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As a reminder of the decolonization work necessary to build a truly sustainable society, we acknowledge that the process of putting together this issue took place on the territories of the following Indigenous nations:

Anishinabek, Cherokee, Chippewa, Haudenosaunee, Kwantlen, Kwikwetlem, Métis Nation (Region 3), Mi'kmaq, Mississaugas of the Credit, Musqueam, Osage, Piikani Kainai, Powhatan, Qayqayt, Shawnee, Siksika, Squamish, Stó:ló, Stoney Nakoda, Teet'it Gwich'in, Tla'amin, Tsleil-waututh, Tsawwassen, Tsuut'ina, Wendat

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Netukulimk: The Mi'kmaq Way of Life

Despite colonial attacks, Indigenous peoples have preserved our principles of living in harmony with the land.

By **Killa Atencio**

Killa shares her voice and culture in many ways: as a poet and spoken-word artist, writer, visual artist, entrepreneur, and manager at LOVE Nova Scotia.



When I was a child, my father would tell me awe-inspiring stories about Chief Raoni, the head of the Kayapo people who has led the struggle against the exploitation of their land in Brazil. I was fortunate to meet Chief Raoni when my father and the Innu nation of Québec invited him to speak about Indigenous rights and protecting the boreal forest. One of my fondest memories is of touring Montreal's Biodôme with him. In the lush and warm tropical rainforest exhibit, he walked right off the path marked for visitors. I assume he felt at home, connected to the forest, even inside a concrete building in the middle of the city.

This moment was one of my earliest teachings. Remembering Chief Raoni's connection to the land reminds me that we are in an interdependent relationship with Mother Earth, responsible for protecting the gifts we receive from her, and using them in a sustainable way.

This perspective is not unique to a single Indigenous nation, tribe, or even continent. My father is Quechua from Peru. The Quechua philosophy of *sumak kawsay*—which loosely translates to “good living”—is based on ancestral knowledge and practices. Through *sumak kawsay*, we as a community coexist with the land, preserve our culture and identity, and care for an environment that will provide for us for generations. An example of *sumak kawsay* is *haywarisqa*, an offering of natural objects made by farmers before they harvest potatoes, symbolising giving back what they have taken from the Earth. The offering is a

gift, charged with intention, love, reciprocity, and reverence, and is usually burned, buried, or released into a river.

My mother is Mi'kmaq from Listuguj, Québec, and in our culture there is a parallel value at the centre of everything we do: *netukulimk* (pronounced neh-DU-guh-limk). Its teachings—that the human and natural worlds are not separate from each other—are sewn into the fabric of Mi'kmaq identity and celebrated. Netukulimk means to have enough, but not more than enough. It teaches us to use natural bounty for ourselves and community sustenance, without wasting and jeopardizing it for the future.

When we would go sweetgrass picking in summer, I was taught to respect the plant and give thanks by offering tobacco to the Earth. We would do our best to not step on many plants as we walked, pick in different areas to not deplete the population, not pull out the root, and only pick what we needed to ensure there would be sweetgrass left for the next season.

Prior to European contact, nature and its waterways provided all the necessities of life for the Mi'kmaq. Since contact, we have endured colonization's attempts to sever our relations to the land and the offerings it provides. The Peace and Friendship Treaty of 1752—signed by the Mi'kmaq and the British crown—asserts that the Mi'kmaq “shall not be hindered from, but have free liberty of Hunting & Fishing as usual.” But this clause has not been honoured and has often been impeded by bureaucracy. With the creation of reserves in the late 1800s, Mi'kmaq were often relocated far from their traditional hunting and harvesting territories, or without access to waterways. Mi'kmaq people hunting or fishing would sometimes be accused of “poaching” and have their catch seized by the Canadian government's Indian Agents.

These colonial tactics took a toll on transferring the teachings of netukulimk between generations. But we haven't let them be forgotten. Reclaiming Our Roots is a Mi'kmaq-led project in Nova

Scotia that connects Indigenous youth with meaningful land-based learning and community stewardship, rooted in the principle of netukulimk. One of the group's activities is trapping beaver for population management. In keeping with netukulimk, they identify how many can be harvested each year, rotate trapping spots, and use every part of their catch by eating and gifting the meat, and using hides, skulls, teeth, and claws for crafts or ceremony.

Mi'kmaq rights to hunt and fish were upheld by the Supreme Court of Canada in 1985 and 1999. But though the court said we were entitled to earn a “moderate livelihood” from our hunting, gathering, and fishing back in 1999, Canada has never clearly defined what that might look like. Tired of waiting and determined to reaffirm their rights, Mi'kmaq fishers in Digby, NS, began to harvest lobster for sale outside the commercially licensed fishery earlier this fall.

When white commercial lobster fishermen responded by harassing, intimidating, and destroying the property of the Indigenous fishers in the name of “conservation,” they completely ignored our treaty rights. They failed to understand that the Mi'kmaq are self-governed by our own laws of conservation and resource management through netukulimk, which has been practiced for thousands of years. And it's not just an ancient principle: Mi'kmaq communities have implemented fisheries management plans and livelihood fishery principles guided by netukulimk, including regulations like prohibiting the retention of lobsters that are molting, under a certain size, or have eggs attached.

I don't use the term “natural resources.” It commodifies Mother Earth's gifts and denies the spiritual connection we have to her. The Earth is not ours, no matter who we are—it belongs to our grandchildren. We are simply stewards. By continuing to practice, relearn, and share the teachings of netukulimk, we partake in honouring our ancestors, ourselves, and the generations to come. |

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Asparagus Magazine is printed on Rolland Enviro Satin paper, made from 100% post-consumer recycled fibre, at International Web exPress in Coquitlam, BC.

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Letter from the Editor

I've struggled with writing my letter this issue. Not because I didn't know what to write about—I do. But because I wish I didn't have to bring it up. Because I wish it wasn't noteworthy.

In the very first issue of *Asparagus*, I wrote that I wanted the magazine to “represent a world we don't live in yet, but should; one in which people at all social intersections are both the storytellers and the ones whose stories are told.” We've always made it a priority to consistently commission work from writers, illustrators, and photographers from racialized backgrounds and other marginalized groups. And not as tokens, but as a significant portion of the work we publish, in print and online. Still, this issue marks a milestone for us. For the first time, more than 60% of the contributors in these pages are people of colour.

And I don't want to talk about it. Or about how the magazine includes work by people living with disabilities, and creators who are members of the LGBTQ+ community. This issue also contains work by folks who've been doing this a long time, and by others who are just getting their start.

And the only thing I want to say about all of that is, *Of course it does!* The world is full of people of all kinds, so of course our magazine should be the same. End of letter.

But it's not the end of my letter, because I know that my “of course” is still not a matter of course in journalism today. I know there are other indie outlets like us out there doing the work to create an inclusive and representative roster of contributors. And I know that even though we've been

doing that work, there will always be more to do. But because it is still a rare thing to encounter a magazine that is mostly written/photographed/illustrated by members of marginalized groups without being specifically targeted at readers from those same groups, it feels like something I need to talk about, even if all I want to say is “of course.”

It is past time for this to be normal. It is past time for media to consistently hire members of marginalized communities to write about their own communities and experiences from the inside. And *also* for them to hire members of marginalized communities to write about things that interest them which may have nothing to do with their communities and experiences. And while we're at it, it's past time that the teams behind the scenes supporting and collaborating with those contributors were diverse and inclusive as well, so that contributors from marginalized groups aren't faced with a privileged monolith at the other end of the email chain.

Before starting *Asparagus*, I used to say I wanted to put out a beautiful magazine on 100% post-consumer-recycled paper so I could say to the rest of the industry: “I did it, which means you can do it. Now do it.” And now the *Asparagus* team is publishing a magazine in which the majority of contributors have lived experiences that aren't the white-cis-het-male one so widely represented in our media day after day after day. And so to our industry, I say: “We did it, which means you can do it. Now do it.”

—Jessie Johnston
editor@asparagusmagazine.com

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Lakes at Stake

An interactive theatre game aims to inspire people to save Bangalore's lakes.



By Shailaja Tripathi

Photo by Nitin Vyas

Long before Bangalore was known as India's tech capital, it was known for its 200 lakes. But the title City of Lakes no longer holds true. In the face of rapid urbanisation and pollution, many have disappeared or turned into dead zones. Concerned that many Bangaloreans don't understand the lakes' plight, a local playwright has created *Once There Was a Lake*, a game that aims to spur conversations about ecology.

“I thought about what art can do,” explained creator Chanakya Vyas, artistic director of the theatre company Indian Ensemble. “It can make people more aware, more conscious. It can make people see something that they don't see, while keeping it playful and entertaining.”

A city of lakes

Bangalore lacks a major water source like a large river, so Kempe Gowda, a chieftain who founded Bangalore in the 16th century, built more than 100 lakes. Over the years, rulers and communities added to this system, which is made up of a series of interconnected reservoirs (known locally as “tanks”) that gather water from streams and rainfall.

“Bangalore never had lakes. They were tanks made by building bunds,” explained Naresh Narsimhan, a local architect and urban designer. The lakes often led to the establishment of new villages (now annexed by Bangalore). They helped with flood control, recharged groundwater, and created opportunities for fishing, while providing water for drinking, irrigation, and livestock.

Only a handful of lakes remain healthy. Urban growth has sounded the death knell for many others, thanks to new buildings, the accumulation of silt, uncontrolled weed growth, and garbage dumping. Some lakes have grabbed international headlines by foaming and catching fire, due to a buildup of inflammable gases like methane from untreated sewage, industrial effluents, and solid waste.

But the story of Bangalore's lakes is also a story of citizen activism. With the resolve to save these water bodies, citizen groups and campaigns have emerged in the last decade. Retirees, schoolchildren, techies, filmmakers, professional environmentalists, and homemakers are all actively engaged

with conservation efforts. Volunteer groups draw attention to the problem, file petitions, work with authorities to revive the water bodies, and meet on weekends to pick up garbage in and around lakes.

A game for ecology

Once There Was a Lake aims to draw more citizens to the effort. A confluence of folk performance, traditional board games, live action role-playing, and theatre, the game, which was created with a grant from India Foundation for the Arts, is designed to be intimate, with room for up to 12 players.

It begins with a song about Dugilamma and Gangamma, water goddesses worshipped by the local Kannada community. Then, an actor narrates the story of the players' neighbourhood, which has been cursed by the goddesses and run out of water.

“As villages turned into towns, towns into cities and cities into smart cities, one by one [the lakes] disappeared. What lies in the middle of your neighbourhood is a vast dry patch of land,” the actor says. “Gangamma and Dugilamma are still there—old, angry, and cranky—waiting

for you to revive the lake and reimagine your neighbourhood.”

A grid stands in for the neighbourhood, with cards representing dry land, water, greenery, industry, and settlements. Resources shift throughout the game as players make moves, like laying greenery on dry land or industry on water. They are motivated by victory conditions outlined on their cards. One might need to build industry, while another is focused on greenery. By throwing light on this tug of war between urbanisation and ecology, the game sensitises participants to issues like replacing lakes with buildings and cutting down trees to make way for a highway.

Actors read out stories at regular intervals to highlight environmental challenges. The story of a crow and a vulture underlines citizens’ indifference to their surroundings. Flying over a neighbourhood, the birds are disturbed to find a lake being filled with mud. They try to alert a human who is too busy watching a melting glacier on her smartphone to take in her surroundings.

Engaging citizens in revival

Vyas moved to Bangalore in 2012 and settled in Sarjapur, an IT cluster in south-east Bangalore where Kaikondrahalli Lake had been restored two years earlier. Urban development and garbage dumping had blocked water flowing into the lake, turning it into a polluted bed of water and trash. In 2008, a group of residents, architects, environmentalists, and ornithologists urged the local municipal body (known

as BBMP) to revive the lake. The citizens’ group transformed into a trust that has signed a memorandum of understanding with BBMP to help maintain the lake.

Some lakes have grabbed headlines by foaming and catching fire.

“It was inspiring to know that it was a marshy, empty land and, by the time I came, it had been turned into a lake park,” said Vyas. “We assume these things are done by the government because it is their duty, but, here, the authorities were pushed by the citizens.”

The story stuck with Vyas, who later realised many locals thought reviving lakes was too complex for them to get involved. Once There Was a Lake is his response. “Every choice they make on the board has a consequence. For instance, if we build too many industries next to the waterbody, definitely the waterbody will get polluted,” said Vyas. “It makes players aware of ecological issues.”

Had it not been for the pandemic, Vyas would have mounted full-fledged performances by now. He is contemplating an online version of the game and the team is conducting trial sessions when it can. Surbhi Rao, a corporate lawyer and theatre enthusiast, attended an abridged game at a Bangalore theatre space, which prompted him to think about the lakes in his

neighbourhood. “More than anything else, it encourages a conversation,” Rao said.

Rethinking lakes

Harini Nagendra is a professor of sustainability at Azim Premji University and a local ecologist. She wrote a book on human-nature interactions in Bangalore from 6th century CE to the present. “The role of communities in reviving, restoring, and maintaining lakes in Bengaluru is absolutely critical,” she said in an email. “Innovative and immersive activities like what Chanakya has designed are essential—they draw people in and engage them in a way that talks and discussions cannot.”

V. Ramprasad, the founder of Friends of Lakes, an environmental group that has breathed life back into many of Bangalore’s lakes, hopes efforts like Once There Was a Lake shift the public narrative on lake conservation. He worries the public is more concerned about using lakes for leisure than conservation. Ramprasad points to Sankey Tank, a reservoir built in 1882 by the British. Today, it is part of a popular park. Responding to complaints about congested walking paths, BBMP is considering adding another path. This has upset activists like Ramprasad who worry that would shrink the lake.

It is in this context that Once There Was a Lake aims to lead citizens on a path of inquiry about their surroundings. Like the players in the game, a city that was once replete with man-made lakes wrestles with decisions that could preserve and revive them or destroy them for good. **I**

chief executive officer and co-founder of Because Animals. “[Our product] is just as nutritious as traditionally grown meat, but it does not contain antibiotics. [It’s] without the steroids and growth promoters typically used in animal agriculture.”

In recent years, labs across the world have produced burgers, steaks, seafood, and more, without directly slaughtering a single animal. These products—called lab-grown meat, in vitro meat, cultured meat—are exactly what they claim to be: real meat. Instead of raising animals for slaughter, however, muscle or fat cells are grown in a nutrient-rich broth.

Supporters say cultured meat could help solve a crucial problem: animal agriculture

devastates the environment. From soaking up 2,422 cubic giga-metres of water (or 29% of the water used by humanity) every year, to generating 14.5% of global greenhouse gas emissions annually, to fostering antibiotic resistant microbes.

Pet food production contributes significantly to these figures. A 2017 paper published in *PLOS ONE*, a peer-reviewed science journal, found that 25-30% of animal farming’s environmental impact—in terms of land use, water consumption, pesticides, phosphates, and greenhouse gas emissions—comes from producing pet food.

“This isn’t something we can ignore any longer,” said Dr. Ernie Ward, a veterinarian, author, and co-founder of plant-based pet food company Wild Earth. According to Ward, the total greenhouse gas emissions from feeding our pets meat “equals about 14 million car exhausts over a period of a year... [or] 64 million metric tonnes of greenhouse gas emissions.” And, because pet food has shifted towards more animal protein in recent years, he continued, this figure is growing.

In contrast, research has shown that, by growing meat in the lab, we could reduce animal suffering while lowering the meat industry’s land use, water consumption, and greenhouse gas emissions by over 95% each.

On the front lines of lab-grown meat, Because Animals is taking an unorthodox approach by focusing exclusively on pets. In 2019, the company succeeded in creating the world’s first cultured-meat cat treat out of mouse cells, “without harming or hurting a single animal,” said Falconer.

Because Animals sourced the cells from the ears of three mice rescued from a lab and used an anesthetic so the mice would not feel any pain. (The mice now live with one of their research team members.) Then, the team grew these cells in cell media—a broth rich in nutrients, hormones, and other materials necessary for cell growth.

