

SAGE



SAGE

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SAGE

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Collision

4	EDITOR'S LETTER Trevor Dolan and Karam Sheban
5	URBAN LIFE Emma Johnson
6	THROUGH TEARS, WE REMAIN HUMAN Allegra Lovejoy Wiprud
13	BOOM Kathryn Gougelet
23	TEN SLEEP Jesse Callahan Bryant
43	POISONED LAND, POISONED BODIES Krista Mangiardi
49	FISH AND RICE MAKE A BENGALI Tasneem Islam
61	SAILBOATS, SUBMARINES, AND THE SEA Pat Wiedorn
67	VALLEY ISLE GRAVEYARDS Paige Foreman
68	PEACE AND POWER IN JOSHUA TREE Anelise Zimmer
75	WASTE AND RECYCLING John J. Frederick

81	GREAT LAKES FISH FIGHT Peter Payette
85	REFORMIST // REVOLUTIONARY NOT A DICHOTOMY Manisha Rattu
92	SAVE THE BEES. SAVE THE WORLD. Katherine Owens
95	LANDFILL Dewi Tan
106	CREDITS

EDITOR'S LETTER

Trevor Dolan and Karam Sheban

Thanks to extensive human meddling, the planet is coming apart at the seams. It often feels like people have a pestilential touch; wherever we meet the natural world, we manage to kill something important. But in obsessing over our capacity for destruction, we often ignore healthy, productive, respectful contact between people and the planet. To explore these qualities of human interactions with their global biome, SAGE Magazine has devoted this issue to stories of collision. Collisions usually cause some harm, but they can also open space for growth and resilience. This edition will dig into that tension.

We put out the call for writers to share their work on environmental collisions of any form, and our submissions ran the gamut from the very literal—Pat Wiedorn's boat crashes into a wall—to the heavily figurative—Manisha Rattu writes of dueling activist groups fighting for justice. We hope each story, poem, and haiku will spark a new idea of how people collide with, over, in and around the environment.

We've also tried some new things with this edition's physical form. Rather than working with a professional designer, we've hired two students from the Yale School of Art: Luiza Dale and Tuan Quoc Pham. They had some fresh ideas for how we could improve your experience reading the magazine, which ranged from a sewn spine that lets the pages lay flat to artfully applied metallic typeface. SAGE has printed fewer copies this year; we invested the savings in these design elements that we hope will more fully immerse you in our authors' work.

Many thanks to our designers, Arts Editor Sam Corden, our authors, and the devoted team of editors who made this work possible. Their tireless work got this magazine to kick ass as hard as it does. Just bask in it. Take it all in. Enjoy.

URBAN LIFE

Emma Johnson

Wildlife can change
if the rate is suitable
but humans are fast

1 of 5, continues on page 21

THROUGH TEARS, WE REMAIN HUMAN

Allegra Lovejoy Wiprud

As a student of religions and ecology, the times I've spent in the tropics have afforded me a special affection for these places. While my own affections cannot compare to those of someone tied to a place by blood or birth, I've come to deeply appreciate the tropics for their role in ecology, religion, and culture—but also for their own rhythms and energies. As a Northeasterner used to extremes of light and dark, heat and cold, humid and dry, I love the sense of balance found in the tropics: the even day length, temperature, and flourishing of plant life that satisfies man and beast alike. Yet while I may find solace in stability, nature reminds me that no place is free from change.

One of the most meaningful concepts I've gained from my studies in ecology has been the role of disturbance. In an ecological sense, disturbances refer to weather, geological, or biological events that bring about change. Some disturbances are life-giving, such as episodic low-grade fires that rejuvenate forests or seasonal floods that nourish bottomlands. But some disturbances, called "lethal," make it very difficult for life to grow again. In common terms, we could call these disturbances calamities.

Disturbances can have a human aspect too, of course. Colonialism, war, slavery, the plowing-under and paving-over of entire ecoregions are disturbances wrought by humans on one another and on our world. It is during these worst of disturbances that we humans call out to God, seeking meaning, solace, and even vengeance in our pain.

The combination of human and natural disturbances manifested with full force this winter as the rainforests of Australia were ablaze in just the latest calamities sweeping across our world. I was fortunate to be spending my winter

in Hawaii, nourishing my spirit in the rainy forests of the northern Hawaiian Islands (while dutifully learning their ecological history, of course). So hearing about terrible wildfires sweeping across another tropical rainforest felt oddly close, despite 5000 miles of ocean between us.

While fewer than thirty humans are known to have died as a result of Australia's fires, entire towns have been destroyed, with thousands of fleeing survivors sheltering on beaches and even in the ocean itself. Australian ecologists estimate that some 500 million animals residing in these forests may have died, as animals have a hard time fleeing large-scale fires. Some species may now be functionally extinct. The scale and destructive force of the fires, burning nearly 30 million acres, has been exacerbated by drought and by chronic disinvestment in fire-fighting forces and disaster response capabilities of the Australian government.

And this, just a few months after anthropogenic fires in the Amazonian rainforest burned some 300,000 acres of forestland. When we add in California's Kincadee Fires and others, this has led many to say that 2019 was the year the world burned.

I've found myself asking, "Where is God in this?" What does *this* have to do with God's plan? It's easy to speculate, but hard to be right, at least on the level of human understanding. Sometimes, people view calamities as Divine retribution for human wrongdoing; sometimes, as a warning to change our ways before worse consequences unfold. Inasmuch as these things are understandable at all, I can try on the latter view better than I can the former. Warnings and foreshadows of future trends can be understood from a standpoint of science and politics, as well as of faith. Wildfires now are an indication of future trends: a warning to change, *before it's too late*.

Disturbances and calamities are not limited to ecosystems, of course; human societies also experience them. The onslaught of colonialism in the Americas and beyond was a calamity, still

unfolding today. In the United States, we face renewed threats feared to bring about calamities in our populace, our environment, and perhaps even our national existence itself. Today, as in the past, resisters call out *Awake, Change!* Looking back into human history, poets, artists, and mystics have named God's presence in these terrible moments, writing their shock, grief, and rage into history.

Lately I've spent time with the preserved words of ancient Jewish mystics and prophets who sought to warn their countrymen of what would befall them if they continued to perpetuate an unjust and violent society. Their words ring perennially as warnings against societal cruelty and exploitation. Jeremiah, among the most famous of the Jewish prophets, decried the selfishness and injustice of the elites in his time:

They have grown fat and sleek. They know no limits in deeds of wickedness; they do not judge with justice the cause of the orphan, to make it prosper, and they do not defend the right of the needy.
(Jeremiah 5:28)

As a result of this "wickedness," Jeremiah foresaw tremendous destruction. Yet his words carry no spiteful glee or vindication; instead, they are full of sorrow.

*I looked on the earth, and lo, it was waste and void;
and to the heavens, and they had no light.
I looked on the mountains, and lo, they were quaking,
and all the hills moved to and fro.
I looked, and lo, there was no one at all,
and all the birds of the air had fled. [...]
Because of this the earth shall mourn,
and the heavens above shall grow black.*
(Jeremiah 4:23-25, 28)





Although Jeremiah lived 2500 years ago, his warnings and lament ring today in a time when we, too, do our best to ignore the signs of our own pending downfall, wrought by our own hands. In a world made smaller by mass communication, the emotional pressure of calamities near and far weigh upon us from all sides. The burden of knowledge and grief is inescapable—making lament unavoidable.

The laments of Jeremiah and of many men and women whose words and names have not been recorded in history aided their fellow countrymen in coming to terms with the destruction that was taking place. Just as today, these must have included both people in denial of the injustices of their society, and people who were informed and longed for a better way. The poets of their time remind us that even when you can't change or prevent the injustices taking place, witnessing to them in word and song is a meaningful act of love. Doing so gives voice to the human experience between love and loss. Sometimes the bravest thing we can do during endings is to lament. As brave as it is to try to *prevent*, to *fix*, to *reclaim*, as things change so quickly, it is perhaps braver still to put these urges on pause and simply recognize the changes taking place; to publicly name what is being lost. Loss, of course, is both individual and collective. Yet as losses seem to accelerate, it takes all of us to name them.

Burning Australia has been on my mind when I've stood at the ocean's edge in Hawaii, its warm waves softly lapping my feet. On islands more than anyplace else, I am reminded that all life is the child of both fire and water. Fire—in the form of oceanic volcanoes—formed the rocks of these islands. Water, wind, and time eroded those rocks into soils. Wind- and water-borne seeds colonized those soils and brought them to life. The memory of fire dwells in these soils and in the patterns of exposed rock, yet it is the loving caress of water that once brought it to life. These waves, too, know love and loss. They have been lapping these shores for thousands of years. While they touch my feet with a soft caress

today, just yesterday they were lashing the shore, sucking at sand and rock with a hunger that was almost frightening. Perhaps that force, too, is one of love. As the love of the prophets manifested in a forceful cry to *Awake, Change!*, perhaps the ocean's lashing waves are an expression of her love. How much force do the waves need to leap up rocks and erode them into sand and soil? How much force does the ocean need to leap up the shore in Australia, cooling its fires and embracing her beloved children there?

Perhaps that's where God is in this, too: in the witnessing and the naming that are acts of love. Perhaps He is in the soft caress of wave and breeze, acts of love, and in the fierce lashing of waves and raging of fires, bringing an end to the unjust societies as hard as stone. We can experience this ferocity both as deep pain and as blessed release. To those of us who stand by, watching, praying, or working to halt our society's injustice *before it's too late*, we must acknowledge the pain and grief of endings, with love.

BOOM
Fossil Fuel Collisions
 Kathryn Gougelet

Fracking | Accident

The driver of the frackwater truck swerved because there was a little girl walking along the highway. She was walking eastward early that morning, not precisely on the shoulder, swerving in and out of the edge line the way she does with thick, dulled crayons. She might have been chasing a ball or a cat. From my desk now I can only imagine the terror of the encounter with the truck—the driver, eyes bloodshot, mega coffee thermos in hand, squinting at her approaching silhouette and recognizing her as a daughter, friend, sister, little girl. And her, too, looking up at the oncoming vehicle and seeing the massive grill of the machine, and above that a pale white face in the window. A father, an uncle, a scared man, she thought, before he jerked the wheel and swerved into the guard rail. The enormous truck bumped and skittered its way violently down the hillside, past a house where two other little girls sometimes played in the yard. The truck crashed in a ditch just south of the house, just within eyesight of the man who owned the house, Tyler Rivers, who was on the lookout for this sort of thing.

When I think of fracking, I think of acceleration. I think of Tyler throwing open the door to his house and running towards the truck. I think of the rate at which the driver went from speeding and scared to lifeless and still, which is, despite the haste of Tyler's running, precisely how he found the driver in the cockpit of the vehicle. He was a young man, maybe just out of high school, offered, like the others, a salary of \$80,000 to drive this truck—with haste—to fracking sites across the highways

that roll through West Virginia, Virginia, Pennsylvania, and Ohio.

About five thousand feet beneath Tyler and the body, the Marcellus Shale Rock formation sprawled its old, quiet seams through the earth's stratum. From the surface, you wouldn't know this. Tyler knew not only that the hard rock was there, but that it contained innumerable pores, some just as wide as grains of sand, all filled with lucrative natural gas. The gas, if you were to snake your way down into the deep layers of the earth, would appear an innocuous vapor, colorless and clear in its small pockets. When ignited, though, the vapor burns hot and bright.

Around the time of the crash, Tyler's neighbors were asking questions about the increasing fracking activity in their backyards. *What chemicals do companies use to perform the fracking? Who gave you the right to frack in my backyard? Could any of this digging underground contaminate groundwater? Is this procedure safe for the workers who have to transport this stuff?*

As for chemicals, most companies use some kind of agent that makes the water slick, as well as a mixture that will kill bacteria that live deep underground before they come up to the surface. According to *Inside Climate News* reporter Neela Banerjee, under a policy referred to as the "Halliburton Loophole," companies do not need to disclose which chemicals they choose for these functions, or at what concentrations. So Tyler can stand beside the highway and watch truck after truck rumbling down the road with unidentifiable (at least to Tyler) mixtures of "frackwater" or "wastewater." Roger Drouin at *Yale Environment 360* reports that waste fracking water from deep in the earth contains arsenic, chlorine, and radium, each of which might leach through

drinking water into the bodies of community members. Tyler and his neighbors have to rely on smell and taste alone to sense if their water has been contaminated. It can be hard to know how to test their drinking water, let alone what to test for. All of that is to say that on the day that the fracking truck crashed in Tyler's yard, he had no way of knowing the contents of its quiet belly.

As for the safety of fracking procedure, the driver's crash into Tyler's yard is telling. Beyond the rigs, which are often operated by workers with varying degrees of expertise and training, the road accounts for a large portion of fracking-related injuries and deaths. Ian Urbina at the *New York Times* writes that between 2003 and 2008, one-third of deaths in the oil fields were caused by driving accidents. Sometimes the driver survives an accident, sometimes they do not. Sometimes a crash involves the leakage of unidentifiable frackwater being transported in those trucks, sometimes the cargo remains contained; unscathed. As for the driver in Tyler's yard, he swerved because a child suddenly appeared in the road, but he was also likely sleep-deprived, likely going fast enough that seeing the child would have been difficult. He was possibly, in order to meet the demands of his long shifts, on some kind of stimulant.

In a lecture I attended on fracking in the Bakken Fields, geographer Bruce Braun told the audience, "if you want to learn about fracking, look in the gas stations around fracking country. You will find so many caffeinated drinks. That says something about the pace of life in this industry." Braun tracks accidents in the fracking fields, and suggests that the rate at which natural gas is coming out of the ground relates to the accidents and the pace at which fracking workers have to live—the pace at which the

industry operates to extract the gas from the ground and sell it as quickly as possible. I think often about the collision of the truck into Tyler's life, because hearing the story made it feel like the truck had collided with my own life, too. For Tyler, and soon, in turn, for me, the story would serve as a confrontation with the pace of our own lives—a pace driven by vapor burning bright.

Tyler | Fracking

I had met Tyler years before on a visit to coal country. When he learned I was in West Virginia for the month, he invited me to visit his town and learn more about the fracking boom that had transformed his community over the last few years. I couldn't turn down the invite. I had heard the industry talking point that fracking burns more "cleanly" (emitting less pollutants) than coal, but a visit with Tyler could help me start to understand the full impacts of fracking, and would provide context to the decline in coal that I had been tracking elsewhere in West Virginia. The market had spoken: coal was dead because natural gas was cheaper. West Virginia's industrial muscles had shifted northwards with the gas, and so, for just a day, I would too.

I wish I could tell you more about Tyler, but I can't divulge too many details. I'll say that he's an environmental and public health advocate in his spare time, but he asked me to keep all other facts about him, including his name and his town, anonymous, because any overt anti-fracking sentiment would get him fired at work. As it turns out, the sentiment behind Governor Jim Justice's new motto about welcoming fracking wholeheartedly to the state, "No more saying no" had permeated into an informal code at Tyler's workplace, too. Saying anything against fracking was saying *no* to West Virginia's

industrial future. And so many people in the state, all the way down to Tyler's employer, held fast to the idea that West Virginia needed, despite the risks of fracking, despite the frightening acceleration of industry, despite all of the unknowns, to say yes.

The secrecy with which I needed to proceed frightened me, because it showed just how powerful the industry presence was in the state when I met with Tyler. He could be fired for talking to me, a writer visiting from the desert with an *environmental* slant. The kind of person who, despite Justice's new motto, might just say *no*.

We walked through Tyler's living room and into his corner office, and he offered me a seat behind his chair so that I could see his computer screen. His toddler daughter, who had announced herself as Disney's Moana when I walked in the door, excitedly wiggled her way up to sit in my lap and watch her dad at work. Together, we watched the mid-thirties man, big-framed silhouette, shoulders sloped, leaning close to the screen as he clacked away at his keyboard, clicking into files, following chains of commands that seemed by the assuredness of his mouse like well-worn pathways. He was clearly caffeinated, turning around to us with bright and wide blue eyes as he talked about his vigilante role tracking the industrial boom in his free time.

"The fracking came in heavy here," said Tyler, as he opened up a map that he had created on Google Maps to geo-locate the impacts of the fracking activity. "Not as heavy as in the Bakken fields of North Dakota, but heavy enough." On the map he had plotted a series of small purple dots, each representing a drill pad, the precise locations at which a probing drill initially pierced the ground. From each of these dots,

purple spindly fibers stretched outwards like the legs of a water strider. The long purple lines all faced the same direction, and Tyler explained that they represented the horizontal drilling that happened at each drilling pad. The lines followed the same angles because they followed the natural striations in the shale rock, and so the deep horizontal drilling was occurring with the grain of the rock, so to speak. If I squinted, the series of lines and nodes looked like cells dividing fast: *prophase, metaphase, anaphase, telophase*.

