

## Chapter 13: Humans' Roles in Environmental Change

### Learning Objectives

- Consider the ways in which all the subfields of anthropology connect with environmental anthropology
- Understand the various types of environments that people live in—biophysical and nonhuman, as well as built spaces and constructed environments
- Know the field of environmental justice and the various types of issues activists will often tackle, both in the US and around the world
- Reflect on the types of struggles encountered by the Waorani in the Ecuadorian Amazon and how the events reported connect to the field of environmental justice
- Consider the ways in which we interpret the challenges faced by humanity, and our responsibilities to address those ecological crises

### Introduction

The politicization of climate science and data has unfortunately resulted in conflicting and personal valuations of environmental change, including humans' roles in damaging ecological systems. Some people certainly don't exhibit much concern for the damaging effects of human action, perhaps in part due to their distance from negative effects of modern consumption (many do not live near dump sites, e-recycling locations, oil refineries, tanneries, industrial cattle farms, and so on) or perhaps from lack of knowledge. Others might see warming temperatures, prolonged droughts, erratic weather systems, and the like as mere variations in the planet's deep ecological history.

Some people argue that when you examine our history, we have long cycled between crisis and growth, where one innovation by humans—even if it creates notable problems (think of the automobile's benefits *and* its negative consequences such as air pollution)—leads to another as we mine our ingenuity to mitigate (self-inflicted?) problems and to avoid societal collapse. This is what DeFries refers to as **ratchets**: the innovative technologies, big and small, purposeful and accidental, that have changed our species to what we are now.<sup>1</sup> And others trace much of what we see unfolding—species extinction, river or oceanic hypoxia, deforestation, carbon emissions, micro-plastics in marine life, bee colony collapse disorder, and so forth—as profound ecological crises that extend from human behavior and consumption within Western capitalism and rapidly growing middle classes in emergent economies such as India or China. Undoubtedly problems exist and humans have shaped the global transformation of the environment.

How we understand these issues and seek to address (or ignore) them largely falls into the field of **environmental anthropology**, which most fundamentally seeks to examine the cross-cultural differences that exist between how people understand and conceptualize the natural world, use environmental resources, care for life (near and far), and construct our built environments that might negatively affect some more than others. Here **environment** is not only what we generally think of as 'nature' (the biophysical and non-human environment), but also built spaces that people inhabit (e.g., city centers, industrial production sites, housing, parks and reserves, and so forth). It is important to note that as we move forward in this text and class we'll see the ways in which built environments disproportionately place some people at greater risk and in more vulnerable positions.

Attempts to understand the variation in human perceptions and use of natural resources—including how we create the environments where we live, work, and play—extend into all of anthropology's subfields. For example, archaeologists have been informed by Julian Steward's **cultural ecology**, which examines the ways in which societies adapt to their particular surroundings, best utilizing the available resources and developing technologies and social organization that enable their long-term survival. Well known examples such as [Easter Island](#) demonstrate what happens when societies over extend the environment, leading to variations in socioecological collapse.

Biological anthropologists are often interested in the biosocial effects of exposures to environmental disorders such as pollution, diminished food production (and associated malnourishment), prolonged droughts, and so forth. Additionally, they often examine how modern capitalism places some people at greater risk of exposure to toxic and dangerous elements in society. As seen in greater detail in the chapter on economic inequities and syndemics, researchers that employ the **syndemic framework** consider the effect of socioeconomic inequality on people's health and the ways that one health burden can compound and exaggerate another health complication. For example, one's employment in a blue jean tannery exposes them to dangerous and toxic chemicals, placing them at greater risk for skin infections, respiratory illnesses, or cancer. Should someone employed in that factory develop an acute illness, that person's possible precarious economic position and limited availability of health care can create a feedback system where their condition worsens over time, leading to other chronic health burdens. Considering impacts of climate change more directly, poorer families living along coastal zones, such as in [Kiribati](#), find themselves in danger of flooding and displacement. The process of displacement not only creates psychological stress, but such families often relocate to marginal lands with limited productive capacities, thereby creating new types of physiological and behavioral vulnerabilities as households struggle to make ends meet.

