

Challenge vs. Opportunity: An Optimist's Approach to Global Forest Conservation

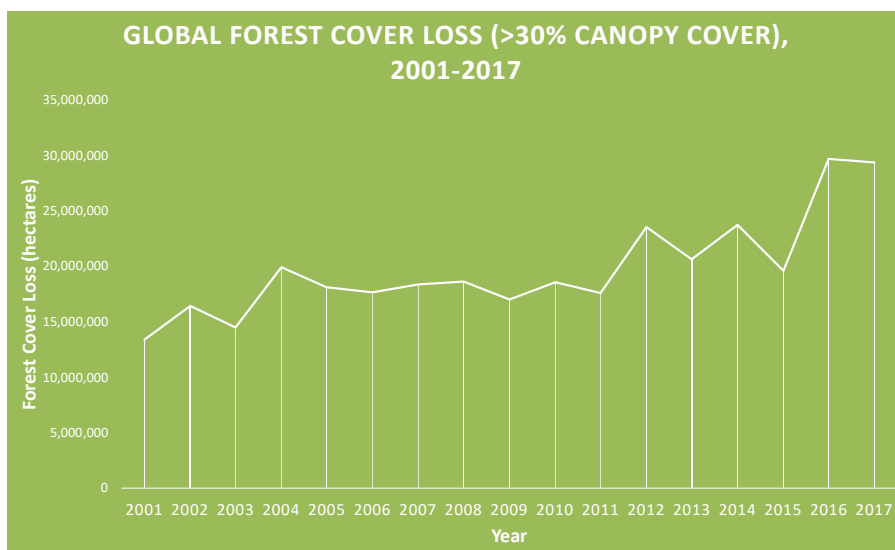
Delilah Cupp
University of Colorado Boulder

Setting the Scene: The Climate Crisis

The Age of the Anthropocene. The Age of Imminent Climate Disaster. The Sixth Great Extinction. Whatever you like to call this era that we are living in, one thing remains starkly apparent: we are headed towards certain catastrophe. Indeed, catastrophe ensues across all corners of the world; global temperatures are projected to increase two degrees by the end of the century, glaciers are melting, sea levels are rising, hurricanes and tropical storms are annihilating coastal communities with unprecedented frequency, plastic pollution has invaded every beach in the world and the stomach of nearly every living marine creature, desertification is advancing across multiple continents, wildfires are ravaging forests worldwide—and somehow, in the midst of all this overt chaos, people are still actively cutting down tropical forests.¹

In the face of pervasive catastrophe, people are giving up. And for good reason—bombarded daily with headlines highlighting the now-commonplace disasters striking every corner of the world, disheartenment ensues. Giving up becomes the default option. And so, all over the world, chainsaws are raised, bulldozers push forward, and millions of trees are plowed down every day.

Forests are cleared to make way for cattle and soy production, oil palm plantations, timber harvesting, urban expansion, infrastructure development, and more.² Consequently, deforestation is accelerating with seemingly unstoppable momentum. Deforestation is occurring at a rate of 13 million hectares per year—that's over fifty football fields of rainforest destroyed every minute.³ In the time it takes you to read this piece, 500 football fields of rainforest—and the thousands of species living within—will be destroyed. Despite increasing attention brought to forest conservation in recent years, 2017 was the second-worst year on record for deforestation—driven primarily by increasing global demand for resource-intensive commodities like beef and soy.⁴



Global Forest Cover Loss, 2001-2017. Data Source: GFW.

While the utility derived from production on or development of cleared forest land is tangible, the utility intact forests provide far outweighs the benefits of feeding a global population overly accustomed to red meat, livestock fed by soy feed, processed foods manufactured with palm oil, luxury timber for China's expanding market, and extended road systems.

Intact forests sustain life as we know it. Functioning forests exercise almost incomprehensible power over our Earth's atmospheric, hydrologic, and terrestrial systems—the systems that allow us to breathe and survive on this planet. In the midst of accelerating global climate change propelled by anthropogenic greenhouse gas emissions, forests play a pivotal role in climate change mitigation, serving as natural carbon sequesters and storing more carbon than is currently contained in the Earth's atmosphere.⁵ Unsurprisingly, then, deforestation

emits more greenhouse gas emissions than the entire transportation sector each year—that’s all the cars, trucks, ships, trains, and airplanes combined.³