He then clicked and an additional digital layer appeared atop the purple dots and lines: a red layer of dots that represented chemical spills and civilian complaints. The map was speckled with these dots.

"Some of the companies do a much better job than others," he said in a gesture towards fairness to the industry, "in terms of violations."

Tyler then started to recall out loud the civilian complaints at many of these locations, people calling him wondering why their backyard had turned into a parking lot for a new fracking well, people wondering why a stinking pile of chemicals that looked like snow showed up on the hillside, why approaching the apparent snow pile gave them headaches. Why it never *melted*. Others wondered why their drinking water started to taste like licorice, why they had stomach pain, why they felt nauseated.

His daughter, still seated in my lap, looked along with me, clearly excited to be part of dad's office time. How much of this discussion—of trucks crashing, of chemicals spilling, of frantic neighbors calling Tyler—would drip its way into her bright little mind, into the world that she was making for herself?

The rest of my day with Tyler now feels like a reel of flashing images when I try to recall it. First slide: Tyler offers to take me to see some of those red dots from the map. I am in Tyler's white pickup truck driving up a hill upon which metal tubes and pipes and spigots and knobs wrap themselves around a compressor station where the gas is stored and liquefied before it gets transported to power stations. Men behind the wire fencing of the station reluctantly return Tyler's wave as we drive by. No one came up to these frack sites without permission, and we didn't have permission.

Next slide: we careen down a hill and through brilliant green deciduous forests as Tyler talks about the "fugitive" methane that leaks from abandoned well pads all over the landscape. To think that there were probably hundreds of leaking wells out there in the fields, each contributing to climate change without anyone necessarily accounting for them, alarmed me. Part of the reason why fracking has exploded is because it supposedly emits less CO₂ than other fossil fuel sources when burned. But the escaped methane, called "fugitive emissions," changes that calculation. "You wouldn't believe how many leaking wells there are" says Tyler.

The images continue to flash. I look out the window to see a snapshot of workers in hard hats hauling and connecting segments of a wide green pipe spilling down a hillside and across a field. How long until the pipe starts transporting gas? I look over at Tyler and he is unwrapping a gobstopper. He says a candy-garbled "out here it's like the wild west" and explains that companies have moved with such haste, communicated so poorly about their plans to develop their operations, that several pipes have run into each other, causing spills into the West

Virginian fields and soil that Tyler would soon detect and label on his vigilante map. He adds: "Hardly any of the existing regulations get enforced out here."

Throughout the day I listened most closely as Tyler discussed the neighbors and fellow West Virginians who called him to report new industry transgressions, each soon becoming their own red dot in a file on Tyler's computer. At first, he said, he was shocked that they reported to him. He was especially shocked by a case in which a fracking company created a parking lot in a man's backyard overnight. The bleeping of large vehicles backing up, along with their incessant rumbling in and out of the parking lot, filled the man's house at all hours of the night. And large, bright stadium lights flooded his windows so that night never really came. One light pointed directly into the window of his son, who had a traumatic brain injury from which he was trying to recover. That case really got to Tyler. He tried writing a letter to the *New York Times* about it, but no one ever responded. Eventually the company moved on from the man's house, the parking lot emptied as if it had never been there.

He said that, as he attempts to advocate for his neighbors, he has become demoralized. "I call it EMT syndrome," he sighed. "Like when you've seen enough blood and gore it doesn't bother you anymore."

Still, like an EMT, he remains diligent, invested in a healing procedure, sitting at the computer late at night, trying to add more layers on to the map, trying to document the rapidity of industry against the relative slowness of human lives. He told me that he dreams of showing this map to some of West Virginia's decision-makers, and then taking those decision-makers

around to all of the red dots, to the homes and backyards, "so that they can see all of this for themselves."

Coal | Fracking

When I was conducting research in a former mining town, I spent an afternoon with a retired miner, Seth, in an old college library that was officially closing down because the college, nearly bankrupt, was moving to another town. Two librarians hustled around us packing books up into boxes and taping price tags onto pieces of furniture to sell. The tags marked desks and bookshelves all over the library. Seth brought me over to a shelf of books that hadn't been boxed up yet, pulled an old blue covered one from the shelf, and handed it over to me. "Look at the spine," he said, "you see where that was published?" I ran my finger down the frayed papery spine, noted a title related to mining engineering, and, imprinted in gold, was a label that read the name of the small town in italics.

"Right here in this town," he explained proudly, recalling the town circa 1965, when coal was booming. "Everything was happening here then. We trained the best mining engineers, we had hundreds of students in town, we published our own books. Coal was streaming out of the mountains all around us like you wouldn't believe, filling every train car out on the tracks."

We were standing next to a set of large windows overlooking the town and he walked over to stand close to them, gesturing that I follow him. The blue-white light illuminated his leathery skin and the deep lines around his eyes. He pointed out of the glass to the sites of a former bowling alley, comic book store, diner, and convenience store. I looked over at him and he was pointing out

to the town, touching his finger to the windowpane. I realized as he spoke that he was creating for me a map of his memory, of a world that that he once lived in, but that had slowly decelerated—a world that, like all worlds, was ultimately brief.

Over the course of fossil fuel history, this much is true: for every boom there is a bust. But, if I am to really try to understand the lives of people like Seth who lived in industrial denouement, I need to wrap my head around boom-times, too—around lives in the fleeting peak of immense capital, relevance, excitement, and danger; slippery and ephemeral wealth. In West Virginia, for miners like Seth, the boom-times manifested in a bowling alley and a convenience store. But most of the wealth from booms left the state, evaded long-term investment into the lives of the people who extracted it. Instead, the wealth moved into the pockets of absentee land owners and absentee investors, like the current secretary of commerce, Wilbur Ross, whose net worth in the billions derives in part from Appalachian coal.

In 2003, when Kentuckian Erik Reece realized that the mountain he loved was slated for strip mining (A.K.A. mountaintop removal) by Leslie Resources (in which, incidentally, Wilbur Ross was a major investor), he used the term "acceleration" to describe what he was seeing on the landscape over the course of a year as Leslie Resources' machines and laborers proceeded to wrench coal out of the mountain's strata. Reece notes that his mountain was named as if presciently: "Lost Mountain." He also suggests that we should think about such fast mining as the warping of deep geological time. Seams of coal that had taken millions of years to form took only a year to uncover, strip away, and send around the world. In a year, ecosystems brimming with immense

biodiversity were bulldozed. Reece's mountain was decimated.

As new mining technology and deregulation swept through his landscape, he contextualized the moment in the broader scheme of Appalachian history: "the story of the last hundred years" he writes, "is the story of acceleration." He quotes historian Henry Adams, who wrote an essay in 1905 titled "The Law of Acceleration." Reece paraphrases Adams as he muses about the nearly exponential growth in coal extraction and consumption between 1800 and 1900, writing, "there was, Adams admitted, a chaotic upsurge, a 'vertiginous violence' associated with such acceleration [accommodated by the use of fossil fuels], but he believed the modern mind could harness that force and use it for good." In Adams' own predictive words for what fossil fuels would do for people in the future: "every American who lived into the year 2000 would know how to control unlimited power. He would think in complexities unimaginable to an earlier mind."

To this, his mountain all but gone, coal seams extracted and exported from the state, Reece responds: "but alas, we don't [know how to control unlimited power], and we don't [think in complexities unimaginable to an earlier mind]." In other words: we are not quite capable of understanding the power that coal (and other fossil fuels) has brought us (the power of illumination, the power of combustion, the power of altering the climate). And, we are not quite capable of wrapping our minds around the complexities that these fuels bring to our lives (altering the climate, environmental contamination, the uneven spread of that contamination among mostly marginalized communities and people of color).

It's worth asking who the "we" might be in Reece's assertions. Reece is directly affected by coal extraction. He lives in a region in which the memories and legacies of a fossil fuel boom are very recent. I am less confident that a broader "we," perhaps "we" who are removed from the sources of our energy, are capable of wrapping our minds around the gravity of this particular industrial moment, in which not just coal, but natural gas is now illuminating our light bulbs. We are less likely to wrap our minds around the consequences of long-term impacts to drinking water, the consequences of a man staying up plotting industry transgressions in a database, the consequences of, not just one, but dozens of trucks veering precipitously off roads in otherwise quiet hills.

I have less confidence in that broader "we" because that broader "we" includes me, and I have tried and truly struggled with making sense of my day with Tyler. I have not touched my notes from that day for months. Out of fear, I think now, fear of the frenzy of that day, the pain of knowing that people might be calling Tyler right now with the next spill in their yard, the next leakage of fracking chemicals into their backyard pond, the next headache, the next illness. I am afraid I can't sufficiently push my mind into the relentless motion of extraction. Compared to the simplicity of the act of turning on a light switch, the complexities of impact are difficult to account for. In this industrial moment of connecting to the grid, in this acceleration, it is not only possible, but *easy*, for me to think of the frenzy of that day and then forget, put my notes away. I slip into the illusions of consumption, the illusions of comfort, illumination, the boom. When I remember, though, I feel like it is me setting my fingertips against the window overlooking my world, and that the world I see beyond the pane is one already gone.

Traffic | Self

I have recently started watching pigeons as they watch traffic. They are abundant around my current home in Tucson: pigeons lined up tidily along a lamp post. They perch above a local Thai restaurant, above a Safeway, above the bridge under which thousands of bats roost in the early spring, the bridge from which those bats flutter wildly into the pink streaks of a desert sunset, searching with their tiny clacks of echolocation for small bugs to eat. Occasionally I'll see so many pigeons in a line that one of them will have to perch on the sloped bend in the streetlight. They slip on the slope and flutter up again, clamoring with scaled feet against the metal for a place to stand for a while. They are steadfastly committed to these posts, from which they can watch the city traffic whirl.

They are astonishingly attentive. Most of their heads are turned, like the surveillance cameras they perch next to, in the direction of incoming traffic. *Bird-brained surveillance*, I once wrote in my journal. From their vantage, they can survey the pace of the human condition.

I've made a habit of watching them on my bike ride to school. I follow their beaked heads down to the traffic, to cars clunking over small gaps and cracks in the road. Sometimes, I am among these cars, too, speeding along to any number of places, buying a filing cabinet or prescription drug, combusting and exploding the gas in my engine for a pack of cookies from Trader Joe's. From my bike, closer to the pavement, I can see that the white lines of the crosswalk have become caked with hasty rubber smears.

When I think of traffic, as the pigeons may or may not do, I think of weight. The

evidence of a car's weight is all over the pavement. Cracks and pores and fissures from the steady movement of vehicles. I find it hard to believe exactly how many vehicles can process through the intersection in the few minutes I wait there on my bike. Each car weighs, on average, approximately as much as a small rhinoceros. I pause for a moment, look around at my fellow bike commuters, also waiting for our green light, texting under bike helmets, laughing with friends, and think, *how is this not more strange to us?*

How could this not be magic, what the birds and I watch—we are watching the collapse of time! Thousands of years of fuel reserves powering rhinoceros-sized containers across the road. We are watching the collapse of time and energy and labor required to get the fossil fuels to us, the entire series of events that occurs between extraction and the lightness of our foot on the pedal. Literary scholar Rob Nixon suggests that we collapse time by *borrowing* time, too, from the people who will come after us, children, grandchildren, people who will be hardest hit in the global south, current and future climate refugees and communities who will contend with irreparable contamination and ecosystem damage from fossil fuel extraction. There is more to any intersection than we might initially think.

As for me, I keep waiting at the same crosswalk. What would it mean to confront the moments I spend there as the red seconds flicker by on the light post? Maybe I should groan. The poet Brenda Hillman suggests that as participants in an energy system that has violent flaws, we should groan at the gas station when we are filling up our cars. To groan is to recognize the pain we're causing in consuming this resource, the weight of this resource. I haven't groaned yet... I am

far too shy to try... yet. But every time I fill up my car, I *think* of the act of groaning, of what it would be like to knock my head back and moan at some frequency aligned with the pain I must be causing in the world. Instead, I keep the pain private, groaning inwardly, as so many of us must do, in precisely the way that energy companies hope that we'll do: carry this fragment of pain as if it were only our own.

I recently saw an article in the Guardian by a seventy-three year old grandmother who has started fighting against fracking in Lancaster county in the U.K. She talks about chaining herself alongside her son and friends to machinery at a fracking site near Blackpool. I skimmed the article and noticed a note in the comments section, which read, "wait til someone tells her that her house runs on natural gas." I have heard various iterations of this comment over the years among former miners or current fracking workers who genuinely wonder how the world would operate without fossil fuels. Answering that *how* will have to wait for another essay. For now, what I want to know is: how do I, like the grandmother fracking activist, hold the irony of consumption alongside the dreams for the just, equitable, safe, and healthy future I want? How do I respond to those accusations that I, too, am a user of these resources? Well, perhaps I just say this: you're right, I am.

It seems appropriate that the crosswalk would force me to pause before a blur of cars to see not only what I am up against as a person trying to make sense of planetary collapse, but also, to see all of what I am in this moment, too: I am the biker, the pedestrian, the car, the driver, the rubber smears, the pigeons.

Past | Future

People speak about natural gas as the fuel of transition, the fuel that will finally end the fossilized energy era, the *bridge* between an energy past and an energy future. As just over thirty percent of electricity is still coming from natural gas in the U.S. right now, our national footing remains alarmingly on that bridge. I like to think that I saw beyond this bridge at a solar power rate case hearing for Tucson Electric Power in Tucson, in which dozens of community members stood in front of an all-male, all-white board of state corporation commissioners asking to reduce the costs of renewable solar power through the utility. The board would ultimately vote against their constituents' wishes, but the state record permanently shows that, one-by-one, community members went up and declared their desire for solar into the microphone. For environmental justice, for equitable futures. One-by-one, they would leave the meeting in cars and on bikes, traveling back to fossil-fueled homes in which I imagine them lying awake as I did, all of our minds spinning relentlessly around the worlds we wanted.

As landscapes are cleared
competitive invasives
fill the open space

2 of 5, continues on page 47



TEN SLEEP

Jesse Callahan Bryant

On a hot day in the summer of 2018, I woke up to red and blue lights saturating the white dolomite walls that loom over the Ten Sleep Rock Ranch, the new rock climber's campground in the canyon just upstream of the town of Ten Sleep, Wyoming. I had been in the area for a few weeks, but this was the first time I'd seen any signs of law enforcement. The lights shut off as the cruiser rolled to the back of the new campground.

The police report later said that ten shots were fired while the Rock Ranch's controversial founder, Louie Anderson, was dangling from a rope, bolting yet another route. The rock, Bighorn dolomite, splintered like shrapnel around him. No bullets hit his body, just the skyscraper skeletons of the coral reefs that used to frequent this desert. Perhaps if he listened a little closer as the bullets riddled the limestone around him, he would have heard them whisper, *you are not welcome here*.

For years now living in Wyoming, I'd meant to see Ten Sleep for myself. However, in recent years, friends in the area have said that it's swarming with climbers—climbers washing ropes in the public “splash pad”, climbers using the sink in the public library as a shower, and climbers mining all of the WiFi bandwidth in the area. One local barista named Talena told me that the problem for her is mostly the exclusivity. “If you're not a rock climber then... oh... don't want to talk to you anymore.” Although testimonies from Ten Sleep residents vary widely, the central point is the same: a sense that they'd lost control of their town. Too much, too fast.

Like many small Western towns, each chapter in Ten Sleep's history has begun the same way: power and wealth coming from elsewhere with a new way of doing things. After a few weeks in Ten Sleep it became clear that a new chapter was well underway. A recent dramatic Facebook post noted that this

current conflict over climbing, “is about a battle for nothing less than the Soul of Ten Sleep.”

“It was not an accident,” a climber at the Rock Ranch told me of the shooting, “and now half of the people in town don’t believe him [Louie Anderson], which is great because now everybody just picks what they believe in the world these days, and the other half of the people don’t know what to think.”

The police have no leads, no suspects.



From Yellowstone National Park, if you point your car east toward the Bighorn Mountains and drive across the moonscape desert of northern Wyoming for two hours, just when you think the road should begin climbing toward the alpine, it abruptly drops into a valley invisible to any distant vantage. As the road descends, the color pallet morphs from black and white to red and green like *The Wizard of Oz*.

