



#### On the Cover

Front: Harvest, Sirsi, India

By Kelly Sky

Back: How to Forget the Atomic Age

By Erica Elliott

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A Cross-Species Conversation, Francine Wickes

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Flare, Marissa Williams

The Ecotone is the journal of the Environmental Studies Program and is created by graduate students at the University of Oregon. The journal provides a venue for communication and exchange within and beyond the Environmental Studies Program among undergraduates, graduate students, faculty, staff, and alumni, and facilitates cross-campus dialogue between disciplines and departments. The Ecotone serves as a venue for sharing professional interests, discussing environmental concerns, and posting creative expressions. The Ecotone is published annually and includes journal articles, nonfiction, fiction, poetry, art, and other creative submissions. If you have questions or comments, would like to submit work or be placed on the mailing list, please contact:

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## Editor's Note

ormally, I think of my body and my environment as discrete entities: my body is me; my environment is that which surrounds me, that which is not me. I necessarily experience my environment through my body, but as concepts, they remain distinct, neatly contained.

During the layout phase of this issue of *The Ecotone*, in which we explore some of the many ways in which bodies and environments influence, interact with, and mutually constitute one another, I developed a case of poison oak. How fitting, and yet how itchy. Although I had returned to Eugene after spring break, and was spending many hours a day indoors in front of a computer screen, Mount Diablo had followed me home, had become a part of me in an unfortunately quite visible, extremely tangible way.

Stacy Alaimo's concept of trans-corporeality provides one way to think about bodies and environments that emphasizes their porous materiality and interrelatedness. Alaimo writes, "thinking across bodies may catalyze the recognition that the 'environment,' which is too often imagined as inert empty space or as a 'resource' for human use, is, in fact, a world of fleshy beings, with their own needs, claims and actions."

Although the following pieces cover topics ranging from ginkgos to religious festivals, dust to environmental justice, orangutan gestures to jogging, they all attempt to "think across bodies," to illustrate the interconnectedness of bodies, animate and otherwise, and the worlds they share.

~Lisa Lombardo, April 2013

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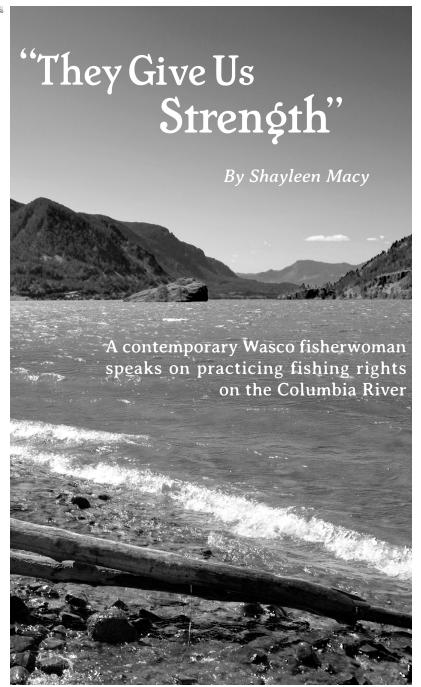
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Assorted *Ecotone* editors. Clockwise from left: Marissa Williams, Lisa Lombardo, Julie Bacon, Chithira Vijayakumar, Kirsten Vinyeta, Erica Elliott. Photo: Gabby McDaniel





Columbia River Gorge, Lisa Lombardo

This speech was given at the free salmon dinner that preceded Winnemem Wintu Chief Caleen Sisk's keynote speech at the University of Oregon Many Nations Longhouse in January, 2013.

A y tláaxma. Kw'ałanish wa mátash kínwa. Ink nash waníksha Shayleen Macy. Wash nash Wasco, Warm Springs, ku Yakima Warm Springsknik. Wash nash skuuliłá ku twatimałá Ulikanpa. Kúshxi nash wa np'iwitłá Nch'iwánapa wúuximpa ku shátimpa. Kúshxi tyámpa. Táaminwa shátimpa nash npíwitxa, ku shátimpa a2013 iwáta inmí páxaat anwíkt np'iwitłá. Íkuuk nátash kúukina núsux a'átawishamatash.

Hello everyone. I'm happy to see you here. My name is Shayleen Macy, I am Wasco, Warm Springs, and Yakima from the Warm Springs Reservation. I am an art student at the University of Oregon. I am also a Columbia River fisherwoman; I fish in the spring, summer, and fall. I fish every summer. This summer will be my fifth year fishing.

The salmon we cooked for you today came from the Columbia River where I fish every year. As a Wascopam, I know that for thousands of years people have fished there and traded salmon to neighboring communities. From an environmental perspective, we know that the salmon will return from the ocean hundreds of miles away and bring with them rich nutrients that nourish people, animals, and plants. For those of us who are able to fish and provide salmon for our people to this day it is a blessing.

The job that I do is difficult. I don't use industrial machinery to process my salmon. I do it all with my own hands and a knife. The salmon are heavy, but they give us strength. Indian women have carried fifty or more pounds of salmon on their backs for years. They've climbed up rickety ladders and over

sharp lava rocks, while watching their kids on the banks of the rivers from Canada down into California and as far east as Idaho.

I've been told that traditionally the men generally fished and the women processed the fish into a dry pulp that was packaged in the quart-sized wápaash baskets and buried or otherwise stored until needed. It was traded to people all throughout the Midwest and other territories. People came from the south and from the east to acquire the food and other goods. I was surprised to learn that traditionally women did the trading to acquire what was needed for the families.

I feel that some of this has not changed today. For the first three years of my fisherwoman life, I had a partner who was a very good fisherman. One of the best on the river. He would provide the fish, which I would sell. Anything left would be smoked, dried, canned, or frozen. I learned how to do these things. The summer months were very fruitful for us. The river provided us with everything that we needed. Everything.

During my fourth year of fishing I did everything alone. I fished alone and sold the fish. I camped on the river by myself, sometimes sleeping in my truck. I woke up on the river before the sun came up, and I went to sleep at sundown, exhausted. I visited every camp on the river by myself last summer from Cascade Locks to the Wishram Village near The Dalles, where my people are originally from. I met a lot of people and did business with them. I talk Indian with some. At times I was afraid, many days were very uncomfortable and frustrating and harsh. But I learned to take care of myself. I learned how to speak to people, how to face my fears. I learned a lot about life. These are all the blessings that came from the river and



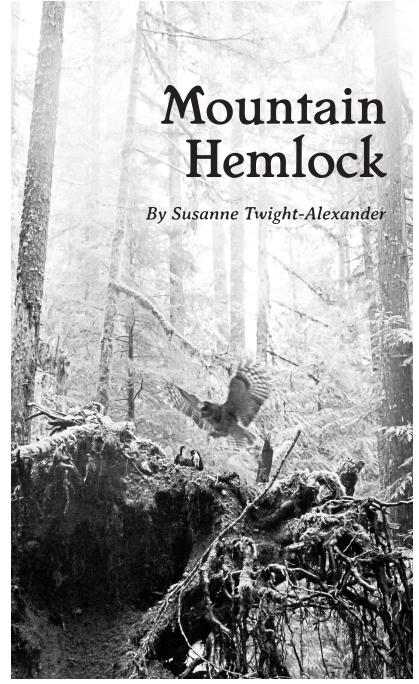
Shayleen Preparing Salmon, Julie Bacon

from the salmon. I've been told that whenever you have a problem, a hard time, you go to the river and it will help you.

Fishing is a blessing and it is a tribal right for some tribes. Indian people have a relationship with the salmon, like a relative. When people see me on the river they say, "Oh, she's a salmon person." Because we are them and they are us. The Wascos believe that we came from a freshwater spring in the ground. In fact, "Wasco" means "little cup" or "bowl," and it means the very place we are from. We believe that we come from the river, we are of the same spirit. I believe all of these things to be true. The river has shown me that they are true.

I have worked as an activist on issues that affect Indigenous Environmental rights, including the Athabascan Tar Sands crisis and the pollution of the Columbia River. As people of this land, including all people who live here today, we have a great responsibility to take care of the earth, the water, and all of the other resources. Water is life-sustaining.





A Spotted Owl Descends on its Prey, Kirsten Vinyeta

tip my head back face framed by the water and float in circles, hands paddling gently at my sides, sunlight on water-beaded skin, watching the trees that grow in narrow cracks and crannies, the paintbrush blooming in tiny caches of soil, gray granite and green needles and red flowers blending in a slow dance around and around and aroundthe top of the spindle a few puffy little clouds, the music a soft sound of ripples spreading across the surface. I ease to shore and pull myself onto a sun-warmed log, resting my head on my arms, shifting my body to avoid the few nubby places where once branches grew. The wood has a slightly fuzzy texture. Water dripping from breasts and stomach and thighs turns the silver dark like the rocky shore. When I lift to roll over onto my back, knees bent toward the sky, arm across my eyes to block the sun, there is semblance of body shape on the soft fibers.

Hemlocks, with their drooping tops, eventually become these silvered snags.

Bark sloughs off and the limbs snap during winter snows until they stand barren, needles long gone, deep hollows providing havens for chickadee, woodpecker or bat.

A few jagged stubs are all that remain of their once graceful boughs.

And then they fall, this one into the small lake that perches snugly against a steep cliff, heather meadows at its eastern end, where once I found a junco's nest, speckled eggs hidden beneath a brilliant shooting star.

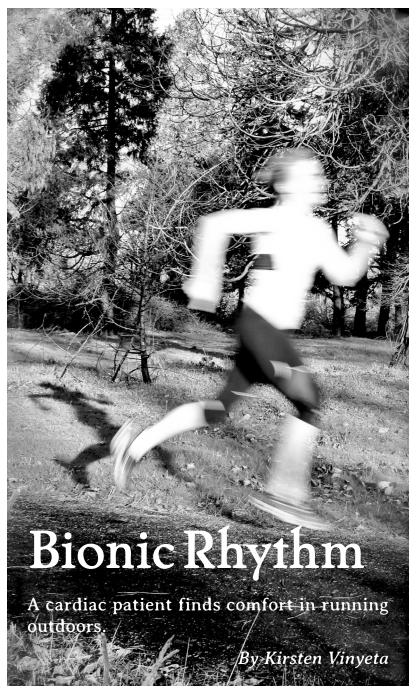
My camp provides a view across the canyon.

Below, two lakes reflect their tree-edged shores and, in the evening, fill with sunset's glow.

I have been told it's dangerous to hike alone.

But this is what I love.

This is who I am.



**Photo: Roger Hicks** 

In, in, in; ooouuttt. In, in, in; ooouuttt. That is my breath's pattern when I run. My apprehensive inhalations escort the air of the Willamette Valley into my lungs in a three-part, staccato rhythm. The exhalation is the yin to the inhalation's yang, releasing air back out in one calm, drawn-out note, expressing the relief of another small victory. I have taken another breath.

Using a loose interpretation of what being a "runner" entails, you could say that I am now a runner. As a teenager, had you told me that I would someday run for pleasure, I would have assumed you were making some kind of sick joke, shot you with a deadly stare and blurted out various profanities. I didn't know it then, but a couple of serious heart defects were challenging my existence. I was 19 years old when my atrophied heart declined into full-blown cardiac failure. I could not walk fifty yards without running out of breath.

Seven hours of surgery, a pig valve prosthesis, a plastic aortic root, and nine years later, I am no marathoner, but I have come a long way. I started out on treadmills at the gym, but they made me feel like a mouse on a mouse-wheel surrounded by other sweaty, robotic mice, every one of us on the road to nowhere. Eventually I started running outside, and that's when I began to enjoy this activity that I had once considered a living hell.