While the pessimist might herald deforestation as an intractable challenge contributing to the irreversible global climate crisis, the optimist sees deforestation as an opportunity—or, a strategy in the portfolio of *natural climate solutions* to deter climate change. Natural climate solutions, including the conservation and restoration of forests along with improved land management and agricultural systems, hold the potential to contribute 37% of the greenhouse gas emissions reductions required to meet global climate targets limiting warming to a maximum of two degrees Celsius.⁶ Furthermore, two-thirds of that 37% can come from conserving, restoring, and improving the management of tropical forests.⁷

As such, the value of forest conservation as a natural climate solution cannot be understated—especially with the consideration that *stopping* widespread deforestation to conserve what *already exists* is theoretically much easier and more straightforward than deploying climate change reduction technologies that have yet to be invented, such as transforming the world’s energy and transport systems.²

Synthesizing the outlooks of both the optimist and the pessimist would present deforestation as both a challenge and an opportunity. Tackling the challenge and capitalizing on the opportunity necessitates incorporating all key stakeholders in forest management. Critically, indigenous peoples and local communities manage more than one-eighth of the world’s forests, which contain at least one-quarter of the planet’s tropical forest carbon.⁸ Any successful forest conservation scheme must prioritize the interests and well-being of the people who live directly underneath the forest canopy—the stewards of the forest.



Quilombola agro-forestry leader in the Atlantic Forest, São Paulo, Brazil. Photo by Delilah Cupp.

Evidence abounds supporting the efficacy of indigenous peoples and forest communities to manage the forests they call their homes with great care and demonstration of long-term stewardship, as they rely directly on forests for food, medicines, building materials, income, water filtration, and recreation.² The World Resources Institute published a report in 2014 detailing the dramatically lower deforestation rates in community forests than in forests managed by other entities, such as corporations and governments acting without indigenous participation.⁹ However, the proven most effective method for deforestation reduction is combining community management with strong legal recognition and collaborative government protection.² In the Brazilian Amazon,

for example, deforestation inside legally-recognized and protected community-managed forests is 11 times lower than in surrounding forests.⁹

Therefore, forest conservation has been intimately intertwined with the survival of the world's indigenous peoples.² Biodiversity is wound up in cultural diversity and vice-versa.

While the idea of conserving forests for their intrinsic natural value may not appeal to an environmental pessimist, the idea of respecting indigenous land rights and empowering the local communities whose cultures rely on their forests presents a perhaps more universal appeal.

My Story: How Did I Get Here?

I must admit, my enthusiasm for forest conservation prioritizing indigenous empowerment was not innately endowed. In fact, I, too, once leaned towards a pessimistic concession.

During my first two years studying Environmental Studies at the University of Colorado Boulder (CU), I was regularly reminded of the new frontiers in environmental destruction fueled by industrial consumption and capitalist growth. Doomsday-style lectures exhibited the demoralizing trajectory of global population growth, increasing inequality, excess consumption, resource-intensive food systems, destructive commodities production, greenhouse gas emissions, unjust governance, environmental injustices—and the plethora of problems arising from every attempt to solve any of these issues.

And so, towards the end of my Sophomore year at CU, I decided to give up on my home planet. I was overcome by an overwhelming sense of pessimism for the future of our Earth; I no longer expected any returns from attempting to save the fragile ecosystems that remain.

I considered dropping out of school. Or, at least, switching majors to something less demoralizing, like Finance or Computer Science.

Fortunately, in a last-ditch attempt to revive my interest in Environmental Studies, I enrolled in the Global Seminar course, *Conservation Biology in the Atlantic Forest*, and booked a flight to Brazil for the month of May 2017.

Enrolling in this course unequivocally determined the trajectory of the remainder of my undergraduate studies, my interests, my career path, and, most importantly, my optimism in the fate of the planet.

The course, led by Dr. Tim Kittel, brought me to the Atlantic Forest in the state of São Paulo, Brazil—where a staggering 7% of the original forest cover remains.¹⁰ While the number 7% may look miniscule on paper, I can assure you that the 7% of Atlantic Forest left standing is undoubtedly worth defending.

The forest captivated me. I became enthralled with the sights, the sounds, and the feelings instilled by being underneath the thick canopy of trees—and around the people who lived within them.



Looking towards the Atlantic Forest from the shore of the Atlantic Ocean. Photo by Delilah Cupp.

During the course, I visited several *Quilombolas* (rural communities formed by runaway African slaves between the 16th and 19th centuries¹⁰) and local forest communities, where I witnessed genuine forest stewardship at work and the pivotal role that forests play in these communities' livelihoods.