After passing a green sign that reads “Ten Sleep, Pop. 260” you will come to the sort of Wyoming town we’re taught to see in the imagined American West: one general store, two bars, four churches. Most people just pass through on Route 16 on their way to and from Yellowstone. But if in the thirty seconds it takes to drive through Ten Sleep you slow down, pull over, and look closer, you’ll find some things of note.

You might see that the dusty abandoned lot on Main Street is not overflowing with weeds, but kale. You might realize that that homeless-looking man with a long, greying beard plucking the banjo outside his trailer is pretty good. His name is Jalan, and he is a national banjo picking champion.

Only outsiders think Ten Sleep exists in the clichés of Western mythology. In this population of 260, there are engineers, miners, artists, ranchers, small business owners, and a handful of professional athletes.

If you walk around the corner to 3rd Street, you’ll find a small home with a garage that’s rapidly being reclaimed by vines. The owner is a friend of mine named Mark Carter. Mark and I met a couple of years back in the high-stakes skiing and snowboarding scene of Jackson, Wyoming. Although he spends a good chunk of the year helping maintain his family’s renowned 40,000-acre cattle ranch, Carter Country Meats, the inside of his garage is a museum dedicated to his ongoing career as a professional snowboarder. The walls are lined with more than a hundred snowboards, many that never made it to market. Next year’s YETI and The North Face products are scattered about. An open canister of Daneson toothpicks—his toothpick sponsor—lies on the floor like a beer from last night. The ceiling is one gigantic American flag that casts a red and blue hue onto his face as he works on his mountain bike.

I asked one day what he thought about the vanloads of Patagonia-clad Rock Ranch-staying rock climbers coming to town. He looked me dead in the eye, and after shifting his ever-present toothpick from left to right, murmured, “It’s a goddamn mess.”



Wyoming is preparing for two simultaneous crises: the collapse of coal and the non-viability of small family ranches. The majority of the state’s tax revenue comes from extractive industries. In terms of coal, Wyoming produces more than the next top seven producing states combined. A single mine, called Black Thunder, produces about as much coal each year as the coal-famous state of West Virginia. As the demand for coal shrinks, so does the financial viability of mining operations and Wyoming’s tax base. And while coal is the economic powerhouse of the state, cattle ranching is the founding mythology, the cultural glue.

Here too there is a sad decay. Small family ranches are in most cases no longer financially sound operations without

government subsidy. Those who continue the work sit in a dissonant suspension between deeply held myths of rugged individualism and full reliance on the government. In Ten Sleep, parents generally discourage their kids from getting into ranching. Mark told me sadly, “We’re a dying breed.” There is a particular *Grapes of Wrath*-like collapse underway, where many of these small ranches, “will be a part of a great holding next year, for the debt will have choked the owner... Only the great owners can survive, for they own the canneries, too.” As these core Wyoming industries become economically obsolete in our rapidly globalizing world, whole cultures will be eradicated and new ones elevated.

In 2016, then Governor of Wyoming Matt Mead formed the Outdoor Recreation Task Force, “to assess Wyoming’s outdoor recreation economic sector, needs for now and the future, relationships with land access, and the possible creation of an Office of Outdoor Recreation.” In 2017, The Wyoming Outdoor Recreation Office and Wyoming State Parks began the Bighorn Basin Outdoor Recreation Collaborative, charged with, “exploring ways to promote outdoor recreation, develop new recreation opportunities, and create a plan to enhance the Bighorn Basin’s recreation-based economy and quality of life.” This was the first collaborative of its kind in the state’s history, which means that in the Bighorn Basin, where Ten Sleep lies, the writing is on the walls.



I grew up in Upstate New York near several towns that have never recovered from their early industrial heyday and decline. When Eisenhower’s Interstate Highway System made the Erie Canal obsolete, a long list of cities that were once on the main thoroughfare connecting the East to the Midwest and beyond rapidly collapsed.



When I was young, I learned to climb at the Albany Indoor Rock Gym and after college spent four years calling my car and Wyoming home. I am a rock climber. So, when Mark told me that *my* community was ruining his town, it felt personal. We stayed in touch from across the country while I was in graduate school, and at the end of my first year, I thought the only way to truly understand what was going on was to embed myself in the community. In May, I got in my car in Connecticut and, after picking up Interstate 90 in Massachusetts, drove west—Albany, Rochester, Buffalo, Cleveland, Chicago, Madison, Sioux Falls, Rapid City, Gillette, Exit 58 at Buffalo, up over the Bighorn—to the Ten Sleep Rock Ranch.



The Rock Ranch was the recent brainchild of Valarie and Louie Anderson, a wealthy Orange County, California couple who moved to Ten Sleep in 2016 to fulfill their dream of “living a slower pace and semi-retiring into a lifestyle of camp hosting” and to “begin another chapter in their legacy of climbing and crag development.” For Louie in particular, the potential for nearly unrestricted climbing development was enticing. Sitting with Valarie one day under the pavilion she told me that they almost moved to Chattanooga, Tennessee but at the last minute chose Ten Sleep. It was quieter.

Back in California, Valarie taught yoga and Louie owned a series of rock climbing gyms, which he still manages. They both live publicly healthy lifestyles. Louie’s Instagram is filled with action shots of climbing and healthy meals, and Valarie’s mostly time-lapses of yoga routines. Although well-intended, the style and pace with which they have entered the Ten Sleep community have not gone unnoticed. Nothing goes unnoticed in Ten Sleep when you’re new.

After you drive under the big wooden archway that reads *Ten Sleep Rock Ranch*, you’ll notice the gravel road splits and links more than a handful of campsites and small cabins. Fruit is often strewn on the ground, and the air smells sweet and sweaty. It used to be an apple and cherry orchard where Ten Sleepers would pick fruits in the late summer and fall. Now there is a bathhouse, public refrigerators full of La Croix, a small rock climbing gym, and a pavilion with WiFi and outlets continuously connected to an assortment of unattended Apple products. If you’re there midday, you’re guaranteed to see at least one athletic 30-something in flip-flops wandering aimlessly and shirtlessly. There are more of them every day.



Most mornings, I would wake up and follow Route 16 from the Rock Ranch down into Ten Sleep. Where mountain meets desert is a hidden topographical paradise similar to the famous sandstone national parks of Southern Utah. Petroglyphs in these red canyonlands go back more than 10,000 years.

Some days I would make the drive to the only general store, Dirty Sally’s, which quickly became my makeshift office. The building’s brown wood siding is growing pale from the sun. Leah and Wes, the new owners, recently repainted the window frames a beautiful white. A large sign that dangles perpendicular to the storefront and flow of traffic reads in plain font, “ICE CREAM,” “COFFEE,” “SOUVENIRS,” and “GROCERIES.” The once-prolific bison on the red, white, and blue state flag dances in the wind like a memory.

Inside it’s cold and dark, except where the dusty sun shines through the big front window. Talena is behind the counter in a *Star Wars* shirt and choker necklace, handing brown caramel ice cream in a fresh waffle cone to an older cowboy. He smiles through his grey mustache and thanks her in the sincerest

way. He sneaks a quick lick and takes his cone to the circular wooden table next to mine, where he and his old cowboy friends share ice cream instead of coffee every morning and are a happier bunch than any I've known.

After a few weeks, thirty iced coffees, and twenty frozen burritos, I found myself chatting with Talena about the town and climbers. She said she didn't want to talk at work, but that if I wanted to go on a hike with her and her kids later that day, she'd love to chat.

On top of the canyon rim above the Rock Ranch, we rested in the shade of a huge Ponderosa. We were both sweaty and tired. The boys were not. Talena pulled out a cigarette.

"You want one?"

"Nah. I'm good."

"That's smart. Hey boys, go find me some fossils!" The two boys took off, and after a flick of a lighter, a quick puff, she asked, "How many of them have actually hiked this trail? Or to the lookout?"

"The climbers?"

"Yeah."

"I don't know. Not many."

Between drags on her cigarette, Talena told me that her dad was from New York and her mom from Iowa. "We came here for some time in '82 and '83. My parents fell in love with the area and spent 23 years trying to get back. My sophomore year we moved. It was hard. I was 14 with a tattoo, listened to heavy metal, got four left feet." She said it took more than ten years before Ten Sleep accepted her family. "But when we left for school and came back, nobody seemed to remember that we ever didn't live here."

We sat quietly for a bit and I closed my eyes. There was a light wind that smelled like sage and cigarettes. I could feel some salt in my eyes. It was silent and warm, except the lightly audible echo of the creek deep down in the canyon.

"You know, you don't see the deer anymore down there. You

don't see the elk. You used to see them in that area below the cliffs where there are so many routes now."

"You hunt?"

"Yeah of course! We subsistence hunt and process all our own. I think last year we took six deer and I've already run out of meat. I'm counting down the days until my oldest is old enough to get a license." Talena smiled with sadness, a sort of preemptive nostalgia, as her oldest came tearing around a tree with a gun-shaped stick pretending to battle some imagined enemy. No fossils.

It was clear that it was precisely these sorts of informal economies and cultures that were at stake these days in Ten Sleep. I asked if she'd heard about Louie getting shot at.

"I hadn't heard of that happening until I overheard you talking about it the other day. Those folks haven't made any attempts whatsoever to reach out that hand, to say 'how can we make this impact less tough on you guys' you know? There's a reason for the animosity."

We sat in silence again. After a bit, Talena gestured at the silent space in front of us, and added, "We moved to Ten Sleep for this."

Down below, the Rock Ranch buzzed from the cars, communal refrigerators, and WiFi routers. Looking back at that hike, neither Talena nor I knew the half of what was going on down there.



The Ten Sleep Climbing Festival is a wholesale celebration of the climbing industry. What used to be an informal party of friends with beer, a bonfire, and a guitar has become a meditation in upper-middle-class consumerism. Hundreds come from Boulder, Salt Lake City, and beyond to participate.

The scene on June 30, 2018 was a carnival of tents covering the lawn outside of the Ten Sleep Brewing Co. A crowd of



athletic millennials and their dogs foraged for the best of next year's gear. The event was primarily planned by Valarie Anderson, the Rock Ranch manager who had recently also joined the board of the Bighorn Climbers' Coalition.

A few confused locals wandered about, perhaps realizing for the first time that things were different than they used to be. I spent my time asking passersby to fill out my surveys about how they were spending money while in Ten Sleep. It turns out that climbers spend relatively little in Ten Sleep, mostly on campsite costs and gas. Many bring their own food for the entire trip. If new businesses are to spring up in Ten Sleep, climbers are most excited for those to be locally-owned restaurants. After a handful of surveys, boredom drove me to the bar. I was waiting for evening, when The North Face rock climbing athlete Matt Segal was supposed to give a talk.

Matt grew up in Florida and got his start in competition climbing before taking his world-class talents to the planet's hardest climbs. Segal is a remarkably thoughtful individual, with degrees in Psychology and Religious Studies in Tibetan Buddhism from Naropa University. More than a decade ago he started coming to Ten Sleep seeking out some of the area's hardest climbs, but what has kept him coming back each summer is his friend, Mark Carter.

Matt and Mark have been friends and The North Face athletes together for years. A few days before the festival, I got a text from Mark that read, "Matts here. You should come by!"

I walked into Mark's cool dark house to find the two of them catching up over a La Croix. I listened to them talk about internal The North Face drama for a while and Matt spoke at length about his new instant coffee company, Alpine Start. "It's super weird to be the owner of a multi-million dollar company now, like overnight. I'm learning a lot."

Matt asked me what my project was about, and I told him I was looking at how climbing has been changing the area and his

ears perked up. "It's changed a ton in the past few years. Oh my god! I'm super intrigued."

He asked me what's up with the new place called the Rock Ranch.

"A couple named Louie and Valarie opened it up in 2016."

"Oh, Valarie is the one organizing the Festival."

"Yeah."

"Who's Louie?"

"Louie Anderson."

"Louie Anderson is here in Ten Sleep! Are you serious?"

"Yeah, he owns the Rock Ranch. People say he's been developing a ton of new routes in the area. Also, a few weeks ago he got shot at up in the canyon while bolting!"

"Oh man, Louie Anderson..."



Louie Anderson had been interested in Ten Sleep climbing development long before he purchased the Ten Sleep Rock Ranch. In an April 2006 *RockClimbing.com* forum, Louie noted that Ten Sleep was "the best sport climbing I've experienced or seen in Wyoming" before adding that there was, "endless new route potential at just about any grade you might be looking to bolt."

In the same post, he also wrote that Ten Sleep was, "somewhat of a secluded spot, but I predict huge things for the future of the area and its popularity for attracting out of state climbers." The goal for Louie has always been to attract outsiders to the area. However, the desire to attract climbers and thus *be known* is not what makes Louie controversial. It's his ethics regarding two widely detested techniques in rock climbing development: chipping and gluing.

In a November 2003 online post, Louie momentarily pulled back the veil of purity on his climbing development. "Many

people at crags all over the world climb on drilled holds without realizing it. Many of the crags around Lander have drilled holds, some done to look more realistic than others.” This process of creating unnatural holds is what people in the rock climbing community called “chipping”, or drilling and chiseling handholds into the rock to make particular sections easier, or even climbable at all. Three years later, Louie publicly offered advice for gluing rocks to a wall when he wrote, “Assuming you do a good job of cleaning the rear of the stones you’re gluing, there will be much greater surface area to attach on an uneven rock surface.” Louie’s words jarred many members of the climbing community, who believe in the purity of the mythologized wilderness.

For generations, mountaineering and rock climbing in the Western world have been a way for members of an upper class of society to project disillusionment with the privileged lifestyle they were born into. In the United States, the climbing community tends to reject modernism by spending a lot of time in remote and sublime spaces. This has turned the rock climbing community into one of the biggest proponents of the mythologized wilderness: a pure, natural place separate from the unhealthy dregs of our modern, globalized rat race. For generations, rock climbers—from writer John Muir, to Sierra Club President David Brower, to Patagonia Founder Yvon Chouinard—have often found themselves situated as pop culture wilderness defenders.

On one hand, Louie’s tendency toward gluing and chipping is relatively benign in the grand scheme of our public lands, where trees are still felled, and coal is still actively extracted. But on the other hand, his chipping and gluing cut deep into core myths the rock climbing community believes about itself. By the early 2000s, there is evidence to suggest that Louie was aware of what his chipping and gluing represented in the belief system of the climbing community. In 2004, he lamented that recently he’d become, “much quicker to glue when bolting at crags. This is

something that I’m aware of and am making a conscious effort to change.” However, by 2016, when Louie settled into his new home in Ten Sleep, seemingly secluded from the ethical scrutiny of California, he slipped back into old patterns and triggered a community reaction with an intensity that neither he nor anyone else in the rock community could have predicted.



On February 12, 2019, a petition began circulating on Facebook that eventually made its way to *Rock and Ice Magazine*. The authors of the document were a group of older Ten Sleep climbing developers who expressed serious concern with the current state of affairs. After just a few hours of the petition being made public, signatories included hundreds of recreational climbers and a good chunk of professional ones, including Matt Segal.

The petition contends that over the past three years, Louie has put up more than 140 new routes in Ten Sleep Canyon, many of which seem to be heavily chipped and glued. The most egregious case, a climbing area called Funky Town, has been described by some, “as an entire wall of 27 manufactured routes put up by Louie.” One of the petition’s authors told me that the original purpose of the petition was to ask “for the chipping to stop, but more importantly, it was a call to action for the routes to be stripped from the walls and be removed from the guidebooks in order to avoid normalizing chipping.”

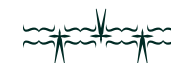
In response, Louie agreed to stop chipping but refused to remove the routes that had already gone up. Another local developer and signatory to the petition, said that Louie even, “told the President of the Bighorn Climbers’ Coalition that he would re-bolt any routes taken down.” However, as the subsequent Facebook comment section ballooned, another story emerged that was perhaps more damning than the petition itself. This was not Louie’s first rodeo.



One signatory, Devlin Gandy, recounts being high off the ground on a route Louie had bolted called Hijacked in the Santa Monica Mountains when suddenly a hold broke off the wall, sending him careening down. Dangling just a few feet from the ground he looked at the rock that had broken, which he describes not as a rock at all, but “a foot-long piece of epoxy carefully caked in breccia dust and chalk.” Speaking to Louie, he wrote, “Holding the former hueco lip in my hand, I could see the great efforts you took to obscure your handiwork, how you had carefully layered grit and chalk onto the surface of the epoxy with the hold ergonomics in mind.”