Several times a week, I escape the grip of academia by running away from campus and into Eugene's Alton Baker Park. There is something soothing and meaningful about offering my bionic rhythm to a landscape pulsing with life. My mind enters a meditative state, surrendering the freed-up energy to the muscles and tendons that have now been called to duty. With

each step, muscle contraction, and breath, I enter a deeper trance that at once dulls and awakens my senses.

As I run over the Willamette, the river's rushing current drowns out my footsteps. After passing under me, the river heads north and through the Willamette Valley, where it nourishes one of the most fertile agricultural regions in North America. Beneath my scarred chest, my patchwork heart pumps furiously, flooding my every cell with oxygen-rich blood so that I may continue reaping the harvests of the living.

Eugene's raindrops, persistent but gentle, envelop my hot skin like a cool silk curtain. By the end of a rainy run, my frustrations, self-pity, and sweat combine with the rainwater and drip onto the concrete, where they will sit until they either wash into the city's gutters or evaporate into the atmosphere.



European Black Slug Blazing a Trail, Kirsten Vinyeta

After many months of rain, the sun too is therapeutic, warming my skin, muscles, and emotions that have been lying neglected, cold, and clammy for too long. Sometimes the sun is shy and playful, peeking though clouds and tree branches like an introvert with a crush. Other times it is bold and cavalier,

making full-fledged advances as I run through Alton Baker's open prairie, leaving me flushed and spellbound.

I will never run a famous race, let alone finish one in a time worthy of bragging about to friends. But one can dream! At a solid pace, I run down a trail jam-packed with fanatic spectators. Amazed by my athleticism and endurance, tall grasses and wildflowers are eager to high-five me as I run past. I stick my hand out to pay my fans respect, after which they get windswept by my incredible speed. Western scrub jays promptly announce my times throughout the park, spreading the news of my newly set records. Surely, track phenomenon Steve Prefontaine would be proud to know that athletes of my caliber are using the network of trails that were built in his name.

There is something remarkable about hearing and feeling all of my working parts in action. In my mind, the experience triggers a reel of autobiographical imagery. I picture myself as a fetus, developing with my tiny cardiac defect. I remember myself as a little girl struggling to breathe during exercise, and as a 19-year old getting strapped down to the surgery table. I see myself in the hospital bed with a new scar hidden under thick gauze, life-support tubes and chords draping over me like suspension bridges.

I also think about the life that was sacrificed to save mine. My valve prosthesis didn't appear out of thin air; it once belonged to a healthy pig. Did this pig live confined in a sterile lab? Was this pig raised for the sole purpose of saving a human life? Was the rest of the pig wasted? A quick internet search informs me that biomedical companies often partner with farms to acquire pig hearts, and that the rest of the animal is used for food



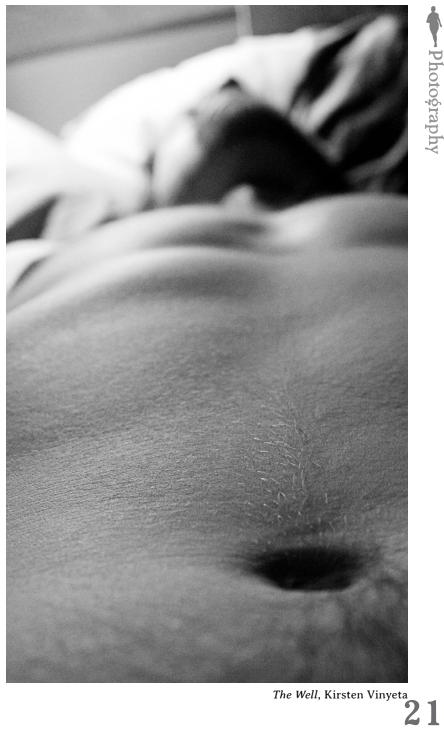


Photo: Alayna Linde

and other common purposes. This eases my mind some, but I am still troubled. Western medicine performs xenotransplants barely acknowledging the life that was on the other side of the transaction. I carry my pig valve with much pride and gratitude, but also with guilt. I will never be able to repay my debt to the living being that saved my life.

I see myself now, running on the trail, and I look splendid. My pumping heart, my expanding lungs, my pounding quadriceps, my perspiring skin... all part of a body that is mobile, eager, and tough. That I am very much alive yet so inevitably mortal both overwhelms and exhilarates me. Would this journey be so great a gift if it weren't finite? I once knocked on death's door but no one was home. "I bet death's not as bad as I make it out to be," I try to tell myself. In the future, I will need more heart surgeries, and death will inevitably be lurking. Maybe if I looked past its shady reputation I would realize that death can be soothing, that it is necessary, and beautiful in its own right.

I look at the landscape around me and see both life and death carried out with pragmatic dignity. The Camas Lily, which once covered this entire valley in soft, purple carpets, stands proudly as it hangs onto life in a few underappreciated patches. Cottonwood leaves fall to the ground and surrender fully to the earth, nourishing the soil so that the next generation of foliage can wave its green flag in the wind. A fish held tight in an osprey's skilled talons does not overdramatize its last breath. Perhaps the fish knows it will feed a nest full of enthusiastic fledglings. I can only hope that by the time I take my last breath, I will do so with the natural ease of one who knows she is but a recycled smidgen in a complex, forever transforming and wonderful universe.







Tucker, Lisa Lombardo

mbrose, the ginger cat, lies in my lap, his soft weight of dependence a joy. My dependence, not his; he is a wild creature who followed us home one September night 10 years ago and stayed.

We belong to him now, not the other way around. His insistence on a lap, a bowl of food, water, or the way out of the house is our command, and we obey, for the sake of love.

There are those who have come and gone before him: Screechy and Chessy, Sylvie, Phoenix and Big Cat; then, too, the many from a life I lived in another space and time, all victims of humans and their inventions.

The solution, then, is clear: to become more catlike in our appreciation of the earthly plane: to stretch and roll and rub our faces against the surfaces of the world; to purr and knead and snuggle into the arms of the ones we love. So simple, so free.

And thus we begin to see our salvation.







Photo: Becca Cudmore

# A Common Need

By Becca Cudmore

The communication behaviors of orangutans at a Borneo rehabilitation center show that nonhuman animal communication may be more complex than previously acknowledged.

For animals to survive it is imperative that they understand their environment. While individuals may be able to interpret the world on their own, it is much more efficient to learn from others. Because it is beneficial to gain information from others, evolution has produced multiple means of information sharing throughout the animal kingdom. This transfer of information is what we have come to call communication.

Though animals can learn by watching fellow group members, complex life lessons often require more clarity and direct communication. While in humans much communication takes place through spoken, written, and sign language, information sharing among other animals takes many other forms—scent secretion, body posture, coloration, electroreception, and dancing, to name a few. All of these can send important messages to fellow groupmates and to potential predators. At its core, human language serves no unique purpose compared to that of any other means of animal communication.

This idea that human language is part of a spectrum of information sharing, rather than being an autonomous adaptation, is fundamental to my own interests. Broadly, I study anthropology, which is the study of humankind. While it does focus on humans, anthropology also includes comparative research that looks at our closest evolutionary relatives, non-human primates. I recently conducted a project with Dr. Biruté Galdikas, president of the conservation organization, Orangutan Foundation International. We examined communication in one of humankind's closest living relatives, the Bornean orangutan. Unlike humans, orangutans are a solitary species. However, they do interact with one another during important life events, such as during mating



Toes, Megan Toth & Kelly Sky

season and child rearing. Though less frequent than our own, these interactions still require a way to transfer information.

The orangutans in our study live at the Orangutan Care Center and Quarantine in Borneo, where over 300 orphan orangutans are rescued and rehabilitated with the goal of someday being released back into the wild. Most of these orphans have lost their mothers due to habitat destruction and poaching, and are now cared for by humans. Because of their daily interaction with humans, we were able to test a unique question: Does communication between orangutans differ from communication made by an orangutan toward a human?

To answer our question it was first necessary to decide upon an object that would be sure to elicit orangutan gesturing. Because food is prevalent in both wild and captive environments, we chose the orangutans' most desired food item—papaya. Then, to encourage orangutan-toward-orangutan gestures, we gave one orangutan in an enclosure a piece of papaya, while observing others' gestures towards that individual. To encourage orangutan-toward-human gestures, a human experimenter handed one orangutan in an enclosure a piece of papaya, and continued to hold more in his hands. We observed the other orangutans' gestures toward the papayaholding experimenter.

Preliminary results from these experiments tell us that orangutans do, in fact, use different gestures towards humans than they use with one another. Gestures between orangutans tend to be facial while gestures towards humans are generally made with the arms. This difference can be explained by the fact that orangutans are an arboreal species, spending most of their lives in the trees. Their limbs are not free to gesture; therefore, they rely on alternative forms of communication. It appears that the orangutans at the Care Center use expressions of the face, like the lip pout and the approach face, to communicate with each other. However, because they have been exposed to humans for a good portion of their upbringing, they have learned to use human-specific gestures

with their caretakers. These gestures are made using the arms rather than face, as humans respond more readily to familiar gestures, such as an arm point or a clap.

This use of different gestures toward distinct audiences (orangutan versus human) is what anthropologists call gestural flexibility. Flexibility in animal behavior is often thought of as a mark of intelligence, with greater ability to alter one's behavior in new situations indicating greater intelligence. Studies such as ours help humans to take a peek inside a fellow animal's mind, gaining a stronger understanding of their behavior as a whole.

These types of studies also show that humans are more similar to the rest of the animal kingdom than we may have previously realized. Simple forms of communication are tinkered with through natural selection and become more complex through evolutionary time. However, all communication serves the same basic function. Even in life distantly related to humans, we see evidence of communication. Bacteria, for example, emit special molecules that indicate to other bacteria the size of their community in any given area. Across species, communication is one of the best solutions nature has found to meet the need for animals to understand their world.

More than anything, working with these orangutans instilled in me a greater sense of humility about what it means to be human. I take real pride in being a member of the animal kingdom and a part of nature as a whole. As a student, I find this perspective motivating. It fuels a deep desire to not only understand my environment, but to learn how to protect the land that I, and all life, are so very dependent upon. §





Burrowing Owl, Allyson Woodard



# To Hear The Earth Speak hey told me I was deaf, but I didn't believe them. The music was always there. Always strongest at sunrise, bending the ancient sky colors until they were inside me.

Perpetual Costline, Jordan Grace

I knew sound as I saw it. The yellow sap of cedar trees sang directly into me, gave all the essence of its life into watery sound. I breathed it in, along with rain-soaked wind.

The music followed me. My parents shined their eyes on me, assured me I was just like Beethoven, composing entire symphonies in our heads, neither of us able to hear them. I tried once to write the music down, but unlike Beethoven, I'd never heard outside my head. Notes were meaningless without knowing their sound. And instruments were nothing more than pretty things to touch.

My music must have been incomparably unique, unbounded by influence. But no one else would ever listen to it. It belonged only to me and the forest.

Nothing made me happier than dogwood flowers. They meant the sun would soon touch the tops of the maple trees, that turkey vultures would paint distant circles in the afternoon clouds.

One summer night when the air was hot I spread my sleeping bag out next to a patch of salmonberries. Along the river, where the trees thinned, I watched the water darken.

Then the stars sang. Lyra, Corona Borealis, Ursa Major. None could ever rival Venus, nor match the voice that sprang with it from the horizon. All the stars came in darts, accompanied by the Milky Way's steady pulse. I lay upon the bare ground, forgetting my sleeping bag.

Eyes constantly stroking the sky, I let the leaves cluster in my hair. Beneath me was all the curve of the Earth, and I could feel it hum.

