

LOVE IN A TIME OF RUIN: LOOKING AT FOUR RECENT BOOKS ON CLIMATE DISRUPTION

By Alice Loyd

Dahr Jamail, [*The End of Ice: Bearing Witness and Finding Meaning in the Path of Climate Disruption*](#) (New York: The New Press, 2019)

David Wallace-Wells, [*The Uninhabitable Earth: Life after Warming*](#) (New York: Tim Duggan Books, 2019)

Bill McKibben, [*Falter: Has the Human Game Begun to Play Itself Out?*](#) (New York: Henry Holt and Company, 2019)

Jennie Ratcliffe, [*Nothing Lowly in the Universe: An Integral Approach to the Ecological Crisis*](#) (Hillsborough, NC : The Crundale Press, 2019)

Although I keep up with the latest climate research as I've done on a daily basis for nearly twenty years, until recently I had stopped reading book-length appraisals of where we are and what we should do about the climate problem. "What more need be said and what more do I need to know?" was my position. Then friends put into my hands the books I'll survey here, and in reading them I formed a new position—a new standard for judging which books on the topic merit my time and attention.

The End of Ice

I began with *The End of Ice*, which I read without stopping because I was caught up in Jamail's grief over the loss of beloved landscapes. The book tells how the world looks today: not only mountains and polar regions have already been transformed by warmer weather, but also deep seas, jungles, and forests. The book jacket says, "After nearly a decade overseas as a war reporter, the acclaimed journalist Dahr Jamail returned to America to renew his passion for mountaineering, only to find that the slopes he had once climbed have been irrevocably changed by climate disruption." Jamail's story begins in Alaska in June 2016 while he is engaged in a climb of Denali, the highest peak in North America.

It had been thirteen years since I'd last been on Denali yet it felt like I had never left it at all. Such is the enduring nature of mountains, their sublime agelessness. . . . That evening, I wrote in my journal, processing each piece of bad news about the mountain. I wrote about my sadness but also about my determination to keep on returning to Denali until my body no longer allowed. I wanted time in this place, on this mountain that will always stand as a sentry, a sanctuary, a guide, and a beacon to me. (*Ice*, 22)

He reports traveling in June 2017 to Glacier National Park in Montana where he talks with Dr. Dan Fagre, a "big-picture scientist whose research has covered everything from glaciers to avalanches to amphibians to paleoclimates to ecosystem dynamics." Dr. Fagre has worked at Glacier for twenty-seven years and is well qualified to relate the consequences of higher

temperatures in that location. Snow is now on the ground an average of thirty fewer days than it used to be, with the result that trees grow earlier in the season and become larger, with the result that they use up more water, with the result that by August of 2017 more than a million acres were aflame. Although in 1850 the park contained 150 glaciers covering 100 square kilometers, in 2017 there are twenty-six glaciers, covering only fourteen or fifteen square kilometers. In the interview, when Jamail quotes a prediction based on 1990 figures, that all the park's glaciers will be gone by 2030, Fagre says, "Our trajectory has well exceeded that now. . . . This is an explosion, a nuclear explosion of geologic change. . . . We've shoved it into overdrive and taken our hands off the wheel" (*Ice*, 36, 39, 40).

Fagre cuts to the chase when it comes to the fact that glaciers in his beloved national park are on their way out, and rapidly at that. "We've been saying this for twenty years," he tells me. . . . He sees me looking at him. I don't know what to say, so I just bite my lower lip. He too is shaken. "They are going to go away, it's gonna be pretty soon, and it's going to be a big deal because they've been here seven thousand years." (*Ice*, 45)

In February 2017 at the Great Barrier Reef in the Coral Sea off the coast of Queensland, Australia, Jamail views the bleaching coral with Dr. Dean Miller, marine scientist and director of science and media for Great Barrier Reef Legacy. They don full-length black body suits, masks, and fins and slip into the water at one of the sites on the itinerary. Jamail's report is, "I'm taken aback by the decimation. At least half of the coral is already dead, covered in slimy algae, or bleached white. At one point, I swim for five minutes straight and see nothing but dead or bleached coral. Even the deeper areas, many of which remain largely intact, still have signs of bleaching." At a less damaged site, by contrast, "the colors of the coral shimmer, schools of fish abound. Giant underwater islands of coral stretch tens of feet toward the surface, with coral growing atop coral, life growing on life. Giant blue stag coral grow straight out of ten-foot-wide brown table coral. It is stupendous. The water crackles with the sound of fish biting coral and the clicking sounds of shrimp. . . . I stay there alone, soaking it all in." He sees giant clams, anemone, starfish, hard and soft corals, all the colors of the spectrum. "I get to be part of their world for those rare, precious, magical moments. My heart swells and I never want to leave" (*Ice*, 99).