Linguistic anthropologists might consider the ways we talk about nature and how our cognitive models structure our understanding of nature. Do we view landscapes as a commodity, filled with valuable resources that should be bought and sold on the market? Do we view nature as inherently valuable, filled with species that have equal worth to humans regardless of their instrumental value to human survival (or what is frequently viewed as [deep ecology](#))? Do some discourses and packages of talk have more influence and power in shaping environmental policy

around the world? Do the words we use when talking about ‘nature’ influence our actions toward the management and use of natural resources, including our responsibilities in stewardship and care (what we cover as ‘linguistic relativism’ in the chapter *Language, communication, and complexity*)?

Lastly, cultural anthropologists explore the human-environment relationship through various theoretical models and toolkits: political ecology, feminist political ecology, ethnoecology, various types of participatory and applied engagements (such as studying traditional ecological knowledge), post-structural studies, and so forth. While each tackles a given set of issues differently, they share a worry about the ways in which social, political, and economic inequalities can place people in particularly vulnerable positions in the world. Such worries stem from peoples’ experiences with land dispossession, ethnocide and displacement, collapse in food production, ecological destruction through extractive capitalist expansion, the erosion of indigenous sovereignty over resource control and use, or population growth that stresses capacities to provide nutritious food and potable water. Clearly the issues tackled by environmental anthropologists vary greatly.

While it might be tempting to view anthropology’s subfields as distinct and separate, much of what interests environmental anthropologists require holistic frameworks. Environmental anthropologists frequently collaborate with or draw from the work of other anthropologists, regardless of subfield or specialty. As the world faces entrenched and interwoven problems, one subfield does not have the theoretical sophistication to disentangle all the components that contribute to negative socioecological outcomes. The case studies that close this chapter demonstrate the widespread ecological problems we face.

### *A Note on the Case Studies and this Chapter’s Organization*

While the rest of the chapters in this book have one case study that closes the chapter, this reading has opted for a different structure. First, the foundational material explored here is shorter. This is to allow for two case studies. The first is a vignette about the Waorani people's fight for environmental sovereignty. The second is a piece by Rachel Riederer (*The Other Kind of Climate Denialism*). This is done for two primary reasons. First, examples of negative environmental justice outcomes abound, and the possibility of a positive outcome provides us with a hopeful sign; and second, *The Other Kind of Climate Denialism* offers an opportunity to consider the ways that we might carefully position arguments about environmental change within data and theoretical frameworks.

## **Environmental Justice and Advocacy**

Given the widespread environmental problems people face around the world—and the fact that many of those problems extend from capitalist frameworks that disproportionately spreads risk and reward—many environmental anthropologists have worked alongside community activists as they seek healthy, clean, and just environments to live in and raise their families. Environmental anthropologists that take on activist roles often do so under the framework of environmental

justice. According to the Environmental Protection Agency, '**environmental justice** is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work'.<sup>2</sup>

### *Anthropology and Seeking Justice*

As noted by Barbara Rose Johnston, 'anthropologists engaged in the struggle for environmental justice use their training in medical, sociocultural, political, economic, ecological, archaeological, and other aspects of our discipline to study, challenge, and (ideally) transform human environmental relationships. They seek to illuminate the ties between social conditions and environmental quality; to challenge the inequities that structure the human environmental equation; and, through the production, dissemination, and use of information, to affect substantive change....

Environmental justice .... [as a term emerged] in large part from the work of scholars like sociologist Robert Bullard and activists like Charles Lee (principal author of the 1987 Christ Church report), who documented the disproportionate siting of hazardous activities and waste disposal in U.S. minority communities. Lee, Bullard, and others documented a pattern of environmental racism, where histories, socioeconomic conditions and relationships, and governmental policies played significant roles in structuring inequitable experiences. African American and minority communities bore a disproportionate share of the health hazards and risks associated with environmentally polluting industries and activities. Efforts to transform these inequitable conditions often involved coalitions of civil rights groups, religious and interfaith councils, environmental organizations, and labor unions, and their combined effort to link environmental quality issues with the struggle for social justice came to be called the movement for environmental justice.