Traditional cell media controversially sources nutrients, minerals, and growth factors from the blood of fetal calves. However, Falconer’s company invented a recipe without any animal products, she said.

After enough cells have grown, the starter batch is moved into a “bioreactor”—a sterile, temperature-controlled vat similar to those used in breweries.

At this step, cells are typically grown on a “scaffold” so the final product resembles a cut of animal-sourced meat. However, Because Animals works without scaffolds because pets are less picky about their food’s shape. This makes the process faster and cheaper, said Falconer.

Finally, the meat is harvested and mixed with other ingredients. Then, it’s on to the food bowl.

“It will begin to familiarize people, the general customer, with this idea of cultured meat,” said Falconer, who aims to make a first batch of a few hundred cultured cat treats commercially available by the end of 2021. “The message we’re really trying to convey to customers is that cultured meat is meat—it is not a meat alternative.”

Ward agrees. Cultured meat not only presents a timely solution to the pet food problem, it might also quell the cultural “ick factor” associated with lab-grown meat, he said. Some people are distrustful

25-30% of animal farming’s environmental impact comes from producing pet food.

of lab-grown meat, he explained. However, they might feed it to their dog. Then, when cultured meat hits the market for people to consume, it’s more likely to be accepted.

Jacy Reese Anthis, author of *The End of Animal Farming* and co-founder of the Sentience Institute, a US-based think tank working to prevent the suffering of all sentient beings, including livestock, isn’t so sure.

“In the long run, I think we’ll need cultured pet food. But if I had the option, I would not make it the first one to market,” he said, explaining that introducing cultured meat to consumers as pet food could create negative connotations. People might see it as a lesser alternative to animal meat—a food for pets, not humans.

“I’m much less worried about ending factory farming a few days or weeks earlier than I am about just making sure it’s ended in general, and making sure that there’s not some negative issue with public perception that lasts for decades,” said Anthis. Instead, he argued, cultured meat should be introduced as a high-end product. Once it’s established as a luxury food, it could trickle into more general markets.

Ward disagrees. When cultured meat is on the market for both humans and animals, he said, people aren’t going to avoid eating it because it’s in pet food. “Most pet foods are using beef and poultry,” he said. “And yet, last time I checked, hamburgers and chicken McNuggets are two of the most popular dishes.”

For now, Falconer and her team are working hard to scale up production and optimize their process as they prepare to hit the market. In just a few years, it’s possible your pets will get to enjoy all the meat they can handle—without harming a single animal. **I**

FOOD OF THE FUTURE

Cultured Kibble

An American company creates cat food without harming animals or the environment.



By Kevin Jiang

As sci-fi as feeding your cat kibble grown in a laboratory may once have seemed, it’s closer than many realize. Because Animals—an American company that aspires to create pet food without harming animals

or the environment—is working to bring the world’s first batch of lab-grown cat food to market as early as 2021.

“We’ve basically pioneered cultured meat in pet food,” said Dr. Shannon Falconer,



Shannon Falconer working in the Because Animals lab

Photo courtesy Because Animals

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All's Fair in Love and Pants?

Just how sustainable are those fair-trade jeans? We get the skinny on Fair Trade certified clothing.



By **Emma Rubin**



When I first became passionate about avoiding fast fashion, I found it hard to find one closet staple: jeans. I pored through lists of sustainable and ethical denim brands; each seemed like a good investment, but was out of my budget. In recent years, that's begun to change. Major retailers like Target have begun selling jeans from Fair Trade USA-certified factories for under \$30. Beyond denim, other fair-trade clothing has cropped up in stores, both mainstream and niche. But what does the seal's growing abundance mean? Do fair-trade jeans truly embrace ethical labour and environmental standards?

What is Fair Trade USA?

Founded in 1998, Fair Trade USA originally certified a network of coffee growers. When coffee companies sourced beans from fair-trade farms—which met certain environmental and labour standards—and paid growers a set minimum above-market price, they received Fair Trade Certified labels. By the early 2000s, Fair Trade USA had expanded to tea, cocoa, and produce. Its sticker could be found on everything from chocolate bars to bananas. In 2010, the company began certifying cotton apparel and linens, and factories producing them.

What does the label indicate?

Fair Trade USA has three apparel certifications. First, Fair Trade Certified Factory and Fair Trade Certified Sewing seals certify garments manufactured in Fair Trade

USA-certified factories; the raw materials, including fabric, are uncertified. This certification appears on jeans from Madewell and Target's Universal Thread line, and on Mountain Equipment Coop's fair-trade line.

Second, the Fair Trade Certified Cotton seal guarantees the cotton in the product comes from fair-trade sources and makes up at least 20% of the raw materials. The nonprofit doesn't certify other fabrics, but some companies incorporate sustainability in other ways. For example, Patagonia makes products with a Fair Trade Sewing seal from recycled polyester.

Third, the Fair Trade Certified logo with no caveats guarantees the product is made in a certified factory and fair-trade cotton makes up at least 50% of the fabric mix. Fewer brands have this certification. HAE Now's cotton products and Vonada's T-shirts meet these standards.

How does certification work?

The Fair Trade USA Factory Standard for Apparel and Home Goods aims to empower workers, while ensuring fair working conditions and environmentally responsible production. Certification requirements fall into four categories. First, empowerment standards focus on ensuring workers can negotiate and work with management to improve working conditions. Second, social responsibility standards require factories to uphold labour, health, and safety standards, and buyers to commit to long-term purchases

to create a stable climate for factories to improve working conditions. Third, factories must meet environmental standards and continuously improve environmental practices.

Fourth, the certification promotes economic development by requiring brands to pay Fair Trade Certified suppliers a premium above the cost of goods. The premium goes into an account managed by a committee of elected workers and non-voting management representatives, which funds community projects, such as childcare facilities, computer centers, and health care clinics, or distributes cash bonuses to employees.

Suppliers must comply with a long list of Fair Trade USA factory standards, the majority of which must be met immediately. Others can be met within one or three years of certification. Fair Trade USA grants certification for three years at time with third-party certification audits completed triannually and third-party surveillance audits in intervening years. If a supplier is not complying with requirements, they must remedy the problems. Otherwise, they can lose certification.

Fair Trade Certified cotton is grown on fair-trade farms and, depending on the certificate holder, may be spun in certified mills and processing facilities. Factories and traders can purchase unprocessed seed cotton or spun and dyed textiles from a list of certified suppliers. Certified farms must avoid pesticides and fertilizers banned by Fair Trade USA and follow waste disposal requirements that aim to protect soil quality and biodiversity. Additionally, cotton buyers, like traders or processors, must pay farms a minimum price for cotton, a crop whose value often fluctuates.

How is Fair Trade USA funded?

Brands, factories, and farms seeking certification pay for audits through a third party. Fair Trade USA charges clothing brands a portion of sales depending on the scale of their operation. It also receives donations and grants. Some critics have questioned this financial structure, as the more suppliers it certifies, the more licensing fees it generates.

How does Fair Trade USA compare to other certifiers?

To *Asparagus'* knowledge, Fair Trade USA is the only third-party fair-trade certifier for

discrete apparel factories. Other groups like Fairtrade International also certify cotton.

In terms of cotton, Fair Trade USA and Fairtrade International have some differences. Fair Trade International prioritizes small-scale producers while Fair Trade USA certifies both plantations and small farms. Wage requirements also differ. Fairtrade International requires farms pay workers a living wage within six years or a union-negotiated deadline; Fair Trade USA requires progression towards a living wage without a definitive timeline. Both groups monitor suppliers with audits, prohibit forced labor, and require that workers have the right to join unions.

How well does it work?

Fair Trade USA's apparel program has worked with dozens of brands to shift fraught supply chains and source clothes from more ethical manufacturers. But Anna Canning, campaigns manager for the Fair World Project, a fair trade watchdog group, worries brands benefit too much from Fair Trade USA's individual factory and cotton logos.

"What we see overall is a lot of marketing of impact, but less-so systems to back that up," she said, pointing to J. Crew's fair-trade jeans. When they debuted, J. Crew

received a rush of media coverage. But, even though the jeans were sewn in a Fair Trade USA-certified factory, the farming, spinning, and dying of the cotton in the jeans were not evaluated by Fair Trade USA.

Too often, uncertified cotton is harvested or spun unethically.

Too often, uncertified cotton is harvested or spun unethically. Forced labor was prevalent in the 2019 cotton harvests in Uzbekistan and has been documented during cotton harvests in Turkmenistan. Child labor has been reported in other major cotton-producing countries like India, Pakistan, and Burkina Faso. Many cotton laborers work seasonally, are from poorer regions, and are exposed to dangerous pesticides. Beyond that, cotton's prices can rapidly fluctuate, leaving workers at risk of uncertain wages and poverty.

In addition, some worker's rights groups and academics question the effectiveness of audits, which are at the heart of Fair Trade

USA's process. They worry workers may not feel comfortable speaking honestly and annual visits don't provide a full picture of what happens year-round.

Which seal should I look for when I buy clothes?

The complete Fair Trade USA Certified Seal is the best option for fair-trade cotton goods. However, certified apparel that is not 100% cotton contains non-certified materials, too. In these cases, you can research where the producer sources other materials. Groups like Fair Trade Federation and Fair World Project assemble lists of brands with ethical and transparent supply chains. You can also consider other fabric certifications, including the Global Organic Textile Standard (GOTS), Cradle to Cradle, and Textile Exchange. Finally, buying clothes secondhand is perhaps the most sustainable option, as it reduces waste and extends the life of garments.

Personally, I decided against buying certified jeans. I prefer clothes for which supplier transparency extends from the beginning of the supply chain to the end. Still, it seemed impossible a Fair Trade logo could appear within big box stores just five years ago. I'm hopeful its popularity will continue to grow. *[E]*

“Every article is about something I've been wondering about. Nailed it!”

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BUZZ WORDS

Sweet Success

Hives for Humanity is bringing bees — and community — to Vancouver’s most disadvantaged neighborhood.



By Carolyn B. Heller



Photo courtesy Hives for Humanity

Vancouver’s Downtown Eastside seems like an unlikely place for anything green to thrive. Boarded-up storefronts line the crowded streets, where people camped in doorways try to protect themselves against the dampness and disorder. Yet for the past eight years, a Vancouver-based non-profit organization has built an inventive program to bring new life to this urban district, long considered one of Canada’s poorest postal codes. And it all started with bees.

Sarah Common and her mother Julia launched Hives for Humanity in 2012 to offer new opportunities to traditionally marginalized people in the Downtown Eastside (DTES). Their idea? Train local residents to work with bees.

“We’re trying to connect to people through nature, by working the land together,” explains Sarah Common, who was a community worker in the DTES at the time.

She had been volunteering in a DTES urban garden, when she began offering beekeeping instruction to local residents with her mother—a beekeeper—in 2012. The interest they received from the community inspired them to create an organization to expand this beekeeping training and build flower-filled gardens where bees could thrive.

Today, Hives manages over two dozen green spaces, including apiaries and

“pollinator gardens” with flowers that nourish bees, at different locations throughout the region, including supportive housing sites, parks, and community centres. They have also launched a business that sells bee-based products, including producing and selling honey and beeswax candles, to help fund Hives.

By providing green space, a scarce resource in the disadvantaged district, along with opportunities for residents to learn new skills, Hives for Humanity has helped build a flourishing community of beekeepers and gardeners amid the challenges of poverty, homelessness, and drug addiction.

Learning to work with bees wasn’t easy, says Horace, a long-time Hives community member who asked to be identified only by his first name. “I’m still afraid a little bit,” he laughs.

But the organization has helped him learn new skills, from beekeeping to candle-making, and he now appreciates many of the bees’ unique traits. He says, “The best time to see the bees is when they’re getting born. It’s amazing. They fly right away and go to work. They don’t mess around!”

Perhaps more importantly, Horace, who grew up in Alberta, says that working with Hives for Humanity has kept him out of trouble—and out of jail. “I was in trouble all the time,” he recounts, “but all the time since I’ve been involved in this, I’ve been doing so good.”

Hives’ 2019 annual report describes their programming as “no-barrier,” meaning that people can join activities directly from the street. Although Hives has had to scale back its programs this year due to the pandemic, in 2019, they offered 99 community beekeeping and related workshops serving more than 1,400 participants.

“We aren’t connected to where our food comes from, what it takes to plant a seed, to grow and care for that seed, to see that

The best time to see the bees is when they’re getting born. They fly right away and go to work. They don’t mess around!

seed become a plant and flower and feed the bees,” says Common.

Ali, another member of the Hives community who also asked to use only her first name, says she appreciates how the honeys that bees in various neighbourhoods produce have distinct flavours, colours, and textures due to the different plants in each location.

Ali has positive memories, too, of her first time working in a community garden, even though “that’s when I had little sense of what it was like to learn about planting vegetables.” Not only did she begin gaining gardening skills, she says, she started to form what became long-lasting friendships with the people she was working with.

Hives has also partnered with organizations like the Vancouver Convention Centre and the Fairmont Waterfront Hotel to provide bees for the buildings’ rooftop hives. These relationships offer work opportunities for their program participants and help educate the public about Hives’ beekeeping work. For example, before the pandemic, the Fairmont offered tours of its “Chef’s Garden,” where guests learned about the herbs and other plants that the Fairmont chef uses in the hotel restaurant, as well as Hives’ honey-making operations.

Tara Taylor, who’s responsible for community engagement and development at Vancouver’s SpencerCreo Foundation—which supports social enterprises in the region—has worked with a number of local community organizations, including Hives for Humanity. She says that one of its strengths is the organization’s ability to provide a diverse range of training and experiences for its members.

“It’s kind of like honeycombs, which are all connected,” says Taylor. “Sarah and Hives have created these tranquil gardens and spaces where the rest of the world can be put on pause.” These oases are especially important in areas like the DTES where life for many residents can feel chaotic, she stresses. In Hives’ gardens, “people show up for the bees and for the connection.”

But maybe Horace sums it up best, when he explains that, through his work with Hives, he’s found a caring community that’s helped him in many different ways. As with people, he says, “If you love the bees and take care of the bees, they’ll love you back.”

DEPT OF DENTAL HYGIENE

The Story of Fluoride

Fluoride is literally in the water, but do you know how it got there? Or the impact it’s having on us or the environment?



By Erica Gerald Mason



Photo by Erin Flegg

before their work was done, but 30 years after identifying the issue, McKay confirmed the cause of the teeth’s stains and strength: high levels of fluoride in drinking water.

Enter the US National Institutes of Health (NIH). The organization decided to continue the research on water-borne fluoride, and funded a method of measuring fluoride levels in water to an accuracy of 0.1 parts per million (ppm). By the late 1930s the NIH concluded that fluoride levels up to 1 ppm could improve dental health without causing enamel fluorosis (like Colorado Brown Stain). Decades later, the regulated use of fluorides in drinking water and dental hygiene are commonplace.

According to FDI (the world dental federation), 370 million people worldwide have access to fluoridated drinking water. Most US municipalities that fluoridate their water use fluorosilicic acid. Other countries—including Chile, Peru, the UK, and Russia—add fluoride to dairy products like milk, powdered milk, or yogurt.

It starts with a stone

So we’re putting fluoride in our mouths, via water, toothpaste, and maybe even yogurt. But how does it get there from its original mineral state?

Most fluorosilicic acid is a byproduct of manufacturing superphosphate fertilizers, which are used in conventional agriculture. Fertilizer production begins when phosphate rocks (minerals containing phosphorus) are mixed together and pulverized. As rocks from different sources contain different levels of phosphate, the blend is hammered until the mixture is uniformly 15% phosphate. The powdered rock is then combined with a sulfuric acid solution and mixed with more water. The resulting “batter” flows out of the mixer, then additives like potash and limestone are added.

Before “fluoride” became an omnipresent dental care ingredient, the term referred to any number of minerals containing the element fluorine, which is found in soil, plants, rocks, and water. Humans can be exposed to fluoride through food or fertilizers, but the most common source of fluoride exposure is drinking water. It can get there naturally (when water flows through rocks high in fluorides), intentionally (when water utilities add fluoride solution to the water supply), or as a result of industrial pollution. Fluorides are a byproduct of phosphate fertilizer manufacturing, and can leach into water supplies near fertilizer factories, as well as near phosphate rock mines.