"According to Miller," Jamail writes, "the oldest historical records are the coral themselves, some of them dating back more than 20 million years, and they show that there have never been bleaching events like what we are seeing now" (*Ice*, 91). When Jamail asks Miller about a World Resources Institute report which warns that, without dramatic intervention, there might be no coral reefs left by 2050, Miller responds, "I think it's too conservative, I really do. Corals need many years to adjust to the warmer ocean waters, and we don't have that kind of time anymore. The warming we are seeing now is happening far too fast to allow for evolution. . . . So what we're seeing now is death. That's what bleaching is." He continues, "Instead of the reefs getting the breaks they need for regeneration between these bleaching events, the time is instead filled with more stress events like extreme storms, pollution . . . so we are really in an impossible situation now" (*Ice*, 92).

Jamail's survey of devastation also includes the Pribilof Islands in the Bering Sea; Miami Beach, Florida; the forests of the western USA including Sequoia National Park; the Amazon rain forest of Brazil; and Utqiagvik, formerly known as Barrow, the northernmost incorporated point in the United States. In each place he speaks with the scientists whose careers and lives are tied to the well-being of those environments. Their research has patiently recorded the changes they have seen over the past 15, 20, 30 years. Their data, images, and reports in professional journals are meticulously objective, but the scientists' responses to the experience of deteriorating ecosystems are anything but detached. Referring to the die-off of sea animals and birds of the increasingly warm, acidic, algae-laden Alaskan waters, Bruce Wright, senior scientist with the Aleutian Pribilof Islands Association who has worked for the National Marine Fisheries Service and is a former section chief for the National Oceanic and Atmospheric Administration (NOAA), is adamant: "The murre¹, this is what happened to them that so many scientists won't talk about. When the zooplankton is missing from the food web, the energy is stuck in the sediments, so it was simply a loss of food because the toxins from the *Alexandrium* took out the zooplankton. The food web is, literally broken. . . . We're not going to stop this train wreck. We are not even trying to slow down the production of CO₂" (*Ice*, 73).

Dr. Harold Wanless, professor and chair of the Department of Geological Science at the University of Miami, who is now in his seventies and has been tracking sea levels his entire career, says,

We've screwed ourselves. We kicked the bucket. We have gone off the cliff. 93.4 percent of the global warming heat we've produced is in the oceans, and half of that went in since just 1997" (*Ice*, 115). Pointing to a chart, he shows Jamail that the IPCC projections for sea level rise are skewed too low because they underestimate the amount of melting in both Greenland and the Antarctic. "They have the warming of the ocean being a fair percentage of their projections and Greenland being small and Antarctica being a minuscule amount of sea level rise, and that's incorrect. And it wasn't correct in their 2007 assessment either. There are political games going on in the IPCC and their modelers can't look beyond the model. The IPCC only uses stuff in refereed journals, which is already four to five years outdated, and they cut off three years early for peer review, so it is at least ten years outdated, and I'm looking at stuff that is happening today. (*Ice*, 117)

Nor are the residents of these places unemotional as they speak with Jamail about what is happening. John Rumney, the American who founded The Great Barrier Reef Legacy and has lived "on the reef, not in Australia" for forty years, came up after a few dives saying to Jamail, "I love this reef with all my heart." As he pulled up his mask, he was crying (*Ice*, 97).

¹ The common murre is a penguin-like bird of the cooler northern oceans (allaboutbirds.org).

Because this book's stories of global catastrophe are told by people engaged with the suffering of the places they seek to protect, I didn't find the material depressing. To have visited those scenes with Jamail and his hosts actually gave relief because they expressed my own grief and frustration. I was consoled to face the damage with others who care.