The petition and subsequent fallout haven’t affected Louie much, beyond losing his Mad Rock Climbing sponsorship. Today, his 464 page, 1,110 route *Ten Sleep Canyon Climbing* guidebook is available on Amazon Prime. Despite the guidebook receiving only one-star reviews online, its publication has effectively secured his reign of Ten Sleep dominance. The cover shot of Funky Town is even tilted to make the climbing look steeper than it is. After seeing the cover, one of the petition’s authors said, “It was like spitting in our face.”

When I talked to her in March 2019, Valarie said she is starting to plan for the 2019 Climbing Festival. She also told me that she’d recently joined the board of the Bighorn Basin Outdoor Recreation Collaborative. “The folks who started this know that recreation is the future. But capitalizing on tourism, while protecting land and keeping locals happy? That’s tough.” She didn’t seem yet to consider herself a local. Maybe she never will.



Later in the summer of 2018, while I was typing away at my Dirty Sally’s office space, Talena sat down next to me and told me she’d just gotten back from a hike up to the ice caves. In a special part of Ten Sleep Canyon, there is a massive cave about two feet wide

and a hundred feet tall. All year, even on the hottest July days, 32-degree air pours out from a mysterious hole somewhere deep in the earth. The depths of the ice caves have yet to be fully charted.

“We hiked up there with the owners of the brewery because they’d forgotten where it was, and I knew.” When they finally reached the cave, Talena says climbers were swarming the walls on either side. She said that when they walked up, it was awkward. “It was that, *look straight ahead, don’t look at the locals, don’t say hi to the locals, don’t acknowledge that the locals are here, oh my gosh the locals are here, what are we gonna do, we’ll just keep climbing.* I was like, wow guys, I’m just here trying to enjoy my backyard you know?”



In August 2018, I left Ten Sleep and took the long drive back to New Haven, where I watched the conflict evolve from the same vantage point of most of those involved: behind a computer screen.

In the fall of 2018, which is when I’d written the bulk of what became this piece, I was told by the editors at all of the major rock climbing magazines that they wouldn’t publish anything on Ten Sleep because it would jeopardize climbing access. In fact, one said that it wasn’t even their decision, but rather that the President of the Access Fund, rock climbing’s special interest group, had declared the media restriction.

All throughout the spring, tensions kept building. There was the petition which, despite the best efforts of climbing special interest groups, forced the conflict into the rock climbing mainstream. As summer approached, I knew it was going to explode again. Some of my Louie-hating contacts began texting me and talking about the conflict as a “civil war.”

The situation escalated in July of 2019, when an anonymous group of 18 climbers chopped the bolts off of many of

Louie’s routes in the middle of the night. They also attached red padlocks to the bolts on a handful of other routes to indicate those that were even more egregiously manufactured. This finally forced the Forest Service into the conversation. On July 19, the Forest Service began “enforcing regulations that prohibit constructing new climbing routes or trails on the Bighorn National Forest.”

Throughout the following months, *Climbing Magazine* and *Rock and Ice* finally published pieces on the conflict. And despite the writers’ best efforts at articulating the real issue to their readers, in no article were the actual people of Ten Sleep mentioned. The conflict was pitched over and over again as though the rock climbing community operates in a void; as though not only are humans separate from nature, but that rock climbers are separate from the democratic politics of normal human affairs. The writing paints Ten Sleep Canyon as a gift from god to the climbing community who shall have dominion over the dolomite, roadside pullouts, and every living thing that moves.

Every year the rock climbing community, and other recreation communities like it, is further entangled in the late-stage capitalism we all live in, where it is not just products that are sold, but identity and lifestyle too. Year after year, these tiny rural communities in the West become smaller and smaller, chipped away by a dying economic system and a social culture that seems to no longer value a small town way of life. What happened in Ten Sleep is one incident in the ever-evolving global pattern of pushing local people to the wayside in favor of something new.



I asked Talena in 2018 what she thought the future held for rock climbing in Ten Sleep. “In the Ten Sleep community...you’re

either in or you're out," she said. "And if you're out, it's gonna take a hell of a long time for you to be in. Having the climbing community and the Ten Sleep community get off on the wrong foot, it's gonna take one hell of a someone to be able to heal that rift. I don't know if it's ever gonna happen."

If nothing else, the outstanding question we should ask about what happened in Ten Sleep is: is rock climbing good? And if so, for who?

POISONED LAND,
POISONED BODIES
Krista Mangiardi

Angelina stood on the solid, familiar earth and looked up. The cliff extended high into the sky, until the sun broke just over its edge. With trepidation, she lifted one foot off the ground and placed it tenderly onto a rocky surface. She breathed in and out. Leaning her weight forward and onto her toes, she pushed up and away from the ground. Gripping onto the rock's crevices with her fingers, she placed her next foot onto another small indent. Her muscles contracted and relaxed. Her ligaments stretched. Her eyes focused. One calculated move and leap of faith at a time, her body started to ascend the rock's face.

Just one year earlier, Angelina lay in a sterile, white hospital bed, monitors clicking and whirring by her head. The body that had run around softball fields, walked down Fifth Avenue, and lain on the beach was breaking down. Non-Hodgkin's B-Cell Lymphoma, or Bone Lymphoma, invaded what should have been a healthy 19-year-old body. The cancer was strong enough to fracture her right femur. If it were to have persisted a little further, completely breaking the bone—she could have lost her leg.

But a year later, rock climbing for the first time ever, she faced a route up New River Gorge in West Virginia and her body was strong. She reached her arm up, her fingertips desperately searching for a handhold. She froze. The muscles in her forearms pulled tight and she was stuck, in need of retreat. She called for help and was guided down. When her feet hit solid ground, doubts started to flood her mind. Why did she think she could do this? How would she survive climbing for an entire week?

She looked over at Brad. He glanced back and just said, "So, you ready to go again?!"

Brad Ludden, a professional kayaker, founded First Descents in Denver, Colorado after watching his aunt's experience with cancer when he was a child. The organization provides free outdoor adventure programming all over the country to young adults who have been impacted by cancer or other serious illnesses. While doing some research during her treatment, Angelina happened upon the non-profit online. In a rush of excitement and nervousness she registered, ready for an adventure but unsure of what to expect.

When she came down from her first rock climbing attempt, Brad hadn't asked her how she was feeling; he just knew that she was capable of doing more. Nobody had trusted Angelina's strength that much in a long time.

She took a deep breath, exhausted, but her peers were cheering her on, surrounding her with enthusiasm. So, she gathered what little energy remained in her limbs and approached the rock wall again.

We got the call on my last day of college while my mom and Angelina were helping me move out. My sister's tests came back: she had cancer and needed to report to the hospital the next day to start treatment. We numbly finished packing my belongings into boxes. I tried my best to say goodbye to my roommates, pretending as if everything was normal. I moved from my dorm room, to one night at my parents' house, to a couch in the cancer ward. Angelina began to endure 96-hour continuous cycles of chemotherapy, but there was nothing I could do to help except be a witness and a sister. We used humor as a distraction, making slightly

inappropriate jokes about drugs and chemo brain, and that made us feel better. But the reality of the situation still hung in the air.

When Angelina was diagnosed, her doctor told her, “It wasn’t anything you did or didn’t do,” trying to comfort her. “It was something in the environment, something that you were exposed to. It changed your genes.” She felt relief in the fact that she hadn’t done anything wrong. A little later though, her thoughts became more complicated. What was the “something” in the air, water, or soil that did this? Why had it impacted her? How could it have happened?

And so, sitting up on the white hospital bed that felt nothing like her own, Angelina took to the internet and looked for answers. She scoured articles on chemicals in cosmetics, contaminants in groundwater, and hazardous molecules in the air, growing paranoid with the realization of how many toxins surround her daily. She started making her own toothpaste and lotions. The rest of our family caught the paranoia too. Our mom made her own chemical free laundry detergent. I started switching all my makeup to brands which only used natural ingredients.

Angelina tried to control the few things in her life that she could, eliminating what carcinogens she could easily find in her routine. But as she cut back on the chemicals in her soap, other chemicals rushed into her body from the bags of chemotherapy. Her memory of that time is vivid. “I saw my hair fall out, the color drain from my face, the nausea builds in my stomach, and my energy dissipate. I kept imagining the day I would have my body back from the doctors, look like myself, and no longer be filled with chemicals.”

When Angelina finally stepped out of the hospital after her last round of chemo, she looked up, not at the ceiling of fluorescent lights she had become so familiar with after six months, but at the blue sky—and then her healing really began.

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Today my sister works as a Program Coordinator for that same non-profit that gave her the opportunity to rock climb in West Virginia. Angelina climbs boulders, kayaks down rapids, hikes above 19,000 feet, and helps other young people overcoming serious illnesses do the same. Meanwhile, I sit far away at home in comfortable chairs reading books, being lazy, and not paying too much attention to the natural world around me. I love hiking and grew up on a farm playing in the mud. But I don’t feel nature in my bones—it isn’t an integral part of my identity. My sister, however, wasn’t given the choice to ignore the environment around her, or its power to shape human lives, because it almost took hers away. Angelina took that realization and reclaimed it.

Through her work, she talks to others every day who have been diagnosed with cancer, learning their unique stories. The people she works with have cancers or illnesses caused by a host of known or unknown factors, some related to the environment, and others not. Each person is motivated to travel to the rivers of Oregon or the beaches of North Carolina on her programs for different reasons: healing, adventure, exercise, or ambition. The stories of people whose lives have been touched by cancer and whose lives have been touched by nature are legion.



For some people, the sun is the cause of their cancer. For others, it's polluted groundwater. For those who lived down the street from a coal plant—the air might be the source of their illness. Every story is different.



Steven Walters of Hays, Kansas was diagnosed with malignant melanoma in 2018 caused by sun exposure. He's spent much of his life outdoors hunting and fishing with his father and grandfather. Two months before he was diagnosed, his father passed away from pancreatic cancer. Their relationship had been built in the grasslands of central Kansas, in pursuit of pheasant and quail. "It's where we would heal and rejuvenate our minds and energy. We were at our best when we were hunting together, smiling, laughing, bullshitting," he explains. When Steven's father passed away, he lost his desire to hunt, and then his cancer treatments weakened him physically. He finished treatment six months ago and is navigating his relationship with the natural world. "I find great strength and healing in being outdoors, but I am also reminded of my physical limitations and that my dad isn't there. The memories are both strengthening and demoralizing...I guess if that's possible," he told me.

Tom O'Brien of Plainview, New York had a malignant tumor removed from his kidney after being diagnosed in 2018. The exact cause can't be discerned, but he believes known carcinogens in his local water supply to be a contributing factor—and it makes him mad. He blames people who are destroying the earth for profit. Tom finds it deplorable that a country as developed as the U.S. is still struggling with clean water and he wishes there were more people doing something about it. Nature brings him

catharsis, "I'm a different person on a trail than I am in New York City. I like who I am better, I love the pace," he says.

Claire Eckstrom of Denver, Colorado was diagnosed with thyroid cancer at the age of 23—only months after her childhood neighbor was diagnosed with the same disease. Both of their homes in upstate New York were close to a coal burning power plant. Arsenic, a byproduct of many coal plants, is a confirmed cause of thyroid cancer. Claire suspects they were exposed to arsenic through chemical runoff in their homes' well water. Hoping to rediscover her connection with nature which crumbled after her diagnosis, Claire moved to Colorado from New York City after her treatment stabilized. "Five years later I can finally say that I have realized a new life—one where nature plays a large role in my health, relationships, and happiness," she says. She has a new awareness of harmful exposure to carcinogens and, though it is all overwhelming, nature provides a welcome respite.



I listen to my sister's story, to the stories of the people she has spent time with, and there always seems to be the moment where the people and the environment are ripped apart. People who used to run in the rain and roll in the mud are taken away to hospital beds far away from fresh air and muddy feet. They grapple with big questions about life and death and the role that the Earth plays in their story. For many of them, they confront the human actions that mutated the environment in ways that caused them harm. For others, it's harder to find blame in people, they simply enjoyed being outside in the sun or drinking a glass of cool water, never thinking they would later regret it. Then

they have to figure out how to reconcile with the natural world again. Toxins put into the environment poison human bodies, which are then healed with even more toxic chemicals. Damaged forests become refuge for those damaged bodies. A cycle forms between people and the environment, pain and comfort.

Angelina has been in remission for five years now but cancer's impacts on her life can't be easily erased. She has scars that require continuous healing—continuous remembrance. Her body will never be the same and neither will her perception of the environment around her while the rest of us have the privilege of not having to think about it.

My sister put it best: "Learning that my cancer was caused by environmental factors showed me the parallels between my body and the Earth. Just like my relationship with my body can be toxic, our relationship with the Earth can be toxic. The consequences are similar. When will we realize that poisoned land means poisoned bodies?"

Even pathogens
can become more prevalent
as the species change

3 of 5, continues on page 66



FISH AND RICE MAKE A BENGALI

Tasneem Islam

Throughout my life, fish was the one thing I'd hear my parents talking about with every Bangladeshi person they met. They'd discuss what they found at the market, how fresh it was after the long journey overseas, where they bought it, how they cooked it. For some, the rituals of cleaning, descaling, and cooking fish were all they brought with them of their culture to the U.S.

The saying goes: *maach e bhaat e Bengali*, which means “fish and rice make a Bengali,” and like every other Bangladeshi family, we lived our culture through fish consumption.

We ate rohu, katla, and sometimes even shutki—a pungent, dried fish that smells like it's rotting and is an acquired taste many first-generation Bangladeshis never develop.

With so many freshwater species available in Asian fish markets, there was never a dearth in the species diversity and recipes we consumed. There was, however, one fish my parents were always most excited to find and bring home: hilsa.

Hilsa, or ilish, is the national fish of Bangladesh. It grows up to two feet long, lives in brackish waters, and travels from the Bay of Bengal up Bangladesh's many rivers to spawn. Female hilsa are preferred to male hilsa for their fish eggs, which are considered a delicacy. When cooked, the fish has a soft, oily texture that pairs well with the flavors of Bangladeshi cuisine. Slices of ilish are marinated in turmeric and fried until they're golden with crispy skin. The roe is cooked through and children often get first preference to eat it. We grew up eating ilish for dinner, but my dad would always argue it was best eaten for breakfast over a bed of cold rice soaked in water overnight.

As I grew up, I gained an appreciation for the complex importance of ilish in my household. So, I sensed real concern when my parents' conversations settled on the steadily increasing



price of hilsa. By 2011, the wild stocks of ilish had been so badly depleted from intensive fishing practices that a hilsa fishing ban went into effect to help stocks recover. It seemed like anytime my parents brought ilish home after that, the fish were smaller and increasingly more expensive. Enjoying ilish was a cultural practice in our household and to lose it would sever an important connection to our heritage.

Climate change is often characterized as a threat multiplier. Faced with more extreme weather events, warmer temperatures, and river flooding, Bangladeshis living near water risk losing not only their homes but also their livelihoods. Saltwater intrusion and groundwater arsenic contamination are uprooting those living nearest the sea, forcing these coastal communities to migrate. The influx of climate migrants has steadily expanded urban slums around the city of Dhaka, putting strain on transportation routes and infrastructure and eroding overall quality of life.

Flying into Shahjalal International Airport in the summer of 2017, I saw water everywhere. Water in ditches, water moving slowly alongside busy roads, water carrying brown silt around the city's edges. As we descended below the clouds, the city emerged so densely-packed that roads were barely visible. Dhaka is roughly five times the size of Manhattan with twice the population density.

I arrived eager to learn about the future of the commercial fishing industry and the supply chain of fish destined for international markets—the same one that provided me with the rohu, katla, shutki, and ilish I grew up eating.

Two-thirds of Bangladesh lies within five meters of sea level and Khulna is no exception. With the Sundarbans and Bay of Bengal to the south and the capital to the north, Khulna is where land and water intermarry. The lush, green countryside gives life to trees heavy with mangoes and jackfruits. Large, rectangular ponds bisect the land giving the landscape a honeycomb texture. Its muddy soils make it the perfect place to dig out ditches

for raising fish and shrimp, and growing rice. Hundreds of these ditches, called gher, form the basis of the commercial fishing industry in Bangladesh providing thousands of people with nutrition, income, and livelihoods.

Tidal flooding has been a regular part of the history of the region. But fishermen have adapted to use it to their advantage. When water levels rise or there is heavy rainfall, they're able to use an intricate canal system to divert water from the major rivers. These canals also serve to both fill and drain their fishing ponds throughout the year. All fishermen have developed systems like these and work together to fortify their lands. I was confused as to how each of these individual fishermen were able to produce enough fish for the global market. But I found out it is strength in numbers; these individual backyard fishing operations were a part of an expansive network of individuals and communities working together to supply fish for the world.