The focus on the links between toxins and race in the social sciences was in part a response to the problems exposed and exacerbated by Reagan-era policies. The "New Federalism" of the 1980s included deregulating industrial practices and stripping the funds from domestic programs that monitored the environment and protected occupational safety and public health. Economic activity intensified and, with the removal of environmental and public health safeguards, conditions deteriorated to the point that not only were poor people of color experiencing harm, so too were affluent suburban consumers (as illustrated by rising cancer rates, growing awareness of problems like the circle of poison, and the rapidly growing environmental book market). Environmental social scientists and community activists documenting the links between toxins and cancer could no longer fail to ignore the links between toxins and race in the United States. While several coalitions of social scientists, environmental groups, and civil rights groups worked throughout the 1980s to educate and organize the community and lobby the government, it was not until the Clinton administration came into power in 1992 that we saw political acknowledgment of the existence of **environmental racism** and a growing use of the term *environmental justice*.

President Clinton's election in 1992 brought about sweeping reorganization in the executive branch with, in some areas, radically different sets of priorities. In regard to the environment, the Clinton administration instituted changes in funding, policy, and priorities that placed higher emphasis on the human dimensions of environmental crisis, in effect acknowledging that continued dismissal of problems like environmental racism posed significant political as well as long-term economic threats to national security. Environmental justice activism in the early days of the Clinton administration culminated in the February 11, 1994, presidential executive order on environmental justice (Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*). This set of regulations, policies, and procedure is meant to ensure that no group of people, including any racial, ethnic, or socioeconomic group, bears a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies...

While the term *environmental justice* is derived from an analysis of the links between toxins and waste in U.S. communities and has distinct political meaning, ... the environmental justice framework has been expanded to include diverse peoples and problems from around the world and used to explore the links between environmental crisis and human rights abuse. In a global context, environmental justice refers to the movement to build social, cultural, economic, political, and environmental sustainability. In a disciplinary context, environmental justice as a field of study or work suggests problem-focused, action-oriented anthropology involving the relationship between environmental quality and social justice.

In articulating and illustrating the synergistic ties between culture, power, and the environment, anthropologists are playing a central role in expanding the environmental justice framework from a race/class analysis of environmental inequity to a broader consideration of the historical conditions, relationships, and beliefs that give rise to patterns of selective victimization and the human rights/environmental crisis intersect. Their work is typically structured in interdisciplinary arenas and weaves together historical data, sociocultural analyses, and ethnographic voice to map out the culture/power dimensions of human environmental crises—identifying explanatory factors that more quantified analyses might miss. Some of the environmental issues explored by anthropologists involve the biodegenerative aspects of industrialism (mining, manufacturing, use and disposal—especially problems of toxins, hazardous waste, and environmental hazards). A number of anthropologists have been involved in disaster-related work, examining, for example, the sociocultural context of oil spills, floods, and hurricanes. A growing number of researchers have been exploring the environmental justice contexts of war, looking at problems faced by refugees, repatriation, and postwar reconstruction, as well as the social justice dimensions of the nuclear age/including the mining, manufacturing, and processing of uranium ore; the production and testing of nuclear weapons; and the use and abuse of nuclear energy... Much of this work examines the inequities and ensuing conflicts associated with resource value, access, use, and control. Perhaps the greatest number of anthropological contributions to the environmental justice literature falls under the "**Victims of Progress**" rubric, where various economic development schemes contribute toward ethnocide, ecocide, and, at times, genocide'.<sup>3</sup>

## Example: An Uncommon Victory for an Indigenous Tribe in the Amazon



**Figure 1:** Nemonte Nenquimo and other representatives of the Waorani people marched in Puyo, Ecuador, on the day they won a lawsuit against the government, over plans to lease oil rights on their land.

Photograph by Rodrigo Buendia / AFP / Getty

The following report presents the ways in which environmental (in)justice occurs outside the United States. When reading about the Waorani people, consider how environmental justice as outlined above relates to their struggles.

As reported by Rachel Riederer, ‘On April 26th, a parade of hundreds of Waorani men and women, members of an indigenous nation in a remote part of the Ecuadorian Amazon, marched triumphantly through the streets of Puyo, the regional capital of the eastern province of Pastaza. Many had come from villages in parts of the rain forest that have no roads—journeying by canoe and small plane. They were celebrating a new court ruling, which held that the Ecuadorian government could not, as it had planned, auction off their land for oil exploration without their consent. Nemonte Nenquimo, a Waorani leader, told me that they had come to Puyo to reclaim their right to self-governance and that the verdict had made them feel safer. “The court recognized that the government violated our right to live free, and make our own decisions about our territory and self-determination,” she said, over WhatsApp. “Our territory is our decision, and now, since we are owners, we are not going to let oil enter and destroy our natural surroundings and kill our culture” [a process referred to as **ethnocide**, or the systematic destruction of an ethnic group’s culture and identity].