Throughout the night I kept my eyes open. I absorbed the swinging lobes of the world above me. Felt the breeze finally cool. In the morning I could still hear it, all of it. Lingering on the birds' faces. Resting upon the dry fragrance of the soil.

It wasn't until I went away to college that the music ceased. I had no choice but to go to the city. And, there, concrete muffled any sound. In long winds after the full moon I could feel music, sometimes. But it wasn't joyous, nor did it ache. All I felt was numbness. Cold. So I brushed it away.

Each day another melody dimmed. I had never lived in silence before, and I feared it.

I was known only as the deaf girl, softly pitied from afar. With my hands I could speak. Not everyone understood. Through the window of my dorm room I could see buildings and cars. I was keenly aware that there was no earth beneath my feet.

A month into the first term a friend asked me on a road trip to the coast. Her brother was deaf, and she knew how to sign. I hadn't been to the beach for many years. It had been so long, in fact, that I'd forgotten what it sounded like.

We drove through forests and over hills. I rested my forehead against the car window and watched the branches of Douglasfirs. Ferns, fallen logs, walls of moss. Just like my forest.

My chest opened, music rising. It grew louder, louder. Around a bend we wove until... there it was. The ocean. That beautiful plane of water singing in deep, eternal sighs.

Never had I heard grander music. Then I knew— it was all the world singing.

Ecotone 2013

By the time we reached the water, the rain had come. As it piled over us, I slid my feet into the freezing ocean. Droplets of sea and sky rested on my eyelashes.

In the rain I heard my forest. I listened to the river's smooth currents. I heard the alder trees bow in the wind.

There was something deeper than memory in which I could carry the music. Something nameless. I would forever be connected to the forest. It had raised me. Sung to me. Given me ears.

While the sun buried itself beneath the waves, we sat in the sand. Every string of the sky was red. The opposite of the sunrise, but just as sweet.

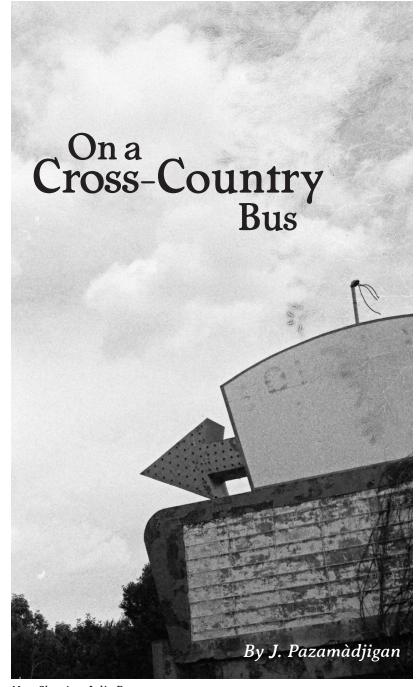
Any numbness fell away. It was as though I had never even left the forest; it was everywhere, in everything.

In all ways it was a part of me. \*



Snowfield, Mt. Adams, Erica Elliott





Now Showing, Julie Bacon

came from the Quanshipauge country, where cold granite slumbers hard under clay, and the acres of winesaps turn on their crowns under the insistence of so many machines. I came from that country of one thousand grays, unyielding and yearning for green. Long roads, the Greyhound bus, and I sit

petrifying in my place, passing the hours. Barren swamp wastes of Pautuxet, leafless fingers flickering black and white the tones of her well-worn winter garment donned deep into May, I saw Quinnipac too, the steely glow of daybreak on her dark waters, gushing at her mouth as a

scream into the sea. Onward the wheels wound me deep into the high-walled canyons of commerce, the concrete yawning over me, and to myself my own body becoming smaller in the shadow of these walls. Buried in its bowels, convoluting in the smoke and soot, tangles of guts and great ganglions give it life, this too I

saw. Susquehanna sunset, vivid hues staining bright each braided chain, the painted current coursing under the latticework of arches in stone and Pittsburgh steel, like a dream it met me as that first day bowed beneath the Alleghenies. Emptied out on strange pavement, alienated

even by the common, after hours of escape. The sidewalk is not mine. I have no memory here. There is not a single face that has a name. Blankness of not knowing, refreshes me; as rain drops spatter night-dark concrete ever blacker, and unfamiliar voices pour their stories

like pestilence and poison into my eager ear, a great vomiting clamor of calamities large and small, all that might befall a soul who has not enough; luck, or money, or faith, or will to live without injury or injuring, in a game so badly rigged. Listening then I

am both part and apart of all their grief, bad luck, poor choices. Allegiant, this journey churns us in the froth and foam of a new invisible organ, central as the liver, containing all the coarseness of these miles, the fingers yellow and split,

the butts of cigarettes mined for something smoke-able, the rare morsel of food, the screaming mothers, the weeping children, all there residing, immortal—no, but unnaturally long-lived, such is the work of my journey. So that even now those things press close, and 16 years space is nothing.

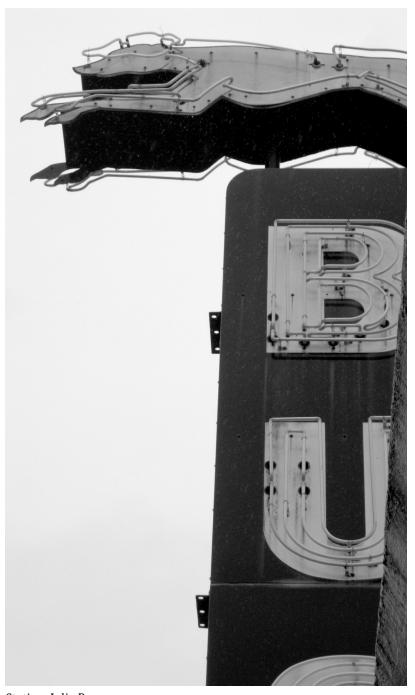
I came from the Quanshipauge country, where the river limps over low dams, and litter lends her color in the gyres of spume; where industry's body was built and broken, brick snags still upright in the clay. I came from that country unyielding, yearning for green. Along the way I saw

Ottokee in fertile beds, the cover turned down, earth umber under the noon light, a foil for those places further on where my home seemed close in the specter of their wasting. Cousins of Seekonk and Pocassett, devoured, desolate, and peopled by shades of selves

who like the gritty footprints of buildings past, remain. Collecting glass and garbage throwing leggy weeds at the sun proclaiming their persistence in this place. Like beggar ticks, we cling to the faded fabrics, seat after seat, bus after bus, we move. On to what we do not know. A green thread in

me, anchored at that other shore deep in the reedy sloughs, slips back in braided convolutions, to pierce my heart; the thin spring of a great river which draws this fate invisibly near as the wheels drag us on past Wabanusee, Arikaree down where waves of sage in adoration





Station, Julie Bacon

Ecotone 2013

stroke the breast of earth, and magpies beside the bus beat their wings, erasing every human voice. Absorbing in the black white oscillation of their movement, my mind, my very breath. Stillness sits beside me the long miles into the night and soft whispers to me Siskyou, Siuslaw

exhaling each word into my dream-song, the cooing, cool sleep of careening west in the snug clefts of Wasatch. Waking at the northward thrust, at the bus stilled in a Pocatello sun rise, at the shrill infant's cry stirring in the dawn with a song all its own. My throat aches to join him

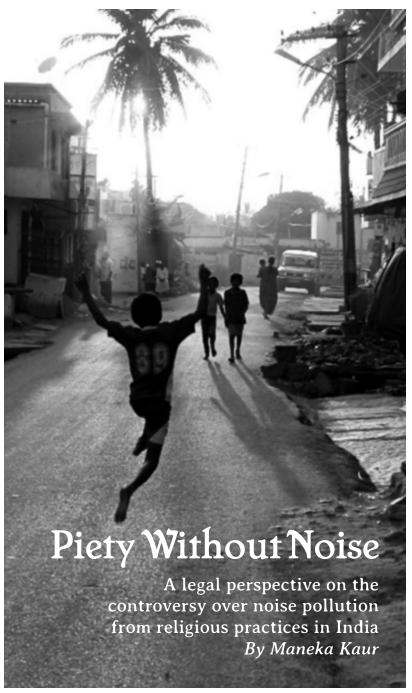
to yelp that victory charging, to feel an eagle burst my veins, leap out over Yam-pah-pa and dive down to the salmon yet swimming. Talons stretched, reaching, touching transforming. Fledging feathers for something called irresistibly home.











Bangalore, India, Kelly Sky and Megan Toth

"We need to find God, and He cannot be found in noise and restlessness. God is the friend of the silence. See how nature—trees, flowers, grass—grows in silence; see the stars, the moon and the sun, how they move in silence...We need silence to be able to touch souls."

~Mother Teresa

In the Indian city of Thane, a lawsuit was filed in August 2011 seeking to require the city to enforce noise ordinances against those celebrating Hindu religious festivals. This public interest lawsuit was filed by activist Dr. Mahesh Bedekar, who faced fierce opposition from political parties for dampening the festive spirit. As a result, the Bombay High Court ordered the state to convene a meeting with the festival representatives to see if the festivals could be celebrated with less noise the next year.<sup>1</sup>

Time and again, people have objected to the noise caused by religious festivities, and each time the courts have ordered meetings to prevent it the "next time." Is there no end to this circle of complaints and meetings? Is piety really not possible without noise pollution?

### Introduction

Noise, with roots from the Latin word *nauseas*,<sup>2</sup> is unwanted sound produced by natural or anthropogenic sources. The natural environment contains many sources of noisewind, volcanoes, oceans, and animal sounds are all familiar intrusions accepted at various levels.<sup>3</sup> Man-made noises from machines, automobiles, trains, planes, explosives, loudspeakers, firecrackers, etc. are more contentious.<sup>4</sup> Noise

is an underestimated threat that can cause a number of short and long-term health problems such as sleep disturbance, cardiovascular effects, poorer work and school performance, and hearing impairment, among others.<sup>5</sup>

In India, people are not only exposed to general forms of noises like industrial and non-industrial noises, but they also have to face misuse of loudspeakers and sound amplifiers conducted during celebration of daily rituals and various festivals.<sup>6</sup> While it may be valuable for one, the country's practice of celebrating festivals with pomp and show in an attempt to be



wandering feather on the shores of Rock Island, W1, Klisten Vinyet

closer to God may be immensely uncomfortable for another.

The World Health Organization (WHO) Guidelines for Community Noise recommend less than 30 decibels in bedrooms during the night for good quality sleep and less than 35 decibels in classrooms to allow good teaching and learning conditions.<sup>7</sup> The same guidelines recommend less

than 40 decibels outside of bedrooms to prevent adverse health effects from night noise. Noise levels in India are already above the WHO recommendations, and religious practices only exacerbate this problem. For instance, on an average day major cities like Delhi and Bombay have noise levels near 80 decibels. During religious activities, such as the weeklong religious festival Durga Puja, sound levels reach 99 decibels compared to a usual 65 decibels in Bengal. Is it acceptable to suffer such noise levels only because it is related to religion? Is it okay to violate the rules and laws relating to sound levels because it conflicts with the fundamental right to practice religion? Should there be a line drawn between noise and religion?