On a particularly impactful excursion to one Quilombola set inside a steep river valley adjacent to the ocean, I saw productive agro-forestry systems atop rolling hills overlooking the Atlantic Ocean, accessible only by hundreds of slippery steps carved out of the clay-rich soil by Quilombola residents. I walked across precarious bridges constructed from the wood of fallen trees, connecting small wooden bungalows on either side of the stream cutting through the settlement. Further upstream, I climbed up ropes tied to trees providing assistance up the steep, slippery walls of roots leading to breathtaking freshwater pools. I watched children jump from the top of cascading waterfalls into the pools below, splashing and laughing gleefully in the spring humidity.



Freshwater pool upstream of Quilombola in the Atlantic Forest. Photo by Delilah Cupp.

On my walk back towards the Quilombola center, I felt wet roots turn to snakes right underneath my bare feet. Propelled by fear-induced adrenaline, I ran right into the center of a makeshift football match on a small, meticulously packed clay field. Greeted by laughs and smiles, I received a pass from a teenage boy wearing a 'vintage' Messi jersey. The ball was tattered and nearly deflated, but the players kicked it with impressive force. I tried my hand at keeping up with their game, contributing no doubt the least skill on the field (despite my background in varsity soccer). Nonetheless, the kids' smiles of encouragement and welcoming gestures kept me glued to the game... until a worried course instructor ushered me away after I failed to show up to the course's scheduled activity.

I am confident that whatever material I missed in the course activity was subjugated by the value I garnered by playing football with the smiling Quilombola kids on their clay field.

In retrospect, what I witnessed in the Quilombola that day was a group of people in love with their land. I met true stewards of the forest, deriving material and spiritual utility from their environment, sustainably managing their forest. My visit to the Quilombola that day helped me realize the true value of the forests and the people within them.

My Return to CU: Pursuing Targeted Studies

I returned to CU the following fall with a revitalized enthusiasm for Environmental Studies. I had a *track*, a targeted interest which directed all of my subsequent research over the next two years: forests, and the people living within them.

My relentless optimism inspired by my experience in Brazil afforded me a clear direction to tailor my studies.

Each project I completed contributed to my enthrallment with forest conservation initiatives acting in conjunction with indigenous and local communities. I wrote countless research papers on the socioeconomic implications of payment for ecosystem service schemes in Brazil; I dug deep into the palm oil epidemic destroying forests and displacing communities in Indonesia; I delivered a presentation on the effects of climate

change on shade-grown coffee production in Mexico; I explored the environmental implications of globalization materialized through China's increased demand for palm oil and luxury timber.

Rather than assert that my targeted studies have rendered me some sort of expert in forest conservation, I must admit that the only thing I know for certain is how much I have yet to learn. The most important wisdom I have gained from college is knowing that the more I learn, the less I think I know.

However, there is one thing I know for certain: there is something left to save on this planet—in fact, there are billions of things left to save on this planet: the forests, and the people within them.



Children playing rugby in an indigenous village in Taveuni, Fiji. Photo by Delilah Cupp.

In fact, the people within and dependent on forests for their way of life (i.e., every human on this planet) may provide *the* imperative to protect those forests.

One of the most valuable lessons imparted to me during my time at CU was from Dr. Atreyee Bhattacharya (Dr. B) during her holiday party at a local brewery last December. Dr. B, a renowned climate science writer, reminded me that the Earth is not in danger from climate change. The Earth will get on just fine; rather, it is us *humans* that are in danger. Anthropogenic climate change and deforestation are not environmental crises—they are human crises. Humans will be unable to sustain life as we know it without the services provided by forests; forests, on the other hand, will be just fine without humans.

This sentiment is aptly demonstrated by the regeneration of the forests surrounding Chernobyl, Ukraine—the site of the world's most disastrous nuclear accident. In the 30 years since the area was completely evacuated by humans following the nuclear disaster, the forest regenerated rapidly and now thrives as a wildlife sanctuary teeming with lush forests and biodiversity.¹¹ If a nuclear disaster site can regenerate to a thriving forest, then I imagine that a similar fate could follow for any site relieved of anthropogenic exploitation.

Delivering Community-based Conservation: The Governors' Climate & Forests Task Force



I am not alone in my optimism for advancing environmental alongside socioeconomic goals. In fact, I am fortunate enough to work with an organization carrying out these goals: The Governors' Climate and Forests (GCF) Task Force.

The GCF Task Force is a sub-national collaboration of 38 (and counting) states and provinces working to advance efforts to protect forests, reduce emissions, and enhance livelihoods through sub-national policy innovation and integrated leadership.¹² Embracing the spirit of optimism, the GCF Task Force celebrates success in innovative forest conservation schemes prioritizing indigenous livelihoods—highlighting local stories with global implications.