In February, the Waorani, together with Ecuador's Ombudsman, a parliament-appointed official who serves as a public advocate, had filed a lawsuit against the Ecuadorian government for not properly consulting with them before opening up their territory to potential oil exploration. In recent years, Ecuador has divided much of its portion of the Amazon into blocks to lease the mineral rights in an international auction. One of the blocks included Waorani land. In 2018, the government removed Waorani territory from the auction but said that the region [could still be subject to future drilling](#).

The path to the verdict had not been certain. In March, a group of Waorani women [shut down a hearing](#) with song, protesting the conditions under which the case was being tried; they objected to it being held in Puyo, far from the Waorani villages, and to the absence of a court-certified translator. Many of the Waorani representatives wore traditional dress in court and had red bars painted across their cheekbones and brows. Singing a song about their traditional role as protectors of the forest, they drowned out the judge and lawyers until the judge finally suspended the hearing, which was rescheduled for April.

The crux of the lawsuit was the Waorani's claim that the government had not properly consulted their community about the oil auction. Nenquimo told me that representatives from the Ministry of Energy and Non-renewable Resources came to her village in 2012, seeking community members' consent for the auction, but she and her family were out on a hunting trip and didn't meet with them. Mitch Anderson, the founder of Amazon Frontlines, a non-governmental organization (N.G.O.) that works with the Waorani and other indigenous groups on sovereignty and environmental issues, said that the consultations were treated as a box that needed to be checked off, rather than as a serious discussion with the community about the impact of introducing oil extraction into the forest lands and rivers where they hunt and fish. Anderson said that language barriers and short visits made the process even more opaque.

On April 26th, a three-judge panel ruled in the Waorani's favor, finding that the process did not afford the Waorani free, prior, and informed consent, and that their territory could not be included in an oil auction. The ruling could impact other indigenous groups whose lands are also up for oil exploration. One of the Waorani's lawyers, Maria Espinosa, said [in a press release](#) that the judgment should also be interpreted to mean that "the State cannot auction off the territories of the six other indigenous nations in the southern Ecuadorian Amazon, which were subject to the government's same flawed and unconstitutional prior consultation process."

Just days before the Waorani victory, a coalition of Latin-American journalists unveiled a new reporting project, "[Tierra de Resistentes](#)" ("Land of Resistants"), focused on the dangers that face environmental activists. Their reporting showed that advocates from ethnic minorities—particularly indigenous people—face a high risk of violent attack from supporters of mining, logging, and other industries. The project, which is supported by Deutsche Welle Akademie, the Pulitzer Center, and others, opens by declaring, "Defending the jungles, mountains, forests and rivers of Latin America has never been this dangerous." One aspect of the project is a database, compiled by thirty journalists, from Bolivia, Brazil, Peru, Colombia, Ecuador, Mexico, and Guatemala, which documents more than thirteen hundred attacks on environmentalists that took place in these seven

countries during a ten-year period, and the project includes in-depth stories about sixteen individual cases.



*Waorani women celebrating their victory in court.*

Photograph by Dolores Ochoa / AP

Andrés Bermúdez-Liévano, a Colombian journalist and the project's editor, told me over the phone that, as the reporters compiled their stories, certain patterns emerged. Attacks often took place in remote regions, where the government and law enforcement had scant presence, if any. Bermúdez-Liévano told me that [a 2016 report to the U.N.](#) by Michel Forst, the special rapporteur on the situation of human-rights defenders, confirmed a global increase in attacks on environmental groups. Forst's report said that, in the year 2015, worldwide, more than three environmental advocates were killed every week, often in conflicts related to expanding mining, logging, damming, or agriculture. Forst found that the people who oppose these activities are often portrayed as "anti-development" or "unpatriotic" and are subject to violent attacks.