The Uninhabitable Earth

The Uninhabitable Earth by David Wallace-Wells doesn't offer that consolation. I had read his masterly in *New York Magazine* entitled "The Uninhabitable Earth, Famine, Economic Collapse, A Sun That Cooks Us: What Climate Change Could Wreak—Sooner Than You Think." [The article](#) is the most-read essay the magazine has ever published. In the first three weeks after publication, it was downloaded over 4.5 million times and aroused much debate ([thehealthcarepolicy podcast.com](#)). In the book, as in the article, Wallace-Wells is not grieving over lost places: he introduces himself by saying, "I am not an environmentalist, and don't even think of myself as a nature person. I've lived my whole life in cities, enjoying gadgets built by industrial supply chains I hardly think twice about. . . . I also always accepted the proposition that there was a trade-off between economic growth and cost to nature—and figured, well, in most cases I'd probably go for growth" (*Uninhabitable*, 6). He is, nonetheless, writing from strong feeling. He says he was scared out of inertia a few years ago when he started to collect "terrifying, gripping, uncanny narratives" about climate change (*Uninhabitable*, 7). The title and content seem intended to stir readers to share those fears—and thus act. As a *New York Times* reviewer of the book writes, Wallace-Wells "wagers that we've grown inured to cool recitations of the facts, and require a more direct engagement" ([nytimes.com](#)).

Rather than visiting places as Jamail does, Wallace-Wells, in his role as deputy editor at *New York Magazine*, obtains information through interviews and the vast reach of the internet. In the book in the following order he relays to us literally oceans of evidence under the heading "Elements of Chaos": heat death, hunger, rising seas, wildfire, weather disaster, freshwater drain, dying oceans, unbreathable air, health threats, economic collapse, climate conflict, and systems crises—the cascading outcomes that occur when these elements combine. If *End of Ice* is an elegy, *Uninhabitable Earth* is a march. One after another, his powerful sentences pound the drum toward our destination if we don't change.

Over the past few decades, the term "Anthropocene" has climbed out of academic discourse and into the popular imagination—a name given to the geologic era we live in now, and a way to signal that it is a new era, defined on the wall chart of deep history by human intervention. One problem with the term is that it implies a conquest of nature, even echoing the biblical "dominion." But however sanguine you might be about the proposition that we had already ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance, and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. . . . You could also go with "war machine." Each day we arm it more. (*Uninhabitable*, 20)

Especially those who have imbibed several centuries of Western triumphalism tend to see the story of human civilization as an inevitable conquest of the earth, rather than the saga of an insecure culture, like mold, growing haphazardly and unsurely upon it. That fragility, which pervades now everything humans might do on this planet, is the great existential insight of global warming, but it is only beginning to shake our triumphalism—though, if we had stopped to contemplate the possibilities a generation ago, it probably would not surprise us to see a new form of political nihilism emerging in the region of the world already baked hardest by global warming, the Middle East, and expressed there through suicidal spasms of theological violence. (*Uninhabitable*, 35-36)

Some readers might object to the degree of force Wallace-Wells puts into almost every paragraph. I suspect some of the negative comments his work has received are because commenters felt assaulted by his style, though what they voice is an issue with his content. Such terms as “fearmongering” and “alarmism” have been applied, as well as the more commonly expressed sense that arousing fear in people will inhibit positive action. For me, however, the language suits the occasion. When the house is burning it is appropriate to shout “Fire!”

And he does shout fire splendidly. No dry account of climate consequences here. In my view we are blessed to have such a gifted writer put his hand to describing the climate crisis. Here is his explanation of now-common events in the news:

Climate change is not a discrete clue we can find at the scene of a local crime—one hurricane, one heat wave, one famine, one war. Global warming isn’t a perpetrator; it’s a conspiracy. We all live within climate and within all the changes we have produced in it, which enclose us all and everything we do. If hurricanes of a certain force are now five times as likely as in the pre-Columbian Caribbean, it is parsimonious to the point of triviality to argue over whether this one or that one was “climate-caused.” All hurricanes now unfold in the weather systems we have wrecked on their behalf, which is why there are more of them, and why they are stronger. The same is true for wildfires: this one or that one may be “caused” by a cookout or a downed power line, but each is burning faster, bigger, and longer because of global warming, which gives no reprieve to fire season. Climate change isn’t something happening here or there but everywhere, and all at once. And unless we choose to halt it, it will never stop. (*Uninhabitable*, 20)

In light of the book’s content, I’m puzzled when Wallace-Wells exults about the future for his child:

I have to admit, I am also excited, for everything that Rocca and her sisters and brothers will see, will witness, will do. She will hit her child-rearing years around 2050, when we could have climate refugees in the many tens of millions; she will be entering old age at the close of the century, the end-stage bookmark on all of our projections for warming. In between, she will watch the world doing battle with a genuinely existential threat.” (*Uninhabitable*, 32)

A gifted writer, yes, but I think a novice in absorbing the meaning of the topic he writes about. Certainly Wallace-Wells has only now begun to consider matters that have occupied me and most of my close acquaintances for decades. But he is welcome to join the journey toward more wisdom and less hubris that is the fundamental work we all must do.