The study of fluoride and teeth began in 1901, when dental school graduate Frederick McKay noticed Colorado schoolchildren’s teeth were marred by bizarre discoloration, dubbed “Colorado Brown Stain.” In 1909, McKay enlisted the help of dental researcher Dr. Greene Vardiman Black, and the two struggled for years to understand the cause of the stain and why stained teeth were less cavity-prone than unstained ones. Black died

The batter is then allowed to dry, and broken into tiny pieces by another hammer (granulation). Fluoride gas released in this process is captured, used to create fluorosilicic acid, and sold to water-processing facilities as is, or mixed with either caustic soda or sodium chloride to create sodium fluorosilicate or sodium fluoride, respectively. These fluorides can also be added to water, and sodium fluoride is used in toothpaste.

Some scientists believe supplies of phosphate rock will be drastically depleted by the end of the century. “We are running out of [rock] phosphorus because we are mining it faster than it can be geologically regenerated,” explains Miguel Cabrera, professor of soil science at the University of Georgia at Tifton. With 82% of the world’s rock phosphorus used for crop fertilization, Cabrera points to animal manure, bone meal, or recycled sewage sludge as alternative phosphorus sources for agriculture.

If Cabrera and his peers are right, the fluoride industry may be out of luck, since none of those options are a likely source of fluoride for teeth. However, a 2013 blog post from Columbia University’s Earth Institute argues that what’s really running out are easily accessible phosphate reserves and inexpensive methods of extraction. The post quotes the institute’s Pedro Sanchez, who claims tectonic uplift is surfacing phosphorus at the same rate we’re using it. The post suggests more efficient mining and processing, and a return to organic fertilizers like those Cabrera suggested, can safeguard phosphate reserves.

From vat to tube

Once the fluoride has been manufactured, it’s off to the toothpaste factory. Toothpaste has contained a similar set of ingredients since the 1950s. A 1956 Procter & Gamble patent described toothpaste made of: a binder (in this case, carrageenan, an extract of the algae called Irish moss), non-aqueous liquids (glycerin), soluble dry powders (saccharin for sweetener), aqueous liquids (water or a water-based solution), and “substantially insoluble dry powders” (in this recipe, a synthetic foaming agent, flavor, and chalk).

Modern toothpaste typically has a non-aqueous liquid base of sorbitol (a compound naturally found in fruit) or

glycerin (a byproduct of soap production). Specific ingredients vary between brands, but the most common binder is cellulose gum. Carrageenan is also still in use, as is xanthan gum, a fermented sugar. Modern “insoluble dry powders” include abrasives for polishing tooth enamel, like silica hydrate, sodium bicarbonate (baking soda), and calcium carbonate.

A mild surfactant makes toothpaste foam, helping it in the mouth longer. Sodium lauryl sulphate—typically produced from problematic palm oil—is most commonly used. Titanium dioxide gives toothpaste its white color; gels typically have food grade colorings added. Finally, manufacturers may also include preservatives, like sodium benzoate, ethylparaben, or methylparaben. And of course, fluoride is added. Sodium fluoride and its derivative sodium monofluorophosphate are the most common fluorides used in toothpaste. Once all the components have been combined, the toothpaste is injected into tubes.



Photo By Erin Flegg

Causes for concern?

So fluoride is fighting cavities in our teeth, but we know this because of the disturbing discoloration it caused a century ago. What else is it doing to us? And when our toothpaste goes down the drain, what is it doing to our ecosystems?

Fluorides are naturally occurring minerals, so they’re not a problem for us or the environment at the right concentrations. That said, *Harvard Public Health* magazine reported in 2016 that “evidence is mounting that... the potential risks from consuming fluoridated water may outweigh the benefits for some individuals,” like patients

undergoing dialysis. Based on new data about young children’s tap-water consumption, the US Public Health Service reduced the level of fluoride it recommends for drinking water to 0.7 milligrams per liter in 2015. (Health Canada recommended the same level in 2010). As for the effects of dental fluoride on the environment, research suggests it doesn’t cause harm because of its low concentrations.

But, as with the children’s teeth in Colorado, humans and other life suffer from exposure to too much fluoride. Fluoride concentrations over 1.5 mg/L of water

typically result in mottled teeth. In India, fluoride levels as high as 48 mg/L have been measured, and NGOs estimate that 60 million Indians are at risk of drinking over-fluoridated water. The country’s large (and growing) water needs have led to an increased dependence on groundwater from deep wells, where fluoride occurs in higher concentrations. Fluoride ingestion at such elevated levels can result in brittle bones, brain damage in children, thyroid disorders, heart failure, bone cancer, and infertility in women. India has had a fluorosis prevention program in place since 2009, but a recent report in the *Lancet* quotes an NGO

The US throws away a staggering 400 million toothpaste tubes a year.

saying that “for a problem of this scale, the response has still been very patchy.”

Fluoride can also be an atmospheric pollutant, being released in gaseous forms by factories making bricks, steel, aluminum, glass, and ceramics. Too much fluoride in the air or water impacts plants and animals. In cattle, excess fluoride mottles teeth and deforms hooves. In chickens, high doses of fluoride affect liver and kidney function. A 2017 research review states that “Fluoride may stop photosynthesis and other essential processes in plants,” and identifies apricots, peaches, and lilies as among the most vulnerable to fluoride toxicity.

Fertilizer manufacturers aim to minimize environmental impact by using dust-catchers when grinding phosphate rock, and filters to prevent emissions of fluorosilicic acid. Historically, government oversight has protected US residents from fluoride pollution. But with the Trump administration’s rollback of environmental regulations, there may be greater risk than in the recent past.

And what about that tube?

Since toothpaste is one of the main sources of fluoride in our lives, it’s worth a moment to look at its delivery method: toothpaste tubes. Typically, they consist of plastic laminate sandwiched around a layer of aluminum, which is impossible to recycle. According to STP ComplianceEHS—an organization that publishes environmental information for business—the US throws away a staggering 400 million toothpaste tubes a year. In 2019, Colgate announced plans for its Tom’s of Maine brand to switch to a recyclable version of the laminate. The company’s peppermint antiplaque toothpaste currently comes in the new packaging.

So even if fluoride is safe in the right quantities, this way of getting it to our teeth is usually a problem. And it’s an avoidable one. Many zero-waste toothpastes are now available, and while lots are fluoride-free, there are options for people who want fluoride. If that’s not you, homemade toothpaste is also an option! The story of fluoride doesn’t need to hurt people or the planet, but it matters how that story gets told. *1*

THE DECIDER

Christmas Contest: Evergreen vs. Plastic

Are real or artificial trees better for the planet?



By Mariana Zapata

If Christmas trees are at the center of your holiday decorations, you might be deciding between a real or artificial tree. But is either one actually better for the environment? We know you hate to hear this, but it’s complicated. Let’s break it down.

Grown vs. manufactured

Artificial Christmas trees are made mainly with steel and two types of plastic, polyvinyl chloride (PVC) and polypropylene, according to a 2018 life cycle analysis (LCA) by WAP Sustainability Consulting, a firm specializing in LCAs and carbon management for businesses. The American Christmas Tree Association (ACTA), which represents artificial tree manufacturers, commissioned the study.

Mining iron ore and making steel from it, and extracting and refining petroleum to make plastic, both lead to air and water pollution. Then comes the energy-intensive process of making and assembling the tree. Per the 2018 study, manufacturing consumes 247 megajoules of non-renewable energy per tree—enough to power an average American home for 2.4 days. It also releases sulfur dioxide and nitrous oxides, gases that pollute and acidify the air, and has a carbon footprint equivalent to 7 kilograms of coal burned.

On the other hand, in North America, real Christmas trees are crops, explains Shirley Brennan, executive director of the Canadian Christmas Tree Growers Association. This means the trees are grown to be cut down and do not contribute to deforestation.

Tim O’Connor, executive director of the National Christmas Tree Association (NCTA), a US association representing Christmas tree growers, says over email that real trees “stabilize soil, protect water

supplies and provide refuge for wildlife.” Because every tree cut is typically replaced by one to three others, these benefits are not threatened by yearly harvesting. The carbon footprint of this stage is negative, saving the equivalent of 4.5 kg of coal from being burned.

That said, the 2018 LCA concluded cultivating Christmas trees involves significant non-renewable energy use. Over the roughly 10 years it takes to produce a tree, gas-powered vehicles and tools (like chain-

Real trees necessitate yearly transport. Artificial trees are transported once and kept 10 years on average.

saws) are used for planting, maintenance, and harvesting. Even so, the non-renewable energy used amounts to a third of that required to produce an artificial tree.

At the same time, growers use pesticides—which contribute to water acidification and pollution—and fertilizers, which cause nitrous oxide emissions. To minimize these impacts, look for farms with sustainable practices or certifications. For example, SERF-certified Christmas tree farms in Oregon meet environmental and worker-health standards. Organic Christmas trees are another option.

The transportation dilemma

According to the 2018 study, the average artificial tree sold in North America is

imported from China. But Manasa Kovvali Rao, a sustainability data manager and researcher at WAP Sustainability, explains that bulk transportation is very efficient. Since the overall impact is divided by all the items in cargo, the portion of impact allocated to a single tree in a ship or truck is minimal.

Of course, being shipped from China and then transported by truck to retailers means artificial trees have higher transport emissions than real trees, which North American consumers can buy locally. Using the 2018 study numbers, transportation emissions are equivalent to 1.2 versus 0.9 kg of coal burned for artificial and real trees respectively.

But real trees necessitate yearly transport, whereas artificial trees are transported once and kept an average of 10 years, according to Jami Warner, executive director of ACTA. This amounts to about 9 kg of coal burned over a decade for an annual real tree—7.4 times that of an artificial tree.

Emissions aside, transporting artificial trees is more environmentally harmful. Cargo ships use diesel combustion engines and bunker fuel, a highly polluting byproduct of oil refinement. These burnt fuels are released into the air and water as the ship moves, contributing to smog, ocean acidification, and eutrophication (the excessive mineral enrichment of water).

Decking the halls

While in the home, the impact of either tree is negligible. Real trees need to be watered, but the 2018 LCA estimates only 62 liters are needed over an 18-day Christmas season—that’s like flushing a toilet that meets the minimum standard of the US Environmental Protection Agency (EPA) 10.3 times.

The end of the road

A major shortcoming of the 2018 LCA is that it does not account for the environmental impact of plastic waste. Kovvali Rao explains that the programs to measure it are still being developed. Nevertheless, disposing of plastic trees is detrimental to the environment, given it takes them hundreds of years to biodegrade.

For real Christmas trees, let’s focus on the most common disposal options: landfill, composting and repurposing. If your local landfill is equipped to capture energy, methane released during decomposition will be captured and returned to the



Photo by Matthew Henry

grid as energy. In other landfills, however, methane will go into the atmosphere, exacerbating global warming. Only about 75 facilities in the US capture energy and many in Canada don’t either, so avoid throwing your tree away if possible.

Repurposing or composting a real tree is the greenest disposal option. Part of the carbon dioxide and methane trees sequester is released during composting, but it’s only about 50%, claims a 2010 LCA by consulting firm PE Americas (also commissioned by ACTA). The other 50% “remains sequestered in the biomass,” the study states. According to the US EPA, compost can multiply soil’s ability to store organic carbon, so the environmental benefits go beyond saving a single tree from landfill.

Cities and towns throughout North America have programs that compost Christmas trees or chip them into mulch for public parks and gardens. *The New York Times* identified other programs that use old Christmas trees to protect beaches from erosion and create habitats for fish in lakes. Repurposed trees emit uncaptured gases as they decompose and they give nutrients to soil, unlike landfilled trees.

And the Winner Is...

All things considered, real trees are greener, provided they don’t travel too

far from the farm to your home, and your community has a repurposing or composting scheme.

If these options aren’t available, you can purchase an artificial tree and use it for many years. The 2018 study identified a 5-year break-even point for all environmental factors measured. However, a 2009 LCA by Montreal consulting firm Ellipso concludes you’d need to keep an artificial tree for 20 years to break even in terms of carbon footprint. Given that plastic won’t disappear for hundreds of years, if at all, it’s probably better to err on the side of the 2009 study.

Real or artificial, the overall environmental impact of Christmas trees is minimal. The total carbon footprint of an artificial tree per the 2018 study equals 0.004 cars used for a year. The numbers are even smaller for real trees.

Kurt Rosenstrater, an Associate Professor at Iowa University’s Department of Agriculture and Biosystems Engineering who specializes in LCAs, believes people should also take other factors, like affordability, tradition, and supporting the local economy, into account. Given this, choose the tree that’s best for you, then keep it for as long as possible or repurpose it.]

Raven Mask

Haida designer Dorothy Grant’s cloth masks blend fashion, function, and traditional art.



Raven Mask by Dorothy Grant | Photo courtesy Vicki Myhren Gallery



Grant’s mask was included in the MASK exhibit at the University of Denver’s Vicki Myhren Gallery. The exhibit was forced to close a month early due to the city’s rising Covid-19 infection numbers. | Photo courtesy Vicki Myhren Gallery



Grant’s raven design in full, as printed on a kimono | Photo by Henry Tsai

When Covid-19 happened and we went into lockdown mid-March, I called my seamstress and asked her how much scrap fabric we had left over from garments. She said we had lots, so I said, “OK, I’m sending you a facemask pattern, and I want you to make up everything you can.” We probably made up 250 masks, and we sold them all immediately on social media. Then we got into printing more fabric just for the sake of making masks. Our [regular] sales were cut off, so I started making them out of

necessity. And out of seeing the future, that this is going to be around for a long time.

[The MASK exhibit] is a statement from many artists about protection, or their perceived vision of protection. My mask comes from what I’m used to, the practical use of fabric. These masks that I’m making are made out of a really tight but lightweight weave cotton, almost like a 1,000-thread-count sheet. It’s really strong and has silk mixed in with it. My fabrics are really durable and they’re custom-made

for me. It came out of a practical approach: this is what we’re going to need, and we’re going to need to feel comfortable and look good at the same time.

I use the Haida word “*yaangudang*” as my mission statement, because it means to have respect for oneself and for all that you come in contact with. And that’s perfect for this pandemic environment that we are in. To have respect for oneself and respect for others, that’s really what wearing a mask is all about.

— Dorothy Grant as told to Jessie Johnston

BLACK SHEEP PARENTING FOR A GREENER FUTURE

Mending the World, One Knee-Patch at a Time

How repairing my kids' clothes has helped me get through this challenging year.

By **Brianna Sharpe**

In February, I invited a group of friends over to mend clothing and drink tea. While the snow fell outside, we gushed over thread colours, shared techniques, and admired one another's handiwork. I repurposed an old (unused) diaper liner into a patch for jeans. My friend Gisele showed us how to darn a wool sock, whisking us back to a slower time. Although the evening was more banter than backstitch, it turned fixing fabric into a chance for connection instead of a chore.

Our plan to meet again in March was ripped away like almost everything else that month. But the spirit of that gathering has stuck with me, beyond just being a symbol of the "before times." Although I can't mend in community, making colourful repairs to my kids' clothing has become a way to affirm my love for them and the world we live in. And more than that—it's a reminder that we can always create new stories using pieces of broken ones.

I'm not writing this piece as a mending expert; I don't have much technique, and nothing I've done is particularly Insta-worthy. But my stitches seem to hold, and are a way I resist both the monotony of stay-at-home parenting, and the lure of online pandemic shopping.

This September, five-year-old Little Grey Lamb started kindergarten. The tiny backpack we bought him last year wouldn't hold all the things he'd need for class, so I picked up a new-to-us one at our local gear exchange. It's sturdy but shabby, so I embroidered yellow stars to hide some tiny holes. Showing up on that first day, so many other kids had brand-new Avengers or Spider-Man packs. I momentarily felt bad. But not only has he never asked for such a bag, I know when he looks at those little stars, he remembers how I make things special for him by making special things *for* him.