While in Khulna, I visited the home of my great-uncle. His house's caretaker, Iaqub, greeted us at the terracotta-colored front gate with a kind smile. He showed us around the mango orchard, the one-story house, and a small pond in the back, before taking me to my great-uncle. He was an elderly man with a full head of white hair and long white beard. Over a bowl of freshly cut mangoes, he explained the challenges of holding on to such valuable property. Years ago, his nephew had attacked him in a vicious attempt to steal his land. He pulled up his lungi to reveal a large scar across his leg. He survived but knew that these family tensions would continue to intensify. Family conflict over property rights is a common problem in the country.

The next day, I met with a well-known fisherman, Mizanoor, who wore pants instead of a lungi and who owned a shotgun for protection. He proudly pointed to the horizon emphasizing the scale of his operations and how many people he employed to work them. He demonstrated how they decontaminate the pond water, how they feed the fish, how they transport



their catch in open-back trucks over one-lane, dirt roads to processing centers. At the processing centers, I saw uniformed workers clean, process, flash freeze, and package the fish and shrimp for international markets. Large, refrigerated rooms held these boxes until they were picked up by the pallet to get taken to the port. These rooms were a respite from the tropical heat just beyond its doors.

Traveling back to the capital, I thought about how each fish passed through so many hands. I thought about the imported fish I grew up eating in the U.S., and how it too had passed through those hands. I had come further in my cultural connection to fish, but still felt uneasy. In my conversations in the country, I had asked people what they knew about climate change, but no one seemed to have a strong understanding. For the Bangladeshis I have spoken to, preparing for the future was not a priority when preparing for the short-term was challenging enough. Extreme weather events and river flooding were already a regular part of their lives. Fishing was their primary source of employment and protecting the dirt walls around their gher was all they could focus on.

As we neared the capital, the general pace slowed as the traffic intensified. The roads were crowded with people, rick-shaws, and other vehicles. Dirty water flowed in ditches along the sidewalks carrying plastic snack bags and bottle caps. The heat kept everyone subdued, but tempers were short. I missed the countryside and thought about how different life in the city was.

One particularly hot morning, we were driving out to visit another fishing district in the northeastern region of Bangladesh. Traffic was jerking along as usual when I noticed a man get out of his car to yell at a truck driver in front of him. The shouting escalated and the truck began to speed off. The man grabbed onto the edge of the open window and then slipped off. As we drove past, I looked out the back window to see the truck bounce up and his body roll. For a second, I thought I saw the



man rise to his feet—a final rush of adrenaline maybe, a feeling that he might be okay. But as dozens of bystanders rushed to the scene he collapsed in their arms—the cracked bones in his body giving way to gravity.

Did he really stand? Or did I just want to believe I hadn't watched a man die?

My research trip ended weeks later. I continued to follow news of monsoons, severe flooding, and extreme heat in Bangladesh, but also heard tragic news from several people I had met.

Iaqub, who took me on a tour of my great-uncle's house, was murdered by his siblings over property rights on his land. My great-uncle too passed away, leaving behind the house his family had been plotting for years to take from him. Mizanoor, who took me on a tour of his fishing ponds, caught between two cars in a ferry accident along a heavily trafficked river in Bangladesh. A great-aunt of mine who lived in the capital.

Bangladesh is one of the first places the effects of climate change are beginning to show. The country already experiences some of the highest rates of in-country migration in the world, with an estimated 400,000 people arriving to the capital, Dhaka, every year. Many are fishermen whose homes are at the frontlines of sea level rise. It has overwhelmed city planners and transformed living conditions.

The fishermen depended on water for their livelihoods and had developed a resilience born out of trauma. But this resilience was being pushed to its limits. How long will they be able to continue fishing when they've lost their lands to the sea? How will they live off increasingly inhospitable land, when the alternative—to move to the city—may not be any safer?

I began to see a new face of climate change. This wasn't people drowning in rising waters. It was people dying from increasingly stressed living conditions. I could see the compounding effect of climate stress on the very people I met. I saw the

stress of climate migration manifest in family conflict over property rights. I saw how increasingly crowded transportation routes led to the accident that injured Mizanoor. I saw how tempers in a crowded city could escalate into violence.

Sometimes I think I was destined to witness the gruesome car accident that wickedly hot summer day. It made something real for me that until then I hadn't fully understood. Climate stress is about more than our environment. It's about the breakdown of the relationships we depend on and the increasingly unpredictable ways we can lose our loved ones.

My Bangladeshi heritage gave me a culture connected to fish and the sea. I learned to carefully pick bones out of ilish with turmeric stained fingers the same way the fishermen who caught that fish did. We shared a relationship through a dependence on and love for fish.

We are maach e bhaat e Bengali. From fish and rice we come, and to the sea we return.



SAILBOATS, SUBMARINES, AND THE SEA

Pat Wiedorn

The first thing I did during my tryout for the sailing team was to crash straight into the seawall. Everyone at the Naval Academy is required to be part of a sports team. I did track in high school, but there was no way I was making the team at the Academy, and I was forced to shop around for alternatives. My dad owned a sailboat so I knew how to make a sailboat go in about the right direction, and I thought I would give the sailing team a try. Like all boats, however, my dad's boat had spent more time in port than out, so my several cumulative days' worth of experience did not justify the overconfidence which drove me straight into the side of Dewey basin. I had, however, distinguished myself by being the only candidate who followed the directions by wearing the standard-issue boat shoe socks, and was allowed onto the team.

The thing I would learn on my next three years on the sailing team is that sailing isn't about ships, it's about the sea. Mariners obsess over their ships. They tune the rigging and paint the sides and mend the sails and splice the lines. Given the obsession and care, I had always thought that being at sea was a violent fight with ships and men on one side and the ocean on the other, bows crashing through waves and sails bent against the oncoming wind. This is what old Navy hands and old mariners will tell you—that the first enemy is the ocean. You go out and collide with the storms, the waves, and by your wits and guts come out victorious. But going out sailing every day showed me that instead of a fight, it was a dance. I saw the changing faces of the sea and began to understand how to react to the lead, and then to step

forward and guide the ship where we needed to go.

I remember vividly the day I first saw the wind. Reading the wind, seeing it, is the first important skill to learn as a sailor. I had been on the team a few weeks but I didn't understand this skill. I was in awe of our bowman, who knew exactly when the wind was about to pick up in a puff or die down in a lull. And so, I plucked up the courage to ask the secret and the bowman pointed out over the waves. He pointed out the patterns, how the subtle ripples darkening the surface and crossing the bow gave you hints, and from those hints you could see how the wind was flowing and how we would trim our sails. That moment was the first revelation, the first time I could look out over the confusing seascape and see the forces driving it. Over the next few years I learned to read the surface of the water, using hints of whitecaps and signs in the lees to choose our sails and plot our path. You can't fight the ocean in a sailboat; you have to work with the ocean to guide yourself where you need to go. You need to look out beyond your own lifelines, to know and understand the sea.

To know the ocean is to love the ocean. You have to, or else the trials you face out there would be too much. After my second year, we were sailing to Bermuda for a race. It was a week of tough, upwind sailing, across leagues of sea. One night we had left too much sail up as the sun set. During the night a storm began to surge and the wind grew in strength. We tried to avoid it, but it was eventually clear we'd have to undertake the dangerous task of changing our foresail to a smaller one. It was my job to lead the team forward and so forward we went. At night, with the storm raging, it was pitch black. The clouds covered the moon and any light from shore was hundreds of miles away.

We struggled forward to the bow against the wind, and when we finally made it I looked ahead. The only light was from the thin line of phosphorescence at the top of the towering waves. I thought those waves looked like monsters in the night. Bracing as these monsters crashed down around us, again and again pinned as we fought for any grip to stay aboard, we grappled with the sail to try to heave it down and replace it. But in the dark, we could only barely manage.

To help, someone back aft turned on the deck light. This let us see but turned my whole world into only the five feet covered by the cone of light. Outside that we were totally blind, and more importantly I knew my crewmate driving the ship was blinded as well. This had me terrified. When the waves grow as big as they did in that storm, it is vital to guide the ship over the waves in just the right way. Otherwise, a sailboat careening down the backside of a wave will bury its bow in the trough, flipping the boat in a pitchpole. In a storm like this one, that would have been a death sentence. With no way to see, our helmsman would have to feel her way down the back of the waves, keeping us and the boat safe. She would have to rely on her own understanding of the sea, born of her own love and experience. Despite my terror I trusted her; she knew the waves, and she knew the ocean, and she steered us expertly through the storm while we changed the sail as quickly as we could. Morning came, and we were safe, but if our crew hadn't understood the ocean we would have been doomed.

Fortunately, whatever the trials of storms and waves, the ocean makes up for it. It was on our return from Bermuda, and we were cruising along under a sunny blue sky. I looked up from the helm and over what had been an empty sea when suddenly we

were surrounded by a pod of what seemed to be a hundred dolphins. They burst from one wave and soared through the air before diving into the next one. They played along our bow and jockeyed for position with each other. They swarmed and played and jumped and splashed and tittered all around until just as suddenly as they came, they were gone again. And so here out on the ocean I had found some small measure of perfection. I had a love of sailing and a love of the ocean. I was a member of a small crew who all understood our boat, the sea, and each other. And at that point I thought I was as close to the ocean as I ever could be.

As I approached my senior year at the Naval Academy, I had to choose a service community to join. Where to go? Drive surface ships? Fly planes? But when I looked around, the closest thing I saw to a sailboat was a submarine. On a surface ship, you cruise above the ocean. From the bridge 100 feet in the air, you overlook the waves and pride yourself on crashing through them, with the toughest sipping their coffee even as the barometer drops and the clinometers hit their stops. Above them, the people flying planes look down and pity those stuck only 100 feet up. But on a submarine, you don't ride above the ocean; you're in it. You're enveloped in the sea, braving crushing depths but reliant on those same depths to keep you safe. When I first joined the sailing team, I never realized how close I would come to the ocean, but as I strode onto my first submarine, I could never have imagined how little I knew. Every aspect of the ocean and every change affects the submarine, down to the very way you float. Despite being submerged in it, in some ways in a submarine you are cooped up and away from the ocean—no matter where you are, the inside of the submarine is a nice cool 68 degrees and the weather

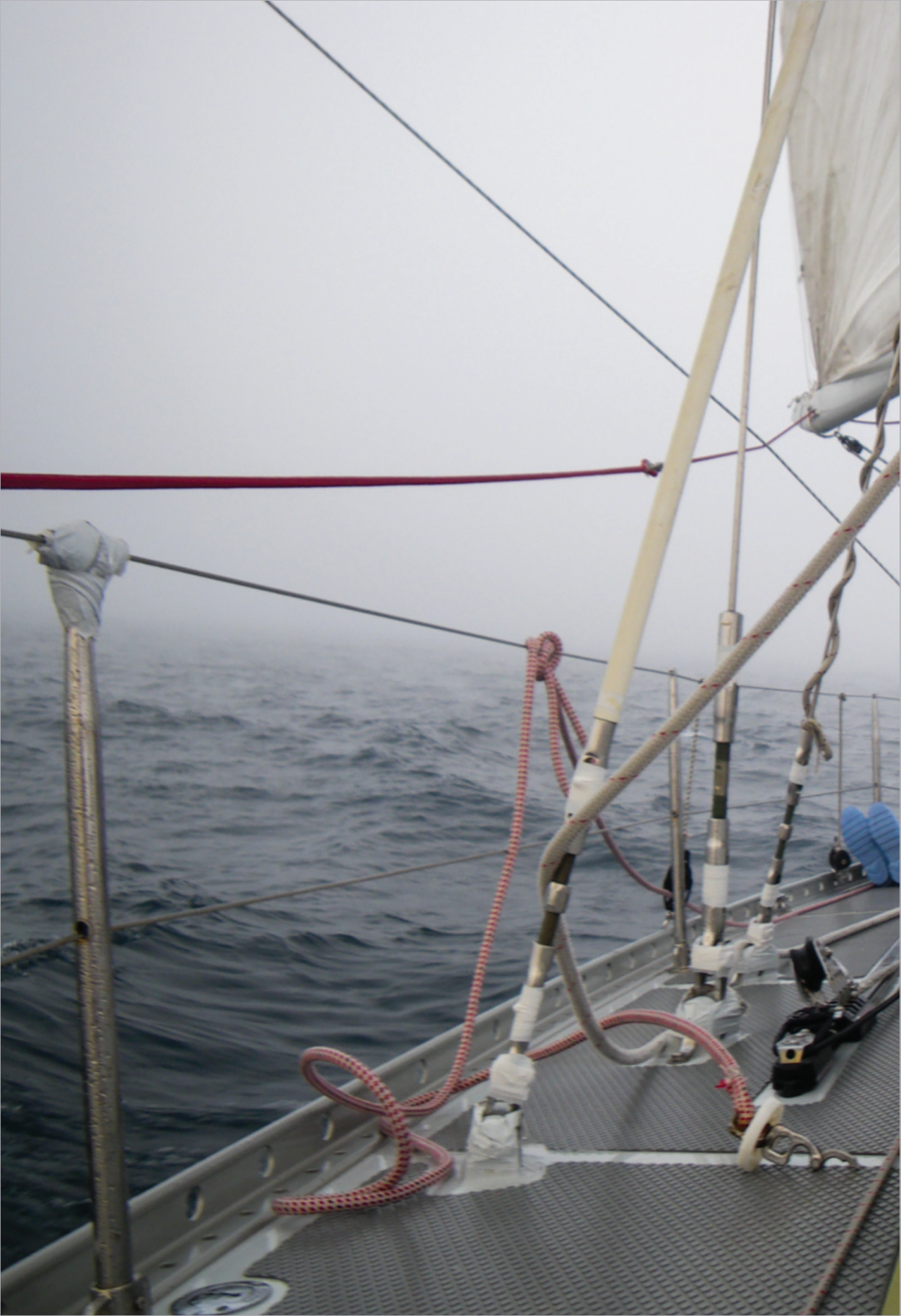
never changes. But the ocean is never far away.

The trick when it comes to submarines aren't to keep them afloat, but to make sure they sink just enough. A modern submarine is a 7,000-ton behemoth that powers through the deeps with the heat of a nuclear reactor. But it is a behemoth that needs to be neutrally buoyant, not a pound too heavy or a pound too light. The ocean isn't a constant and the continually changing temperature and salinity affect the buoyancy of the boat. A hot day can evaporate the surface water and drive salinity up, or a rainstorm can dilute it and drive salinity down. Wave action will mix the water column and give you a constant gradient hundreds of feet deep, or calm seas can cause an inversion which means you suddenly get a lot lighter as you head towards the surface. Where rivers or springs empty into the ocean the swirling waters put the aft end of the ship in a totally different water column than the front.

Submarines are in many ways pretty fragile; they've already sunk, so to destroy them and everyone onboard you only need to sink them just a little bit more. Staying underwater and hidden is what keeps the submarine and crew safe and alive. Every person on the crew needs to understand the ocean, but the task of stepping through the dance falls to the small team of the helmsman and planesman. This is not easy; misunderstanding the waves and driving the submarine on a bad course could cause the ship to be sucked up and broach the surface. A good team, totally in sync, is marvelous to watch. The better they are they quieter they are, each with eyes locked on their gages, responding to each other's movements, feeling the effects of the sea on their actions from the tilt and rock of the ship.

The most intimate connection to the sea on a submarine is through sounds. In the same way that I learned to see the wind, on the submarine I learned how to read the ocean from the sound. Sound is everything underwater. Without windows and without light, sound is the only way we have to navigate the world. Sonar is not like you see in the movies. Real sonar is passive, just listening to the sounds of ships and fish and waves to paint our picture of the world. Submarine sonar is incredibly powerful, with a supercomputer scraping the hydrophones for every scrap of sound energy. In the control room, we would always have on a hydrophone speaker, eavesdropping on the ambient sounds of the ocean. The sounds we were worried about were the gnashing, rattling crash of propellers from ships that could spell our doom. But while listening close for the sounds of danger you heard the ocean's more secret voice. I always felt you could tell the ocean's mood, listening to its anger in harsh whines and screeches. Most days the ocean was happy, usually quiet and content, or imbued with the low whoops and higher pitched whistles of whales. As you listened close and watched the sonar screens, you could begin to see the world around you. You could see the rainstorm, with its erratic trails passing down the starboard side and raindrops sounding close despite 400 feet of depth. You could watch the distant merchant ship, plodding along a well-worn route with the engine's steady drumbeat. The loudest sound in the ocean is made by snapping shrimp. They're so loud that a prudent submarine can hide behind these tiny shrimps to avoid detection. But on an average day their clicks and clacks were a soothing comfort from far away.