In the stories published by "Tierra de Resistentes," the physical threats take several different forms. An indigenous community in Ecuador was driven from its village by mining operators. In Peru, a community near the Colombian border was coerced into growing coca. Bermúdez-Liévano said that, although the reporters did not fear for their own safety while in the field, they did take special measures to protect their sources. They often brought people to outside locations to conduct interviews, "away from dangerous eyes," so that they would not be seen talking to reporters.



Bermúdez-Liévano said that the group’s database—which draws on reports from N.G.O.s and governmental officials—is incomplete, but he called it a starting point for documenting an ongoing crisis. It shows how ethnic minorities are being targeted, by oil companies, illegal loggers and miners, and drug cartels.

In the weeks since the project was published, the violence has continued. In Coloradas de la Virgen, a community in northern Mexico that has been protesting illegal logging and drug trafficking, two activists were killed; both were relatives of a local leader names Julian Carrillo, who was killed in 2018 and whose story is documented by “Tierra de Resistentes.” In Colombia, one of the leaders profiled in the project, Francia Márquez, was physically assaulted. Bermúdez-Liévano said that the stories revealed a chilling duality: “Latin America has incredible biodiversity and natural beauty. But we also see such a large number of violent attacks on the people who are taking care of these resources.”

Against this backdrop, the Waorani victory in court stands out. Nenquimo told me that, the night before the verdict, she dreamed about the case and woke up feeling confident that they would win. She carried her spear to the courthouse, as a symbol. “In my blood, I felt my grandfather, and my other ancestors, who protected their territory at the tip of the spear,” she said. When the verdict came down, she was overwhelmed with happiness. She told me, “We have shown the government to respect us, and the other indigenous people of the world, that we are guardians of the jungle, and we’re never going to sell our territory.”

The following day, Ecuador’s Ministry of Energy and Non-renewable Resources announced, on Twitter, a plan to appeal the decision. After the verdict, though, the mood of the Waoranis gathered in the courthouse was celebratory. I spoke with Anderson and Nenquimo on a video call as they began their celebratory march through Puyo. The sun was bright as the group walked away from the courthouse. Nenquimo was singing and had tears in her eyes. Their cell-phone battery was running low and they quickly signed off. Nenquimo waved into the camera and kept marching’. <sup>4</sup>

## Key Terms

Cultural Ecology

Deep Ecology

Environment

Environmental Anthropology

Environmental Justice

Environmental Racism

Ethnocide

Ratchets

Syndemic Framework

Victims of Progress

## Case Study<sup>7</sup>

### *The Other Kind of Climate Denialism*

Rachel Riederer



*As uncertainty and denial about climate change have diminished, they have been replaced by similarly paralyzing feelings of panic, anxiety, and resignation.*

### **Introduction**

*The Uninhabitable Earth*, David Wallace-Wells’s new book about how climate change will affect human life, begins, “It is worse, much worse, than you think.” In superhot cities, roads will melt and train tracks will buckle. At five degrees of warming, much of the planet would be in constant drought. With just six metres of sea-level rise—an optimistic projection—land where three hundred and seventy-five million people currently live will be underwater. Some of the apocalyptic stories aren’t from the future but our recent past: in the [Paradise Camp Fire](#) of late 2018, people fleeing the flames “found themselves sprinting past exploding cars, their sneakers melting to the asphalt as they ran.”

To anyone who has been paying attention, the broad strokes of “The Uninhabitable Earth” come as no surprise. We are racing toward—in fact have already entered—an era of water shortage, wildfire, sea-level rise, and extreme weather. To read the book is to ask hard questions about one’s own future. When will the city where I live be flooded? Where should I live when it does? Where will my future children live? Should I have children at all?

Yet Wallace-Wells has also stressed that there is no place for fatalism. [In an interview with NPR](#), he said that “every inch of warming makes a difference”—we cannot stop the process of warming altogether, but we can control whether climate change yields a future that is apocalyptic or

instead “merely grim.” Several years ago, I [asked](#) the climate activist and writer [Bill McKibben](#) how he was able to keep from falling into depression, given how much time he devotes to thinking about climate change. He answered that fighting is the key—it’s only despairing if you think that you can’t take on the problem. “It’s the greatest fight in human history, one whose outcome will reverberate for geologic time, and it has to happen right now,” he said.