Mending influencer Kate Sekules (yes, there is such a thing!) says "the opposite of hate is mending," which resonates with me. This small act conveys so much care for my family and the planet. As the pandemic pushes us indoors, it's also making us all reevaluate our commitment to "fast fashion"—and reaffirming our commitment to sweatpants. It's dismaying that Amazon founder Jeff Bezos has become US\$74 billion richer through this time. But I think, increasingly, people are trying to reuse what we own instead of making people like him richer.

Needles and thread have long had the potential to write new stories.

My friend Jess says her mending is aspirational: she dreams of living a handcrafted life, but her family's day-to-day means that fast fashion and quick fixes are realities. "Mending is kinda like my middle finger to [those realities]," she says. "If I can get clothes to last through both kids, at least it's something." When possible, she buys clothes from organic indie designers, and mending them when they're worn out helps justify the expense.

Like so many parents over the last seven months, I've spent 4000% more time with my kids than I ever thought I would. So much of it has been warm and wonderful. But while I think I'm a great part-time stay-at-home parent, I'm distinctly mediocre when I have to do it full time—so I've had to find ways to make this new life my own. There are always dishes in the sink, and I'm pitiful at keeping the living room

tidy, but I've canned our jam for the year and mended my way through a small pile of worn-out knees.

Similarly, my friend Gisele uses needle and thread to make her home-bound existence more enjoyable. "Mending got me through helping my kids with pandemic schooling at home," she says. "Anyone who has taught a kid to read knows what torture this is. Having something simple to do at the same time gave my hands something to do and helped me not go crazy."

As Kate Sekules pointed out in a recent episode of the vintage style podcast *Pre-Loved*, the history of mending is "not ... very sexy." In conversation with the show's host, Emily Stochl, Sekules goes on to explain that across time and culture, clothes were often the most valuable and labour-intensive thing people would own. These days, of course, the opposite can also be true. Mending takes time and mental space, which are resources many can't justify spending when t-shirts are \$5 at Walmart.

"[Mending] has got a sort of shameful history, of course, because mending in history speaks of poverty and deprivation, and even worse things," Sekules says. Perhaps in homage to that painful history, she is trying to politicize mending; she's created a series called "sewhername," in which she stitches the names of Black women who have died at the hands of the police onto pieces of clothing.

There are many cultural histories wound up in the act of fixing clothes, most notably the Japanese tradition of sashiko: that swoon-worthy white stitching over dark fabric. The fractal-like patterns are actually lines of running stitch carefully linked together. According to Atsushi Futatsuya—a *sashiko* educator who grew up surrounded by this centuries-old technique—it was created of necessity by Japanese families who couldn't afford new clothing or fabric. "Sashiko was developed for that purpose of surviving through the days, especially in winter: repairing, mending, stretching the fabric," he says. "It is the deep down history."

Even the iconic white thread on indigo fabric of sashiko reveals its history, says Futatsuya, as they were the cheapest and most available materials. The creative stitching would have been done by someone for whom speed was important and



Photo by Brianna Sharpe

whose skill with a needle would make their fabric stronger.

Futatsuya is an ardent protector of what he calls "the Japaneseness" of this stitching practice. "If one starts not caring [about] the origin of its culture, then the culture may be repainted," he said in an interview earlier this year with *Matador*. "There are people behind the culture."

My little projects are not sashiko. In fact, Futatsuya is worried that sashiko culture is being "re-painted" by the new (non-Japanese) trend of visible mending. But through these varied histories, I'm reminded that needles and thread have long had the potential to write new stories: to give new life to a garment, to add strength in tough times, to show care in a bleak world. These days, we need to believe we can put something beautiful on top of something broken—not to erase the flaws, but to make the burden bearable. *!*

Brianna Sharpe is a freelance journalist who covers politics, parenting, LGBTQ2 issues, and more. She lives on a mini-acreage in the Alberta foothills with her family.

ENVIRONMENTALIST FROM HELL

Actual Self-Care for the Actual End of the World

Two years ago I thought things were tough, and came up with some coping strategies. Boy do we need them now!

By **Sara Bynoe**

Life as we've known it seems to be crumbling before our eyes. Democracy is under attack on many fronts, and in addition to a global pandemic, the world is still charging toward climate change. I often wonder: are these the End Times? To be fair, I've felt like the apocalypse was approaching for a while. Over two years ago, I wrote a column for *Asparagus* called "Self-Care for the End of the World," which didn't seem premature in the least.

How quaint! Now that we are in the End Times, I thought it would be good to revisit my recommendations to see how they've held up. I know my Environmentalist

from Hell persona is more of a sassy ranter than a grounded sage, but right now the world needs less dialled-up angst, more deep-breath calm.

The three self-help practices I focused on were: taking in the good, experiencing nature (specifically forest bathing), and noticing you're alright right now. These practices have received a lot of attention in these stressful times, as people want to learn how to safely and cheaply care for themselves. They aren't ground-breaking, but take it from me—someone prone to anxiety and sensitive to the emotions around me—these practices work!

Taking in the good

Over the past nine months, I've often found myself doom scrolling: spending more time than I'd like to admit reading awful news on social media. This is the exact opposite of taking in the good. Research has found that news has grown increasingly negative since the mid-20th century. Now is a good time to remember that I need to distance myself from negative information and find balance.

Having this morning routine curbs my impulse to doom scroll as soon as I wake up.

And some joyful things are happening. Two of my friends are pregnant, and I've started a new romantic relationship. I created a spreadsheet of Vancouver's rare covered outdoor spaces so friends and I could gather

during our rainy winter, and it got the attention of CBC News. Now it looks like City Hall might actually take action! These are all good things. I pause and sit in these warm fuzzy feelings to retrain my brain away from its negative bias.

Another way I build on these good feelings is writing down things I'm grateful for every day. Today, it was a cute text from my boyfriend, the sunny day, still having a part-time job, a good cup of tea, and sleeping more than seven hours straight. When something really good happens—like booking an acting gig or connecting with a friend I haven't seen in a while—I pause in those happy emotions and soak up every ounce of joy. The more time I spend taking in the good, the more I feel like I can get through the day with a smile on my face.

Experiencing nature

I embraced forest bathing at the height of the first wave. It's a practice of being in nature, taking your time, and using all your senses to be in the present. A friend lent me her car so I could drive to Pacific Spirit Park, 763 hectares of forest on Vancouver's west side. I would wander the woods listening to my thoughts, the rain, the wind. Amidst the greenery, I felt safe and grounded in ways I can't when walking my neighbourhood's sidewalks.

Pacific Spirit Park became my soul's sanctuary. I'd go on rainy afternoons and find few people on the trails, which was comforting but not lonely. Watching the seasons change by visiting the same trails has deepened my own connection to the forest. As I've witnessed the ground changing from wet to dry to cold, I've been reminded that this awful time too shall pass. It won't be dark and dreary forever; before we know it, the flowers will bloom again. Of my three original self-care recommendations, connecting to nature has been the most impactful.

Noticing you're alright right now

As I step over fallen branches and around puddles, I can't help noticing I'm well and safe in this moment. This acknowledgement that I'm healthy, secure, and content has become a useful reminder whenever I start to feel overwhelmed by the news. In the early days of lockdown, my body literally shook with anxiety. Acknowledging my own wellness has calmed



Photo by Erin Flegg

my nervous system and stabilized my mind, but it took a lot of mental focus to get there. We don't know when this pandemic will end, but through noticing the many moments of being okay, we'll slowly make it through.

My new kindness routine

As someone who primarily worked in arts and events before the pandemic, I've had my entire life upended. Without work to fill my days, I've had the opportunity to find other self-care practices that have helped me, and might be helpful to you too. I like to think of them as my personal kindness routine.

Daily meditation: Every morning, before I do anything else, I use a free app called Insight Timer to help me collect myself for


the day. Most often I use the timer feature and simply pause to follow my breath. But on days when I'm too anxious or overwhelmed, I'll use one of the app's guided meditations to bring me back into the present.

Frequent exercise: I try to work out right after I meditate. Usually I'll do a 20-minute high-intensity interval training (a.k.a. HIIT) session, but sometimes I do a barre workout or pilates routine. I really miss going to the gym and lifting weights. There's something about the communal experience that motivates me in ways I can't reproduce at home. But I don't want to go back yet, especially because on my last gym visit, I witnessed a woman leaving the washroom without washing her hands. It was eeeewwww then, but that's scary now!

So, months ago, I splurged on a set of 4.5 and 8 kg weights, and worked with a personal trainer to develop some workouts I can do at home. Including a workout in my day helps me sleep, and sleep helps my brain function, so I've made exercise a priority. Having this morning routine also helps me feel productive, and it curbs my impulse to doom scroll as soon as I wake up. There are a tonne of free workouts available on YouTube and Instagram these days to get you started, but if you can afford it, many fitness studios have started doing classes on Zoom that are worth checking out too.

Journaling: I've kept a diary for most of my life. I recently started following a book called *The Artist's Way* again. One practice from that book is to write three pages every morning, "morning pages," about whatever comes to mind—an emotional or creative brain dump. You're not supposed to reread your pages, just let them be. It's about the practice, not the product. Journaling has been a wonderful reminder to give my inner artist time to play. And at times it's been downright cathartic.

This morning routine—meditation, exercise, morning pages—takes me 40 minutes to an hour. In the Before Times, my schedule was all over the map. Having the time to give my morning this structure has helped me get off on the right foot. I can start the day feeling like I've already accomplished something. Most importantly, it keeps me from doom scrolling.

We are living in unprecedented times, rife with fear, anxiety, and burgeoning autocracies. We'll never get through it without sound minds and healthy bodies. That's why it's important to practice self-care when you can. By implementing a kindness routine and taking moments to yourself, you build your resilience. We need to be strong for ourselves and others, now more than ever. While it may feel like the actual end of the world, I remain hopeful we can get through these times by fighting for the Earth, for equality, and for our own well-being. 

Sara Bynoe, in the before times, was often found on stages in Vancouver and buzzing around arts and cultural events. Now she takes long walks in the forest listening to Buddhist meditations.

MONETARY VALUES

Caring About Care

The pandemic is an opportunity to rethink an undervalued pillar of our economy.

By Sana Kapadia

2020 has laid bare the challenges faced by working parents. As a working mother in the thick of the pandemic—with school closure, constant child and home care, and a thriving career battling for attention—I have viscerally felt the impact of economic, financial, and social structures designed without gender equality in mind.

Like me, working mothers around the world were marooned without the safety net of school, daycares, and other childcare options. The weight of care in most families with two working parents has mostly landed on mothers.

We need to shift from defining care as an individual burden shouldered by women, to looking at the care of our young and old as everyone's problem.

When the first lockdown kicked off in March, I found myself taking care of meals, laundry, cleaning, and consoling my kids, who were anxious about Covid-19, before burning the midnight oil to finish up work. As an investor and advocate for gender equality, the quest to support gender-smart solutions is both my day job and my passion.

There were days where my husband and I literally did a childcare switch a minute before a virtual meeting; I'd arrive on Zoom feeling discombobulated.

Some days, my 3-year old son sang "Eye of the Tiger" right when I was in the middle of a strategic work call; I'd make a joke and weave it into the conversation.

Knowing I am not alone kept me going. Other working parents (mostly mothers) share similar stories. We have not only exchanged experiences, but also created shared databases of educational tools, kids' yoga videos, arts and crafts ideas, and tools and tips on how to make homeschooling work. For the most part, it was us, mothers, making these plans and, in some cases, leaving our jobs to be more present.

But this is not just a mother's problem. It is everyone's issue: the care economy—that is the paid and unpaid workers, organizations, and systems that provide education, health care, domestic support, child care, and elder care—is the undervalued backbone of our society. Covid-19 has shone a bright light on the inequalities that contribute to this system. It also offers us an opportunity to reframe how we think about the care economy and reap its benefits. If we close gender equality gaps, we could boost global GDP by US\$13 trillion, according to McKinsey research.

A sea of rafts, yachts, and boats

For me, the pandemic conjures up an image of boats of different sizes and standards navigating the same rough seas. Some of us have rafts with holes and water is pouring in. A few have yachts! For those with an army of nannies and household staff, care might not have come to a standstill at all. At the other extreme, the increased care burden created by school closures and the pandemic recession is expected to increase child marriage in poor countries.

In order to reimagine the care economy, we need to shift from defining care

as an individual burden mostly shouldered by women, to looking at the care of our young and old as everyone's problem. If care is not treated as a collective social responsibility that affects the well-being and productivity of all members of our society, it will be impossible to come up with new definitions or solutions.

We need to explore what this looks like as a society. For example, organisations, both big and small, need to explore how workplace arrangements and policies can better support caregivers. The pandemic has helped with this shift, prompting more companies to accept working from home and flexible work set-ups as the norm. The International Labour Organization even released a practical guide on *Teleworking During the COVID-19 Pandemic and Beyond*. This shift can help make the workplace more supportive for those with care obligations, ranging from families with young children to ones caring for the elderly.

Time to change the narrative

We also need to unpack the gendered nature of care and the burden associated with it. Globally, women spend two to 10 times more time on unpaid care work than men. This decreases their labour force participation, wages, and job quality. After childbearing, women also face a loss of earnings known as the "motherhood penalty." Even in a fairly forward-thinking country like Denmark, an average mother's earnings penalty doubled from 40% in 1980 to 80% in 2013.

Secondly, we must talk about how much family structure has changed—in terms of make-up and shifting responsibilities. By better understanding the cognitive labour and gender roles that persist in households, we can work towards enhancing gender equality. I am grateful



Photo by Erin Flegg

for a supportive partner with whom I can walk this talk together, finding ways to have a more balanced setup that works for us all.

We need a parallel dialogue that broadens the understanding of what work is considered essential. For instance, research by the Brookings Institute spotlights the importance of acknowledging foundational work and services such as health care, food supply, grocery retail, garbage services, care aides, cleaners, and more. The low prestige associated with many of the roles in these sectors is maddening considering that none of us—rich or poor—would be able to function in modern society without our garbage being collected or food reaching our grocery stores. While some of this work is captured in GDP, not all of it is, given the prevalence of informal workers in these sectors.

We also need public sector involvement. In fact, a briefing by the UK Women's Budget Group, which scrutinizes policy from a gender perspective, shows that investing in the care economy, which enables more women to work and thus increases GDP, is more effective at reducing public deficits

and debt than austerity policies. By investing in education, health care, child care and social services, governments can help shore up the economic and foundational pillars that allow the wider economy to function. According to the Women's Budget Group, an investment in care industries equivalent to 2% of GDP, could create 1.5 million jobs—750,000 more than an equivalent investment in the construction sector, which is often a beneficiary of economic recovery programs.

The Indian activist and writer Arundhati Roy wrote that "the pandemic is a portal," and urged us to walk through it and create a better world. I commit to support dialogue and action that ensures those we care about—and who care for us—are treated equitably and equally valued. Now is our time to create new systems that work for everyone. 🌱

Sana Kapadia is a gender equality advocate, specialising in using finance as a tool for social change, across impact investing, entrepreneurship, and blended finance. A Business in Vancouver Top 40 under 40 winner, Sana is a world changer, champion of diversity and equitable systems shifts.

THE VIEW FROM INSIDE

Artists Are the Architects of Activism We Need

Dreamers and creators can break imaginative barriers and lead us to a better world.

By **Jesse Firempong**

In her book, *War Talk*, Arundhati Roy wrote: "Another world is not only possible, she is on her way... [On] a quiet day, if I listen very carefully, I can hear her breathing." Well, from where I stand, we can now hear her roaring. Because of the inequality unmasked by the Covid-19 pandemic, the gap between what we dream is possible and what we expect from our government is shrinking.

What do I hear in this new world's roar? A national child care program to support parents, especially women, who do the lion's share of care work. A universal basic income, so that nobody struggles to put food on the table. A transition to clean energy and an economy that works within nature's limits. To help pay for it, taxes on the wealthiest among us, some of whom have profited from the pandemic while society's most marginalized suffered. There are no guarantees, but so much of what activists have been asking for to build greener and more equitable societies has begun to win popular support.