Falter

I turn now to *Falter: Has the Human Game Begun to Play Itself Out?* by a pioneer of that journey, Bill McKibben. His 1989 book, *The End of Nature*, has been called the first book about climate change, and for these thirty years since, McKibben has applied himself to climate mitigation with persistence and ingenuity. In this latest book he deals with three concerns that may prove fatal to the human project: global warming, artificial intelligence, and genetic modification. Of the first he says:

There's a small category (a list with three items) of physical threats so different in quantity that they become different in quality, their effects so far-reaching that we can't be confident of surviving them with our civilizations more or less intact. One of these is large-scale nuclear war . . . Second on that list of threats is the small group of chemicals that, just in time, scientists discovered were eroding the ozone layer, a protective shield that 99 percent of us didn't even know existed. . . . And the third, of course, is climate change, perhaps the greatest of all these challenges, and certainly the one about which we've done the least. It may not be quite game-ending, but it seems set, at the very least, to utterly change the board on which the game is played, and in more profound ways than almost anyone now imagines. (*Falter*, 20-21)

McKibben explains how climate change came to be so serious by applying the idea of leveraging. Concerning the political situation that has kept climate mitigation at a standstill, he writes that in the past the ideological pendulum swung back and forth, and though at times much harm was done, none of it threatened to end "the human game." This was not because the robber barons of the Gilded Age or the Nazis of World War II were less venal than the drivers of global warming, but [author's emphasis here and throughout these reviews] "*because they lacked sufficient leverage to make change on that scale*" (*Falter*, 117).

Global warming turns out to be the perfect example of too much leverage. The men who gained ideological power beginning in the Reagan years, a great many of them directly connected to the oil and gas industry, were in control at precisely the moment when they could do the most damage. In the years since 1990—the years since, say, the Exxons and Kochs of the world started launching the various "think tanks" and front groups to poison the debate with what they knew was a series of lies—the world has emitted more carbon dioxide than in all the decades before. And this turned out to be the crucial carbon dioxide. We know now that 350 parts per million carbon dioxide is the most we could safely have in the atmosphere, a number we've rocketed past in precisely those years. . . . If someone grabs the steering wheel when you're a mile from

the cliff, you have time to wrestle it back. But as it turned out, we were on the edge of the abyss. (*Falter*, 118)

McKibben explains, “Global warming is the ultimate problem for oil companies because oil causes it, and it’s the ultimate problem for government haters because without government intervention, you can’t solve it. Those twin existential threats, to cash and to worldview, meant that there was never any shortage of resources for the task of denying climate change” (*Falter*, 121). The strategy of oil oligarchs to obfuscate around fossil fuel consumption “worked, exactly as well as they needed it to. As late as 2017, pollsters found that almost 90 percent of Americans didn’t know there was a scientific consensus on global warming” (*Falter*, 77).

Often I hear people ask rhetorically, regarding leaders who oppose climate action, “What are they thinking? Don’t they love their grandchildren, too?” I usually attribute their blindness to love of money or power. McKibben explains that the oil oligarchs, almost to the person, have another blinding allegiance, ideology. “Climate change was, for them, inconceivable because it would get in the way of profits—the Koch brothers run enormous pipeline networks; they are among the biggest leaseholders in Canada’s tar sands—but also because it marred the purity of their belief system. The anti-government forces had, at some level, no choice but to deny global warming, because tackling it would have required governments to take strong action” (*Falter*, 119).

He sees a similar commitment to individual freedom in the developers of artificial intelligence. “As early as 2001—before the iPhone and Facebook, back in the days when you just checked email—a writer named Paulina Boorsook published *Cyberselfish*, a book she called a ‘critical romp through the terribly libertarian culture of high-tech.’ In it she said suspicion of government was ‘the techie equivalent to the Judeo-Christian heritage of the West’” (*Falter*, 129).