When my service was up, I was not sad to leave the submarine. Life onboard a submarine is stressful and hard. But I was sad to



leave those moments onboard the bridge at night, with the warm air of the Java sea and the lights of fisherman along the horizon. I was sad to leave the quiet transits and the stormy trips to periscope depth. The best moments were those when we were true mariners, focusing all our efforts and all our love to keep the ship steady and on course. And after a long day I never slept better than in my bunk against the bulkhead, its thin hull the only thing between me and the sea.

Not much of a choice
earthworms adapt to toxins
or they die from them

4 of 5, continues on page 94

VALLEY ISLE GRAVEYARDS

Paige Foreman

Ezekiel 37:1-14

High above the world, I jump off the black rock
and plunge
into a school of iridescence.
Below me, angelfish guard brain coral,
Spirit running through pink folds of consciousness.

The wind-faded tombstones
on the beach cast long shadows at dusk.
Mountain mists creep in.

The next day, hiking down
to a hidden cove, a sign reads,
Do not stray off the main path.
There are unmarked graves.

No fish swim in the cove
Thermal stress makes reefs into boneyards
Brain coral, gray as stone in all directions.

Can these bones live again?
I search for angels in the sick green water,
but there is only apocalyptic quiet
a great cloud of stillness.

PEACE AND POWER IN JOSHUA TREE

Anelise Zimmer

I'm waiting for my dehydrated chili dinner to cook in its bag when I first hear the shout.

"Turn your fucking lights out!"

I freeze in my tent. It's my first Christmas alone, and I'm in the middle of the Joshua Tree National Park desert. I recall all of the people who warned me not to go on this trip. *"Are you sure you know how to get by out there all alone? Don't you want to bring your boyfriend?"*

I can hear my heart pounding in my chest. The last thing a woman wants to hear while alone in the wilderness is an angry man's voice, and to have his anger directed at her. Having grown up in Alaskan bear country, I can confirm that waking up to enormous Kodiak bear tracks near my tent scare me less than encountering an angry man while alone in the wilderness. Tarantulas, rattlesnakes, aliens, or whatever else resides in the desert—bring it on. These things scare me less than an angry man.

I had just wanted my tent to feel a little bit like home. While I'm not religious, I appreciate holiday cheer and some Christmas customs. I made an exception in my otherwise ultralight backpacking gear to carry a string of battery powered holiday lights, and strung them around the vestibule of my tent. The lights bring me a sense of warmth, and remind me of my parents and brother, who live on the other side of the world.

There are no other lights to be seen, so I assume that the "fucking lights" of concern are mine. I never expected them to be so offensive.

"TURN OFF YOUR GOD DAMN FUCKING LIGHTS!"

This time is louder and more aggressive. I'm still frozen. I think back to my day on the trail. I hadn't passed a single person.

I loved that feeling. Just moments ago, I felt an absolute sense of bliss and safety, wrapped in my sleeping bag and listening to the coyotes yelp far in the distance. I fully and comfortably believed that I was all alone under the expansive desert sky. The feeling of independence and self-reliance that I had come alone to the desert to find disappeared instantly into the abyss of the night. Now, I feel vulnerable, alone, scared. I have no idea who is yelling at me.

I palm my pocket knife and gingerly unzip my vestibule to investigate.

"FUUUUUUCK YOU!"

My gaze follows the voice. I see that it is coming from the top of a hill about a half-mile away. The instigator is with several other people and they are building an illegal fire. The lights on my tent are a blemish in their otherwise unobscured and off-trail, illegal view.

Illegal, but no one will come to help me, I realize. Though I've been backpacking for only a couple days, when I entered the desert and lost phone service, I was aware that the government was on the brink of a shutdown. Assuming it happened, this means that not only am I alone in the desert, but there are no Park Rangers to ensure that public lands are protected. It also means that there are no Park Rangers to ensure that *I* am protected.

I stand outside of my tent, trying to assess my safety. Pocket knife in hand, I weigh the likelihood of the person who is unreasonably angry about the lights on my tent and his pals coming down the hill to harass me. I imagine hiding powerlessly in my tent as a group of drunk and fuming men surround it, threatening to hurt me or stealing the remainder of my water, which I need in order to make it out of the desert alive. I envision the men, who grow more terrifying and aggressive with every minute in my imagination, finding out I am a lone woman. I think of every possible horrible interaction. Theft. Arson. Violence. Sexual assault.

I realize I've been standing in the cold for a while when a cold gust snaps me out of my panic. I force myself to breathe.



I rationalize with myself, recognizing that the fears I have are valid. A few more deep breaths, and I think of an escape plan in case the aggression doesn't stop in the coming minutes. If necessary, I will pack up my belongings and hike to a new location for the night. Maybe I'll be able to reclaim my solitude. These guys are far enough away that I'd be able to see them coming and move in time.

I tell myself that they won't come for me. They would have to trek all the way back up the hill to return to their viewpoint. They're not that tough. Once they become distracted by their illegal fire and down a few beers, they will forget that the holiday cheer of my tent is something to be angry about. I imagine them as rowdy college students, home for Christmas and blowing off some steam. Though their actions are still too hostile for my liking, this scenario brings me some semblance of relief. They, like me, are just trying to get some fresh air, right? Or am I giving them the benefit of the doubt? I return to thinking they're drunk college kids and dangerous assailants, letting my imagination swing wildly.

I crawl back into my tent and keep my string lights on, testing whether the yelling will continue and if I will need to implement my escape plan. I eat my now cooked chili. It tastes better when I imagine myself with the upper hand. In the next ten minutes the angry voice fades into a cacophony of laughter and hoots. I write down exactly what happened in the notes section of my phone in case I am murdered in my sleep. I am being overly dramatic for thinking that is even a possibility, but things like that do happen, I tell myself. I drift off, still clutching my pocketknife.

People scold me for going into the desert alone because they think my wilderness skills are inept. They fear that my demise will be due to inattention to detail: getting lost, packing an empty propane tank, or not bringing enough water. But I do not enter a solo-situation ill-prepared; I am confident in my abilities, so those things scare me much less than what I encountered that night.



Solo trips help me recognize my own strength, both physical and mental. It is a trial of patience and logistics to carry everything you need to survive in a 48-liter backpack. The limits of civilization disappear the further I hike from the trailhead. Each day that I trek another dozen miles, I exceed my own expectations.

Being alone in the outdoors is a rare spiritual experience, a humbling reminder that I am nothing more than a speck of desert sand in the hourglass of time that has shaped the land that I walk on. But that feeling of humility is a close relative to the feeling of vulnerability. The bliss of solitude and self-reliance can quickly unravel into a panic of feeling alone and defenseless. The fear that sparks the panic is not the result of seeing a wild animal or getting caught in a storm. It is the threat of my own species, an animal whose behavior I wish I could read as well as a Kodiak bear's.

Despite that fear, I will not stop going to the places where I am blissfully strong and free. I go alone into the outdoors to escape the power imbalances felt every day in society, an opportunity that should be afforded to anyone who seeks it. I am optimistic that the persistence of myself and others will slowly chip away at gender barriers in the outdoors, so that my daughters and granddaughters will never once be told to bring a man for safety, and can also know the empowerment that comes from embarking on their own adventures.

WASTE AND RECYCLING

Overcoming Irreconcilable Differences
John J. Frederick

Our trash and recyclables: most Americans just want to be rid of them. Whether motivated by guilt or planetary altruism, a large majority hope much of it will be recycled. Yet trashing and recycling are polar opposites, logistically, philosophically, and environmentally. For those of us trying to reconcile these differences, the conflicts between the two have been all too frequent and persistent. My personal recollections go back to my childhood, as I recall being awoken each Thursday morning by the steel garbage cans hitting the pavement after city crews emptied our kitchen scraps into the compaction truck. With the first long-term successful organics collection and composting operation in the country, the City of Altoona, Pennsylvania was far ahead of its time through the early eighties. We had composted our organic waste and sewage sludge in an anaerobic digester next to the sewage treatment plant for a quarter century.

Faced with federal revenue-sharing cuts by the new Reagan Administration, the city was forced to scuttle their plans to replace their fleet of aging collection trucks. Lulled into a false sense of security that the local dump would always be convenient and inexpensive, Altoona discontinued the popular organics collection program in 1981. With no place to dispose of the most odiferous portion of their waste stream, four dozen privately contracted waste haulers were tasked with picking up the organics and other trash. Inadvertently, this would also lay the foundation for a dreadfully inefficient, and equally expensive, collection system that curses the community to this day.

Local decision makers didn't stop to consider that the 1976 Resource Conservation and Recovery Act's new landfill regulations would change this landscape even more profoundly. Local, cheap, and poorly regulated waste disposal would soon be a thing of the past. Altoona would feel the impacts two years before the issue made national headlines.

Unable to meet new landfill construction standards, four regional landfills closed between March 1984 and Thanksgiving 1985. About 3,000 closed across the country. With no transfer station and the nearest landfill now 55 mountainous miles away, 45 haulers were scrambling to find somewhere to put their trash. A protest parade of loaded trash trucks around Altoona City Hall put an exclamation point on what became known as the "waste emergency."

The 1987 voyage of the infamous Garbage Barge, *Mobro 4000*, became the national watershed event calling attention to the disposal crisis. When public outcry stopped the barge from disposing of its 3,200 ton payload in North Carolina, it wandered along the Atlantic seaboard the remainder of the spring, summer, and early fall looking for a willing disposal site.

Mobro initiated a national dialog about how much we consumed and wasted in America. Like other environmental disasters dating back to the fifties, *Mobro* made us stand up and take notice about an issue we had long ignored. Beyond the repulsive nature of garbage and its related health concerns, we realized our economic system was based on wild consumption and wanton disposal.

Bucking Tradition

In response to these crises, curbside recycling mandates were passed by Pennsylvania and a number of other state legislatures in the late eighties. While many environmental activists saw it as a social cause, recycling was also an industry confounded by supply and demand, quality control, transportation logistics, international markets, and fluctuations in virgin commodity prices.

Still reeling from the disposal debacles a few years before, mom-and-pop haulers and modest-sized recycling facilities, which Altoona was depending upon, found themselves in the middle of yet another conundrum. They had neither the means to build the infrastructure they needed, nor the financial resources to absorb the inevitable precipitous dips in market prices. The first of these catastrophic market crashes occurred shortly after I was hired as Altoona's first recycling coordinator in 1991. In response to a flood of curbside-collected newspaper, the paper market collapsed and some programs couldn't give away their paper. Every time the markets plummeted, the same haulers that had protested around Altoona City Hall a few years before returned to voice their displeasure to local decision makers. The hauling community requested the offending commodities be removed from our curbside collections, public confusion over these changes be damned. Changing the way the public handled trash was challenging enough; we couldn't add to the confusion by turning the curbside collection faucet off and on every time markets conditions changed.

We came to realize recycling was a job creator and a source of raw materials in a world where extraction and refinement were expensive, energy-intensive, and polluting.

Yet despite the benefits of broader material recovery that came with widespread curbside recycling, the collisions with both traditional trash collection and free-market industrial recycling profoundly changed the dynamics of both.

Plastic

The Waste that Keeps on Giving

I recall attending my state recycling conference in 1993, listening to representatives of the plastic industry speak optimistically about the future of plastic recycling. We had lived through three years of rock-bottom prices for plastic. A dreadful lack of recycling infrastructure seemed likely to doom us to a similar plight for the foreseeable future. Frustrated beyond words and cynical about this false optimism, I unabashedly declared that the plastic industry hadn't "done diddly-squat" to develop markets for plastic bottles. My old-time colleagues still laugh about my blunt assessment, lamenting that the virgin plastic industry still hasn't done diddly nearly three decades later. Despite research and recommendations by the Association of Plastic Recyclers (APR), design for recyclability recommendations are often ignored by consumer product companies more concerned about glitzy packages than recyclable ones.

During the early days of widespread plastic recycling, many of us in the trenches were optimistic that plastic just needed a few years to catch up to other recycling industries. After all, metal recycling went back centuries, and paper and cardboard recovery had been vibrant for decades. Though admittedly messy, metal scrapyards, that bastion of traditional recycling practices, represented infrastructure which was very mature and typically profitable.





Plastic was seen as the poster child of everything wrong with the state of waste in America. It generated toxic chemicals during production and never went away, whether it was dumped, littered, washed into the ocean, incinerated in a burn barrel, or properly disposed of in a landfill. Even in less environmentally-conscious places like Central Pennsylvania, public pressure for plastic recycling was, and continues to be, very strong.

Rather than develop infrastructure and markets for those other materials in the United States, the big recyclers leaned on exportation to China. With empty shipping containers returning to Asia, shipping bales of mixed plastics across the Pacific was affordable and convenient. Cheap labor and lower environmental standards made China look like the perfect solution to the North American plastic dilemma. But as China's recycling industry matured and concerns over being the world's dumping ground grew, China ultimately banned the importation of much of the material. This left North American recyclers holding the bags, bottles, and clamshells.

The 2018 Crash

Despite some struggles, imperfections, and periodic dips in commodity prices, markets were generally strong in the mid-2010s, even for smaller programs and facilities like Altoona's. That came to a sudden end in late 2018. Decreasing quality brought about by the inherent contamination in single-stream material, the loss of the Chinese market, and decreased demand for commodities jointly contributed to a drastic market crash. In most parts of the country today, recyclers have more tied up in collection, processing, and baling costs than what they are getting paid by brokers and mills.

Further cursed by inefficient, multi-hauler collection systems, Altoona's recycling costs kept climbing and are now higher than disposal. These developments recently prompted Altoona's largest hauler and recycler once again petitioned the recycling office to discontinue plastic collection. Whatever financial incentive that once existed for waste haulers to recycle had evaporated. Plagued by hauler noncompliance before the 2018 crash, the trashing of recyclables by collectors seems destined to become even worse.

Public Policy Challenges

Finally, without states to untangle the complex market for recycled materials, even in states like Pennsylvania, with its strong recycling and composting mandates, inordinate financial responsibility is placed on local or county governments.

Lacking the political clout to persuade companies to design products for ease of recycling, local communities were powerless to affect the change needed to reduce difficult-to-recycle packaging. Manufacturers were unwilling to acknowledge or address their role in making recycling difficult and expensive for local governments. So, the onus to sort and market this over-complicated recycling stream fell on cities, counties, and private sector recyclers. Particularly, as beverage containers of all kinds have found their way into the headlines *and* into ocean garbage patches, critics have accused bottlers and bottle manufacturers of being especially unresponsive. The large beverage companies have long opposed container deposit laws, despite periodic lip service that they support recycling and sustainable practices. The controversy was recently resurrected when Coca-Cola's charitable foundation



committed to a \$4 million program to enhance recycling in Atlanta. At a meeting to discuss the program last year, the City of Atlanta's John Seydel asked if it wasn't time to revisit container deposit legislation in Georgia.

"I'll tell you that the answer is a big no!" responded Gloria Hardegree, executive director of the Georgia Recycling Coalition (GRC). Like Atlanta, GRC receives funding from Coca-Cola. "With the investment that Coke is getting ready to make in Atlanta, [deposit legislation] is not going to be a part of that conversation." Whether seen as a blessing or a curse, the stable, giving hand of Coca-Cola became a buoy in the storm.

Similar scenarios have come to pass with electronics recycling and food composting legislation. The obscenely profitable computer and television industries have lobbied against recycling fees on their products, shoveling tens of thousands in recycling costs onto local programs like Altoona's.

A scrap food collection pilot program in my local community fizzled when, among other factors, local waste collectors voiced apprehension over losing income from lucrative food establishment waste accounts. Nationally, larger waste companies have opposed yard and food waste composting mandates over concerns it will undermine methane recovery investments in their landfills.

Making matters worse, the large corporate waste industry has tried a one-size-fits-all approach for decades, first to waste and now to recycling. More rural and mid-sized communities, like Altoona, have been left out in the cold with a lack of disposal and recycling infrastructure investment. Even where facilities have been built, poor material quality and depressed markets

have resulted in catastrophic financial difficulties. Facilities have closed, and desperate pleas for contract renegotiation have placed both waste companies and municipalities in dire straits.

This thirty-year recycling journey has been plagued by a great many bumps and pot-holes. Both in my local trip through Central Pennsylvania and our national voyage across the United States, the figurative trucks have been driven by corporate interests rather than the public good. Perhaps it's time we considered changing the drivers.