This other world needs no fanfare of trumpeters; she is heralded with choruses of "No Justice, No Peace." She needs no conquering army; she is led by legions of youth demanding the climate justice adults have failed to deliver. But the biggest barrier to the arrival of a better future? Too many people still can't imagine that things could be different. Changing this could change everything.

As governments in Canada, the US, and around the world ponder what it means to "build back better" from Covid-19, artists and dreamers have the capacity to broaden people's sense of political possibility.

With Greenpeace Canada, I've been lucky enough to work on projects harnessing the power of art, including

working with Indigenous artists who designed powerful imagery for banners used in an aerial blockade of an oil tanker in Vancouver in 2018. The symbolism of the banners became a



Still from *The Years of Repair* by Molly Crabapple

gateway for talking about the issues at stake in the fight against tar sands expansion. Such gateways are crucial for understanding, and overcoming, the current crisis of political imagination.

The fossil fuel lobby has spent decades convincing people that climate science is uncertain (it isn't), and that

even if climate change were happening, we couldn't do anything to stop it (we can). Evidence has been laid out at length by experts like Harvard researchers Geoffrey Supran and Naomi Oreskes, who found that oil companies have known for decades their products would lead to climate change, but ran PR campaigns to mislead us about it.

"When you feel helpless on climate change," says Grace Nosek, a doctoral student at the University of British Columbia studying how the law can be harnessed to address the doubt seeded by the oil industry, "think that that narrative was likely seeded by the fossil fuel industry. Remember it, and then try to push back against it."

When you break the power of old narratives, you create space for new ones—and for new real-world possibilities. One game-changer has been the emergence of persuasive protagonists in the climate justice story: from youth climate strikers like Greta Thunberg and Vanessa Nakate, to New York congresswoman Alexandria

Ocasio-Cortez, to Black Lives Matter co-founder Opal Tometi.

Ocasio-Cortez and Tometi were recently part of a beautifully rendered video series inking out a vision of a better world. They collaborated with artist Molly Crabapple, journalists at *The Intercept*, and thought-leaders from The Leap (a climate justice organization co-founded by author Naomi Klein and documentary filmmaker Avi Lewis). The Leap's stated mission is to "make system change irresistible." The 2019 Emmy-nominated short *Message from the Future* is an animated "look back" at a successfully implemented Green New Deal, told from the perspective of Ocasio-Cortez. The 2020 sequel, *The Years of Repair*, imagines a post-pandemic world where care, a green transition, decolonization, and reparations are at the centre of the economy. It was co-written by Tometi and Lewis.

"It was a huge breakthrough," said Lewis of the first film. "It struck a political moment when people just were hungry for it." Still, skeptics continued to dismiss the Green New Deal as undoable.

"Those big ideas—what is it that prevents us from tasting them in our mouths?" Lewis remembers he and Klein asking themselves. "What is it that prevents us from believing that change on that scale could and should happen?" The answer? "It's just that block of imagination."

For Prashant Miranda—a visual artist based in the seaside village of Lund, BC—art is a powerful tool for dismantling this block. "[Art is] a release of ideas, of hope, a language which cannot be communicated," Miranda told me. "It's an intangible form that allows you to connect universally. In that regard it really unlocks the unimaginable."

Message from the Future was meant to do just that. *Years of Repair* seeks to dig deeper into how a just society can be achieved on a global scale. The films have been viewed millions of times, and are used as public education tools by The Leap's partner groups, including the Movement for Black Lives, Global Nurses United, NDN Collective, and more.

Lewis, who co-wrote both films, calls them "documentary futurism": using the language of documentary journalism to describe the world as if looking back from

the future. Documentary futurism can unleash our political imagination, he says. "It helps us see how we get to a better place from where we are now."

Miranda sees similar possibilities. Leaving behind the commercial children's animation industry where he got his start, Miranda now pursues art independently, inspired by how nature connects with culture.

What is it that prevents us from believing that change on that scale could and should happen?

"I'm not a frontline activist at all," he insists, though his art is infused with activism, from documenting the story of a felled oak tree in Toronto, to creating nature-based designs for traditional quilts made from upcycled saris as part of a livelihood-generation project for women in Varanasi. Recently, when political violence erupted in his native India, Miranda poured his feelings into his sketchbook. "I was feeling terrible. I thought: I'm not in India, what am I going to do?"

That's when images of solidarity came to him. "Everyone, coming from all different kinds of backgrounds, was hand-in-hand," he says of the water-colours he created and posted on Instagram. "That next day, I saw that image being used in frontline protests [in India]. Right from my headquarters here in Lund, it was actually reaching the frontlines. Then I saw it being used with the headline of a [news site]." Seeing his art shared widely on Facebook and Instagram, Miranda reflected, "It was really powerful that I needn't be helpless."

Literature can likewise turn helplessness to hopefulness. I spoke to Marcelle Kosman, co-host of the podcast *Witch, Please*. On the show, Kosman and her co-host Hannah McGregor explain complex social issues, like white nationalism and classism, through the lens of the Harry Potter novel series. For Kosman, sharing tools people can use to under-

stand, analyze, and describe cultural narratives and systems is important. Fiction, she says, is a "low-stakes alternative kind of reality" that can nudge people to question the world they live in by imagining it differently.

"One of the things that has been really motivating for both me and Hannah has been people writing in and people telling us that the podcast has allowed them

to see things differently," she says. "The other thing that's been really cool has been hearing from people who have felt ... like they had the language to challenge either friends or family members who had hateful opinions."

Something Kosman would like to see more of is fiction that engages with the environmental anxiety experienced by millennials and Gen Z. Author Cory Doctorow is doing just that, currently at work on a novel set in a post-Green New Deal future. He told me via email that the most urgent narrative to overcome is the neoliberal story that individual consumer action is the only solution to the climate crisis. "Reconceiving struggles as movements, rather than as heroic individual projects, is the only way that we will be able to successfully overturn the order that threatens to render our species extinct," he concluded.

From sketchbooks to social media to novels, activist art can transform a passive hope for Roy's other world into a collective movement that will paint, write, and march her into being. In Avi Lewis' words, "to actually collectively create the world we're fighting for is much less a political muscle and much more an artistic one."

Jesse Firemping is a writer by night and climate justice communicator with Greenpeace Canada by day.

NATURAL HISTORY

Losing the Athabasca

My parents took me to see glaciers as a kid. By the time my children grow up, they could be gone.

By **Lindsay Kneteman**



Photo courtesy Lindsay Kneteman

My first in-your-face experience with climate change was the summer I turned 9. It was the mid-'90s, and my family was visiting the Athabasca Glacier in Alberta's Jasper National Park. The Athabasca is the best-known of the six "toes" of the Rocky Mountains' massive Columbia Icefield. If you drive the world-famous Icefields Parkway, you'll see it on the west side, around an hour south of Jasper. As of 2020, the icefield is a sprawling 200 hectares of rock and ice, straddling the Alberta-BC border.

To get to the ice, you either pay a not-insignificant sum to ride a special bus equipped with giant, off-roading tires, or you walk up

a rocky but well-trodden path. My family chose the path. As we hiked, we passed small trailside markers, each showing a different year. These signs, my father said, indicated how far the glacier's icy terminus had previously reached. A quick glance showed that since 1890—the first year marked—the glacier had steadily retreated. This was happening, my father explained, because humans were warming up the Earth, speeding up the melting of the ice. If we kept doing what we were doing, the planet would get hotter and the glacier would be gone.

You know where this is going: The ice has continued to melt. Since the mid-1800s, the

Athabasca glacier has receded around 1.75 kilometres. Depending on summer temperatures and other factors, as much as 20 metres of horizontal ice is lost each year, alongside as much as 6.5 metres of vertical ice.

Glaciers do naturally recede. Over 11,000 years ago, Alberta was covered by ice that has since retreated. But what we're seeing with the Athabasca isn't normal melt, explains Bob Sandford, the water and climate security chair at the United Nations University Institute for Water, Environment and Health.

Sandford—a lifelong Albertan who's lived in the Rockies for decades—has personally watched the Athabasca recede year after year. He's also seen the data. He explains that the UN's Intergovernmental Panel on Climate Change has published five reports that all looked at whether glacier melting is just cyclical. "And every time," he says, "the answer comes back in a more complete and refined way, suggesting irrevocably that it's increases in carbon dioxide that are causing this."

I've always thought the Athabasca Glacier represented Alberta more accurately than Instagram-perfect Lake Louise. Just like the province, the glacier is impressive and demands your attention. It's rugged yet also surprisingly accessible; Parks Canada says it's the most-visited glacier in North America. And, like Alberta's, its fate is interwoven with the fossil fuel industry.

I was born in rural Alberta and lived there until I was 18. Then—with an acceptance letter to a Toronto university—I left, knowing I would never return to live. But I did, and still do, look back. And, too often, my home province fills me with frustration, bewilderment, and even anger.

I left Alberta during the era of the Kyoto Protocol, in which Canada committed to reduce greenhouse gas emissions to 6% below 1990 levels between 2008 and 2012. When Kyoto was ratified in 2002, nearly 75% of Canadians—including my immediate family—supported it. But for the most part, it was blasphemy in Alberta, where the conservative provincial government campaigned against it.

Sometimes I wonder: What if Alberta's turn-of-the-millennium government had taken a different path? Acknowledged that oil was a crucial part of the province's past, but couldn't be its future, then focused on a methodical transition to a low-carbon

economy that could have served as a model for the entire world.

Instead, most provincial governments have continued to promote the fossil fuel industry's expansion with policies that will see the province dragged in the history books. The current United Conservative Party government is particularly aggressive, cancelling its progressive predecessor's made-in-Alberta carbon tax, creating a "war room" to promote a pro-fossil fuels agenda, and launching an inquiry into the already debunked theory that foreign-funded environmental groups are sabotaging the province's energy sector.

It doesn't have to be like this. Alberta is a beautiful place full of talent, promise, and an economy nearly as complex as my feelings about the province. Yes, oil and gas is still the biggest industry, but in 2017, that sector's contribution to the GDP was only 16%! Too often, the province's leaders and residents treat Alberta as some kind of disconnected bubble that exists primarily to feed the bottom line of the energy sector, regardless of consequences.

True, the oil industry has taken some positive steps. Between 2000 and 2017, operational greenhouse gas emissions from the oil sands were reduced by nearly 30%. But they still pump out approximately 70 metric megatonnes of greenhouse gases a year. (By comparison, in 2017, the roughly 6.9 million residents of Massachusetts produced just over 73 metric megatonnes.) And the industry wants that number to grow; the Oil Sands Advisory Group has proposed allowing emissions to reach 100 megatonnes, at which point they would be capped. The Athabasca is already receding 200 times faster than normal, and its home province is willing to allow its demise to happen even quicker.

Mark Ednie, a scientist with Natural Resources Canada who monitors the glacier, explains that glaciers are a reflection of our past emissions: "What we're seeing now is what the climate was like from 20, or even 50, years ago." He says that even if the world went zero-carbon tomorrow, the glaciers would continue to melt as our air temperature is higher now than it was decades ago.

When I ask if there's any way to save the Athabasca, Ednie replies without hesitation, "There's nothing we can physically do." Based on the models he's seen, "The

glacier will probably disappear between 2040 and 2100." The higher altitude parts of the Columbia Icefield should persist for much longer, though.

Sandford's research is a bit more optimistic. While the Athabasca will be "much diminished within a generation," he believes some part of the glacier will continue to overlook the Icefields Parkway into the next century.

Even if the world went zero-carbon tomorrow, the glaciers would continue to melt.

Both men agree glaciers are vanishing. They point to research by the University of British Columbia, which concluded that by 2100 up to 90% of Alberta's glaciers could be gone. "They're on their way out," says Sandford, with audible sadness.

The loss of the Athabasca will hurt tourism—those specialized glacier buses won't have any ice to rumble over—but the biggest impact would likely be on the province's water supply. Last August, a study by UBC scientists was published in the journal *Nature Climate Change*. It found that retreating glaciers in Alberta and BC—including the Athabasca—will cause Alberta's various glacier-fed rivers to have "substantially lower" flow during the summer. Without additional measures, over 1 million Albertans (roughly one in four residents) could face seasonal water shortages. It also noted the communities most at risk; one of them is Hinton, my former hometown.

The study's lead author, Sam Anderson, told me that Alberta's Environment and Parks ministry has reached out to him about his work. But while government employees might care about the province's glaciers, there's little evidence of that sentiment among its leaders. After not finding any provincial government statement about the Athabasca, I reached out to Alberta Environment and Parks. A staffer told me they would try to get a comment, but ultimately, my request was met with silence.

"The Alberta government doesn't care about climate change," Sandford told me with-

out hesitation, adding he feels embarrassed to be Albertan. I can't help but nod in agreement.

My struggle with Alberta isn't just that it too often resists science, but that it's being economically foolish. We're approaching "peak oil demand," when the world's thirst for oil will reach its highest point, then begin a permanent decline in both consumption and pricing. In 2017, Shell predicted we'd reach this stage in the early 2030s. Now, changing market conditions have BP, one of the world's energy giants, saying we'll hit it sometime this decade.

Already, many billions of investment dollars have been diverted. Withdrawal of capital has hit the Alberta oil sands especially hard, presumably due to the high cost of getting their product to market, and its reputation for being dirtier than other sources of fossil fuels. Alberta oil patch revenue for 2020-2021 may not crack C\$1.3 billion; in 2014-2015 it was over C\$7 billion. According to public policy research centre Parkland Institute, the industry shed over 53,000 jobs between 2014 and 2019, before the Covid-19 pandemic.

Alberta is attempting to diversify its economy somewhat. But the provincial government is undeniably most active when protecting an industry that's not only killing the planet, but is itself dying. This focus is so disconnected from reality, I can't help wondering if we've entered some kind of final phase of gifting that will end with a handful of people getting rich while ordinary Albertans are left with few jobs, a gutted economy, and a rocky slope where a glacier once stretched in Jasper National Park.

I hope to return to the Athabasca Glacier next summer with my toddler. I want to recreate photos I took a few years ago with my first child, with the glacier in the background. The photos will be proof my children saw the Athabasca before it was reduced to a mere sliver of the Columbia Icefield.

They will also remind me that, despite the ugliness of Alberta politics, the province is a stunning place that should inspire the fight against climate change. While we might lose the Athabasca Glacier, we can still honour it by advocating for policies that will keep the rest of the natural world from the same fate. *l*

Lindsay Kneteman is a former Albertan who now lives in Toronto. She has two children, a dog, and a chinchilla.



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THIS LAND DOESN'T NEED A WHITE SAVIOUR

White supremacy continues to colour environmentalist efforts. Here's why that's a problem, and how to get out of the way

Story by
CARLEIGH BAKER

Photos by
ARLYN CHARLIE

“Environmentalism has failed. Over the past 50 years, environmentalists have succeeded in raising awareness, changing logging practices, stopping mega-dams and offshore drilling, and reducing greenhouse gas emissions. But... we failed to realize these battles reflect fundamentally different ways of seeing our place in the world. And it is our deep underlying worldview that determines the way we treat our surroundings.” —David Suzuki

The September morning is crisp and bright, though clouds are closing in. The shoreline is sandy and dotted with stunted birch in gold fall colours. Beneath us, the Ogilvie River roils—small but persistent waves slap the bow of my canoe, spraying my cheeks. We are three days' journey into the Peel River Watershed, the shared traditional territory of the Na Cho Nyäk Dün, Tr'ondëk Hwëch'in, Tet'it Gwich'in, and Vuntut Gwitchin First Nations.

In a day or so we'll meet the Blackstone River, whose confluence with the Ogilvie marks the start of the Peel. From there we'll paddle to the heart of the watershed: roughly 68,000 square kilometers of intact natural landscape in Canada's Yukon and Northwest Territories. In the entire watershed, there's only one year-round road. It is a rare place where nature remains undisturbed.

