word holds great significance. Founded in the Brazilian northeast, the first Cachoeira Collective found that the romance languages lacked a word to sufficiently describe "love of community." They decided to pull on "colore" the root word of cultivate and culture which means to till, to inhabit, to foster growth of, and in some cases to worship. And so, the verb "colerer" in Portuguese holds particular meaning. *Eu colero, voce colera, nos colermos, voces colerem.* As the Principles spread, other languages outside of the influence of Latin-descended languages brought their version of the word. Your introductory message should be signed with your linguistic equivalent of: "With love of community." It is recommended that you know all of the linguistic equivalents of this phrase. You may find these in Appendix C.

Your message should also include as a postscript, a portion of the regional translation of the Mater's Script. The Mater's script is a nod to the past and is reminiscent of a prayer recited in the Judeo-Christian tradition that has been rewritten to honor "Our Mother." In doing so, you acknowledge the value of traditions past. The Script is copied at the end of this Chapter.

You should expect your connection to respond in kind with its identification number, returned greeting, and selected quotation from the Mater's Script.

Step 2: Verification

2a. In your next message you should include the code for your region's specific biome identifier. Your region's biomeID is referenced based on the template of the Planet Earth. Earth's biomeID would represent a full sphere that contains all of the relative percentages of primordial materials exchanged via Cachoeiran networks. Your biomeID will contain dips where primordial materials are below the Earth's average and swells where above. Note that your biomeID is never static but is adjusted as resources within your biome are used and renewed.

2b. Your connection will take your biomeID code and build out the model for your region's biologic, geologic, and chemical identifiers using their 3D printer. Your connection should respond with the code for the model that is the counterpart to your BiomeID. It should have swells where your BiomeID has dips and dips where your BiomeID has swells. The two should be a complement. If connecting with a Node, please be aware that the Node may not yet have access to 3D printer (fourth-generation printers are required for this exchange). In such cases, the respondent will have to computer generate your model, generate its counterpart, and then convert the counterpart back to code. This might take several hours.

The sharing of biomeIDs is critical. It demonstrates two things:

1. That your region is critically in need of the materials suggested.
2. That your region has bioavailable resources that can be harvested and made available to the network. All regions and nodes must contribute some resource to the network such that the burden of resourcing does not fall too heavily on a select few regions.

The biomeID is a reduced expression of the value brought to the Cachoeiran network. More robust RegionIDs or NodeIDs incorporate the cultural, artistic, and spiritual themes of a given area. It is not unusual to see abstract representations of a ID models splattered across the buildings and fields of Cachoeiran landscapes.

Step 3: Response and Information Sharing

3a. Once the counterpart model has been received, you should tweak your biomeID's code to highlight the needed raw materials.

3b. Your codes for quantity, timelines, delivery routes and delivery locations should be embedded into a separate message in Encrypted Cachoeiran Syntax (Please note this handbook is written in Standard Cachoeiran Syntax. See Appendix D for Encrypted Cachoeiran Syntax).

Step 4: Confirmation

Your contact should confirm their receipt of your message and provide a security key by which to accelerate future interactions for this specific request for materials. They should offer gratitude for the privilege of connection and for the privilege of contributing to your livelihood.

Step 5: Expressions of Gratitude

In turn, you should thank your connection with a poem of your creation. In doing so we incorporate the Cachoeiran principle of honoring the past (via the Mater's Script) and the principle of generative evolution (via your poem). We have linked past to present, and collective to individual. Your poem may be fully artistic or include practical elements such as the status of chaos in your region or the relative safety of transportation routes near the delivery sites.