## Consequences of Noise Pollution: A Violation of Human Rights

The term 'human rights' refers to those rights that are considered universal to humanity, regardless of citizenship, residency, status, ethnicity, gender, or other considerations. Human rights are commonly understood as "inalienable fundamental rights to which a person is inherently entitled simply because she or he is a human being." Unwanted sound can damage both mental and physical health. In humans, it can cause annoyance, hearing loss, sleep disturbance, aggression and hypertension, high stress levels, and other harmful effects. 11

Noise affects not only humans, but other species as well. Cuttlefish and octopi suffer serious damage from noise pollution, while high frequency sound can kill cephalopods. Dirds in urban areas, which use their sensitive hearing abilities to hunt prey, are at a loss due to interference of man-made noise. High noise levels can also negatively affect the breeding

and feeding patterns of some animals, pushing them to the verge of extinction.<sup>13</sup>

Though the link between human rights and noise pollution is apparent, many constitutions around the world do not effectively deal with this issue. Fortunately, the Indian Constitution does address noise through various articles, statutes, and amendments recognized over the years.

## **India Against Noise Pollution**

The constitution of India is one of the few constitutions in the world that respects environmental laws and treats them as a part of human rights. The 'Right to Life'<sup>14</sup> guarantees a life not only of mere survival or existence, but one that should be lived with human dignity.<sup>15</sup> Anyone who wishes to live in peace, comfort, and quiet within his or her house has a right to be free of noise as a pollutant.<sup>16</sup> The Directive principles of state policy<sup>17</sup> command the state to include a pollution-free environment in its objectives. The Fundamental Duties<sup>18</sup> order each citizen to keep their environment clean. The 'Right to Information'<sup>19</sup> gives each citizen a right to know about the permissible noise levels of various industries and entities, which in turn can help in fighting noise.<sup>20</sup>

Stated within the Indian Constitution, the 'Right to Practice Religion'<sup>21</sup> provides each citizen with a "fundamental right to enjoy any religion he aspires to be a part of, in a way that he deems fit;" however, it also states "the practice should be conducted in a way, so as not to encroach on someone else's fundamental right." Where many defendants have used and banked upon the first part of the article, they conveniently forget what the second half says. The court, which usually makes calculated decisions in this sensitive context stated in



one particular case, "Right to religion does not include the right to perform religious activities on loud speakers and electronic goods that produce high velocity of noise."<sup>22</sup>

The Indian Constitution's efforts against noise have also been implied in a large number of Indian Statutes. The Code of Criminal Procedure under Section 133 empowers the magisterial court to issue an order to remove or abate nuisance caused by noise pollution (including nuisance of an environmental nature).<sup>23</sup> Similarly, the Indian Penal Code, 1860, in sections 268 to 295, which deals with offenses relating to public health, safety, decency, morals, etc., can be used to penalize noise pollution.<sup>24</sup>

In spite of all these articles and statutes, however, none of them talks explicitly about noise pollution from religious activities. All of them, whether constitutional articles or statutes, have been interpreted in a way so as to include noise pollution as a last thought. Pursuant to the mounting pressure from not having a noise-specific legislation, the Government of India enacted the 'Noise Pollution Control Rule 2000.' Some of the main provisions of the rules included categorization of areas as per their noise levels, active measures by state for abating noise pollution, bans on fireworks after a certain time period, creation of silent zones, and restrictions on use of loudspeakers.<sup>25</sup> In spite of all the regulations the act enforced, it still left a huge loophole by stating that the government could give permission to anyone to go beyond permissible limits if it deemed fit.<sup>26</sup>

# **Piety Without Noise**

Religion has always been a sensitive topic in India. With more than a dozen religions co-existing, it becomes a duty to not interfere in each other's business. Pointing out something wrong in another's religion would mean giving birth to hostility and, in some cases, even riots. As per the Indian Constitution, "all citizens have a fundamental right to practice the religion of our choice." However, the second part of this right, "without disturbing or interfering in lives of others," has long been forgotten in favor of an alternative logic: the louder the religious practice, the greater its reputation will be. The more people who appreciate it, the better the chance of its adherents ending up in heaven. This is the thought process.

There has not been a single month without loud, night-long praying to one deity or another. These Gods and Goddesses are summoned using giant sound systems so that whoever hears the prayers becomes enchanted by them. Nobody interferes with religious ceremonies or stands in the way of another's religion for fear that an interference could start a religious rift. When the time comes to celebrate one's own faith, people tend to forget about previous disturbances caused by others festivals, and use sound amplifiers and loudspeakers.

Despite the sensitivity of the subject, an attempt was made in 1951 and a case was filed against a main Hindu festival that created a lot of noise pollution. The Bombay High Court in *State of Bombay v. Narasu Appa Mali* ordered authorities to regulate the use of loudspeakers during the nights of Ganesh Chaturthi<sup>27</sup> and Navratri<sup>28</sup> festivals.<sup>29</sup> The court further ordered strict implementation of Environmental Acts. In the court's words, "nobody can object on celebrations of festivals, but their means of celebration must not disturb the peace and tranquility of the neighborhood."<sup>30</sup>

After the *Narasu* case nothing much was said or done about regulating noise from religious establishments, due to sensitive religious sentiments prevailing in the country. The Court has approached the subject of regulating noise in religious institutions with caution and reverence, and most



Vanastree Seed Co-operative, Sirsi, India, Kelly Sky and Megan Toth of the decisions have been based on bare facts without the judiciary touching any aspect of the religious practices.

Another immensely popular Hindu festival, Durga Puja,<sup>31</sup> came under scrutiny in the Calcutta High Court in the Burrabazar case. The High Court held that "citizens have a right to a decent environment, right to live peacefully, right to sleep at night and the right to leisure, which are all necessary ingredients of the right to life."<sup>33</sup> In Free Legal Aid Cell v. Government of NCT of Delhi,<sup>34</sup> the Court went further by ordering the establishment of separate courts to deal with noise pollution. The Court also empowered the District Magistrates to issue prohibitory orders whenever the

need arises and to limit the use of loudspeakers to certain hours. The Court further directed the Delhi government to restrict the use of firecrackers in religious festivals, marriages, processions, etc.

Finally, in 1992, in P.A. Jacob v. The Superintendent of Police, 35 the Kerala High Court asked a Christian group not to use loudspeakers. To support this order, the Court stated that such an act by the group would disrupt the law and order of society and might be inconvenient for the other members of society. The petitioners in this case had claimed "freedom of speech and expression." The Court held "recognition of the right of speech and expression is recognition accorded to human faculty. A right belongs to human personality and not to a mechanical device."36 Relying on various scientific studies that showed the impact of noise on human beings, the Court held "the compulsory exposure of unwilling persons to high noise level would amount to a clear infringement of their constitutional guarantee of right to life under Art. 21. The right to a safe environment, including safe air quality and noise level, is implicit in the right to life guaranteed according to Art. 21 of our Constitution."37 This case was the first time that the Court came forward and reprimanded a religious institute for violating the right to life. The Court further explained the reciprocal duties of rights in Indian society (i.e., if one wants to avail the right, he or she has to follow the duties that come along with it). This idea was also followed in Church of God, 38 wherein the Supreme Court stood against the practice of beating drums and use of loudspeakers early in the morning in places of worship:

No religion prescribes or preaches that prayers are required to be performed through voice amplifiers or by disturbing peace and tranquility... In a civilized society, in the name of religion, activities which disturb old, infirm persons, student[s] or children having their sleep in the early hours or during the day or other persons carrying on other activities cannot be permitted.<sup>40</sup>

Later on in *Om Birangana Religious Society v. The State*,<sup>41</sup> the Court further explained that, in places of religious importance, the reach of loudspeakers and amplifiers should be limited to persons who want to hear. No person or organization can be allowed to use microphones at a high noise level without following sound limits. The Court further imposed nine restrictions on using microphones and loud speakers and held, "the State Pollution Board should approve the volume and noise level and the police and the administration should enforce the same."<sup>42</sup>

Lastly, the 2012 case of *Madhav Roy v. UOI and Ors*,<sup>43</sup> where the petitioner was aggrieved by the noise pollution caused by the respondent temple and mosque in his locality due to their use of loudspeakers on high volume, could not have seen a more welcoming and progressive order. Pronounced by Justice Vipin Sanghi, the order dated 6th January 2012 stated:

No person is entitled, on the pretext of practicing or propagating one's religion, to cause such nuisance in his/her neighborhood, and disturb the peace in the area. Merely because one considers it beneficial for others to hear the... Religious Prayers, or Sermons, one cannot thrust the same upon others, against their will, and at the cost of their peace and tranquility. The freedom to practice one's religion does not give a right to anyone to

breach and trample upon the fundamental and civil rights of others in the community.

Religious tolerance in a secular State means the exercise of self-restraint and maintenance of self-discipline. It means that persons of all communities acknowledge, and exhibit [sensitivity] and respect to the legitimate needs, comforts and rights of others. It does not mean the forcible stamping of one's religion or religious practices on others, whether they like it or not...Such acts cause irritation... whether belonging to the same religious community or other religious communities. Such acts are likely to... lead to communal tensions. Therefore, such practices and tendencies deserve to be curbed to preserve the rights of the citizens.

There were no loudspeakers in the old days...Holy books... did not mention the use of loudspeakers as being vital to spread religious devotion. So the use of loudspeakers cannot be a must for performing any religious act. Some argue that every religion asks its followers to spread its teachings and the loudspeaker is a modern instrument that helps to do this more effectively. They cannot be more wrong. No religion ever says to force the unwilling to listen to expressions of religious beliefs.<sup>45</sup>

### Conclusion

Over the years, our community has increased its awareness of the relationship between environmental degradation and human rights abuses. People see now that with the exhaustion of natural resources, the rate of emigration and unemployment increases, that environmental destruction contributes to the spread of infectious disease, that with

environmental degradation the problems of both developing and developed countries worsen, and that even air pollution accounts for more than 2.7 million deaths annually.<sup>46</sup> We have learned these lessons after suffering. Now we have more than 520 international treaties and agreements that save our environment and respect our human rights. It seems that we like to learn our lessons the hard way.

Maybe that is the reason the link between noise pollution and the environment hasn't been strongly established yet. Maybe we do need a huge disaster in relation to noise pollution for the issue to get due attention. Maybe that is why there is no specific law relating to noise pollution and this link is still in its infancy.

Even in India, which boasts of its green tribunal, the issue is far from settled. The cases that have been mentioned tell us that the Indian judiciary is in fact trying to take a strong stance against noise pollution caused by religious practices. It is agreed that the start was slow, but that it's better late than never. A few justices, such as Bhan J. and Vipin Sanghi J., have chosen the untrodden path and pointed out where religion is encroaching on our right to life guaranteed under the Constitution. They have set a precedent that in case of conflict between the right to practice religion and the right to life, the latter holds supreme. But again, is it enough? Is it being accepted and followed by religious institutions? Is there any official follow-up on the activities? The answer to all three questions is a blatant "no."

Even though some judgments have been made and laws have been set, they are very difficult to implement. These shortcomings are not purely legal. They are also due to our own social politics and dynamics. If we stand up against noise as a human, and not as a person of a particular religion, we can change the situation. We need to understand that praying in our hearts and at our homes is as strong as doing the same on a loudspeaker. We need to understand that by using loudspeakers, there is a likelihood that a man suffering from a medical condition is not getting closer to God, but rather is getting closer to his deathbed. We need to understand that



Woman drawing Rangoli in front of house, outside Sirsi, India, Kelly Sky and Megan Toth

God won't help us unless we pray with all our hearts rather than with our amplified voice. Like Justice Singhvi said, we need to understand that loudspeakers have nothing to do with God. God has to do with our hearts and our thoughts. For ages, our religious leaders have preached their respective religions without loudspeakers or amplifiers. Their faith is what made religion so strong. Let's not wait another forty years to realize that we could have curbed noise pollution when we had the opportunity.