At lunch time, twelve travellers pull six canoes onto the shore, unlace spray skirts and unload food barrels, extract a meal of tuna, cheese, and bread. The sky is now overcast, temperature dropping steadily without the sun's influence. Above the shoreline, a surprising sight: moss grown into a thick, waist-high wall. Snow threatens, and we're cold and hungry, so we climb up onto it to eat lunch in the shelter of the forest.

Our guide isn't happy with this choice. “It took years to grow like this,” he says. I notice my footfalls remain, the tender upper layer of the moss torn away, and ask how long the gaps will take to fill in.

“Longer than you'd think,” he says.

Besides the guide and the trip's organizers, none of us have ever paddled this far north. I'm the only Indigenous person on the trip, and this is not my traditional territory. Some of us had barely paddled at all until a few days before we set out to film a documentary named *The Peel Project*. Six urbanite artists paddling 500 kilometres to help save the Peel Watershed. Which is to say that, at the time, I believed our presence—along with a video camera—would raise awareness of the threats to this area, and somehow influence its fate.

At the time of our travel—September 2014—the Yukon government was seeking to reject the land-use agreement developed by the Peel Watershed Planning

Commission. This plan was the result of seven years' consultation and planning between Indigenous peoples and allies, the territorial government, and industrial interests. It provided for 55% permanent protection and 25% interim protection of the watershed (where roads and mining would not be permitted), with the remaining 20% available to industrial exploitation.

Several months before I ventured out to “save” the Peel, the Yukon government proposed a plan created without input from First Nations, recommending industrial development in over 70% of the watershed. This news launched a full-scale response from residents, with rallies, fundraisers, and territory-wide demonstrations.

Their legal battle went all the way to the Supreme Court of Canada. And they won: the final ruling in *First Nation of Nacho Nyak Dun, et al. v. Government of Yukon* presented a land-use plan that protects the majority of the Peel Watershed in northeastern Yukon. None of that had anything to do with me, and everything to do with years of advocacy by the Na Cho Nyäk Dün, Tr'ondëk Hwëch'in, Vuntut Gwitchin, and Teet'it Gwich'in peoples.

If you're having trouble seeing how six urban artists were ever going to save the Peel Watershed, you're not alone. As the trip progressed, I began to feel this documentary

Sheekaii, ddhah kak natt'at goonlih/Auntie, there are lots of cranberries on top of the mountains—The photographer's aunt harvesting cranberries north of the Arctic Circle.



was centered firmly on us: our delighted horseplay on a gravity-defying bed of moss, our backbreaking portages through knee-deep mud, the harrowing day when four out of six boats capsized into the bone-chilling Peel River. It was undeniably adventurous, but ultimately irrelevant to the cause.

Afterwards, when I pointed out that our effort looked a lot more like white saviourism than effective allyship, not all my fellow travellers agreed with me. Later, when the film screened to an enthusiastic, capacity crowd in Calgary, I began to wonder if I was a bit of a buzzkill. Perhaps our presence in the watershed was an adequate call to action.

Then a 2012 Twitter thread by Nigerian-American writer and photographer Teju Cole reappeared online and gave me the words I was looking for: “The White Savior

Industrial Complex is not about justice. It is about having a big emotional experience that validates privilege.”

Cole’s thread was drafted in response to the #Kony2012 campaign. A small American non-profit created by white people created a video condemning Ugandan warlord Joseph Kony. The hashtag #Kony2012 caught fire, appearing on Instagram stories, posters, and t-shirts. But critics like Firoze Manji, editor of pan-African online magazine *Pambazuka News*, pointed out significant issues with their approach: “The #Kony2012 campaign uses... a characterisation of Africa as somewhere that can only be redeemed by the West (and in this case, a white man).”

Reading this, I immediately thought of the Instagram photos I’d seen of white women posing with children on humanitarian

vacations in Africa. This “woke” grandstanding comes at a cost to the people who inhabit these spaces: the displacement of their voices, agency, and humanity. As Manji said: “[#Kony2012] is based on the assumption that the people of Uganda have no agency, as if they have been silent and have done nothing but await the call of the white saviour to rally the troops.”

The assumption that Indigenous peoples aren’t capable of advocating for ourselves is at the core of white saviourism. In its many, well-intentioned forms—documentaries, hashtags, or t-shirts—it continues to center white voices and perspectives.

White supremacy and Indigenous displacement isn’t just an issue in Africa. We needn’t look further than the creation of Canada’s national parks, beloved by many. I wonder how many Canadians know that the Nakota peoples were displaced from their traditional territories in 1885 to create Banff National Park, and then denied access throughout the first few decades of the 20th century.

“In the early years of establishing Canada’s national heritage places, Indigenous peoples were excluded,” Parks Canada said in a written statement to the *National Post* in 2017. “Parks Canada recognizes that this practice was wrong and ... now honours Indigenous rights and traditions and includes Indigenous peoples in decision-making.”

The creation of national parks provided cover for the seizure of unsundered Indigneous land and the relocation of Indigenous peoples. In a 2017 article, writer Robert Jago (Kwantlen First Nation and Nooksack Indian Tribe), discussed the history of Algonquin Park: the Algonquin people were denied title for towns that existed within the park’s boundaries, and moved to reserves. Their hunting and fishing rights were limited in the interest of “conservation,” even while government-controlled logging continued in the park. The concern wasn’t preservation of the land, but economic control of it.

Displaced Indigenous peoples then became the subjects of national parks’ storied pasts, included in tourism literature and sold to eager travellers. Banff’s Indian Days festival—which invited the Stoney Nakoda people back to their own land in a ritual recreation of their cultures for settler entertainment—was a popular attraction until 1978.

It is long past time that Parks Canada’s performative recognition of past wrongs be replaced by Indigenous land sovereignty. Conservation efforts that don’t first and foremost seek to restore land and title to Indigenous peoples are perpetuating white supremacy.

The history of successful Indigenous land stewardship predates European contact in this country by thousands of years.

Settler activists must pass the mic to Indigenous land protectors.

Nations with diverse languages and diplomatic processes lived with the land, forming agreements like 1701’s Dish With One Spoon Treaty between the Haudenosaunee and Anishinaabe nations. This law extends from the eastern tip of Lake Erie to Montréal, and contains three main provisions: residents and visitors would take only what they needed, leave something for everyone else, and keep the land clean. A straightforward agreement that would allow the land to thrive for generations to come.

The idea of sharing and maintaining the land is a cornerstone of Indigenous belief systems. The concept might seem impossible to those caught in capitalism’s chokehold, but it is currently being successfully applied in tribal parks.

After a lengthy battle ending in the Supreme Court in 2014, Tsilhqot’in communities successfully re-asserted legal title to their traditional territories. Shortly after, they created Dasiqox Tribal Park to protect 300,000 hectares—including the Dasiqox headwaters—from industrial development. According to an article by settler activist and writer Maia Wikler: “Because they approach the Dasiqox Tribal Park as an assertion of their Indigenous law over unceded territory, Tsilhqot’in communities have rejected a co-management model and opted not to seek provincial protected area designation.” Wikler quotes Tsilhqot’in leader Marilyn Baptiste, who says asserting Indigenous sovereignty is “not about kicking people out,” but opting for locally led decision-making processes.

Beyond tribal parks, schools like Native Education College in Vancouver, BC, offer Indigenous land stewardship programs that synthesize traditional and contemporary approaches to land and resource

management. What I’m saying is that Indigenous peoples are well prepared to lead ecological efforts. For the environmental movement to get on board, a lot of people will need to recognize their complicity in white supremacy.

I’d like to step back for a moment to position myself. I’m a white-coded person of Cree-Métis and Icelandic descent. I have light skin and the privilege that accompanies it. This means my skin doesn’t make me a target for overt racism, and guarantees me a safe place among white people.

So as I speak to the importance of recognizing one’s complicity in white supremacy, I’m including myself. If anything, the trip presented me with a major question: how can any modern movement to protect the land escape the colonial trap of white saviourism? This is what I came up with:

1. Get over ourselves

Bring up the concept of white fragility in a room full of “progressive” environmentalists, and it’s unlikely you’ll have a productive conversation about Indigenous land stewardship. Coined by white academic and educator Robin DiAngelo, this phrase immediately creates the phenomenon it describes.

DiAngelo observes that white people become so defensive when confronted with their role in maintaining white supremacy, that fruitful conversation becomes impossible: “White progressives can be the most difficult for people of color because... we will put our energy into making sure that others see us as having arrived. None of our energy will go into... engaging in ongoing self-awareness, continuing education, relationship building, and actual antiracist practice. White progressives do indeed uphold and perpetrate racism, but our defensiveness and certitude make it virtually impossible to explain to us how we do so.”

It’s comforting to envision racism as perpetuated by a cabal of moustache-twirling villains who—through activism and education—can be defeated. According to DiAngelo, “The simplistic idea that racism is limited to individual intentional acts committed by unkind people is at the root of virtually all white defensiveness on this topic.” For environmentalism to stop perpetuating colonialism, white allies must be prepared to self-critique and learn from colonial histories.

2. Stay in our lane

Environmentalism involves an awakening to the destructive effects of rampant natural resource consumption. But this awakening doesn’t necessarily create respect for the land. Settler colonialism encourages hierarchy, with invaders positioning themselves above the land and its original inhabitants, justifying their exploitation of both.

Settlers may eventually become concerned about the toll of industrial exploitation, but the inability to let go of ideas of land ownership prevents them from establishing respectful and reciprocal relationships with nature and Indigenous peoples. Settler activists must “pass the mic” to Indigenous water and land protectors.

Here’s a very different story than the one I opened with. Three elders sit around a campfire with journalist Megan Kinch. They’re in the Oshkimaadziig Unity Camp, an Anishinaabek land-based resurgence movement located in Ontario’s Awenda Provincial Park, founded by the three elders: Kaikaikon, Giibwanisi, and Sleeping Grizzly.

Kinch points out that environmental organizations have claimed solidarity with Indigenous peoples, but that this solidarity had been poorly defined or non-existent. Kaikaikon speaks to this lack of solidarity, claiming that environmentalists could learn a lot if they showed some “humility” and observed the Anishinaabek: “Our people have been observing for thousands of years and survived... There’s been a lot of environmental disruptions, and we’re still surviving.”

Unsure whether you’re staying in your lane? Focus on elevating and amplifying



Ts’iivi tat daih nitin/
Among the tree I see a grouse

Indigenous activists and scholars like Autumn Peltier, Leanne Betasamosake Simpson, and Robin Wall Kimmerer.

3. Learn about Indigenous histories and futures

For Indigenous peoples, land and identity are intertwined. Relationship to land is not a single, pan-Indigenous identity, as there are over 600 distinct Indigenous nations in Canada, with our own stories and teachings concerning relationships to the land. There are also urban Indigenous people, with a nuanced and distinct relationship to both our traditional homelands and the cities we call home. These identities, and our relationships to land, have been systematically under attack for over 400 years.

In a recent essay on identity and the natural world, Kimmerer—an environmental science professor and author of *Braiding Sweetgrass*—wrote: “Replacing the aboriginal idea of land as a revered living being with the colonial understanding of land as a warehouse of natural resources was essential to [colonization], so languages that told a different story were an enemy.”

Looking to the future, a document of great importance to environmental efforts is the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In November 2019, the province of BC became the first jurisdiction in Canada to formally enshrine UNDRIP into law.

The country we call Canada exists on stolen land. UNDRIP asserts that, “States shall



Dzan ts'al tyuu kak dhidii/The little muskrat is sitting on the ice

consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands ...” In the case of the Peel Watershed, the Yukon government’s proposed changes to the land-use agreement were not made with free and informed consent. It’s clear UNDRIP will be of vital importance in future land disputes.

Breaking through the initial defensiveness that occurs when we’re asked to back off takes real work, honest self-interrogation, and reflection. I’m inclined to believe in this process, as it has worked for me. I should mention that it also worked for the

members of the canoe trip who’d initially found my opinions hard to stomach. Over the years, I’ve watched them do the work and emerge as stronger allies.

Moving from a place of fragility to a place of acceptance is the first step, and after that comes the learning. Read Indigenous writers. Listen to Indigenous speakers. When appropriate, ask questions that increase your knowledge about Indigenous land sovereignty, not questions that seek forgiveness for the devastating effects of colonization. It’s terribly exhausting for those battling white supremacy to also have to soothe white guilt.

Finally, define your relationship with the idea of “stepping aside.” This does not mean throwing up your hands and walking away when confronted. Allyship that is dependent on the kindly mentorship of Indigenous people is not genuine. If a confrontation has you feeling like giving up, return to step one of my plan. Repeat until recovered, and get back to work. Because we are not here to validate our privilege through big emotional experiences. We are here to develop a relationship to the land that lasts for generations. |

Carleigh Baker is a nēhiyaw āpihtawikosisān / Icelandic writer and teacher who lives on the unceded territories of the xwməθkwəy̓əm, Skwxwú7mesh, and salilwata peoples.

Based out of Teet’it Zheh, Arlyn Charlie is a photographer and writer. He uses his art as a tool to share his culture, traditions, and language, by giving his photos Gwich’in language titles when creating blog posts.

Story by AMIR AZIZ

Illustrations by LUCINDA CALDER

HEALTHY HARVEST

Can Canada leverage an ugly fungus into a sustainable wildcrafting industry?



Chiitaii gisirinnii'aii dai' shoh ihtii/I am happy when it is sunny outside—Midsummer midnight at the Nataiinlaih ferry landing on the Peel River, just south of Teet’it Zheh (Fort McPherson).

On a birch tree in northern Ontario, a black, charred lump bulges from the flaky white bark.

This lump is a chaga mushroom, and there's a bounty on its life.

Chaga doesn't look like a mushroom at all: it has no cap, no stem. It's just a smoky, crusted ball, hardly distinguishable from a blackened burl or charred branch stub. A few strikes with an axe, a couple of back-and-forths with a hacksaw, or even a good whack with a stick can dislodge the main body of a chaga—also known as the konk—from its host tree. Breaking the konk open reveals an umber interior reminiscent of '70s corduroy. It gives off a faint scent of sap and earth, and, when boiled, produces a tea that tastes like vanilla and wet dog.

The fungus grows mainly across Russia, Canada, and northern parts of the US, Europe, and Asia, and foragers in these regions comb forests for chaga every winter. Someone harvesting for themselves might pry off a nugget, leaving the rest of the konk to continue growing, while foragers looking for profits can hack whole masses off the tree, tossing them into the backs of pickup trucks to sell to retailers.

Chaga is big business. The mushroom is powdered into pills, boiled for tea, distilled in alcohols, and blended in lotions and soaps for its purported health benefits. Proponents believe chaga's cocktail of betulinic acid, phytosterols, polysaccharides, and beta-D-glucans can aid those suffering from cancer, high blood pressure, high cholesterol, immune deficiencies, viral infections, and even the aging process.

Nikki Standinghorn—owner of NeepSee Herbs, an Indigenous traditional medicine business in Saskatchewan—has sold and harvested chaga for years after learning about it from family members and acquaintances. Her customers purchase chaga tea: “Number one, for cancer. Number two, for diabetes. Number three, for arthritis.”

Standinghorn uses chaga herself, and insists she hasn't been sick once since she started. “I cannot brag enough about this stuff.”

Kevin McAuslan, former president of the Toronto Mycological Society, has made chaga “coffee” for years by boiling a nugget, running the softened chunk through a Vitamix, and then boiling the resulting mixture again. “Anecdotal, in my family, we believe it helps in immune function,” McAuslan says. “If I have chaga before I go on a plane, I don't get sick.”

It's easy to dismiss chaga-hype as marketing buzz, but the fungus is medically interesting. While no large-scale studies have looked at chaga's effects on humans, animal studies suggest benefits including immunity boosting, improved blood sugar and cholesterol, and reduced chronic inflammation.