My work at the GCF has reinforced my enthusiasm for this notion first instilled in me after my initial experience in Brazil: “Act local, think global.” By enabling collaborative alliances between diverse stakeholders in regions directly afflicted by deforestation and climate change, the GCF Task Force truly carries out this mission.

The GCF Task Force celebrates successful alliances between subnational governments and indigenous peoples from regions as diverse as the Klamath River Valley of California to the Tambrau District of West Papua, Indonesia.

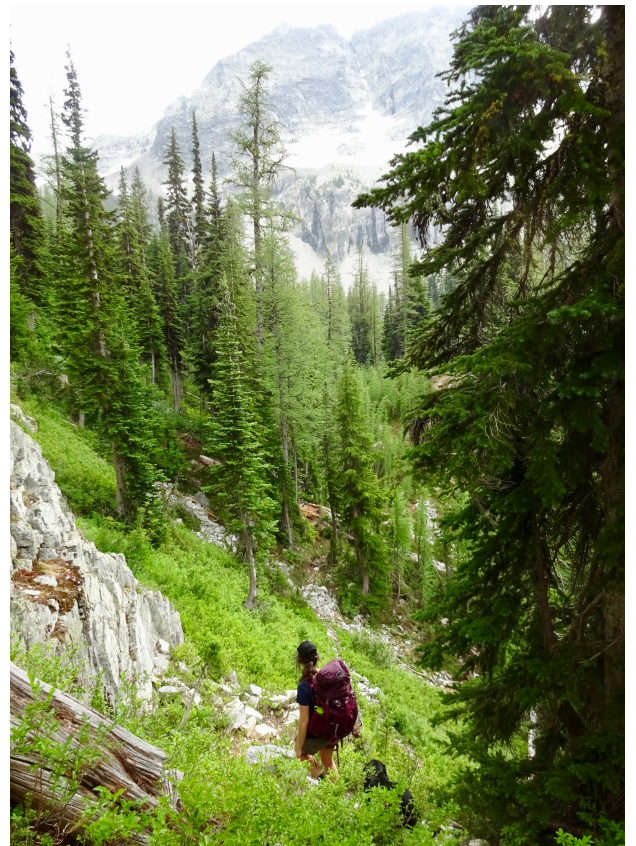
In the Klamath River Valley, the historically displaced Yurok Tribe has reclaimed over 47,000 acres of land encompassing invaluable natural and cultural resources over the past decade. In 2010, the Yurok Tribe partnered with the California Air Resources Board to draft regulations allowing tribal forest projects to qualify for carbon credit through California's cap-and-trade program—making the Yurok Tribe the first tribal group to receive external financing for protecting forests. Resulting revenue allowed the Tribe to reacquire their ancestral territory and implement traditional Yurok forest management practices after a century of separation from the land. Finally, the traditionally old-growth forests in this region of Northern California will be allowed to regenerate.¹³

Similarly, in West Papua, indigenous communities in Tambrau District partnered with the local Indonesian government in 2012 to formalize indigenous land tenure to defend thousands of acres of forests from destructive natural resource extraction. In the process, indigenous communities and local government created a new sustainable development path prioritizing indigenous rights through sustainable economic activities.¹³

Tangible results communicated by the people most directly affected by forest protection ignites my passion to defend the remaining 3.7 billion hectares of forest around the world and the livelihoods they sustain.² I am elated to contribute to the GCF Task Force's efforts towards this end.

Celebrating success at home and abroad

New alliances between people and the planet are popping up all across the globe as visibility increases for the immense value provided by forests. Pope Francis even referred to the Amazon



At home in the Methow Valley. Photo by Delilah Cupp.

and Congo basins as the “richly biodiverse lungs of our planet” in his 2015 encyclical titled *On Care for Our Common Home (Laudato Si’)*—calling for the world to come together to address urgent environmental challenges.¹⁴

Stakeholders in forest conservation are emerging to protect forests from daunting anthropogenic threats acting in disregard for the long-term well-being of humans in every corner of the world. Organizations like the GCF Task Force provide a voice for jurisdictions large and small to advance forest protection and empower local communities.

Just last week, the government of New Zealand granted legal personhood to a river treasured by indigenous Maori cultural heritage. This new piece of legislation is one of many in New Zealand’s effort to resolve historical injustices imposed upon the Maori—setting a precedent for contemporary recognition of indigenous rights in protecting their ancestral lands.¹⁵

Closer to home, the Methow Valley—a small community nestled in the foothills of the North Cascades in Washington—is celebrating permanent protection from industrial mining after years of tireless campaigning by the community.¹⁶ Growing up amongst thick pine forests blanketing the steep mountains surrounding the Methow Valley initiated my instinctive fervor for the natural environment. I rejoice in the secure protection of my beautiful home—and I wish the same security upon all communities fighting for the protection of their natural homes near and far.