Step 6: Ongoing Communication

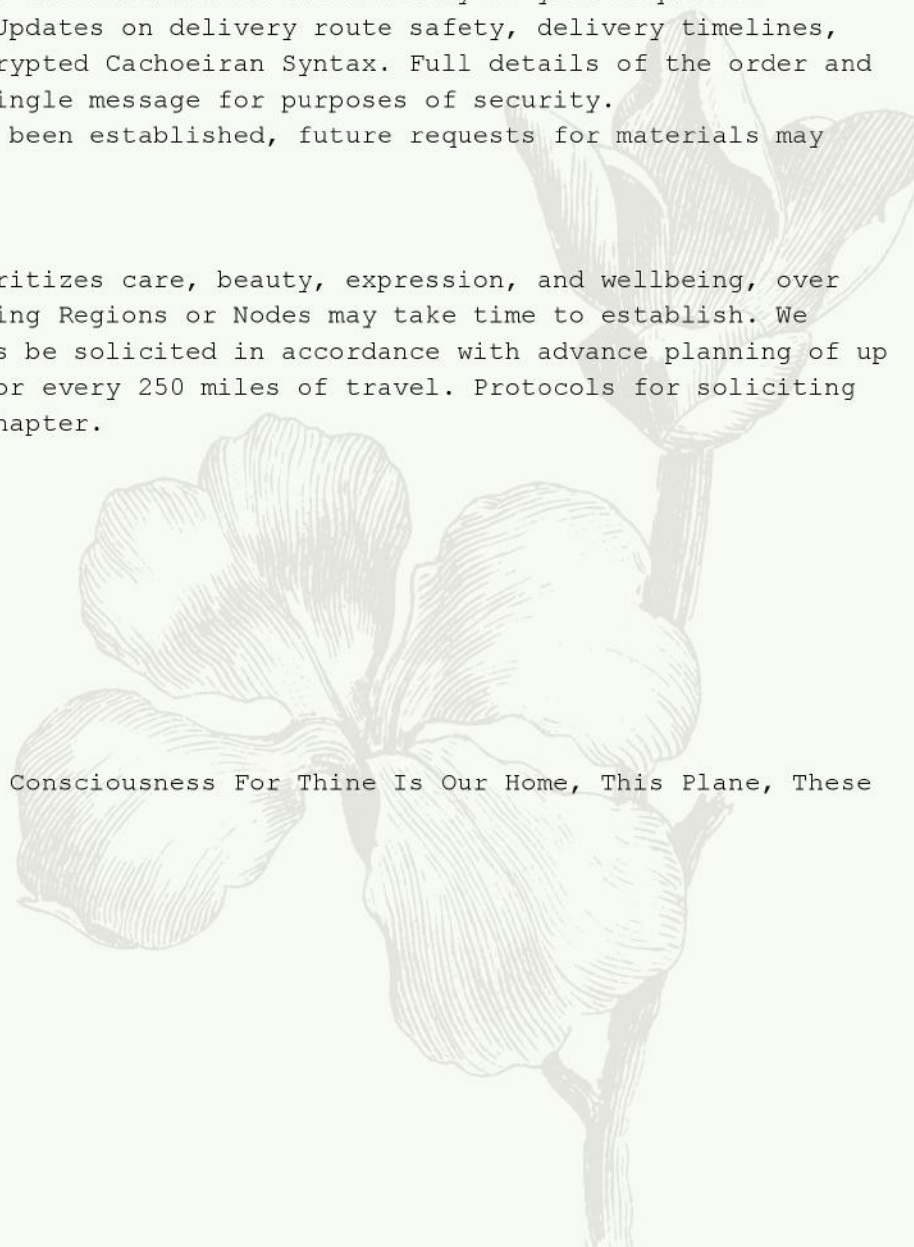
Maintain contact with your connection over the duration of the delivery of your requested materials using the shared security key. Updates on delivery route safety, delivery timelines, and other logistics should be made in Encrypted Cachoeiran Syntax. Full details of the order and logistics should never be compiled in a single message for purposes of security. Once connection with a Node or Region has been established, future requests for materials may start directly at Step 2.

Closing

The Cachoeiran tradition is one that prioritizes care, beauty, expression, and wellbeing, over speed and efficiency. Connections to sibling Regions or Nodes may take time to establish. We recommend that your requests for materials be solicited in accordance with advance planning of up to three months plus an additional week for every 250 miles of travel. Protocols for soliciting emergency requests are in the following Chapter.