In 2008 and 2009, the American Psychological Association put together a task force to examine the relationship between psychology and climate change. It found that, although people said that climate change was important, they did not “feel a sense of urgency.” The task force identified several mental barriers that contributed to this blasé stance. People were uncertain about climate change, mistrustful of the science, or denied that it was related to human activity. They tended to minimize the risks and believe that there was plenty of time to make changes before the real impacts were felt. Just ten years later, these attitudes about climate feel like ancient relics. But two key factors, which the task force identified as keeping people from taking action, have stood the test of time: one was habit, and the other was lack of control. “Ingrained behaviors are extremely resistant to permanent change,” the group stated. “People believe their actions would be too small to make a difference and choose to do nothing.”

Wallace-Wells hits this note in his book, too, writing, “We seem most comfortable adopting a learned posture of powerlessness.” As uncertainty and denial about climate have diminished, they have been replaced by similarly paralyzing feelings of panic, anxiety, and resignation. As we begin to live through the massive dangers imparted by climate change, as one psychologist put it to me, “We are in psychological terrain, whether we like it or not.”

John Fraser is a conservation psychologist who has studied burnout and trauma among people doing environmental work. “We have to move beyond terrorizing people with disaster stories,” he told me. Responses to climate change are often discussed as a spectrum, with denial and disengagement at one end and intense alarm on the other. We are getting more alarmed. In 2009, [a Yale and George Mason study](#) grouped Americans’ responses to climate into six categories: alarmed, concerned, cautious, disengaged, doubtful, and dismissive. In 2009, eighteen per cent were alarmed; in 2018, that number had risen to twenty-nine per cent.

Fraser wants people to feel not alarmed but activated, and he takes a relentlessly positive, solutions-oriented attitude. “We got trains all the way across America in a few years, and people on the moon in a few years,” he said. And ideas for climate moonshots abound: [negative-carbon-emission plants](#) are prohibitively expensive, but they do exist; some advocate for reviving nuclear power; proponents of a [Green New Deal](#) call for ending fossil-fuel extraction and subsidies, and radically expanding public transportation. In Silicon Valley, ideas are emerging that rely less on politics than on technology, like flooding some deserts to grow carbon-sucking algae beds, or using electrochemistry to get rocks to absorb carbon from the air. Fraser believes that the most productive way to communicate about environmental problems is to emphasize the positive solutions that exist. “What we need to promote is hope,” he said. “The first step to a healthy response is feeling that the problem is solvable.”

“Is it appropriate to feel terrified? No,” Fraser said. “Because you just shut down.”

Margaret Klein Salamon, who trained as a clinical psychologist before founding a [climate-advocacy organization](#), takes the opposite view. She doesn’t see fear as paralyzing but as a necessary

response that activates people to recognize danger and take action. What's more, given the state of the atmosphere, she argues that acute fear is rational. "It's important to feel afraid of things that will kill us—that is healthy and good," she said. She believes that reckoning with the scope of the emergency is required, both to activate responsible behavior and to reap the mental-health benefits of "living in climate truth." Salamon, who grew up in a family of psychoanalysts and considers therapy to be "something of a family business," is writing "Transform Yourself with Climate Truth," a self-help book on the subject.

Salamon said that it's no surprise that people can't process the truth about the climate crisis and instead construct defense mechanisms against it. In twenty years, what now registers as an extreme heat wave will likely be the norm. By 2045, more than three hundred thousand U.S. homes will be lost to encroaching oceans; by 2100, a trillion dollars' worth of real estate will be lost in the U.S. alone. As atmospheric carbon levels rise, plants produce more sugars and fewer nutrients—by 2050, vegetables will be turning into junk food. There's a huge overlap between things that wreak havoc on the climate and things that serve a materialist version of the good, comfortable life: meat-eating, air-conditioning, air travel. "It's a basic part of being human that our minds frequently deal with competing interests—that's how defense mechanisms are formed," Salamon said.

Salamon hosts periodic phone sessions in which callers can dial in to discuss their feelings about climate change and climate activism. All sorts of emotions have come up on these calls: guilt and shame, grief, panic, helplessness, even "destructive glee" from people who are angry that their warnings haven't been heeded. Salamon stresses the importance of processing climate change as an emotional and personal phenomenon, not just a scientific one. Everyone, she said, needs to grieve for his or her own future, which isn't going to look the way we thought. It's going to be more parched, more crowded, more dangerous, and more austere.