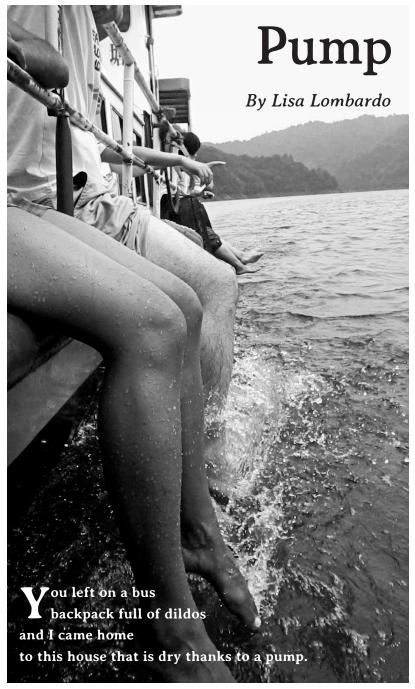
Sea Anemone, Cannon Beach, OR, Lisa Lombardo

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Can we Stay Forever, Marissa Williams

What keeps me awake is wet alright, and right underneath me—
the fleshy sucking sounds
of my house's relentless assault
on the water table

(don't build here, the river tried to say but they drained it anyway.)

A whole neighborhood in denial, under every house a small pump works to stave off the flood, channels the downpour into corrugated drainage tubes.

In the morning
a flock of robins,
not so solitary a bird as I thought,
descends on my soggy yard,
on the worms
(relieved that
they didn't drown
this time)
and the sump pump
in my heart
is going at it full force.
Yours is a much more intense
birding experience
I'm sure.





Honey Cone, Reginald James







Male Ginkgo, Allyson Woodard

Millions of years ago there were many of them and many kinds, clustered around dinosaur-trampled streambeds. Today there is only one lonely species, *Ginkgo biloba*, which may no longer exist in the wild, and whose delicate fan-shaped leaves illustrate their own creeping isolation, that they are related to no other modern leaves—be they pine needles or a willow sprout—more closely than to ancestral ferns. The ginkgo clings to old habits. It has looked, acted and smelled almost exactly the same since the appearance of mammals, since before flowering plants and T-Rex, all through the flurry of extinctions and diversifications that have shaped and re-shaped almost every living organism we notice around us.

This is all information I've learned during adulthood, but as a child my appreciation for Ginkgo biloba never extended past abject loathing. My elementary school was lined with a row of female ginkgo trees—a deranged landscaping decision, given that in the autumn they drop fleshy yellow vomit-bombs (botanists call them "seeds") on the ground, which promptly grind themselves into the soles of passers-by. To me the scent is such a ubiquitous reminder of childhood that nothing smells quite as ginkgo-ey as ginkgo, but for the unenlightened among us I did a quick Google search: the internet agrees that their odor falls somewhere between rancid butter and barf stink. Now imagine some two hundred-odd children stampeding into a small remodeled warehouse, and you get a sense of why we chanted "ginkgo stinko" with repetitive—even patriotic fervor. Autumn was war time, when we united to pick ginkgo flesh from the wheels of our roller backpacks.

Yet despite such olfactory trauma (or perhaps because of it?), every time I pass a fruiting ginkgo it overwhelms me

with a piercing sense of nostalgia. I was recently racing an evening rain cloud across the University of Oregon campus, where I'm enrolled as a graduate student, when I got the distinct, unsettled feeling that I was walking though dog crap. I looked down to find I had tramped underneath a ginkgo without noticing, and stood circled by a soggy legion of seeds. Experience should have compelled me to jump away and drag my heels through the grass, but I felt anchored to the spot, looking down at my shoes. I suddenly recalled a foggy 3:30 afternoon, my little sister Kristina and I waiting outside school with our feet planted deliberately in the gaps between ginkgo seeds, her hands clutching onto my upper arm the way little kids can, with a feather grip that's impossible to dislodge. Had a friend teased her at school? Was she scared of the strangers walking past and clinging to me for protection? Or was she being deliberately obnoxious? The details have disappeared short-term trivia—but they left me with the pinch of her six-year-old fingers on my arm, an immediacy to her presence. It occurred to me that we now live in different cities, and the thought kicked a shot of adrenaline through my stomach—a mundane thought, but suddenly unbearable.

I often do wonder what a parallel adult existence with my sister would be like, and it reminds me of the way my sibling-less friends speculate about childhoods with a sister or brother. Kristina and I are close, but we only call each other sporadically, and every time one of us visits it feels like we're trying to binge on intimacy, struggling to reanimate the inside jokes that once nurtured a luxuriously impenetrable code against adult family members. In a way, we might be too confident in the relationship. I know she'll be there whether I like it or not, so I get distracted by my own present-days until

I check my call history one morning to realize it's been weeks since we spoke.

It's all a part of growing up, I suppose—time inevitably branches us in different directions, and if we're lucky or determined we stay attached to the ones we love. Kristina and I are still in the informal habit of giving each other toy dinosaurs for Christmas, which is a joke in the moment, but over the long run I think there's something comforting about a new Velociraptor each year: We remember each other back when gift-wrapped plastic figurines were more riveting than sex, and the tradition serves as a sort of character excavation, an exercise to help each other reconnect with who we once were. (Or, perhaps we don't know what else to buy.)

Either way, I think of those toys when I find a ginkgo. Sometimes when I look at the trees I catch a pterosaur flash in on my periphery, on all fours with the tips of its wings folded upwards like I've seen in illustrations, climbing more like a bat than a bird, but crowned with a tanager-brilliant crest of bright vermilion. Inevitably, I focus my gaze in its direction and a crow or starling explodes away, cackling. It's a strange notion, to feel nostalgic for moments you never experienced, and at such times I'm torn between feelings of loss and camaraderie. I've read that if you cook the hard interiors of ginkgo seeds they lose their rank odor and actually taste good, and that a lot of people on the planet enjoy eating them. Call me sentimental, but as I stood under the campus ginkgo I couldn't help wondering if dinosaurs and pterosaurs used to agree, and whether if we did pull off Jurassic Park, we would have this steady gastronomy in common.





Such longevity also lends tangible wisdom to our investigations of the past. You may remember from high school biology the tiny stomata on the undersides of leaves, pores responsible for sucking in carbon dioxide and releasing oxygen. Leaves grow fewer when there are high concentrations of atmospheric carbon dioxide, and since ginkgos have existed for millennia virtually unchanged, climate researchers use them as a biological measuring stick. By digging up ancient fossil ginkgos, we can literally draw the past's climate, through its highs and lows, by counting stomata. If I'd bothered to save any of the ginkgo pressings I did as a student, they would resemble those of younger trees on a macro scale, but they would project different memories through a microscope.

For whatever reason, this image grounds me. I think we hear too much talk of innate short-sightedness, our inability to retain a history lesson, when we each carry a raw appetite for the past—appetites that compels us to remember ginkgo seeds fondly or stand in the rain trying to reconstruct a dull memory. And what a boon! We are surrounded by time-travelers, if only we would listen. I don't own a microscope, but I do carry a cell phone, and I'll extend my thanks here to *Ginkgo biloba* and its putrid fruit, for backing my mother up and reminding me to call my sister. \*\*



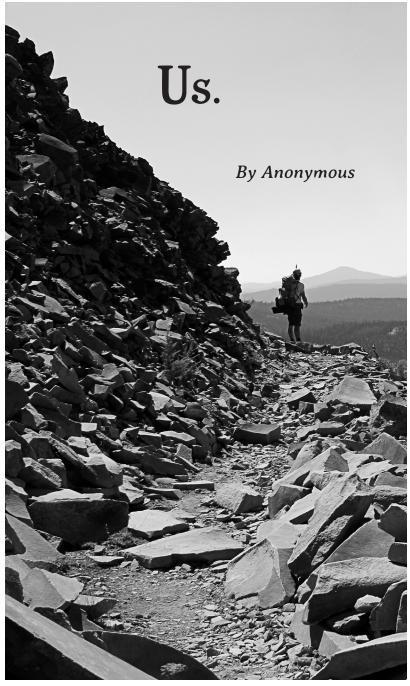


Photo: Kirsten Vinyeta

We sat in silence.
A meditative calm
streamed through our bodies.
Moments ago we climbed down
from the lookout tower
where we gazed upon
the rolling valleys of trees
and gawked at the hummingbirds
circling nearby.

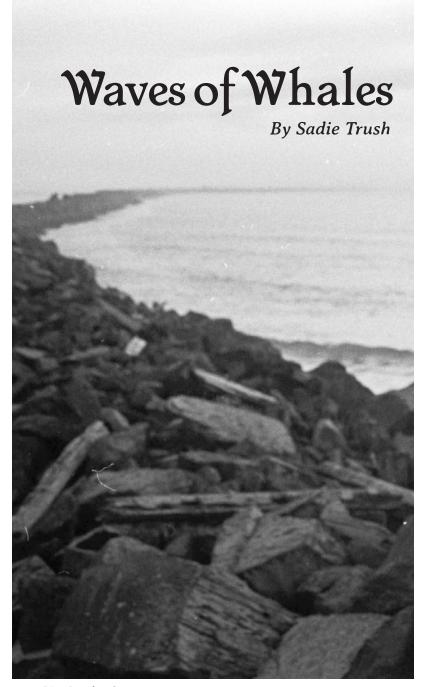
The persistence of the smog
creeping in the distance
didn't matter;
we were immune—
too high above it.
For goodness sake,
we ride our bikes,
we eat our organically grown food,
we reduce and reuse
and reuse
and reuse
until we can't reuse any longer, so we recycle,
but no matter how hard we try,

we are not immune; although we think we are the rolling valleys and circling hummingbirds we are merely the smog creeping in on inevitability.



Shattered, Marissa Williams





Jetty, Lisa Lombardo

Dark, smooth, shining, with patches of barnacles like flocks of sheep on the face of a great marble mountain, rising from the salty waves; open – an eye; see – miles of shore, sanded but for the darts of rocks in the tide, air bubble goodbyes of mole crabs, and silently mysterious, formidable, dark statues. Hauled out of the sea just above the tidal line, their silhouette in the sunrise rivals the shadows of the dunes. Majestic, and ominous, they lay still, removed from their realm, surveying a domain of beach, unfamiliar land. With all dignity they await the hands of the waves to carry them back to their underwater realm.

Hands come, but they push, prod, sponge, push, poke, push, and then stroke, for no more pushing will do any good. This majestic being will die at the hands of those who drove their hulking six tons of body, history, love, and life, onto this sanded shore. As the waves recede, two veins run down the great marble face, not of quartz, but blood ruby red, one from the ear, the other leaking from the corner of their lips. Deep inside this marble mountain resounds a 'thump, thump.' It is not the romantic heart, nor mountain miners, but the steady pounding of bone on flesh, as with each breath their weight slowly crushes their lungs. They bear the pain of death perhaps not knowing their pod lays strewn across miles of beach beyond sight, but within the same tragedy.

In total, ten whales died March 15, 2000, on the beaches of the Bahamas. Scientists counted "14 beaked whales, 2 minke whales and 1 spotted dolphin" beached (Williams), but as many have observed, the islands are so large it is possible many others suffered the same fate, but that their bodies were never discovered. There have been many mass, multi-species beachings of cetaceans in the past: "The Canary Islands,

Greece, Madeira, the U.S. Virgin Islands, Hawaii and other sites around the globe" (NRDC), but this was one of the first to draw attention from the public.