Residents of Siberia and Indigenous people in North America have foraged chaga for centuries. The name “chaga” is derived from Russian, but the fungus has many names, including *posabkan* (Cree), *shkitaagan* (Anishinaabemowin), and *mi'iblw* and *tiuxw* (Gitskan). Indigenous medicinal traditions have used the tea to relieve viral infections, and chaga smoke to treat aches and pains. In a Facebook Live video, Wikiwemikong herbal medicine expert Joseph Pitawanakwat recommends burning the inner part of the konk for migraine relief.

The fungus caught the wider world's attention after the publication of health food writer David Wolfe's 2012 book *Chaga: King of the Medicinal Mushrooms*. Wolfe's book promoted chaga as an anti-cancer, anti-inflammatory, cardio-protective, liver-purifying superfood. As interest has grown, a cottage industry quickly developed to forage for, process, and sell the fungus—some would say too quickly.

Wild-harvesting mushrooms is nothing new; professional foragers around the world supply restaurants and herbalists with the freshest and rarest fungi the forest has to offer. But when some of these foragers transitioned to chaga, they hit a snag: unlike most quick-growing culinary and medicinal fungi, chaga can take 15 years to reach harvestable size. And because it grows only on living trees, it can't be farmed like conventional mushrooms.

Most fungi, including chaga, begin life as a spore. The chaga spore latches onto a wound on a birch tree, such as the site of a torn-off branch. The growing konk feeds off the heartwood inside the trunk, and extrudes out of the bark as a crusted fungal mass. Like a highly selective vampire, the chaga feeds on the living tree, and only completes its life cycle after its host dies, by forming a fruiting body that disperses spores. The tree's death also triggers the decay of the konk.

Because it requires a living host, chaga can't be farmed on dead logs as is common with oyster and shitake mushrooms. As chaga-enthusiasm grew, the industry was left with two options for meeting demand. One option was to create lab-grown chaga (likely by sprinkling spores on cooked grains like rye, wheat, or rice, and harvesting the resulting fungal tissue). While lab-grown chaga is highly scalable, the health food world alleges it contains fewer beneficial compounds. That left option two: scale up foraging.

A resource industry conducted without regulation on public land—like most Canadian chaga foraging—is not a recipe for sustainability. Foragers pick all the fungus they can find to sell to anyone who will buy. This approach can clear large areas of commercially viable chaga stocks.

Sustainability concerns for forest products in general—and chaga in particular—have been discussed for years in the press. However, with more chaga experts claiming that accessible chaga stocks are starting to fall, the industry is now at a crossroads: buyers can either rework their supply chains and foraging practises to retain a continuous stream of chaga, or opt for larger short-term profits, hastening an end to the wild-foraged chaga industry.

This is the picture painted by Dwight Thornton. Thornton is a chaga consumer, forager, and seller based in New Brunswick. To his knowledge, he was the first North American to sell chaga online; after taking it for his own health, and sharing it with family and friends, Thornton started selling chaga in 2007.

“When I put chaga on the first website, it wasn't for resellers and marketers. It was for people like myself who needed it,” Thornton says. He believes his chaga tea habit—around 1.5 litres a day—cured him of a debilitating liver illness, and that others can benefit from the mushroom.

Thornton now buys chaga from other harvesters to sell on his website. According to Thornton, “If sustainability is going to happen, it has to happen with us buyers.” Professional foragers are naturally inclined to sell whatever they can. That's why Thornton requires his suppliers to adhere to a code of conduct aimed at maximizing sustainability and medicinal value.

Unsustainable harvesting comes from short-term thinking; because chaga grows inside the tree as well as outside, a harvester can net extra income by chiselling out the whole fungus from the tree. This provides a short-term profit boost for that individual forager. But it ultimately harms the chaga population of the forest: removing a whole chaga from a tree prevents it from one day completing its life cycle and dispersing more spores. It also damages the inside of the tree, leaving it vulnerable to infection and eventually death. According to both Thornton and Standinghorn, some especially reckless harvesters even cut down trees to access high-growing chaga infections, further impacting the forest.

If a forager only takes part of the konk, not only will the remainder form a fruiting body when the tree eventually dies, but the konk will also continue to grow as long as

its host tree lives, producing extra fungus for the harvester in coming years.

Thornton asks his foragers to only bring him whole, mature mushrooms, with a clean cut to show they did not cut inside

Some reckless harvesters even cut down trees to access high-growing chaga.

the tree. He insists that the chaga he buys be harvested in winter, when the host tree's sap stops running and the chaga's store of nutrients should be highest. While buyer policies like Thornton's could ensure a sustainable supply, he's aware they only currently apply to his harvesters. “Other buyers, they're not so picky,” he says. “They don't care.”

Standinghorn also realized the importance of buyer responsibility early on in her chaga-selling career. “When I realized how much I could sell to the public, I was worried about the sustainability,” she says. So she released a series of videos explaining chaga's benefits and how to sustainably harvest it. Her method is to only take half the external konk, rather than the whole thing. She believes that this harvesting ratio optimizes the mushroom's ability to regenerate. She has harvested chaga from the same three spots, year after year, without any dip in supply.

“This is an amazing medicine,” Standinghorn says. “It'll be there forever for us if we sustain it properly.”

New Brunswick's yellow birch forests are especially brittle, and therefore more

susceptible to chaga infections, according to Thornton. In the fall of 2019, foragers he works with found a cube van sporting Québec plates in the woods, loaded with bags of chaga. The New Brunswickers asked the van's owners to leave; for mushroom hunters, territory is sacrosanct.

Unfortunately, this territory-crossing is emblematic of the cut-and-run mentality that, according to Grant Lauzon, is putting commercial chaga supplies at risk. Lauzon runs *Greenfoot.ca*, a chaga sustainability website. He describes large health food companies buying all the chaga their harvesters can provide, while foragers moving from one area to another give the appearance of an unlimited supply. Meanwhile, in the background, whole forests are depleted of mature chaga.

To spark a new business model, Lauzon developed a scaled-down device for producing chaga extract. Using this device, an individual forager could create their own extract for sale, bypassing larger companies and giving them an economic incentive to keep the chaga populations in their area healthy. Next, Lauzon looked into protecting chaga populations from human overharvesting.

Taking only part of the konk is wise foraging, Lauzon says. However, in his view, it's not enough for a forager to do no harm by harvesting properly. Instead, that harvester must also protect the chaga population from others' unsustainable practices.

Observing the life cycle of chaga, Lauzon discovered that it's possible to “plant” freshly harvested chaga back onto a tree. Using a drill, a forager can bore into a tree, place



a thumbnail-sized chunk of freshly harvested chaga inside, and seal the hole with wax to protect the fungus from the elements. In time, the chaga chunk infects the tree and, eventually, bursts out as a new conk.

On private land, this seeding method could lead to chaga farming: a harvester could work out an agreement with the landowner and seed the chaga for a reliable supply. This approach was developed simultaneously in Europe, where one Estonian company offers professional chaga seeding to land owners.

On public land, where intentionally spreading a tree fungus is ethically questionable, a forager could re-infect a tree after harvesting to counter unsustainable practices. If a second harvester digs out the remaining conk from the tree, the newly introduced infection still has a chance of growing and forming a conk in coming years. While not a great outcome for the perpetually infected tree, it's good news for the forager who knows the chaga will have a chance to spore and produce more conks in the future.

Based on chaga's growth requirements, Lauzon estimates that Ontario foragers could sustainably harvest 15 metric tonnes of chaga per year from easily accessible

forests, while Québec harvesters could bring in as much as 25 tonnes. Managed well, this could form the foundation of a sustainable wildcrafted chaga industry, and generate jobs in rural communities.

This is key, because the demand for chaga is unlikely to go away. Approximately 71% of Canadians have consumed some form of natural health product. Demand for these products is generally driven by increased diet consciousness, rising health care costs, and an older population. These factors are unlikely to diminish anytime soon, and the marketing around chaga's health benefits fits neatly with consumer desires.

In Lauzon's view, natural chaga production peaked years ago, and human interventions are the only viable path forward. A sustainable chaga future is not necessarily a given, though, and Lauzon foresees a few possible scenarios. Chaga harvesting could increase until demand is so high and supply so low that the fungus becomes a luxury good. Alternatively, companies may resort to vat-grown chaga, with a smaller amount of wild chaga mixed in, or to multi-mushroom blends that mask a shrinking chaga supply.

While pessimism is well-founded, there's also reason for hope: managing forest resources is an ancient practice. The Canadian maple syrup industry is an example of disciplined forest resource management. Sugar maple tapping—which requires draining the right amount of sap from a specific type of tree—might offer a model for chaga sellers. Managed correctly, chaga in Canada could become as sustainable as this sweet national delicacy.

Lauzon believes—based on interest in the methods he's developed—that sustainability isn't far off. Over the last two years, he's seen foragers embracing locally managed operations aimed at balancing chaga stocks with consumer demand. "It really has shifted into the care of the harvesters," he says. "My pleasant surprise is: the tide is turning, and it's all of us working together to make that happen."

Amir Aziz is a Toronto-area writer with strong opinions on espresso.

Lucinda Calder is an artist and illustrator located on the traditional, ancestral and unceded territory of the Coast Salish peoples—Squamish, Tsleil-Waututh and Musqueam Nations.

Standing Up for What's Right When It Hurts to Stand

**I can't protest with my
body like some folks, but
there are so many other
forms of activism.**

Story by
TANEASHA WHITE

Illustration by
AFUWA



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I am a fat, Black, Queer woman from the South.

The global events of 2020 have impacted me heavily, and I know I’m not alone; George Floyd’s killing in May rocked marginal-ized and empathetic communities in a loud, global way. Despite systemic racism’s inescapable impact on the Black community, this instance of police brutality—alongside the spring and sum-mer murders of Breonna Taylor and several others—sparked sustained worldwide protests. Massive numbers of civil actions have taken place, in every major US city and some smaller ones (including Richmond, VA, my very own capital of the Confedera-cy). The collective unrest in the US this year is unprecedented for this generation.

Folks who never engaged in activism before took to the streets, willing to risk it all. Photos show them lying in the middle of the street, fist-fighting with cops, dodging rubber bullets. Those pho-tos all send a similar message: This is the way we engage. This is the way we fight back. This is what an activist looks like. Those of us with bodies that receive oppression for simply existing—due to race, ethnicity, neighborhood, native language, physical or mental ability, or any combination of these and other factors—have been living this activism life for a while now, but we receive this same messaging. Even intersectional social justice movements often fail to consider people with disabilities.

I am a fat, Black, Queer woman from the South. I have chronic pain.

I’m unable to stand without pain for more than 15 minutes at a time. If using my body for protest is the only way to engage, how am I supposed to push back against the systemic inequities that influence marginalized peoples’ livelihood—my livelihood—on a daily basis? How am I to actively resist the impacts of ableism, racism, and homophobia on the safety of my community? In the media and popular culture, the term “disabled” often evokes a particular image: a white child in a wheelchair. Even within progressive movements, we don’t recognize that every sin-gle community includes people who are disabled. Many of us live with “invisible disabilities,” and their invisibility makes our pain easy to dismiss, or even deny. Able-bodied folks assume that if they cannot see my disability in order to validate it, then I should be able to perform exactly as they do. I have held more than one job where I was expected to can-vas door-to-door. When an election rolled around, I felt anxious about being honest with my supervisor at one of those jobs, fear-ing they’d see me as “unfit.” I racked my brain to figure out how to complete the task, but I knew it wasn’t possible. A single packet of names would take minimum an hour of walking; on a good day, I can walk about 20 minutes before I hit my pain threshold, have

to stop, and then deal with subsequent pain—potentially for the remainder of the day. It turned out this employer was understanding, and shifted my efforts to alternate contact methods. I was relieved. I’d feared my limitations could lead to organization-wide disappointment or losing my job. I wasn’t sure which would have been worse. The physicality in advocacy activities goes unnoticed by the able-bodied. Standing rallies are common, but because I feel em-barrassed to bring a chair, I often skip them. I have pushed myself to attend in-person protests, sitting in the back for easy escape. I come for the chants and speeches, but skip the marches, knowing they’ll be longer than I can handle. I know I’ll make it a quarter of the way before I have to sit down. What good am I there? I envision myself as the character in the war movie who tells their comrade to leave and save themselves. The people I spend my time with would absolutely throw me over their shoulders in a feat of super-human strength, and attempt to carry me to safety rather than leave me to die. In a Hollywood blockbuster, their heroic efforts and an encouraging musical score would push us to our destination. In reality—sans makeup artists and green screens—I’d get us both killed.

I am a fat, Black, Queer woman from the South. I have chronic pain. I am loud.

I have pushed myself past my limits repeatedly. I regret those times, as I now have even less capacity. Because I live in this fat, Black body, the default assumption about my aversion to physi-cal activity is that it’s due to my weight. Because of fat-shaming culture, I regularly put my body in uncomfortable positions—sometimes reaping the repercussions for days afterwards. I distinctly remember walking a mile to a work event a co-worker told me was “just around the corner.” I stopped five times, each time considering whether to turn around and call someone to come get me. Each time, shame won over. I finally made it, and

attempted to soothe the lump in my throat with the open bar. My left leg almost immediately went numb, and my hands shook from the pain. But I smiled and schmoozed with legislators and orga-nizers like I was expected to. I cannot begin to count the number of times a group of friends or coworkers I was with expected everyone to walk somewhere without checking if we were okay to walk the distance required. Even those without diagnosable chronic pain, illness, or dis-ability deserve a say in the activities their bodies participate in. Consider those who sweat easily or are easily winded. No one should

make assumptions about other people’s comfort; we can’t know without asking. Here’s what the activist world misses with these assumptions: Fighting for our liberation doesn’t have to look one way—there

are many avenues of resistance. For a person at any intersection of oppression, existing as exactly who you are and showing up for yourself every day is resistance in itself.

I am a fat, Black, Queer woman from the South. I have chronic pain. I am loud. My partner is non-binary. I love talking about reproductive justice, sexuality, and the complexities of them both. And if I decided to never do another goddamn thing in relation to policy or activism, I would still be resisting.

We have to push back against the idea that participating in social movements requires us to put our safety and health on the line. When I do engage, I want the activist community to see my re-sistance as valid and important, even if I’m not doing it with my body. We all have different callings, talents, and areas of expertise, and not everyone is going to respond to societal inequalities in the same way. The *Oxford English Dictionary’s* definition of activism is “the use of vigorous campaigning to bring about social or political change.” This means folks passing out water at protests are just as vital as the ones who paid for it. When I think about a “visionary,” I see Brooke Taylor, my lov-ing partner and a professor who caters their syllabus to students of color—including material like rap music—and pushing higher ed-ucation coursework to be culturally inclusive. White supremacy tells us that art created by and for Black people has no connection to academic theory. Choosing to weave something as integral to Black culture as music into higher education is direct pushback to white supremacist academia. When I visualize “community,” I see Queer and/or Trans Peo-ple of Color financing local relief efforts, and those impacted by racist and ableist housing laws, lack of Covid-19 support, and unfair wages supporting themselves is revolutionary. When I picture “resistance,” I picture Shantell Martin, the mu-ralist who made Microsoft’s insensitivity a national talking point

by publicly broadcasting their attempt to commission a Black Lives Matter-themed mural on an absurdly short timeline, “while the protests are still relevant.” Black women are often tone-policed and silenced for being overbearing and emotional. Choosing to speak the truth, even when your livelihood could be at stake, is an outright act of defiance of societal expectations. When I envision “change makers,” I see the staff writers and editors who pushed their publications to capitalize Black before AP made it their standard. It is hard to speak up for margin-alized communities when it can potentially ruffle feathers up the hierarchy. When I imagine “revolution,” I see the social media influencers who gather receipts and call folks out on Twitter, the writers who speak their truths regardless of opposition, the folks who work in nonprofits and aim to change the tide through grassroots efforts and policy. Innumerable people use their talents for social good, whether through their writing, visual art, or performance. Folks like me who write articles about a protest’s organizers are just as impactful as the ones who attended. The bottom line is that all our individual efforts are needed to make this thing we call revolution move forward. We all have a hand in pushing that arc of history towards justice, because it’s clear it won’t happen on its own.