Mater's Script

Our Mother, Whose Weight Supports Us
Hallowed Be Thy Ground
Thy chaos comes, thy cycles run,
All beauty and rhythm
Bestow Upon Us Your Heat and Bounty
Forgive Us Our Glut
And The Space Between Us
Guide Us Towards The Blurred Edges Of Our Consciousness For Thine Is Our Home, This Plane, These
Fields
For All Cycles Of Time



Convite

Noís Radio



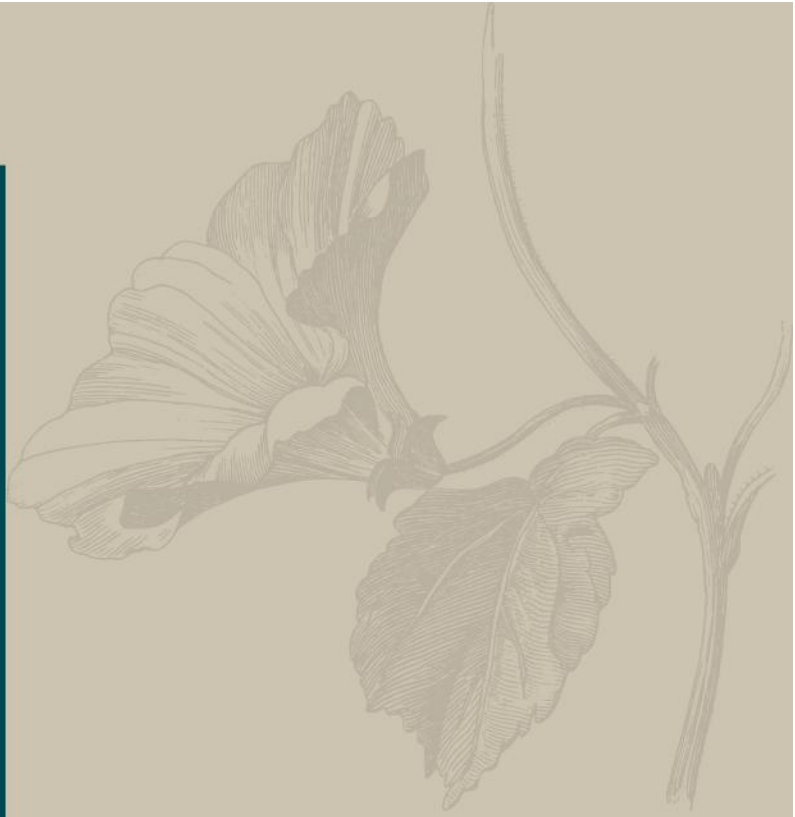
CONVITE

POSTALES SONORAS PARA EL
AUTOCUIDADO DIGITAL DE DEFENSORES
DE DERECHOS HUMANOS, GUARDIAS
INDÍGENAS, CIMARRONAS Y CAMPESINAS

Convite
Abrir camino



**Convite is sancocho
on Fridays with
your neighbors.
Come here and
pitch in!**



Convite
Abrume digital



**Getting together as
a family, come here
and pitch in!**



Eco Shabbat Guide

Stephanie Strifert

How to Shabbat:

Pick a day each week when you want to do something different, when you want to rest as well as let the natural world rest. Ideally, you should find twenty-four hours, but if that's too much, find whatever time you can spare and protect it fiercely.

When I was growing up, every Friday night, my family cooked a big meal, my grandmother came over, and the five of us spent the evening together without using electronics after sunset, as my mother's family had been doing for generations.

Your sabbath could include a meal with family or friends. It could mean turning off your computer for the day. It could mean getting out into nature, going on a walk around your neighborhood or sitting in a park. It could mean creating the ritual items described in this guide or painting or knitting, acts of creation you don't get to do in your job. As Joshua Heschel says, "If you work with your mind, sabbath with your hands, and if you work with your hands, sabbath with your mind".

"Whether commemorated as a secular, spiritual or religious act, sabbaths offer a weekly investment in family and local community, a weekly interruption of the suicidal econometric fantasy of infinite growth, a weekly divestment from fossil fuels, a weekly moment of rewilding" (Green Sabbath).

Traditional Shabbat items:

I am not a Judaic scholar, but this is the symbolism I was taught growing up.

Candles



The story of creation begins with the words “let there be light”. We have two candles, one to ‘remember Shabbat’ and one to ‘keep’ it.