Call me an optimist, but I have a feeling that the voices speaking for environmental rights are finally being heard across the global stage—not too late, but just in time.



Admiring the trees in the Redwood Forest National Park, California. Photos by Ray McDermott.

Sources

1. Intergovernmental Panel on Climate Change (IPCC). 2017. IPCC Fifth Assessment Report (AR5) Observed Climate Change Impacts Database, Version 2.01. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). <https://doi.org/10.7927/H4FT8J0X>.
2. Davey, Edward. (2017). Tropical forests: Present reality, future prospects. *Asia Pacific Journal of Environmental Law*. 20. 162-179. 10.4337/apjel.2017.01.07.
3. Hansen, M.C. et al. (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science* (New York, N.Y.). 342. 850-853. 10.1126/science.1244693.
4. Weisse, Mikaela and Liz Goldman. (2018). "2017 was the second-worst year on record for tropical tree cover loss." Global Forest Watch. <https://blog.globalforestwatch.org/data-and-research/2017-was-the-second-worst-year-on-record-for-tropical-tree-cover-loss>.
5. Ciais et al. (2013). Carbon and other biogeochemical cycles. *Climate Change 2013: The Physical Science Basis*. 465-570.
6. Groot, Han de. (2019). "Forests are a low-tech but high-impact way to fight climate change." *Scientific American: Conservation*. <https://www.scientificamerican.com/article/forests-are-a-low-tech-but-high-impact-way-to-fight-climate-change/>
7. Griscom, Bronson & Adams, Justin & Ellis, Peter & Houghton, Richard & Lomax, Guy & Miteva, Daniela & H Schlesinger, William & Shoch, David & Siikamäki, Juha & Smith, Pete & Woodbury, Peter & Zganjar, Chris & Blackman, Allen & Campari, João & T Conant, Richard & Delgado, Christopher & Elias, Patricia & Gopalakrishna, Trisha & R Hamsik, Marisa & Fargione, Joseph. (2017). Natural climate solutions. *Proceedings of the National Academy of Sciences*. 114. 10.1073/pnas.1710465114.
8. Rights and Resources. (2016). "Toward a Global Baseline of Carbon Storage in Collective Lands: An Updated Analysis of Indigenous Peoples' and Local Communities' Contributions to Climate Change Mitigation." Rights and Resources Initiative: Press Release. <https://rightsandresources.org/en/global-baseline-carbon-storage-collective-lands/#.XMEzmC3Mz6A>
9. Stevens, Caleb et al. (2014). "Community Forests: An Undervalued Approach to Climate Change Mitigation." World Resources Institute. <https://www.wri.org/blog/2014/07/community-forests-undervalued-approach-climate-change-mitigation>
10. Adams, C. et al. (2012). Diversifying Incomes and Losing Landscape Complexity in Quilombola Shifting Cultivation Communities of the Atlantic Rainforest (Brazil). *Human Ecology*, 41. 119-137. DOI 10.1007/s10745-012-9529-9
11. Barras, Colin. (2016). "The Chernobyl exclusion zone is arguably a nature reserve." BBC Earth. <http://www.bbc.com/earth/story/20160421-the-chernobyl-exclusion-zone-is-arguably-a-nature-reserve>.
12. Governors' Climate & Forests (GCF) Task Force. (2019). About: The GCF. <https://gcftf.org/about>.
13. Governors' Climate & Forests (GCF) Task Force. (2019). *New Alliances for People and the Planet*. [Boulder, CO.] Print.
14. Francis. (2015). *Laudato si': On care for our common home*. 1st Ed. [Vatican City.] Print.
15. Warne, Kennedy. (2019). "A Voice for Nature." National Geographic. https://www.nationalgeographic.com/culture/2019/04/maori-river-in-new-zealand-is-a-legal-person/?cmpid=org=ngp::mc=crm-email::src=ngp::cmp=editorial::add=Special_20190422::rid=41263054735.
15. Methow Headwaters. (2019). "Methow Headwaters: Permanently Protected." Vimeo: Methow Headwaters. Video. https://vimeo.com/331807321?ref=fb-share&1&fbclid=IwAR1D_8FprStUWEh6vH23_y_ZjM6U-O3TlrGuWimk_bROYk8uDnuDn-0w-Y