I am a fat, Black, Queer woman from the South. I have chronic pain. My partner is non-binary. My loud, unapologetic existence and my dedication to telling the truth make a difference in my community.

Taneasha White is a Black, Queer lover of words, inquisition, and community, and has used her role within both literary and organizational spaces to make room for folks who are often cast aside. She is the founder and editor of UnSung Literary Magazine and co-hosts a podcast, Critiques for the Culture.

Afuwa was born in Guyana, on Karinya and Akawaio lands. Her text and images have been featured online and in publications including the Capilano Review, The Feminist Wire, Briarpatch, West Coast Line, and subTerrain.

LEGENDS OF THE DARK NIGHT

Most of us know little about bats beyond their spooky reputation. But their threatened survival has a network of enthusiasts trying to change that—and save BC's Bats.

Story by
LAUREN KALJUR



Hoary Bat (*Lasiurus cinereus*)

Photo by Sherri & Brock Fenton Photographers

It's the witching hour. As nearby Vancouver Island residents prepare to settle in for the summer night, Meaghan Cursons and I are on a cabin porch, watching the show begin.

The tiny microphone attached to Cursons' iPad reveals the unseen, converting the echolocation calls that give bats their night vision into a graphic of sound waves. Most likely California myotis, she says, and lots of them. I look up to see bats swoop around us at speeds of up to 25 kilometers per hour, feasting their way through the twilight swarm of midges, mosquitoes, and moths. Judging from their acrobatic dips and dives, the bats are ravenous. I duck out the way. As they dive-bomb from their roosts in the bark of old trees, I wonder: How could I have ever missed such a show?

Bats can eat their weight in insects in one night, and that's a good thing. I'm getting eaten alive; I take refuge inside the cabin, to observe from behind the sliding glass door. Cursons, as a seasoned observer of the night, remains bewitched, and unfazed by the biting swarm. As a bat naturalist and co-founder of the Cumberland Bat Project,

she's determined to engage the uninitiated like me. "Some people hate them, some people love them," she says. "They capture the imagination regardless."

The bats that night were plentiful. But bats in most places around the world are in trouble, as human activity continues to destroy the varied mix of places bats need to rest and roost throughout the year. Our stifling presence is also contributing to the spread of infectious diseases. In North America, a devastating fungal infection—likely introduced by humans—is creeping its way up the Columbia River Basin in the US. White-nose syndrome kills a shocking number of North America's bats in its path. And in lockstep, hundreds of enthusiasts like Cursons are helping teach us that we need bats, as they identify roost sites, count bats, and report deaths throughout the year as stand-ins for scientists.

Historically, the general public hasn't understood bats well enough to appreci-

ate their importance, and associations with vampires and animal-borne diseases like the current coronavirus haven't exactly helped their reputation. But important they are, and researchers hope with more watchful eyes on them, we just might be able to reverse the fate of these legendary night flyers so they can get back to protecting our ecosystems.



Bats emerged roughly 60 million years ago and adapted to thrive on every continent except Antarctica. With over 1,400 known species, bats are the second most common order of mammal after rodents, but they're far from pests. Though their nocturnal role supporting agriculture is far less appreciated than bees', insect-eating bats remove staggering numbers of crop-eating pests from our ecosystems.

Bats can poop while flying over long distances, explains bat biologist Tigga Kingston, so seed-dispersal by fruit-eating bats aids the recovery of cleared and disturbed landscapes. Bat poop—known as guano—is a commodity, used as a nitrogen-rich fertilizer. And the nighttime nectar-eaters are responsible for pollinating more than 500 plants, including agave and some species of banana and mango.

"Bats have intrinsic value to us because of the incredible diversity they represent," says Kingston, a professor at Texas Tech University who founded GbatNet, a global union of bat diversity experts. From what they eat, to where they roost, to their social systems, "they represent all ways that you can be diverse."

"We have very few wildlife in our urban environments that we actually depend on, and bats are them," says Cori Lausen, a leading bat specialist with Wildlife Conservation Society Canada (WCSC). Lausen points to the diversity of bats supported by Vancouver's green spaces, whose eerie presence results in significant savings on pest control—billions' worth across North America. And as more and more bats roost in human-made structures like bat boxes, they, in turn, depend on us.

Biologically speaking, bats break all the rules. Not only are they the only flying

mammals, many have only one pup a year and can live up to 30 years old, unlike similarly sized mammals. As a result, populations are slow to recover from catastrophic events. Between habitat loss, pesticide use, predation by cats (yes, cats), and climate change, around 17% of bat species are viewed by the International Union for Conservation of Nature as vulnerable or endangered. Half of the 16 species that live in BC are listed as a conservation concern

due to population declines. As barometers for the health of our ecosystems, bats are sounding alarms.

But it's the fungal white-nose syndrome—which has been called North America's "worst wildlife disease outbreak ever"—that has caught the attention of even the bat-indifferent. In 2006, the fungus *Pseudogymnoascus destructans* was found to make its home on the muzzle,

The fungus has wiped out 90 to 100% of bats in some locations.

ears and wings of cave-hibernating bats in the northeastern US. Just as bats are supposed to be conserving precious energy, the fungus rouses them, igniting erratic behaviour that burns energy reserves, ultimately killing them. The fungus has absolutely ravaged bat populations in the US and seven provinces in Canada, wiping out 90 to 100% of bats in some locations.

"We still don't know if those numbers will ever recover, and how many decades it will take," says Texas Tech's Kingston. "That's assuming ... some resistance to the disease [develops]." Though the wider impacts of these losses are still being measured, an analysis by University of Chicago environmental economics professor Eyal Frank suggests a connection to human health. He found that farmers in counties exposed to white nose used 40%

more insecticides than usual, and that the mortality rate among baby girls increased by 14.5%. (Impacts on male infant mortality were less clear, but pesticide-use and infant mortality have been previously linked).

In 2016, when white-nose syndrome was first detected in Washington state, a Canadian community-driven nonprofit quickly jumped into action. The BC Community Bat Program, as it's now known, started in the Kootenay region in the early 2000s, when biologists saw community interest in conservation and wanted to see where they could take it. As interest grew, and as white-nose syndrome advanced, the organization morphed into a province-wide collective of independently funded community groups doing everything in their power to save bats.

A myotis bat infected with white-nose syndrome hibernating in a Nova Scotia cave.



Photo by Jordi Segers
National White-Nose Syndrome Scientific Program Coordinator

Photo by Jason Headley
Alberta Community Bat Program (WCSC Canada)



Big Brown Bat (*Eptesicus fuscus*)

For instance, they create tip sheets for landowners and pest control professionals, with support from the provincial government and established conservation charities. Community “bat ambassadors” build bat boxes—structures of varying shapes and sizes that attempt to mimic a natural roost site, like the bark of old trees or an attic—install live bat cams, and educate the public with bat walks. They organize bat counts and collect fresh guano so scientists can identify which species are present by extracting DNA. If necessary, they show landowners how to collect and send dead bats to a lab in Abbotsford, BC, for analysis. They’ve even structured a Bat Friendly Community program, a designation Richmond, Dawson Creek, and Peachland now share for taking steps like controlling unnecessary, cosmetic pesticide-use and protecting bat-friendly wetlands.

What makes BC’s bat efforts unusual is that they’re powered by regular people who have grown to love these mighty little underdogs of the night. “They’re in the communities, they’re putting on the events, they’re putting out the tables, putting up the posters,” says Lausen with the WCSC.



A Yuma Bat (*Myotis yumanensis*) on Bowen Island

Photo by Jenn Barrett
South Coast Bat Conservation Society

they catch bats and swab them for samples to see if the probiotics have settled on their wings. Next year, they’ll test the bats again to see if it has stuck, and how they’re doing.

“There’s a high chance in the next year or two years, three years, that these bats that we’re inoculating are going to go somewhere [and] pick up the [*P. destructans*] in the wintertime,” says Currie. Then, researchers will know if the experiment is working—and if it does, they can scale it.

“If we can help hundreds of thousands of females, the ones that are going to give birth to the next generation,” says WCSC’s Lausen, who is overseeing the research, “then we can actually reduce the impacts of white-nose syndrome.”



Members of the Cumberland Bat Project aren’t the only ones with a penchant for hanging out and recording bats around local wetlands and heritage buildings at night.

Lausen describes a retired Vancouver police officer who took one bat walk before he got caught up in the “bat vortex.” Soon, he was volunteering for Lausen’s master’s student doing field research, and even took a course Lausen teaches on bat acoustics that’s geared toward biologists.

For Lausen, too, it was “love at first bite.” Right from the start of wildlife biology programs, she says, students get inundated with information about charismatic megafauna. “Yeah, yeah whatever, caribou, bear. Yeah, everybody cares about those,” she says laughingly. “But what about the ones that really need our help and that people think are ugly, but really they’re cute if you see them up close?”

This love of bats, coupled with the urgency of white nose, has fuelled some great successes. When Lausen and a handful of other bat researchers saw that time was running out to fill in the scientific gaps, they founded the BC Bat Action Team which she says now counts around 70 bat scientists, naturalists, and

enthusiasts as core members. Together, they’ve charted a five-year action plan for the protection of bats, which federal and provincial environment ministries use to guide bat conservation plans.

“It’s the only reason we’ve been able to make unbelievable strides in this province that we haven’t seen in other provinces,” says Lausen.

When SARS CoV-2 (the virus behind the current pandemic) was linked to bats, the BC bat community jumped in to convey that people aren’t catching Covid-19 directly from animals, and dissuade worried landowners from evicting night flyers. “The messaging was out instantly. And I don’t really feel in this province that we had a huge outcry from the public,” says Lausen. In other places around the world, news of the link between Covid-19 and bats lead to misguided bat culls.

While research and bat counts have slowed due to the pandemic, Lausen remains “cautiously optimistic,” especially when it comes to the multi-strain probiotic,

Bat watchers go to known roost sites at dusk for data.

Increasing awareness of these mysterious creatures is at the core of the community bat program, but the bat counts also contribute critical baseline data to conservation biologists. With confirmed cases now about 150 km south of the border, white-nose syndrome could appear in BC at any moment. The province is home to 16 of Canada’s 19 bat species, and the trouble, according to Lausen, is that biologists know very little about them. None of BC’s species have been as closely researched as the little brown myotis in the east. But if researchers don’t know how and when they hibernate, or even where, they can’t respond effectively to the looming threat of white nose.

That’s where citizen science comes in. As scientists like Lausen fill the gaps in fundamental research, volunteers across the province are making observations about the health and locations of colonies on the ground. Four times

a year—twice in June before pups can fly and twice more between July and August when pups exit the roost—volunteers like Cursons and other bat watchers go to known roost sites at dusk, record the temperature and weather conditions, and how many bats fly out from the roost for one hour, or until it’s too dark to see. They fill out a data sheet and send it to the BC Bat program’s coordinator, Mandy Kellner, who inputs the estimated colony counts to build a province-wide data set. Thanks to volunteers from groups like the Cumberland Bat Project, the number of bat counts grew from 27 in 2012, to 873 counts at 337 roost sites in 2019.

Though citizen data isn’t perfect, “it’s the only thing we’ve got ... in terms of monitoring for declines in populations,” says Kellner. “I don’t think there’s anything that we could do better realistically with just us trained biologists.”

This summer, as enthusiasts were counting bats around the province, researchers were in the field at known roost sites in Metro Vancouver testing another tool in the fight to save BC’s bats: a bat probiotic. Scientists at Thompson Rivers University’s microbiology lab and fungal biologists at McMaster University have developed a four-strain probiotic that inhibits the growth of *P. destructans*, building on findings by microbiologists at the University of New Mexico. They hope that by applying it to roost sites—in this case bat boxes—they can get the probiotic to grow on bats’ wings and help mitigate the disease.

To test it in the real world, WCSC conservation biologist Chris Currie, and his colleagues used a bike pump to distribute a mixture of clay and probiotic onto bat boxes, after first spraying them with distilled water so the mixture sticks. After a few weeks,

and the citizen data informing their action plan. “I think ultimately we’re going to—and we have been—learning a tonne more about our bats in the west because of the citizen science initiatives,” she says.

The WCSC’s Currie knows it’s impossible to inoculate every bat, and the disease is bound to cause harm. “We’re just trying to give them enough time to be able to deal with it on an evolutionary scale,” he says, “rather than just be totally wiped out.”

But no matter how many bats survive the coming years, people across the province are starting to see the night in an entirely different light. “These projects that are popping up are evidence of our deeper understanding of the importance of biodiversity to our own survival,” says my bat-watching companion, Cursons.

Back in Vancouver, I scroll through the upcoming bat events posted on Facebook, some in forests, some online. I click: Going.

Little Brown Myotis (*Myotis lucifugus*) roosting

Photo by Jason Headley



Lauren Kaljur is a freelance journalist who lives on the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh Nations with her grandmother. She’s passionate about innovation and collaboration in storytelling, and works to this end with The Discourse. She spends her free time paddling around Howe Sound/Atl’ka7sem and is newly in love with bats.

Let your inner chaotic child make a delightful mess with collage.

Words & collage
by Anjalica Solomon

Becoming A VISUAL POET

As a poet, I spend my time visualizing images, journaling about memories and dreams, and conjuring vivid sensations with language. In many ways, writing poetry and making collages use similar skills: sorting through and reshaping narratives and images into a cohesive whole.

I'm fascinated by photos from my family's ancestral village in northern India, Dayalgarh. In one, my chachas (uncles) are young, splashing gleefully in the outlet of a tube well. I might start a poem from that photo and interrogate my memories of home in the heat of summer, or my love for my uncles. I transform fragments of histories with my own memories and experience. The result is always me reckoning with the messiness of telling a story.

When I feel restricted by the form of writing, I turn to collage. Over the years, collaging has informed how I approach poetry, giving me permission to be messy, disorganized, and borrow inspiration from strange places. It's all about transformation and making connections.

A friend introduced me to collage through a zine she'd made with her poetry and cut-out images. Before I knew it, I was covering the walls of my house, collaging gifts instead of wrapping them, making vision boards, and album covers, and idea boxes. Swapping magazines at flea markets and leading collage workshops has even become a source of friends! Collaging in a group provides extra eyes looking for specific images.

The practice of collage is deeply satisfying and cathartic, a chance to be reckless and spontaneous. When I'm collaging, I say yes to my inner child who loves tearing things up.

Key collage supplies:

- Scissors (A fine-point X-Acto knife can be helpful for intricate cuts.)
- Magazines, pamphlets, textured paper, and visually interesting ephemera
- Glue (I prefer a craft glue stick.)
- A surface to collage on (I like thick paper, but instead of new material, try taking something from recycling like a shoebox.)

1. Get to cutting

Think about colour, texture, pattern, and what mood you're curating. You might create separate piles for images linked by theme, or words and letters in eye-catching fonts, or scenes to use as background. Make sure you're not cutting through anything you might want on the other side of the page!

2. Don't rush to glue

When I'm collaging, I like to scatter the treasures I've collected over a large space. It might look chaotic; if your floor is a mess you're doing it right! I arrange my images until the collage feels harmonious, then take a picture so I remember the placement, and glue it all down at the end.

3. Disrupt the image

Think about what an image would look like displaced, disrupted, or disfigured. Play with subtracting from the background and layering new elements on top. I'll take an image that feels central, like a tiger, and see if I prefer her in space, or looking out on a field of landing parachutists. I'll take a cardinal and ask it, "Where do you want to land?"

4. What's the story?

Ask yourself how one image might speak to another and put them in conversation. If this child had a butterfly for a face, how would it speak to its mother? If this gold banana peel was a spaceship, what depths of the galaxy could it explore? Sometimes, there is no cohesive story, and collage feels like a hallucination.

With some projects, I'll experiment with placement for days. To me, a collage is complete when things feel balanced in the world I've conjured. It doesn't have to be perfect. When I can tell myself a story about the world inside the collage, I know it's time to glue. }



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Anjalica Solomon is a queer Desi poet, arts educator, and community organizer.

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