Wine



We say a prayer called the ‘Kiddush’ to show our gratitude for Shabbat. Everyone takes a sip of wine from the Kiddush cup.

Challah bread



Challah represents the manna that fell from the heavens when the Jews left Egypt and wandered the desert for forty years.

Challah

Ingredients:

- 1 cup lukewarm water
- 2 teaspoons active dry or instant yeast
- 4 to ~~4 1/2~~ cups ~~all-purpose flour~~ bread flour
- 1/4 cup granulated sugar
- 2 teaspoons salt
- 2 eggs
- 1 egg yolk (reserve the white for the wash)
- 1/4 cup neutral-flavored vegetable oil, like canola



Step 1:
Place 1 cup lukewarm water in a bowl, sprinkle with the yeast and a pinch of sugar, and stir to combine. Let stand until you see a thin foam across the top, 5 to 10 minutes. *If it doesn't foam, it's because the yeast is dead.*



Step 2:
Put the flour, sugar, and salt in a large bowl and whisk to combine.



Step 3:
Make a well in the center of the flour and add the eggs, egg yolk, and oil. Whisk lightly then pour the yeast mixture into the bowl. Stir with a spatula until a shaggy dough that is difficult to mix forms.



Step 4:
Turn out the dough onto a *lightly* floured work surface and knead by hand for about 10 minutes. If the dough seems very sticky, add flour one teaspoon at a time until it feels tacky. The dough has finished kneading when it is soft, smooth, and holds a ball-shape. *Do not add too much flour—the crust of the bread will be hard.*



Step 5:
Place the dough in an oiled bowl, cover with a clean towel, and put somewhere warm. Let the dough rise until doubled in size, 1.5 to 2 hours.



Step 6:
Once doubled in size, turn out the dough and divide into 3 equal pieces. Roll each piece of dough into a long rope. *If the ropes shrink as you roll them, let them rest for 5 minutes to relax the gluten and then try again.* Pinch the top of the strands together and braid.



Step 7:
Line a baking sheet with parchment paper. Place the loaf on top and sprinkle with a little flour. *Again, a little!* Cover with a clean towel. Let rise in a warm place until puffed, about 1 hour.



Step 8:
20 minutes before baking, arrange a rack in the middle of the oven and heat to 350°F / 175° C. When ready to bake, whisk the reserved egg white with 1 tablespoon of water and brush it over the challah.



Step 9:
Bake, rotating the sheet halfway through, until the challah is browned, 30 to 35 minutes total.



Step 10:
Let cool then enjoy! *Don't cut until cool*

Candles

Supplies:

- beeswax pellets
- coconut oil
- candle wicks
- glass or ceramic jars to pour candles into
- 1 large glass jar to melt wax
- wooden tongue compressor *or something to stir wax with*
- ~~almond extract~~ *burns off, buy essential oils if you want a scent*



Step 1:
Fill a pot with enough water to cover the height of the beeswax. Place your jar into the pot and heat the water until it reaches a gentle boil.



Step 2:
Allow the beeswax to melt, giving it a stir with a wooden skewer every few minutes. Beeswax is flammable, so keep an eye on it and make sure no wax pellets have scattered onto your stovetop.



Step 3:
While your wax is melting, prepare your jars by adding a wick to each one. If you're struggling to get them to stand straight, you can glue the wick to the bottom. You can also use a tongue compressor *(or pencil)* to keep the wick in the center.



Step 4:
Once the wax is melted, turn off the heat and add in a bit of coconut oil, stirring to combine. Coconut oil helps the candle burn more consistently and avoid tunneling *but you can omit it if you don't have any*



Step 5:
Pour the wax and coconut oil into your candle containers and let them set 1-2 days before using. Trim the wicks and you're ready to use your candle!



Option 2:
Complete steps 1 and 2. Fill a cup with cold water. When the wax is melted, dip your wick into the melted wax and then the cold water, alternating between the two until your candle is the desired size.



Kombucha

I have replaced wine with kombucha. Wine brewing requires lots of specialized equipment and has a long fermentation process.