GREAT LAKES FISH FIGHT

Peter Payette

"It could be argued that fishing is as old as man in North America" suggested Erhard Rostlund. The geographer figured this was the case since it was likely that the earliest humans in Northern Asia could not have survived without fish and probably brought their nets when they migrated across the Bering Straits. The archeological record does not show exactly how fishing technology spread across the continent, but Rostlund believed it reached a pinnacle in the Great Lakes where the use of nets, particularly deep water gill nets set for whitefish, made the region second to none for its technical achievement. "If the aboriginal fishery of any region deserves to be symbolized by a fish net it was this interior large-lake fishing area."

When Euro-Americans arrived, they built a commercial fishery with industrial strength. Steam powered tugs and lifts allowed longer gill nets to be set further out in the lakes, taking fish that were sold by the barrel across the nation's interior. It lasted only a few generations. By the end of the nineteenth century over-fishing, pollution and habitat destruction had severely reduced the catch of prized Great Lakes species like whitefish and sturgeon. As the 20th century ground on lake herring were fished out in the lower lakes. Only the lake trout, in its deepwater abode, seemed to be any match for the commercial pressure. Then the parasitic sea lamprey arrived from the Atlantic Ocean, and the entire ecosystem collapsed.

Not long after Rostlund offered his praise of the aboriginal fishery, what remained of it and the non-native operations collided with the crowning achievement of modern civilization on the Great Lakes: the creation of a large-lake sport fishery. Around the middle of the 1960s a few fishery biologists in Michigan flipped the script and turned the Great Lakes into a sport fishing

paradise with the introduction of coho and chinook salmon from the Pacific Ocean. The sudden transformation of the coastline in Lakes Michigan and Huron is hard to overstate. So few people went out on the Great Lakes for sport before 1967 that it did not require a license. When coho salmon ran into the Platte and Manistee Rivers that fall, one sports writer reported watching boats launch every 30 seconds.

The idea that fish are for food was almost eradicated in Michigan in the 1970s as “coho fever” took hold. It was replaced by a belief that what technological civilization needed most was a recreational balm for its harried souls. “For this is the paradox of our time,” wrote J.W. Leonard from the Michigan Department of Conservation. “We insist on being clothed, housed, and transported by the latest developments of science. But when we go fishing, we shuck off civilization’s thin veneer. We seek to prove to ourselves that we are still able to fend for ourselves.” The crowds implicitly agreed. At times, so many anglers lined the mouth of the Platte River it had to be closed to allow the fish to pass.

Gill nets were deemed a threat to the region’s new prosperity. The state set out to reduce the number of commercial licenses and to switch fishermen over to trap nets which allow fish to be released, avoiding incidental catch. Advocates of sport fishing spoke of commercial fishing in the Great Lakes as a “marginal” fishery, at best, that was “doomed to extinction” and hardly worth bothering about in the era of deep water sport fishing.

The state may have pushed too hard. Backed into a corner, a few tribal fishermen took the fight to court and in 1979, a federal judge declared that fishing rights reserved in the 1836 Treaty of Washington remained intact. The ruling from Judge Noel Fox was sweeping. Fish in large swaths of the Michigan waters of the upper Great Lakes belong to certain Chippewa and Ottawa tribes he said and cannot be restricted. “The right is not limited as to the species of fish, origin of fish, the purpose of use or the time or manner of taking,” said Fox. This more than

anything allowed the commercial harvest of fish to retain a foothold in the Great Lakes State, arguably for white fishermen as well.

Today the commercial fishery remains a remnant in Michigan, which controls more than 40 percent of the water in the Great Lakes. A few dozen people altogether engage in commercial fishing, split almost evenly between native and non-native businesses. They still supply one of our region’s most iconic wild foods, the whitefish. The state recognized tribes continue to use gill nets, which makes entry into the business more affordable since the cost of a trap net and boat large enough to haul it are much higher.

Now non-native commercial fishers say a package of bills that recently cleared the Michigan House of Representatives will spell the end of their work. They see this as the state finishing a fight that began 50 years ago. The bills would classify lake trout, walleye and perch as game fish, eliminating any option for a commercial harvest. (None of this would affect the tribes.)

While non-native commercial businesses do not target these fish now, except for perch in Saginaw Bay, the industry was hoping new laws would allow them to diversify their catch. Instead, the package of bills would ensure that the industry is almost entirely dependent on white fish, a species that is showing signs of distress according to researchers. Across Lakes Huron and Michigan, research shows fewer whitefish as lake trout numbers rise. Particularly disturbing to fishery biologists is a “dramatic decline” in young white fish. This is what is known as a failure in “recruitment,” meaning young fish are not becoming adults.

Amber Mae Petersen, a fishmonger in Muskegon whose husband has a state commercial license, says leaving the industry to survive on one species gives no ability to respond to changes in the fishery. “It doesn’t take a genius to figure out what’s going to happen,” she said.

Sport fishing groups are thrilled with the legislation. An email from Michigan United Conservation Clubs announced that

fish are “one step closer to swimming away from commercial nets.” MUCC’s director, Amy Trotter, said her “members have demonstrated they won’t stand for subsidizing the commercial industry.” And their position is supported by the numbers. More than a million people bought a license to fish in Michigan last year and that generates about \$38 million for conservation between the cost of the license and federal dollars the fees unlock. Commercial fishing fees are a pittance, and that explains the comment of Rep. Jim Lilly when the legislation was introduced: “Catching fish in our water is a privilege, not a right.”

For the tribes, catching fish for food with nets is and will remain a right in treaty-ceded waters unless an appeal of the 1979 Fox decision upends it. For non-natives, the predictions from 50 years ago may be reaching their fulfillment. In those days commercial fishers were likened to the ranchers and Indians on the Great Plains in the face of the sodbusters who had come to liberate the soil and wrest from the earth its maximum value. In the face of such upheaval, commercial fishing must “change with incredible swiftness” advised the state’s chief of the Fish Division. Now the options for change might be closed off and one of man’s oldest occupations in North America will be left to its original practitioners in Great Lakes State - tribes of Chippewa and Ottawa Indians.

REFORMIST // REVOLUTIONARY NOT A DICHOTOMY

*A Reflection on Organizing Strategies in
the WesPac Movement in Pittsburg, CA*
Manisha Rattu

Introduction

I quickly walk over to the building that houses Greg’s insurance agency, as well as other suites—I am running late. The downtown area brings back a flood of memories: running to the marina for cross country practice, eating at the New Mecca Cafe, and visiting the farmer’s market with my dad. But most importantly, and what brought me back today, was the memory of beginning our demonstration rally against WesPac, and the crude oil terminal they had proposed to build on our Delta a few blocks away.

The development of the downtown area, Old Town Pittsburg, California, was a recent endeavor, sparked by the city to reinvigorate the community’s local businesses, culture, and arts. Pittsburg has long had a rich history with the performing arts; the Creative Arts Building has hosted Louis Armstrong, Ray Charles, Stevie Wonder, and countless other performers. The Pittsburg High School Marching Band has been recognized at the international level. The community is also quite diverse, with a majority of the population identifying as Hispanic or Latino, Asian, Black, or African American. With such rich cultural diversity, it’s only natural that one of the largest events put on by the high school is an annual multicultural assembly, where students celebrate their cultural identities through a dance performance.

Nonetheless, the city is not without its own issues. It often serves as a battleground for many different “isms.” There is a wealth

of cultural vitality in Pittsburg, yet I, a Punjabi woman of color, still experience racism from other black and brown people. The city also suffers from an income inequality higher than the national average. The average age is increasing in the city, as young people are leaving and not returning. The primary industries are health care and social assistance, and retail trade. The highest paying jobs are tied to utilities, mining, and oil and gas extraction. A young person seeking work in a professional, scientific, or technical role is most likely to find that job within the heavy industries, like Dow Chemical and Praxair. For those seeking employment in other sectors, Pittsburg is unlikely to provide them opportunities.

I arrive at the address Greg sent me. After a few unsure knocks, I enter the building and find my way upstairs where his office is located. Our paths first crossed in 2013 when the community of Pittsburg began rallying against WesPac. The WesPac project mobilized Pittsburg residents in a way that no other issue had, and it was successful in defeating a huge corporation which sought to bring dirty oil into our already-polluted community. At that time, Greg had become a strong supporter of young people organizing against the crude oil project.

While Greg Osorio’s day job is as an insurance agent, he spends most of his time embodying his social justice values. He invests his time and energy into working with folks at the social justice non-profit he helped co-found, called Souljah’s. Souljah’s is dedicated to “helping oppressed people everywhere.” Greg is also deeply involved in the Pittsburg community as a continued supporter and organizer of annual Cesar Chavez and Martin Luther King, Jr. Day events. I remember when I was in high school and



Dolores Huerta came to speak at our Cesar Chavez assembly. Greg made sure to take me backstage to meet her personally.

As I walk into his office, he greets me with the same smile I remember. We sit down and our conversation picks up naturally as I speak about my Environmental Justice course. I bring up the WesPac protests, and I tell Greg that I am interested in hearing his timeline of the entire movement. I was 16 at the time of the organizing efforts and do not remember all of the details and logistics; I had mostly worked on the youth mobilization front. From what I understood, there were various organizations and leaders working on this movement, yet it was still a united front. Greg, however, reveals that it was far more complicated than that.



In 2012, WesPac, an energy infrastructure company, proposed building a crude oil terminal in Pittsburg, California. In the wake of the proposal, two grassroots community groups formed to combat the threat in an otherwise politically disengaged community. The Pittsburg Defense Council (PDC), and the Pittsburg Ethics Council (PEC) worked tirelessly to prevent WesPac from taking over our already-overwhelmed industrial suburb. Over the course of two and a half years, the two groups worked hard to convince the city council to reject the project. They came together a few times, but mostly worked individually on different fronts. Their efforts drew the attention of local advocacy groups such as the Sunflower Alliance, Communities for a Better Environment, Sierra Club, NRDC, and more. Local news outlets highlighted the citizen movement taking place in the East Bay town.

Now, years later, I was learning from Greg about the tensions between the two groups. Despite being in the midst of the movement and operating in both spaces, I had failed to see the strain between the PDC, and the PEC. In retrospect, the differences in their strategies were quite obvious. PEC was ferocious in calling out WesPac and city council, mobilizing the youth of Pittsburg, and engaging working-class people of color. PDC used more calmer rhetoric, and employed a regularly updated website, mailing list, and strong media presence. Despite their clashes, the presence of the two organizations was vital to the WesPac movement as a whole, because both strategies were rooted in different philosophies and, therefore, reached different people. This made for a diverse mobilization. The combination of a reformist PDC and a revolutionary PEC were what made success possible in Pittsburg.

Timeline and Points of Contention

The WesPac project was proposed in July 2012 but received public attention in July 2013 when the Recirculated Draft Environmental Impact Report (RDEIR), compiled by WesPac, was made available to the public. The 125-acre terminal project consisted of a marine terminal and storage facility, as well as a rail transload facility and pipeline. The average throughput of crude oil or partially refined crude oil per day was estimated to be 242,000 barrels—about four times the daily flow rate of the burst well in the BP oil spill. The RDEIR acknowledged that the project posed significant and unavoidable risks: the introduction or spread of aquatic invasive species, reduced air quality, release of a hazardous material to the environment, and more.

As a 16-year-old, I was uninterested in protest or organizing efforts; I was too preoccupied by the four AP classes I was taking. I spent a lot of time with my AP Physics teacher, Ms. Fitz, getting much-needed help on our weekly problem sets. I usually came by after Cross-Country practice, which meant that office hours did not end until 6 or 7 at night. I remember one day asking her if she was finally going home, since she lived far, but she said no. She was on her way to a local meeting against a crude oil terminal. I definitely shrugged it off that first time, too distracted with homework, but after a week or so I finally asked her what crude oil was and why she cared so much. She sat down and explained to me what this project meant for a community like Pittsburgh. She offered to take me along to the next PDC meeting. Although it would be late in the evening, I decided to go.

That evening, I was welcomed in a room full of concerned citizens, local advocates and community organizers. We learned the hard facts about the project and strategized counter-efforts in small groups. I was in awe of the fact that my voice was not only listened to but encouraged; I was chosen to share out my breakout group's discussion with the larger collective. In that moment, I felt the power in my voice, and deconstructed the dichotomy I had created between myself and the "adults with knowledge." I had recently started a community service club with my friend, Mohammed, and after that meeting, we decided to shift our club's efforts onto the WesPac project. It was not long before the project spread beyond my friends and throughout our high school. Soon, we had organized our own carpools to meetings, circulated petitions amongst our peers, and held our own strategizing and information-gathering sessions.

Along with petitioning, there was a lot of planning underway for a demonstration rally intended for early January 2014. The Monday before the rally, there was a city council meeting. With my teacher's encouragement, my friends and I prepared short comments. I spent a while figuring out what I would say and decided to focus on the city's mission statement, highlighting how the city council was going against its own established values by supporting WesPac.

At that city council meeting, there were quite a few people present to speak out against WesPac. The new mayor was also being inaugurated at this meeting, so turnout was high. After a few older white folks spoke about the pollution and noise issues surrounding the project, a man in a leather jacket and a baseball hat went up. His voice was sharp and demanding, and immediately he stood out from the other speakers. This was George Monterrey. He said he wasn't here to ask anymore, but to tell city council that no one wanted this project. He went on to say, "the city is not your fiefdom, we don't work for you, you work for us... we will hold you morally responsible if anything happens to our city... WesPac... hell no!"

George and Lyana Monterrey were credited as the couple who first spread news about the project and founded the PDC. They were both born to Nicaraguan families and raised in the Mission District in San Francisco, and they had resided in Pittsburgh for 30 years. George was a Golden Gloves boxer, Vietnam War veteran, and worked a number of jobs in industry. Lyana had always been in the financial sector.

When Lyana Monterrey had learned about the WesPac project, she immediately began knocking on her neighbors' doors. The site of the proposed crude oil terminal was

only blocks away from her home, and she had recognized the risks crude oil posed. Her neighbors, Kalli and Lisa Graham, also joined in on the fight. Once word got out, concerned citizens began to circulate written petitions against the project to show the community's opposition. The Pittsburgh Defense Council had been born out of these efforts as a self-identifying grassroots group fighting the proposed crude oil terminal. However, the Monterreys had eventually left PDC when they realized they didn't fully agree with Lisa and Kalli Graham who went on to take over the organization. George and Lyana Monterrey were ferocious in their organizing, and their constructive anger often guided their dialogue and how they framed their views.

After the city council meeting, members of the PDC went up to congratulate the new mayor and thank the previous one, in an effort to maintain a positive relationship with the city council. The Grahams took on a calm and collected approach when engaging with city council. PDC saw the council members as people they knew, and as fellow residents. They built personal connections with council members and helped them recognize the harms that this project posed. PDC believed that the council was simply uninformed and that by engaging in dialogue with one another, the council would soon realize the flaws in their thinking.

But I was in awe of George's ability to question the council and remind them that they were elected to serve the people of Pittsburgh. His approach resonated the most with me as a person of color from the community, who saw the council as not listening to its own residents. The Monterreys and PEC did not believe that they could negotiate with city council. PEC felt as though the city had made up its mind and was guided

by money and votes, and not the voices of the people. They did not think it made sense for residents to have to negotiate for clean air, clean water, and healthy lives.

The following Saturday at Mariner Park, at the start of the demonstration rally, George and his wife, Lyana, spotted me and my friends. They called us over towards their truck. George introduced himself as part of the Pittsburgh Ethics Council. The PEC consisted of the Monterreys and Greg Osorio, as well as members of the community who did not mirror the same approach as the Grahams and other folks in the PDC. Where the PDC was more strategic in working with city council, the PEC was more insistent on challenging city council and engaging the working-class people of color.

George joked around with me by saying my speech at city council was the best out of everyone, aside from, of course, himself. He even asked me to be his campaign manager when he decided to run for city council and asked that I sit on PEC's board. George and Lyana's easy-going personalities, openness, and strong encouragement felt warm and welcoming. They differed from the environment of PDC meetings, which were buzzing with activity that provided a great space for mingling and strategizing, but not for heart-to-heart conversations. George and Lyana were also very committed to mobilizing young people who would then go on to challenge the system and reimagine it.