In October, 2017, Wallace-Wells spoke on a panel at the annual conference of the Society of Environmental Journalists that was titled "Doomsday Stories: The Ethics and Efficacy of Doomsday Reporting." The conversation largely followed the fault line between scaring readers and offering them hope. Coming down hard on the side of fear, Wallace-Wells passed along something he had been told by the writer Ta-Nehisi Coates, who said, "You really can't let people's need for hope get in the way of the telling the truth." And fear is useful, Wallace-Wells said: the threat of mutually assured destruction motivated world leaders to end the Cold War, and fear of cancer has led people to quit smoking. "It's a little too simplistic to think that anything that is scary is inevitably paralyzing to the public, and I think it's a little patronizing," he said.

One of the other panelists was the psychologist and communications expert Renee Lertzman, who argued that it was necessary to "blow up the dichotomy" between fear and hope, or truth and positivity. The problem with the horror-story narratives is not necessarily that they are frightening, she said, but that they are presented almost cinematically—placing people outside of the action in the "politically neutralizing" position of "titillated, excited, fearful spectators." In her book "[Environmental Melancholia](#)," Lertzman argues that unprocessed grief about ecological devastation is a big part of what prevents people from addressing environmental challenges. This "arrested, inchoate form of mourning" keeps people locked in a state of inaction, she writes.

When I spoke to Lertzman, she talked about the need to have conversations about climate change that allow space for people to process—or at least acknowledge—their feelings. A gesture as

simple as beginning a conversation by allowing a few moments to say, “‘Damn, this is intense,’” she told me, “‘frees up a lot of energy to move into problem-solving mode.” This recognition is a familiar move in psychology: first acknowledging that a topic is difficult and then wading in. It reminded me of the way that a doctor with a good bedside manner might approach delivering a difficult diagnosis, but Lertzman said that it’s more complicated than that: because of our culpability in the climate crisis, discussing it is like getting news about a health issue that’s directly related to one’s own habits. You not only have to face a scary future but reckon with how you helped to create it. “We have to come to terms with the fact that what we’re doing is no longer sustainable, and the onus is on us to rise to the occasion,” she said.

“What works really well is when people feel that they are invited and inspired to be part of something constructive, combined with having the safety to grapple with the magnitude of things,” Lertzman told me. This way of thinking loops back to Bill McKibben’s advice, that the only cure for climate agita is activism. Susan Clayton, a professor of social psychology and environmental studies (and a member of the A.P.A.’s climate-change task force, a decade ago), made a similar point, telling me that what’s good for the climate—in the form of participation in a community effort—is also good for the psyche. “It’s similar to the civil-rights movement,” she said. “The act of coming together is empowering and validating.”

In a poignant essay posted on [Medium](#), Mary Annaïse Heglar, who works at the Natural Resources Defense Council, wrote that the climate movement has a lot to learn from the civil-rights movement. Climate change might be the first existential threat levelled at all of humanity, but America itself has been an existential threat to black people for hundreds of years. Describing the calculated violence of Jim Crow, she writes, “I want you to understand how overwhelming, how insurmountable it must have felt. I want you to understand that there was no end in sight. .... They, too, trembled for every baby born into that world.” The flooding and fires of our changed climate may be unprecedented, but the threat of annihilation is certainly not—in their discussions of climate change, both Wallace-Wells and Salamon refer to their ancestors who lived through the Holocaust. Put in this light, the response of quiet climate denialism—not disbelief in the phenomenon but the choice to bury one’s head in the sand because thinking about it is too unpleasant—is not just untenable but childish. As Heglar writes, “You don’t fight something like that because you think you will win. You fight because you have to.”

About halfway through “The Uninhabitable Earth,” Wallace-Wells pauses to give his “brave reader” a small pat on the back for making it through what would be “enough horror to induce a panic attack in even the most optimistic.” When I started reading the book, the experience was shockingly physical. My heart beat faster as I was reading about the disasters to come. My eyes filled with tears as I tracked Wallace-Wells’s climate timelines with the coming decades of my life, or those of the children I might have. But as I read on, in the course of several days, I became acclimated. I could read it with my mind, without my fight-or-flight systems getting in the way. This felt strangely empowering.