Supplies:

- dechlorinated water
- mix of black and green tea
- sugar
- SCOBY in starter liquid *I got mine from a woman in my book club. Your best bet is finding someone who already makes their own kombucha, but they sometimes also sell them at health food stores*
- wide-lip jar
- pop-top bottle
- cloth and rubber band



Step 6:
After a week, you can drink your kombucha or you can do a second fermentation to add flavor and carbonation. To start the second fermentation, remove the SCOBY, pour kombucha into an air-tight bottle and add fruit juice and/or cut up fresh fruit to it.



Step 7:
Let the carbonation build up for about a week, burping (*aka opening*) the bottle daily to prevent too much CO2 build up.



Step 8:
Put in the fridge when you're happy with the carbonation and enjoy!



Step 1:
Boil tap water or let it sit overnight to dissipate the chlorine.



Step 2:
Brew tea. *I used three black tea bags and one green.* Let tea cool down to room temperature.



Step 3:
Remove your SCOBY from your holding container and double check for mold. *The brown stringy bits are yeast, not mold.*



Step 4:
Add the SCOBY, and its reserve liquid to your brewed tea, leaving some room at the top. Cover with a cloth and rubber band.



Step 5:
Let sit, away from direct sunlight, but in a relatively warm place, for a week. The SCOBY will float to the top and may separate into two. The kombucha will get lighter in color.



A Plea to Wamani: Echoes of Legacy and Hope

Nicolás Chesta

Oh great Wamani, aren't we similar?
We both manage to do things that are considered spectacular.
You provide water through your arms to my city,
While I generate electricity for everybody's affordability.

Isn't it great that we collaborate with such synchronicity?
Nobody in Huancavelica could have ever imagined escaping from imminent calamity.
It is so different now compared to the stories my grandparents used to tell me.
Droughts have conquered the valley, as naturally as a poet's rhyme comes to me.

Are these normal times?
Or are we living in an era of environmental crimes?
Oh, I remember the legend of the hummingbird—
How he crossed the Wacracocha, not drinking a drop, and keeping his word.

Our hero's journey ends by reaching Waitapallana,
Who, witnessing the disaster, cried like a baby llama!
"Poor little thing!" you are about to say.
But he was the only one capable of saving our civilization from decay.

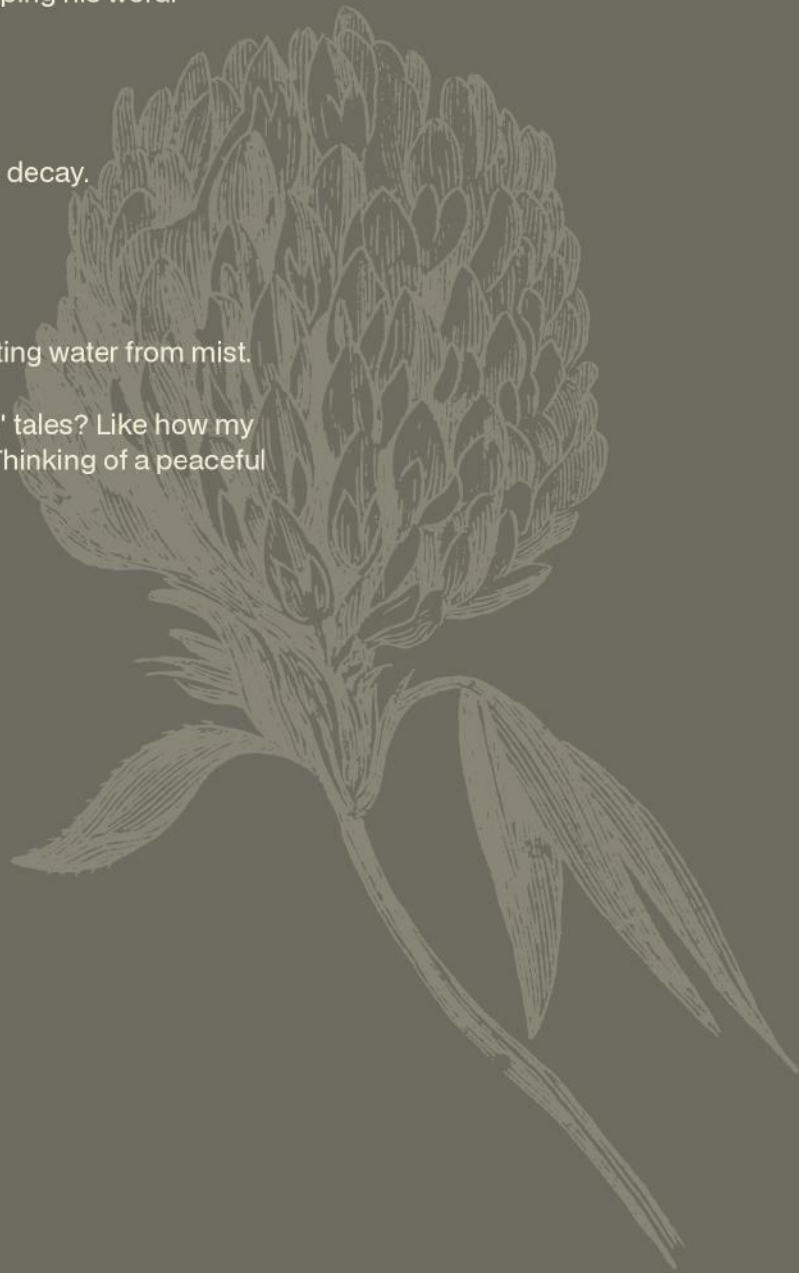
Those legends will never vanish from our memory.
It is our responsibility to preserve them as a treasury.
Look at me now, oh great Wamani! I am a scientist.
My work ranges from capturing energy from the sun to converting water from mist.