And McKibben likewise sees too much leverage in the hands of the tech industry. He quotes Ray Kurzweil, director of engineering at Google, which McKibben calls “arguably the most important company on the planet,” as saying that by 2030 we will “have a synthetic neocortex in the cloud. We’ll connect our brains to the cloud just the way your smartphone is connected now. We’ll become funnier and smarter and able to more effectively express ourselves.” Kurzweil also predicts, “By 2055, \$1000 worth of computing power will equal the processing power of all the humans on the planet” (*Falter* 135-136). McKibben writes,

For the moment, let’s not try to figure out whether this is a good thing or a bad thing. For now, let’s just operate on the assumption that it’s a *big* thing, that it represents an unmatched degree of leverage. If the unchecked and accelerating combustion of fossil fuel was powerful enough to fundamentally change *nature*, then the unchecked and accelerating technological power observable in Silicon Valley and its global outposts may well be enough to fundamentally challenge *human nature*. (*Falter*, 136)

McKibben covers some of high tech's accomplishments and ambitions: for example, artificial intelligence (AI) including what is called "weak AI" (which like Siri can do one thing quite well); "strong AI," which would be a computer that can perform any intellectual task a human being can perform (*Falter*, 137); genetic modification (such as "clustered regularly interspaced short palindromic repeats" better known as CRISPR) that includes gene editing before birth—"designer babies"—and after birth (*Falter*, 142-143); the effort to extend life by decades or centuries (*Falter*, 182); escape into space (*Falter*, 246-247). He writes, "It's not hard to imagine how Big Data and Big Biotech will eventually combine, as Kurzweil insists, to produce a (big) new industry" (*Falter*, 147).

McKibben's argument with both Big Oil and Big Tech regards limits. He says fossil fuels used sparingly and strategically could have been a great blessing, as can technologies applied where they are needed. But he thinks humans are not comprehending the scale of our impact—our leverage—at this time.

Books such as Jared Diamond's *Collapse* intrigue us with their stories of past calamities, from Greenland to Easter Island. But these warnings also somehow seem to give us confidence, because, after all, things continued. Rome fell, and something else rose. The Fertile Crescent turned to desert, but we found other places to grow our food. The cautionary tales about transcending our limits (the apple in Eden, the Tower of Babel, Icarus) seem silly to us because we're still here, and we keep transcending one limit after another. (*Falter*, 13)

He suggests two of what he calls "technologies" developed in the twentieth century that may help us as we try to pull back from the edge. One is solar power—small installations applied at great scale throughout the less-industrialized world. The other is non-violent resistance applied at similar scale in the countries whose emissions are responsible for our predicament.

Nothing Lowly in the Universe

A number of what McKibben might call helpful technologies are surveyed by Jennie M. Ratcliffe in *Nothing Lowly in the Universe*, the fourth book in this review, but she looks for projects such as the Sarvodaya Shramadana Movement in Sri Lanka which have the "wellbeing and awakening of all" as the core principle (*Lowly*, 250). Ratcliffe maintains we have lost our way at the deepest level of perception, and surface remedies will not resolve the problem. Throughout the book, as she moves from the predicament and false fixes stemming from an erroneous world view, into principles that can guide resolution, Ratcliffe expresses a position that will be familiar to readers of Thomas Berry. "Modern, technologically oriented human societies have lost a sense of place in the great cosmic story of unfolding and our place as a part of a whole earth community, and as such have lost a deeper sense of meaning, belonging, and possibility" (*Lowly*, 204).

The first section of the book describes the state of the Earth, and while the developments she presents are not new, Ratcliffe's telling is a personal one, showing her experiences from student days through her career as an epidemiologist and her practice as a Quaker.

In 1972, I stood with a group of fellow students in a laboratory at Manchester University in England, watching a plot unfold on a primitive black-and-white computer screen. We were among the earliest students to play with the system dynamics "World Model," which was developed first by Jay Forrester and later Donella Meadows and others at the Massachusetts Institute of Technology. . . .The subsequent report, called *The Limits to Growth*, became one of the most famous environmental books of the era. (Lowly, 1)

Her perspective is evidenced by a passage she quotes from the 30-year update of *Limits to Growth*: "None of the measures to alter the current system, e.g., economic or technical fixes, while urgently needed, will do more than buy us time if we fail to address the underlying causes driving the system."² She covers overshoot, ecological footprints, and analyses of climate breakdowns with their corollary impacts, with an emphasis on errors in "the way we think about the world—the technological, economic, social, and cultural paradigms by which we live" (Lowly, 47).