It seems the deaths of these giant creatures, larger than any land mammal, capable of living longer than any human, would be widely acknowledged, yet their deaths and their lives have slipped past the eyes of society. On the front pages of newspapers and plastering the electronic cosmos, issues of human-to-human interactions mask what is occurring to those we share this planet with. Many humans have managed to forget in their self-centered focus on personal, economical, and political issues the root of what provides for us, and continues to sustain us. Many of us no longer face the obstacles of our ancestors: fighting the terrain, animals, and seasons for survival. This distancing has enabled us to forget the connection we have to the environment. Simultaneously, some human societies have developed a passion for warfare, which has created obstacles more grotesque and cruel than nature could ever invent. The greatest, and most shocking advances in our technology have been employed to melt the flesh off, suffocate, and kill our own kind. In humankind's rush to eliminate the threats posed by one other, we overlook the dangerous and harmful effects of our militaristic advancements not only on amazing animals like whales, but also on that which created and supports us: the environment.

The Bahamas beaching is one of many environmental tragedies stemming from military actions. The "monitoring stations in the Bahamas confirmed the passage of seven naval warships and three submarines" hours prior to, and during the time the whales were found marooned on the shore (Williams). The beaching of twenty-four whales, of three different species, on

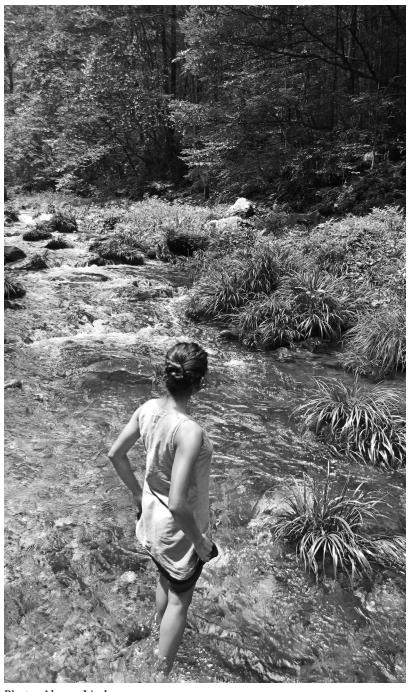


Photo: Alayna Linde



Dunes, Lisa Lombardo

the Canary Islands in 1989 also coincided with Navy activity in the area (Williams, App. D). Despite this, the Navy has been publicly unrelenting in their denial.

According to an article published by the Natural Resources Defense Council, "the Navy initially denied responsibility [that] the government's investigation established, that midfrequency sonar caused the strandings". However, military reports uncovered by the science journal *Nature* say that "whales subjected to military sonar will neither dive nor feed", and these "second- and third-order effects could ... [lead to] starvation and then death" (Cressey). That these reports were only accessible due to the Freedom of Information Act suggests military attempts to hide the consequences of their practices from public view. The military still claims "scientific effects are not clear...on the marine environment" (Cressey). They argue that incidents of whales beaching can also be caused by "animals struggling to give birth, old animals dying of various

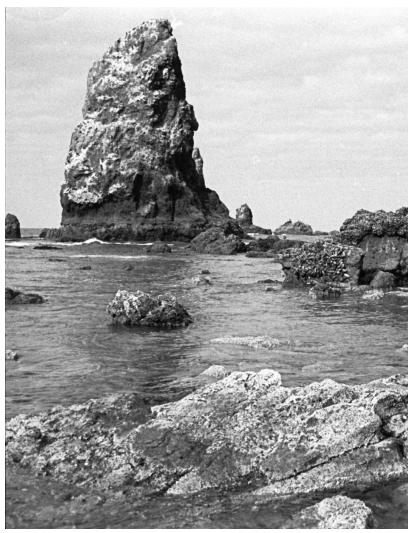
natural causes, parasitic infections, animals hit by boats", and their social tendencies to send distress signals when pulled close to shore, which would work in the open water, but when near land, simply cause the rest of their pod to become stranded as well (Nolan). Common sense, and simple math, though, still suggests that the effect of sonar on these marine creatures may be the "killing factor."

Sonar intensities of less than 100 decibels can cause abnormal behavior in cetaceans (NRDC). Navy sonar is transmitted at "more than 235 decibels", well above a safe range for whales (NRDC). Joel Reynolds of the National Resources Defense Council stated during a press conference that Navy sonar has a radius of "300 nautical miles from the source in all directions ... cover[ing] an astonishingly large area of over 374,000 square miles of ocean within which sound levels received would range anywhere from 140 dB to 240 dB" (Williams). Given this insight to Navy sonar, it is unlikely a whale anywhere within 300,000 square miles of a sonar transmitter will be able to escape without some impairing damage. Even though abnormal behavior can result in death, the effect of sonar on cetaceans is only classified as Level B Harassment by the National Marine Fisheries Service for "disturb[ing] a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns" (NOAA). Despite the harm sonar inflicts on cetaceans, and the attendant damage to the environment, which is interconnected to the ecological niche of every creature, it is only classified as second-degree harm. What's more, the Navy is now pushing to have the minimum decibel frequency increased to 180 dB (Williams). As discussed at the Beacon Conference in 2002, there is still ongoing debate between the Navy and environmental scientists as to

the intensity of decibels that is currently allowed. The Navy uses different methods to calculate decibel intensity that environmental scientists argue are inaccurate and could allow them to transmit decibels over the "safe" frequency (Williams).

As uncovered by *Nature*, the military is aware of the harm they cause the environment. However, because of the distancing which has occurred between technocratic human societies and nature, and the blind will to dominate without regard for external costs, the Navy is asking for an "exemption from environmental laws ...[due to] the need for national security" (Williams). If approved, military actions will be even more detrimental to the environment, especially if the Navy's further request to NMFS (the National Marine Fisheries Service) for "permission to kill from 5 to 10% of whale populations in a given area, a large amount by any standards" is also granted (Williams). Both these requests, and prior actions by the military, illustrate how little the environment has come to mean to some segments of humanity.

Given the tendency of some cultures to believe that the only lives of value are human lives, the fact that the military is now asking for environmental regulating groups, and environmental law enforcement, to only "restrict questions of compliance [to laws and regulations] to actual tissue damaging events" is not surprising (Williams). Acquiescing would allege that the only way animals can be affected and harmed is by visible surface wounds, and that their discomfort or other alterations in behavior are of no consequence. This request, if granted, would allow the military to act as if animals are mere physical objects, and only consider the number of marine mammals harmed by their actions to be those they have physically hit with submarines, or injured during ship explosive testing.



Haystack Rock, Lisa Lombardo

Most of the damage that sonar causes to cetaceans, though, is not visible from the surface. Deep inside, exposure to sonar causes their ribs to expand and contract uncontrollably, forcibly beating their own bodies from within, until blood vessels begin to erupt, as they struggle to maintain their breath. With the overwhelming sonar obliterating their senses they

are unable to sustain constant pressure at their current depth, and rise too quickly to the surface. Not only does this cause the pressure in their lungs to change too quickly, it also brings about "bleeding around the brain, ears and other tissues and large bubbles in their organs" (NRDC). The ability of sonar to "change their dive patterns in ways their bodies cannot handle, causing debilitating and even fatal injuries" (NRDC) is not always visible from the exterior. As seen in Pierce Brosnan's short documentary, Lethal Sounds, some whales discovered on beaches are already leaking blood from their mouth and ears before they die, due to heavy internal bleeding. The military is aware of these internal effects of sonar, as the "US Naval Undersea Warfare Center had calculated that resonance frequency of airspaces in Cuvier beaked whales ... to be about 290 Hz ... almost precisely the middle frequency of LFA (100-500 Hz)" (Balcomb; Williams), which is one of the minimal frequencies employed by the Navy. It has also been proven in experiments done by the Navy on lab animals that when "exposed to LFA at their lung resonance frequency" they "clearly demonstrated vestibular dysfunction (e.g. dizziness, vertigo) and lung hemorrhage" (Williams, Balcomb).

With the horrific results that sonar has on these great sea mammals, how can we continue to overlook, and even press for relaxation of regulations, which will lead to more harm? Many people, once educated on the subject, have a strong moral sense which tells them we cannot continue to inflict damage on the planet and animals in this way. It may appear that the Navy is a single-minded, unfeeling machine, but it is not simply the Navy that has become indifferent to the importance of the environment in our everyday lives, and for future generations.

Each of our bodies, composed mostly of water, is merely a drop in the puddle of our family, a drip in the pond of our community, the lake of our country, and an inaudible *plunk* in the oceans of the globe. It is only with the mergence of all our drops that we may accomplish feats such as supporting the incredible, wondrous weight of a whale's body and life. We must acknowledge this and we must cease to be the trough or crest of the penetrating waves of sonar that drive cetaceans onto the beaches, and instead be the wave that lifts them back into the deep ocean, and keeps them there safe. By doing so, we protect not only their future offspring, but also our own. The water that supports them is the water that supports us.

The sigh of a wave

Wash over your consciousness beautiful being,

Close – an eye

Gentle giant of this pod to a beach of suffering,

Close – your mind

Return to a weightless world.

Mankind of planet Earth,

Open – your hearts

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# Adama

# By Christa Linz

It is morning, the air is cold with fog—icicles enveloping the needles and cones outside of my window. Deeply I inhale the frigid air that hovers hauntingly above my bed, feeling simultaneously the life and death of the cool air.

I ponder the particles now a part of me,

pieces of dust that

became life through vocal vibration.

If only my words had as much power. I feel the warmth of my covers moving in on the ancient presence in my lungs, now melting only to take in another, more peaceful breath of air. The dust enters once again, drawing my heart back to the first breath ever taken on earth, the intimacy

which we were created for.

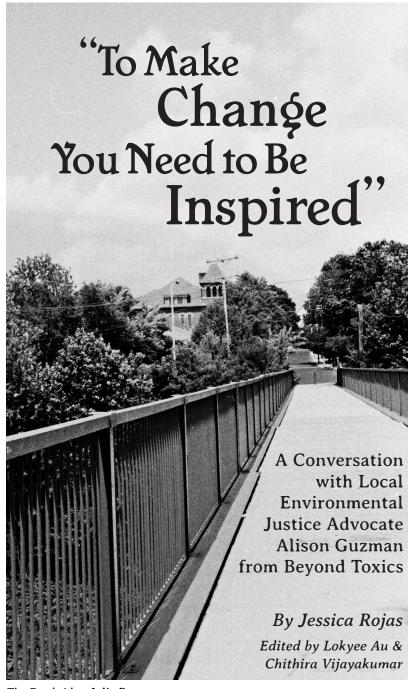
Mouth to nose, we received

life and the calling to love exuberantly.

Oh, how my soul longs to be that dust! For my very essence to be molded into its intended perfection, ever-pointing towards the Creator, the earth

my inspiration for such praise. \*





The Footbridge, Julie Bacon

Jessica: Tell me about your work with Beyond Toxics.

Allison: My work with Beyond Toxics, in collaboration with Centro Latino Americano, involves environmental justice work in the industrial corridor area in West Eugene. I started a couple of years ago with canvassing activities; we would knock on doors and determine how residents felt about their air, because a lot of those communities are being disproportionately exposed to chemicals such as formaldehyde. They face daily exposure to chemicals, and we found this out by asking them whether they had respiratory cardiovascular problems, whether they detected air pollution and when. Many of them detected a lot of odor in that area. That's how I got involved in environmental justice issues in Eugene.

# J: Can you tell me more about how you got involved with this environmental work?

A: I began my research in International Studies and Multi-Ethnic Studies. In that process, I learned about Latino issues and ended up getting my MA with a focus on human rights and social justice. I learned about Indigenous rights and that was my first in-depth look at the environment and environmental justice through Indigenous communities in Central and South America. I did my research on extractive industries and how they affect communities overseas. I was in Guatemala for my main case study. So before I came to Eugene and worked on environmental justice at a local level, I was not only involved in environmental and social work at an international level, but also at an institutional level. The presence of these extractive industries has affected the way in which people perceive the environment to the extent that when we're working with them in Peru and South Africa we only try to develop some kind of

corporate social responsibility process - which we all know is law, right? But they shouldn't even be there in the first place. My involvement with all that got me thinking. I gained some knowledge on the corporate side of the atrocities with regards to Indigenous peoples. When my contract ended, I guess I wanted to do something that was more in line with my values, and focus more on local issues, and that's how my involvement here began as an environmental justice advocate.