Because we felt more heard in the PEC, us youth slowly started to drift there, away from the PDC. The Monterreys and Greg Osorio guided us through our efforts to educate ourselves and our peers. As young people from the community who had come to question authority, our anger was

directed at city council. We decided that we were informed enough about WesPac to take a stance, but many of our peers were not. So, we created a PowerPoint with information about the project and current organizing efforts and visited classrooms to do a 10-minute talk. We did not conclude by telling everyone to join our stance against WesPac—instead, we advocated that our peers wake up and pay attention to what was going on around them so that they can be informed citizens. Without the involvement of active, informed citizens, the city council could continue to make harmful decisions and face zero repercussions. The Monterreys and Greg were heavily invested in stopping WesPac, but they were also keen on supporting us to be a generation of conscious individuals.

Over the course of two and a half years, the WesPac project was challenged by significant citizen uproar. WesPac and the city council had originally believed that the project would be quietly approved, but with the help of the PEC and PDC, the people of Pittsburgh made their voices heard. After months of highlighting the dangers of rail transport, WesPac was forced to adjust their plan to instead bring in crude oil by ship only. This adjustment required the company to write another Environmental Impact Report. At this time, oil prices had dropped nationally, and the demand for US-based oil was declining. The local organizing efforts of PEC and PDC were able to forestall the project long enough to make it unfeasible and too expensive to move forward. At the end of 2015, WesPac withdrew their Pittsburgh oil terminal project due to “business reasons.” We, however, know that they were tired of having to clash against a community that was tactically equipped to challenge them at every step.

Reformist // Revolutionary

In essence, I believe that the Pittsburgh Ethics Council embodied a revolutionary framework, while the Pittsburgh Defense Council embodied a reformist framework. PEC was a reactionary space that existed only when the potential harm of the WesPac project charged the fire and anger of young people and residents. They worked on systemic change, starting with the very type of dialogues people hold; theirs was a revolutionary approach to changing the system.

PDC, on the other hand, built ties with the council, and today its remaining board of 3-4 members still advises on occasional council projects. PDC’s reformist approach has been fairly successful at working with the city council, which has led to changes within the system. Both groups are in it for the long run. While PEC eventually disbanded, the Monterreys and Greg continue to invest time and energy into the community, and they also did so before WesPac came. George coaches community baseball teams for kids and ran for city council. Greg continues to be a long-time organizer of annual community events.

But it was the combination of the two groups, reformist PDC and revolutionary PEC, that made this movement successful in Pittsburgh. The two groups attracted different sets of people: older residents, young people, environmental organizers, and concerned parents. In the case of the demonstration rally, PEC was able to bring in people who would not be speakers who were predominantly residents and people of color, and who shaped their outcry against the health risks this project posed to their children’s lives and the health of all people. PEC was able to mobilize young people to see the power in their voice

and without that encouragement, I would not be at Stanford, nor would I be writing this piece.

But it was PDC’s website that made it very easy for outside organizations to get in contact with community organizers. They helped to involve the press, who shared a number of stories from the movement. The media coverage drew the attention of then California State Attorney General, Kamala Harris, who wrote an 11-page letter criticizing the WesPac project’s Environmental Impact Report.

Had the WesPac movement been entirely reformist or entirely revolutionary, people would have been excluded. Pittsburgh is an extremely diverse community, so multiple angles were needed to connect with people’s varying needs. Some people cared about their homes, while others cared about the future, and many were cognizant of past injustices. The collision of each organization’s methods brought all of those people together and resulted in a huge and rare community success. Despite that success, the movement was not without its own internal struggles. Homophobia, racism, and sexism were very much a part of the two spaces, and it is important to learn from these failures in addition to the movement’s success.

Future Directions

As the city continues to develop and situate itself in the larger context of climate change, we must begin imagining a just transition for Pittsburgh. This transition can be achieved through a variety of strategies, beyond just reformist or revolutionary. Just as the WesPac movement balanced the two strategies and drew in a huge crowd, there

is potential for a sustainable community space to exist where community members from all walks of life can share their concerns and hopes for the future of the community. In doing so, perhaps we can model a future for Pittsburgh that does not rely on fossil fuels, but that prioritizes the needs of its people, that provides good quality of life, that embodies kindness towards one another, and that uplifts the voices of young people.

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SAVE THE BEES.
SAVE THE WORLD.
Katherine Owens

What happens when purposes collide—when a substance has unintended consequences that cause arguably more harm than good. This is perhaps nowhere more apparent than in the use of pesticides in modern agriculture. The line between pollinator and pest can be thin. Twenty-five percent of what Americans eat depends on honeybees for pollination, and yet populations of honeybees and other pollinators are experiencing vast devastation. It was 2005 when beekeepers, scientists, and farmers first began to recognize and address the devastating bee malady we now call colony collapse disorder. Scientists are not precisely certain of the cause, but evidence reveals the debilitating impact of some pesticides. The finger is often pointed at neonicotinoids.

For the fifteen years since, bees, and other species that are critical to our survival, have continued to suffer extreme losses. This is not simply an environmental and ecological disaster, it can be put into clear economic terms as well—as bees provide a service worth 500 billion dollars annually to crops around the world. According to the American Beekeeping Federation, honey bees provide twenty billion dollars of value to crop production in the United States each year. Bees improve both quality and yield of many crops, not to mention providing products including bee pollen, honey, and royal jelly. Cherries and blueberries depend on honeybees to thrive. Almonds require them for survival. If you like beans, carrots, tomatoes, or any of the other 400 agricultural plants pollinated by bees, then you should be concerned,

While we need bees, the question is what to do about other pests. Some approaches to combatting pests can be targeted to individual species, as when farmers use pheromones to attract and trap male boll weevils. Pesticides, however, do not discriminate. Chemicals made to kill will kill, whether the insect in question is useful or not. That being said, pesticides are often the default approach to reducing crop pests.

In the European Union a two-year ban on neonicotinoid pesticides has been imposed and a coalition of political parties has created a campaign to save the bees in Bavaria, Germany. This feat was accomplished through the collaboration of members of multiple political parties, as well as from those who care about nature, conservation, bees themselves, and organic food production. As is often the case for grassroots political change, success came from building a broad coalition. They joined together with the simple slogan: Rettet die Bienen, or, Save the Bees. The campaign brought together so many Bavarians to support the referendum that the majority political party, one not typically associated with the environment, voted in a new law. This policy included the recruitment of 100 biodiversity and habitat consultants, forest and riverside habitat protection to preserve both areas important to bees and water quality, and a reduction in pesticide use.

But who will save our bees? The American Beekeeping Federation's website includes their national legislative priorities, though it may be of concern that these have not been updated since 2017. Among the priorities, they note their interest in federal agencies supporting the already existing National Strategy to Promote the Health



of Honeybees and Other Pollinators. This Presidential Memorandum from 2017 asked, among other things, that the EPA determine the impact of neonicotinoids on bees. It set the goal of reducing bee colony overwinter mortality rate by 50% over ten years, as well as supporting habitat for both bees and the monarch butterfly, another important pollinator. The ABF also prioritize legislative work on funding for research, protecting honey markets and bee habitat, and food labeling. This report singles out pesticides as a legislative priority, noting that bees are disappearing at unsustainable rates. Despite this report, the Environmental Protection Agency began allowing the use of sulfoxaflo (a neonicotinoid) in July of 2019. When making this decision, the EPA failed to solicit input from the public or the beekeeping industry. Public and industry comment is typically allowed in such cases, so in response, a group of American beekeepers have filed suit against the EPA. Meaning, now in the United States, the case must proceed through the courts, while the fate of our food system hangs in the balance.

Bavaria's success may be attributable to moving beyond the usual suspects who care about the health of bee populations: farmers, beekeepers, and environmentalists. What would it take to build a broad coalition in our country? Who would it include? Simply put, it is important to communicate the importance of this issue to the millions of Americans who enjoy the food made possible by bees. If we can collectively communicate the importance of bees to lawmakers, we can make them a priority. Save the bees. Save the world.

Cities do not think
about saving green spaces
when they are growing

5 of 5

LANDFILL

Dewi Tan

Every day, roughly 8,000 tonnes of rubbish are collected from the capital city of Jakarta before ending up at Bantar Gebang, the largest landfill in Southeast Asia. Just two decades ago, the area was covered with paddy fields before it was bought by the state and later converted into a landfill. Being in Bantar Gebang for the first time, I wasn't struck by the monumental size of the landfill as much as the sight of dozens of people working tirelessly from the base to the very top of the 40-metre heap. Today approximately 3,000 families live in Bantar Gebang. Residents have grown dependent on the landfill for a living, as their main source of income involves the collection and resale of recyclables, such as plastic bottles, aluminum cans, and cardboard. The lack of access to clean water, as well as the poor quality of the available sanitation facilities, are just some of the many challenges faced by the families who live around the landfill. It was only when I was shown a plate of chicken drumsticks—which was fried after being picked—that I learned that residents also rely on the landfill for discarded food. With the landfill expected to reach its maximum capacity in a few years, families will have to look for other means of earning a living. Pak Amin, a resident who has been working at Bantar Gebang for the last 8 years, has expressed interest in moving to where the next landfill will be, “depending on how far it is and whether my children can come with me.”

Children who live at the landfill are often stigmatized as poor and uneducated. Such stigma affects these children's psyche, decreasing their confidence and tainting their outlook on life. In order to combat this stigma, Resa Boenard co-founded BGBJ (www.bgbj.org)—a community-run nonprofit organization with the mission to empower the local children to believe that they can become anything they wish to be, no matter how big or small



their aspirations are. Resa, who was also born and raised in Bantar Gebang, recalls that “there was no role model when I was a kid... people stop schooling at eleven [or] twelve... married at thirteen.” To fill this need for adequate educational resources in the community, workshops are conducted regularly. Some of the weekly classes offered include foreign languages, music, photography, yoga, and boxing. At BGBJ, children are also taught how to reduce their plastic consumption. “This is very important because we are living in the middle of the landfill with plastic reaching outside of our doors... [while] some of the children understand, some of them keep asking why us and why not people from Jakarta?” Resa strongly abides by the belief that even when the children move away from landfill one day, they will be mindful of their impact on someone else’s environment. Moreover, “if we don’t take any action, we would be the same as them [people in Jakarta].”

Last July, BGBJ organized an outdoor music concert at the landfill as a part of Make Music Day—an annual global event where communities gather to celebrate live music in public spaces such as neighborhood parks. For the first time, the road in front of BGBJ leading to the entrance of the landfill was closed off. Bright orange dump trucks that drove by continuously throughout the day and night were rerouted, drawing large crowds to the street where the dance floor was set. It was a day packed with back-to-back live performances from 16 bands who traveled from as far as the city of Bandung to perform. The children of BGBJ kickstarted the concert with an opening performance that

- ← Waste pickers (known locally as *pemulung*) are at work atop the largest landfill in Southeast Asia.
- A local resident cleans the plastic bottles collected before she can resell them.
- A makeshift shelter for waste pickers to stay cool while working under the hot sun.







they spent weeks, if not months, rehearsing for; together, they marched towards the stage against a backdrop of what seemed like an insurmountable mountain of waste. Resa's aspirations are echoed in this frame—"In the future we will see the children of Bantar Gebang contributing to protect this environment [and] not just being someone who lives in the landfill."

Over in the distance, I can still make out tiny figures with their backs crouched over at the very top of these landfills. Waste pickers, known locally as *pemulung*, are still hard at work. Many of them are parents who have expressed their desire to provide a better future for their children. With the landfill expected to be filled in due time, one can't help but question how the closure of landfill will affect the livelihoods of communities who have made Bantar Gebang their home.

- ← Pak Amin sorts recyclables from waste outside his house where few lush green banana trees remain.
- One of the children wearing BGBJ's signature "Best Dump Ever" t-shirt.



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Typeset in William's Caslon Text.
Custom glyphs by Mianwei Wang.
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TREVOR DOLAN is a Master's in Environmental Management candidate set to graduate in spring 2020. He has an interest in environmental law and policy, with an emphasis on environmental justice issues and climate change mitigation. Trevor has worked for a bunch of environmental NGOs, including WE ACT for Environmental Justice, the Michigan League of Conservation Voters, and the Environmental Law Institute. Past writing includes a senior thesis on crop donation tax credits and several editorials for publication in his undergrad campus newspaper, the *Michigan Daily*.

KARAM SHEBAN is a second-year Masters of Forestry student at the Yale School of Forestry and Environmental Studies. His interests include community development and resilience, alternative and regenerative forest economies, and environmental writing. Before coming to Yale, Karam worked in Appalachian Ohio with private landowners, using forest farming as a mode of economic development and as a strategy for private forestland conservation. Before that he spent two years as an assistant producer for an NPR public affairs show in Columbus, Ohio, where he grew up.

SAMUEL CORDON is a Masters of Environmental Management candidate with the Yale School of Forestry and Environmental Studies, and is a Journalism Scholar at Yale College. Before coming to New Haven, he worked as an environmental radio broadcaster and photographer with public radio in his home state of Michigan. His current work focuses on policy done in partnership with UN agencies, updating international approaches to deal with modern issues—specifically at the nexus of climate change, human migration, and data regulation.

ABIGAIL CHAN is a Master of Environmental Management candidate at the Yale School of Forestry and Environmental Studies, specializing in Ecosystems, Land Conservation, and Management. She is particularly interested in investigating and transforming traditional frameworks of land conservation to include innovative strategies for resilience, community engagement, and diversity & equity opportunities. Prior to Yale, Abigail attended the University of Virginia, where she received her B.S. in Environmental Sciences and a B.A. in Environmental Thought & Practice.

MEGAN EDWARDS is a joint M.E.M. (Yale FES) and J.D. (Pace Law) student and is interested in environmental justice and environmental conservation. She has been an intern at the Land Use Law Center for Sustainable Development, where she researched how farmers are economically limited by the zoning of agricultural lands. Megan has also been an intern at the Conservation Law Foundation, where she focused on Clean Water Act litigation in New England and PFAS regulation in Massachusetts. She graduated from Simmons College having studied Biology and English Literature.

PAT WIEDORN graduated from the US Naval Academy in 2011 with a B.S. in Chemistry. After commissioning as a submarine officer, he reported to the USS Oklahoma City (SSN-723), a fast-attack submarine then stationed in Guam. After the Navy, Pat served as a Peace Corps Volunteer in Zambia. There, he lived in a rural village and taught fish farming, in addition to HIV/malaria prevention, integrated farming, and nutrition. His special passion was orange sweet potatoes. At Yale, Pat is studying for an MA in Global Affairs at the Jackson Institute, and is focusing on international development.

EMMA JOHNSON is a Master of Environmental Management '20 candidate at the Yale School of Forestry & Environmental Studies. Her areas of study include ecosystem science, mountain ecology, land management, and global environmental issues. Before coming to Yale, Emma worked on the Student Life team for The School for Field Studies study abroad program in Bhutan. She lived in Bhutan for a year helping facilitate a study abroad experience for undergraduates and studying youth perceptions of climate change and the environment. She received her B.S. in Environmental Science from Davidson College in North Carolina.

ELIZABETH HIMSCHOOT is a Master of Environmental Management candidate at Yale School of Forestry and Environmental Studies specializing in Ecosystem and Land Conservation and Management. She is interested in landscape management for biodiversity conservation through the use of cooperative land management and conservation strategies inspired by multiple ways of knowing. Before coming to Yale, Elizabeth worked at the Smithsonian National Zoo and Conservation Biology Institute participating in animal nutrition and conservation research for two years. She received a B.S. in Biological Sciences from the University of Alaska, Fairbanks in 2017.

MAXIMILLIAN SCHRECK is a Master of Environmental Management candidate at the Yale School of Forestry and Environmental Studies, specializing in both Business and the Environment, and Climate Change Science and Solutions. He has an interest in utilizing the economic power of the private sector to mobilize cooperative action on climate change mitigation, adaptation, and resiliency. Prior to coming to Yale, he worked as a economics researcher at his alma mater, the Rochester Institute of Technology, and then at The University of Massachusetts Amherst, focusing on environmental and waste management policy.

BRITTA DOSCH is a second year MEM at the Yale School of Forestry & Environmental Studies where she studies land conservation and climate change. She spent the past summer interning with Secretariat for the Convention on Biological Diversity on their climate change team. Prior to FES, Britta worked for a policy think tank where she focused on GHG mitigation in the energy, transit, and waste sectors. She graduated from Boston University with a BA in International Relations. She is from Los Angeles, CA.

BECCA GEORGE is an editor for Sage Magazine. She is a first-year student at the Yale School of Forestry & Environmental Studies, pursuing a specialization in People, Equity & the Environment and Urban Studies. Prior to FES, she worked at the Asia Foundation and the World Resources Institute and graduated with a B.A. from Wellesley College.