Do you believe our discoveries will turn into future generations' tales? Like how my
colleagues from around the world save endangered whales? Thinking of a peaceful
planet makes me happy.
I just hope you do not judge me as sappy.

Until then, I will thank the sun as if God had given us rain.
Money is no longer a win and gain.
What is money without goods to purchase?
Food on our plates is all we can chase.

Was life meant to be a race?
Is success something to embrace?
Tell me we will rebuild our planet, please!
All I ask is to live in peace.

Oh great Wamani, listen to my sobbing!
Let me know if you are hearing.
I have only one wish, not a list—
Please enhance the work of this tiny scientist.



COLONIALISM IS A GLITCH IN TIME
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GLITCH IN TIME are originally large paper scrolls. They invoke the spiritual technology of prayer, affirmation, poetry and protest. One of the biggest obstacles of truly achieving environmental justice within the context of the "U.S." is the bypassing of root causes such as ongoing settler colonialism, imperialism...etc. The piece speaks directly to how these different systems of supremacy are by definition anti life, meaning they dishonor ancestral cosmologies that have (since time immemorial) supported us to tend the web of life. The theme of GLITCH is referring to both deviations from ancestral technologies that support us to move in time and in cycle, and the collapse of more modern technologies that are happening within the context of and due to colonially driven climate crisis, pandemic denial, labor exploitation, infrastructural neglect, economic greed & monopoly, and other factors. These glitches communicate a facet of earth's reclamation and guidance for us to reimagine our technologies, infrastructures, and ways of life in a time of dismantling hegemony. Graphic design support by Saish Kotecha, using Tré Seals's Vocal typefaces.

Sarah Habib

reading list

suggestions from contributors and staff

Braiding Sweetgrass by Robin Wall Kimmerer

**Proverbs as Sources of African Environmental Ethics:
Articulating Indigenous Eco-Spiritual Wisdoms** by Ikechukwu
Anthony Kanu, PhD & Ejikemeuwa J. O. Ndubisi, PhD

Fresh Banana Leaves by Dr. Jessica Hernandez

Maps of the Imagination by Peter Turchi

A Psalm for the Wild-Built and A Prayer for the Crown-Shy by
Becky Chamber

Cosmic Anarchy newsletter by Dr. Ayesha Khan

Dawn by Octavia Butler

The Mushroom at the End of the World by Anna Tsing

Make Me Good Soil newsletter by Sophie Strand

...and the works of Ruth Wilson Gilmore, Rupa Marya, Raj Patel,
Desiree Fields, Jathan Sadowski, Kate Crawford, Daniel Aldana
Cohen, Thea Riofrancos, and Ruha Benjamin



GLITCH