# J: As a woman of color, are there any challenges you face while doing this kind of work?

A: It depends where - I guess overseas it's different, it's definitely an advantage as you are working primarily with communities of color. Here it's an advantage when you're working with communities of color. However, I have felt for the first time in my work that people who don't consider themselves as people of color assign a certain criteria to me. In their first impression, I am a Latina woman. Before, I [was considered] either a young professional, an American, a woman; but my being a Latina has never really been at the forefront of how other people perceive me. I think that here in Eugene, just to be honest, it's just a predominately white community, to be up-front with that...so who I am to them first is Latina.

I have been out with Latina moms in the community doing home visits, and sometimes racist remarks would be shouted out from cars as we are walking by. I'm exposed here in Eugene to racial slanders, and that affects my work...yet, in a way, I am experiencing what the community regularly faces. For example, we were walking one time and doing these home visits and out of a car this man shouts at us, "Faggots" and I asked

someone walking with us if this happens often, and she said "yes, we get this all the time but we just figure that everybody is hurting, so they need to blame [someone else]." She took the higher road in understanding the situation, but they have been called "spicks" a lot by teenagers during their normal grocery shopping, while taking their kids to school or something like that. The embedded issue around environmental justice is racism, which makes my work super interesting because environmental justice is about bringing equity to decisionmaking processes regarding your environmental health, your health as a human being, as a mother, as a child. These inequalities are embedded in the system. The elephant in the room is racism, and I think that addressing these issues has been challenging. But I am seeing some of it being dismantled through the process of community empowerment. It's not to the point where it's super political or threatening to the general Eugene community, where it can cause instability. It's just general awareness and empowerment, especially as the new generation becomes acculturated to American society and speaks English better than Spanish. Although this is not a part of my work, in the larger scheme, it's an issue of the new generation. These challenges are not only based on what I face in the community as a Latina, as a woman, or as someone part of the decision-making process, but these ideas and concepts are normally not discussed [during] everyday practical work on the ground. I mean, these issues are there, and that's a challenge as well - bringing that to the table to a community leader, a decision maker or a nonprofit organization. These are issues that highlight social dynamics we normally do not address on an everyday level.



This Way, Erica Elliott J: What would you suggest to readers who want to get more involved in local environmental justice issues?

A: That's a good question. First and foremost, I think knowledge is power. People are immediately influenced by what they perceive through the media, and in most cases they [the media] are green-washing. One can go that route, but I think that is the lazy route. The more you research the environment and environmental justice, the more likely each person will find their role. I cannot assign everyone the same thing and say this is what you must do and the world will change. I think what I would encourage is for individuals to really research what environmental justice is. To a certain extent, environmental justice is no longer an issue that can be categorized as a separate concept. How we treat the

environment reflects how we treat each other, and if we were able to take responsibility for how we treat each other, it naturally encompasses the environment. So I encourage people to gain knowledge on these issues and find out how their skills and interests can expand as environmental justice artists, and to find out how best they can be inspired, because to make change you need to be inspired. The lazy way, which is being pressured or not thinking twice as to why you are making changes, can lead to people falling into a trap.

Beyond Toxics, formerly called Oregon Toxics Alliance, is based in Eugene, Oregon and works to empower all Oregonians in the struggle for environmental justice in their communities. For more information, including how to get involved, visit www.beyondtoxics.org.

Interview reprinted with permission from The Siren, the feminist magazine of the ASUO Women's Center.











# Empowering Adult Learners through Garden Education

Remaking Oregon Food Bank's Seed to Supper program By Ali Abbors



**66** was expecting a little pantry with a few boxes of canned food, not this." In my work as Learning Gardens Program Coordinator for Oregon Food Bank (OFB) in Portland, it is not uncommon for me to hear reactions of surprise from first-time visitors. Food banking is not what it used to be. A nationallyrecognized non-profit with four branches and a professional staff of more than 130, Oregon Food Bank distributes food through a statewide network of 16 independent regional food banks and 945 partner agencies. In 2011-12, the OFB network distributed over 1,117,000 emergency food boxes to Oregon families, an increase of 9 percent over the previous fiscal year (Oregon Food Bank, 2012a). However, the shift in modern food banking is more than just a matter of scale. Until as recently as 2004, many food banks focused their public relations campaigns as much on diverting food waste as on relieving hunger (Winne, 2007). Just as the modern environmental movement has broadened its historically narrow interests in conservation and wilderness to include more widely relevant environmental justice dialogue (Schlosberg, 1999), the conversation in food banking has shifted away from food waste reduction and toward the idea that access to healthy food is a basic human right (Riches, 2002).

OFB is one of a growing number of food banks across the nation that is working on long-term, systemic responses to answer a critical question: "What could the effects of food banks be if all the energy that was put into soliciting and distributing wasted food was put into ending hunger and poverty?" (Winne, 2007:77). Like other forward-thinking hunger relief agencies (Korkki, 2012), OFB strives to build community food security—defined as "a situation in which all community residents obtain a safe, culturally acceptable,



Springtime in the Greenhouse, Ali Abbors

nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm and Bellows, 2003: 37)—while continuing to meet the needs of Oregonians experiencing immediate crisis. Through programs in policy advocacy, community food systems organizing, nutrition education, and garden education, OFB employs strategies that measure success not in pounds distributed, but in terms of people empowered and long-term change effected. Seed to Supper, OFB's adult garden education program, is one such effort. At a fundamental level, the program has the potential to increase fresh food access and agricultural literacy. As I will discuss in this paper, effective adult-focused garden education programs like Seed to Supper can also empower learners through transformative experiences that increase confidence, build relationships, and foster more food-secure communities.

## The Genesis of Seed to Supper

Garden education programming has been a part of OFB's longterm strategy since the organization moved to its northeast Portland headquarters in 2001. Located on an industrial lot in an area that still shows evidence of the city's agrarian past, OFB's new property included a large, vacant barn and over a quarter-acre of undeveloped land. Within a year of building its new statewide distribution center, OFB had turned the unoccupied quarter-acre into the hub of its new Learning Gardens Program—a space designed to provide food bank clients with hands-on opportunities to "grow vegetables, relationships and hope" (Oregon Food Bank 2012b). Though immediately popular with OFB volunteers, it became apparent that this vibrant garden space in Portland's industrial northeast was too remote for much of its intended audience to access. As a result, OFB began to develop a mobile garden education program that would leverage the knowledge of volunteer educators to meet clients where they were—at social service agencies, churches, community centers, and local food distribution pantries throughout the Portland metro area.

By 2007, this mobile garden education program had come to be known as Seed to Supper. The program included a flagship five-week curriculum focused on teaching basic skills for gardening in the Pacific Northwest and a series of single-session workshops on topics like container gardening and winter gardening. Originally offered to the adult clients of OFB's hunger relief partner agencies and eventually expanded to serve the public more generally, the goal of the program was to increase community food security and "create long-term solutions to hunger by giving people the confidence and ability to be more self-sufficient in their food choices"





Tomato Seedlings, Ali Abbors

(Oregon Food Bank, 2012c). Participants elected to take part in the program based upon their personal interests, which ranged from stretching a limited grocery budget and eating more healthfully, to connecting with others, to simply learning more about vegetable gardening. This lecture-style program was a complement to—but not dependent upon—the hands-on gardening opportunities available at OFB and local host agency sites.

From 2007 to 2012, OFB volunteer educators taught the five-week Seed to Supper class to over 1,000 participants throughout the Portland metropolitan area. In 2009, Seed to Supper caught the attention of a Portland State University student who worked with OFB staff to assess the impact of the five-week class on community food security, focusing on 1) food access, 2) food literacy, 3) self-reliance and 4) social capital. 210 participant surveys collected between 2009 and 2012, along with 20 interviews conducted by the student researcher during the same time period, showed increases in all four study areas, confirming the value of Seed to Supper as part of OFB's suite of community food security programs (Withers, 2012).

I joined the Oregon Food Bank staff as Learning Gardens Program Coordinator in June of 2011, where I took over management of the Seed to Supper program. As an outsider looking in, I saw a program with net positive effects: participants were becoming more confident about gardening and experiencing increased community connectivity and self-reliance—and they didn't need to travel in order to attend. On the other hand, I discovered that Seed to Supper was administratively bulky, and instructors and participants

consistently pointed to opportunities for improving parts of the program's content and design.

# Collaborating with OSU Extension to Re-imagine Seed to Supper

Toward the end of 2011, as I was beginning to re-design Seed to Supper, an Oregon State University (OSU) Extension Service Master Gardener named Lynn Cox approached me about adapting the program for delivery to the general public through the Master Gardener Speakers Bureau. As part of the U.S. Cooperative Extension Service, OSU Extension belongs to a network of land grant universities that comprise the nation's largest adult education institution, specializing in delivering research-based information to the public (Griffith in Peters & Jarvis, 1991). OFB had a history of loose, collaborative interaction with OSU Extension Service through the organizations' complementary nutrition education programs and through the Master Gardeners, who have volunteered in OFB's Learning Gardens over the years. Both organizations saw the benefits of continued collaboration through Seed to Supper. OFB's experience providing services to Oregon's most food-insecure populations would help OSU Extension deepen its impact in those communities, while OSU Extension's expertise in adult education and agriculture would increase Seed to Supper's credibility and widen the pool of volunteers available to teach it.

Rather than working separately to improve pieces of the program, Lynn and I forged a formal collaboration between OFB and the OSU Extension Service to re-write and co-brand the five-week Seed to Supper curriculum. With increasing numbers of Oregonians experiencing economic hardship (Oregon Food Bank, 2012a), both agencies had seen a recent

uptick in the demand for garden education programs for adults. The Portland metropolitan area provides adult gardeners with a wealth of educational opportunities, from learning garden volunteer programs and nursery-based gardening workshops to Master Gardener certification and Multnomah County's Beginning Urban Farmer Apprenticeship (BUFA) program. Although open to the public, these opportunities are accessible only to gardeners with the time, transportation and, in some cases, financial means to take advantage of them. A number of OFB's local hunger relief partner agencies also have on-site garden programs (e.g. SnowCap , Village Gardens , Good Roots Church ), but they lack garden curricula that are specifically tailored to adult learners. In our respective roles as Oregon's largest anti-hunger non-profit and the state's expert in agriculture and adult education, OFB and OSU Extension were



Dragonfly in the Greenhouse, Ali Abbors

uniquely positioned to produce and administer a community food security-focused adult garden curriculum like Seed to Supper.

# Grounding Seed to Supper in the Critical Perspective

Looking to best practices in adult education throughout the curriculum redevelopment process, we began by examining the program itself. Extension educator Nancy Franz recommends applying critical reflection to adult education at the program design level, suggesting that "groups that engage in critical reflection could be more inclusive, learn as a group, raise their awareness of change issues, and be collaborative and democratic in their approach to the change process" (2007). Critical reflection theory involves challenging the assumptions, habits and beliefs that underlie prior actions and ideas, and then using a more deeply-informed perspective to re-engage in problem-solving activities (Brookfield, 1987 and Mezirow, 1990). Prior research had confirmed the basic assumption that Seed to Supper increases food access, food literacy, self-reliance and social capital among its participants (Withers, 2012), so we turned our critical attention to the specific design and content of the program.