Wallace-Wells writes that the past century of fossil-fuel extraction and industrial capitalism has enabled a life style I enjoy—that this very process “made middle-class-ness possible” for billions of people.” Yet, at the same time, it is a system that must be radically overhauled. Modern people have a tendency, he writes, to see human systems as more inviolable than natural ones. And so



“renovating capitalism so that it doesn’t reward fossil fuel extraction can seem unlikelier than suspending sulfur in the air to dye the sky red and cool the planet off by a degree or two.” It’s why creating global factories to suck carbon out of the atmosphere might appear to be easier than simply ending fossil-fuel subsidies, he writes. These are the competing truths we have to integrate: a livable world is incompatible with fossil fuels, and fossil fuels made the world we live in.

Decarbonizing the economy will be difficult, but it must be done. It will be hard—but not as hard as surviving the catalogue of disasters that will befall us if we don’t. This is, to my mind, the great strength of Wallace-Wells’s approach to storytelling. The thing to grieve, then, is not the Earth’s habitable climate but, instead, the century of carefree car-driving and reckless deforestation, the years of eating meat with abandon and inexpensively flying around the world—and the massive economic growth that this system has enabled. Overhauling the fossil-fuel economy will represent a true loss, but its sacrifices will be nowhere near the alternative. The process is subject to all manner of difficulties: the problem of collective action, scientific uncertainty, technological challenges, political mobilization, and many others. But to do anything less is to go insane.

## Case Study Questions

Please use the following questions and key terms as points of consideration when reading the case study below (Citation: Riederer, Rachel. 2019. The Other Kind of Climate Denialism. 6 March 2019. The New Yorker. URL: <https://www.newyorker.com/science/elements/the-other-kind-of-climate-denialism>).

1. What are the two key factors that Reiderer claims prevent people from taking action on climate change?
2. How has the efficacy of ‘fear’ been viewed when attempting to generate action toward climate change? For example, do doomsday scenarios generate action or retreat?
3. What is something YOU can do TODAY to promote a healthier, more sustainable environment?

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<sup>1</sup> For more information see: DeFries, Ruth. 2014. *The Big Ratchet: How Humanity Thrives in the Face of Natural Crisis*. New York: Basic Books.

<sup>2</sup> Quoted from: Environmental Protection Agency. 2019. Environmental Justice. URL: <https://www.epa.gov/environmentaljustice> (Accessed 27 July 2019).

<sup>3</sup> Quoted in part from: Johnston, Barbara Rose. 2001. ‘Anthropology and Environmental Justice: Analysis, Advocates, Mediators, and Troublemakers’. In *New Directions in Anthropology & Environment*. Carole Crumley, ed. Pp. 132-149. Walnut Creek: Altamira Press.

<sup>4</sup> Reproduced in full from: Riederer, Rachel. 2019. An Uncommon Victory for an Indigenous Tribe in the Amazon. 15 May 2019. The New Yorker. URL: <https://www.newyorker.com/news/news-desk/an-uncommon-victory-for-an-indigenous-tribe-in-the-amazon> (Accessed 26 July 2019).

<sup>5</sup> Reproduced in full from: Wallace-Wells, David. 2017. The Uninhabitable Earth: Famine, Economic Collapse, a Sun that Cooks Us—What Climate Change Could Wreak, Sooner than You Think. 9 July 2017. New York Magazine. URL: <http://nymag.com/intelligencer/2017/07/climate-change-earth-too-hot-for-humans.html> (Accessed 26 July 2019).

<sup>6</sup> This article has been updated to provide context for the recent news reports about revisions to a satellite

data set, to more accurately reflect the rate of warming during the Paleocene–Eocene Thermal Maximum, to clarify a reference to Peter Brannen’s *The Ends of the World*, and to make clear that James Hansen still supports a carbon-tax based approach to emissions.

<sup>7</sup> Reproduced in full from: Riederer, Rachel. 2019. *The Other Kind of Climate Denialism*. 6 March 2019. *The New Yorker*. URL: <https://www.newyorker.com/science/elements/the-other-kind-of-climate-denialism> (Accessed 26 July 2019).