We felt that formally involving our veteran instructors in the program redevelopment would lead to "greater democracy and justice in the learning environment...and increased collaboration" among our educators (Franz, 2007). In January 2012, we invited all veteran Seed to Supper instructors to provide written feedback in an online survey and verbal feedback at an in-person meeting. At the in-person meeting, we asked instructors, as a group, to set aside their assumptions and answer two questions: "Who is our audience?" and "What

are the pillars of the Seed to Supper program?" Based upon their experience, the group worked by consensus to create a profile of a typical program participant. With this typical participant in mind, we then worked with the instructors to identify the basic information that our typical participant would need in order to grow a successful vegetable garden.

Designing successful educational programming for adults requires an understanding of the ways in which adults learn. Effective approaches to adult education will differ from approaches designed for children, even when learners are equally unfamiliar with the topic. Adult education expert Malcolm Knowles (1980) went so far as to propose the word "andragogy" to differentiate the art and science of teaching adults from "pedagogy," the art and science of teaching children. Adult learners are motivated to find practical solutions to real-world problems, and frequently approach learning opportunities with specific goals that are shaped by lived experience. Knowles suggests that learning opportunities designed for adults should offer transparent, step-by-step lessons or activities that provide practical approaches to learners' specific objectives (1984).

Although adult education scholars have not reached consensus on a guiding theoretical framework, some suggest that theories "grounded in the critical perspective focused on power, ethics, lived experience, and emancipation" should inform the development and delivery of adult education programs (Franz, 2007). Influenced by the educational philosophy of Paolo Freire (1970), educator Jack Mezirow proposes that "transformative learning for emancipation education is the business of all adult education" (1990, p. 357). Mezirow's transformative learning theory engages students in the critical examination of their



Packaging the Harvest, Ali Abbors

own habits and "taken-for-granted frames of reference" (2000, p. 7), empowering informed action through the development of new competencies and a more critical worldview.

We aimed to make the transformative power of the existing Seed to Supper curriculum explicit while also implementing practical improvements. Preserving the essential topics identified by our veteran instructors, Lynn and I researched, co-wrote, and published a basic gardening text booklet to replace the loose-leaf handouts that participants had previously received as part of the program. With special attention to the needs and interests of the Seed to Supper audience, the booklet uses accessible language and visuals to outline a variety of practical, low-cost approaches



Radish Harvest, Ali Abbors

to vegetable gardening, and points participants toward additional gardening resources and opportunities for self-directed learning. Effective transformative curricula provide learners with accurate, bias-free information delivered with respect and compassion (Mezirow, 2000). With this in mind, we redesigned the instructor training to focus on valuing students' life experiences while building skills and knowledge that contribute to long-term food security.

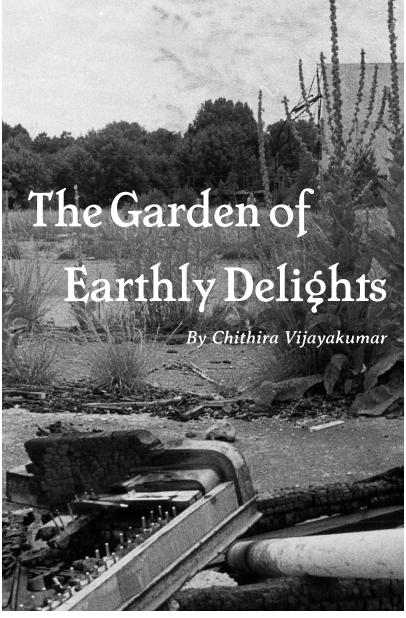
## Looking Ahead

In early 2013, over 60 volunteer educators attended trainings for the redesigned Seed to Supper program. Beginning in March of this year, we will pilot the new curriculum at Portlandarea host sites that include libraries, churches, correctional institutions and social service agencies. We will continue to critically examine the program during the pilot by engaging participants and educators in ongoing evaluation. The new course booklet has streamlined program administration and opened up creative options for sharing the curriculum; future plans include translating course materials into Spanish and adapting the program for satellite partners outside the Portland metropolitan area via the OFB and Master Gardener networks.

Beyond simply teaching participants to cultivate vegetables, adult-focused garden education programs like Seed to Supper can foster long-term transformation by giving participants tools to increase their confidence and community connectivity. For organizations like OFB and OSU Extension Service, investment in programs like Seed to Supper signals a dedication to the belief that empowered individuals are fundamental to resilient, food-secure communities.

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Entropic, Julie Bacon

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ere we are, in a rose garden.

A rose garden, you smirk. How easy, how safe, how old... how, and here you narrow your eyes and pause, predictable.

Why not in the space where the sighing skin of a corpse, one left unheeded by the roadside for weeks, meets the hot tar? Why not between my eyelashes damp with sleep? Why not in the hollow desperation of a dog's hunger?

I don't know why, I admit. I admit. I like it here, in this rose garden. Winter has been arguing with it for a while, and I'm told the last fight ended with her storming out, slamming the door behind her. The flowers fell to the ground and shattered.

Jasmine. Pale garlands that I would twine around my left wrist every day, every day. When they wearied, I would leave them in pockets and between pages for you to find, letting the house fill with the scents of saudade.

There is no jasmine here. The roses are perfect, bitter, memories. Some of them never bloomed, and the buds have withdrawn into themselves to the point of no return, to singularity. The others are scarred, torn like pages of sorrowed letters.

I burrow my nose into their folds and breathe. Deeper, you fool, you say. Don't sniff, you aren't fucking royalty. Breathe them till they turn black-and-white, till they're two-dimensional and still. Deeper.

Tendrils of fragrance have coiled in my hair, and tangled in the trees. I'm running through leaves, I can't remember where my gloves, shoes or jacket are. Dry leaves wet leaves dry wet





Moose, Janet Belisle

crinklesmush. Two girls try to kick the leaves into the air, to scatter them like birds, but they are heavy and sodden, and only shift dispiritedly on the ground.

You're saying something, but I can't hear you because the flowers are shouting.

The wind brings in twilight, and the evening gathers in the corners of the garden. A slight drizzle is beginning to fall, as trees turn to shadows and become heavier with the breaths of birds. Through the chain-link fence, we watch as lemonyellow beams from bicycles criss-cross in the deep, dark air.

The river is wild silk. I remember how you would read underwater, and come up only to laugh at something. You tell me about your earliest memory. A narrow boat, the sun. Your mother is pregnant. With you.

The stars are here. Listen. They're singing.





California Corn Lily, Metolius River, Erica Elliott

## About the Contributors

- \*Ali Abbors is a recent graduate of the Environmental Studies Master's Program. She misses working at UO's Urban Farm but loves her current job at the Oregon Food Bank.
- \*Julie Bacon, aka "Pazamàdjigan," is a PhD student in environmental studies and sociology. Her loves include pitbulls, stick games, and tin-type photography.
- \*From the smallest state in the Union, **Janet Belisle** is a skip-bo playing, loud-music-loving, former lobster boat crew member. She is now a teacher of small children.
- \*Becca Cudmore is a senior at the University of Oregon, majoring in anthropology and minoring in biology and environmental studies.
- \*An Ohio native, **Erica Elliott** is a master of sharp wit and a lover of wildflowers and chest hair. She is a PhD student in environmental studies and English.
- \*Jordan Grace is originally from Huntington Beach, CA. Currently in his third year at the University of Oregon, he is pursuing a double major in environmental science and planning, public policy and management.
- \*Roger Hicks is a construction worker, outdoorsman, and chocolate chip cookie connoisseur hailing from Florence, WI.
- \*Reginald James is a writer and photojournalist from Alameda, California. He enjoys capturing images reflecting the natural beauty of humans, the outdoors, and their interactions together.
- \*Maneka Kaur is an LLM student in the Environment and Natural Resources Law Program at the UO School of Law, with her first degree in law from Delhi, India. She aims to understand the concept of being an environmentalist along with being an environmental lawyer.
- \*Alayna Linde is an ultimate frisbee champion and a recorderplaying phenomenon who once starred in her own music video. She graduates with a Master's degree in environmental studies in June.

- \*Born and raised in Cincinnati, OH, **Christa Linz** hopes to pursue her interest in soil and agriculture after graduating this spring with a degree in environmental studies.
- \* Hailing from Madison, WI, Lisa Lombardo, aka "Tiny Italian," loves unitards and pied-bill grebes. She is a Master's student in the Environmental Studies Program.
- \*Shayleen Macy is a Wasco member of The Confederated Tribes of the Warm Springs Reservation of Oregon. She is currently a senior student of art at the University of Oregon.
- \*When Gabby McDaniel is not doing squat thrusts at the gym, you can usually find her bedazzling her body for a night of GLAM! She is a Master's student in the Environmental Studies Program.
- \*Jessica Rojas graduated with a BA in environmental studies and ethnic studies this past winter. During her time at the UO, she served as Diversity Coordinator for the ASUO Women's Center.
- \*Kelly Sky is a Master's student in the Environmental Studies Program.
- \* Megan Toth is a Montanan-Eugenian feminist environmentalist. She loves documentary film, traveling, and Rage Against the Machine.
- \*Sadie Trush's childhood is rooted in the sorrel beds of Fieldbrook, CA, from which she has grown through the Redwood Curtain to her freshman year at the UO. She is majoring in environmental science, with a possible minor in creative writing, French, or both!
- \*Susanne Twight-Alexander received a Master's degree in environmental studies at the UO in 1993. "Mountain Hemlock" is from her chapbook, *Being*, available at Black Sun Books in Eugene and online at www.susyouzel.com.
- \* Francesca Varela is a sophomore transfer student from West Linn, Oregon, majoring in environmental studies and minoring in creative writing.
- \*Chithira Vijayakumar can usually be found either plotting to smash the State, or cooing over images of panda bears. She is a Master's student in the Environmental Studies Program.

- \* Kirsten Vinyeta is a Catalan half-breed with a fetish for Staedtler erasers and a celebrity crush on Woody Harrelson. She is a Master's student in the Environmental Studies Program.
- **★ Gayla WardWell** is a poetic and vegan forest-dweller who, for the past 11 years, has been the Environmental Studies Graduate Program Coordinator.
- \* Francine Wickes lives in Bangor, Maine and is active in a grassroots organization allied with the popular movement in El Salvador to generate creative power for social change.
- \* Marissa Williams, aka "Shuttlecock," is a badminton extraordinaire who can eat a ghost pepper without shedding a tear. She graduates from the Environmental Studies Program with a Master's degree in June.
- \*Allyson Woodard owns too much plaid and enjoys staring at stars she can't identify. She is a Master's student in the Environmental Studies Program.
- \*Tian Xie is the president of the UO's Chinese Philanthropic Leadership Association.

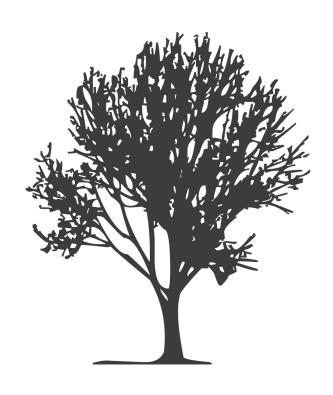


Photo: Tian Xie

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**Ecotone:** A transition zone between two adjacent communities or ecosystems. An ecotonal area often has a higher density of organisms and a greater number of species than are found in either flanking community.

Here, a reintroduced bison grazes behind a fence at Rocky Mountain Arsenal National Wildlife Refuge, a former chemical weapons manufacturing site, with the city of Denver and the Rockies in the distance.