Thus from the beginning of the book we encounter the difference between Ratcliffe's approach to climate mitigation and that of any other climate change book I've read. Her concern is with root causes and thoroughgoing cures—with the way the universe works and where we went wrong in our understandings that brought about so much suffering and destruction.

Ratcliffe's approach is that of a scientist. She worked for the US Centers for Disease Control and Prevention, the US National Institute of Environmental Health Sciences, and the Universities of London and North Carolina. Her competent analysis of climate science includes a clinical explanation of "tipping points."

"The effects of additional warming are typically multiplicative, not linear due to . . . reinforcing feedbacks: These feedbacks include the effect of polar icemelt on decreasing the solar reflectivity of these ice sheets; melting ice below icesheets causing sudden mass collapse of glaciers and sudden jumps in sea rise; the release of methane and carbon from the melting of permafrost and warming of peatlands and other carbon sources; and the decrease in carbon sinks as trees and soils that are affected by warming, combined with the increase in wildfires. In turn, these effects can result in the rapid acceleration of other impacts and "knock-on" effects that have been difficult to model with enough precision so as to predict what the type, magnitude, and timing of impacts will be in coming years. (Lowly, 35)

² Donella Meadows, Jorgen Randers, and Dennis Meadows, *Limits to Growth: The 30-Year Update* (White River Junction, VT: Chelsea Green Publishing Company, 2004), 236, as quoted in *Lowly*, 14.

She calls attention to the recommendations of an international team of climate scientists who modeled some of the possible reinforcing feedback effects in 2018. They concluded that even if we keep the global temperature rise at 2°C, such “domino effects,” each of which push other Earth systems out of balance in a cascade that cannot be stopped, are likely to accelerate as temperatures climb the additional degree above the already-attained 1°C increase. Her discussion of non-linear climate system behavior also includes the results of a Stockholm Resilience Center study, whose authors emphasize the need for integrated rather than compartmentalized analyses, policies, and action (such as agricultural policy joined with forestry management) in order to address such interactive processes (*Lowly*, 35).

I highlight these paragraphs about the interactive, interconnected climate system to emphasize that Ratcliffe sets the climate problem within an understanding of the interactive, interconnected Earth system, and within the emerging view that this is the nature of the universe.

Scientists, from physicists to biologists and cosmologists, have begun to understand and model both the intimate interconnectedness and interactive nature of all parts of the cosmos in ways that are remarkably redolent of the Buddhist view of interconnection and mutual co-arising of all form. The theory of systems, and the systems view of the universe and life, was first developed in the mid-20th century and has found applications in disciplines ranging from physics and biology to economics and sociology. Systems theory also echoes some of the most ancient knowledge systems of the Hindu and Buddhist traditions in its emphasis on interconnections, interdependency, and dynamic processes acting in a unified whole. (*Lowly*, 142-143)

If I understand her position, it is this: if humans had realized that everything is related to everything else and if we had developed or preserved a cosmology and organized a culture that reflected that realization, we would not have arrived at this place of imperilment. Since we are here, however, our best option is to change our thinking while at the same time making concrete corrections in our actions. She writes,

Many people have argued that, as climate breakdown and ecological collapse looms closer than ever, the urgency of our predicament means that we “haven’t enough time to wait” for a mass spiritual awakening or indeed any kind of paradigm shift before we act. In my view, while there’s no doubt that the closer catastrophe comes, the more likely it is that many options will be foreclosed and that fear will lead to repressive violent panic measures, there are several ways that such arguments can be addressed. First, as described above, the spiritual and moral “awakening” does not *precede* action in the world, it *proceeds reciprocally and synergistically in conjunction with* such action, and as we act, we grow spiritually and morally and we are healed, encouraged, and enlightened by our work. (*Lowly*, 155)

In the second section of the book, “Fixes That Fall Short,” Ratcliffe points to misguided mitigation efforts. Among these are population control (counting how many people rather than

how many polluters); technology (achieving low net energy benefits while taking high risks); economic growth (aiming for “sustainable development” but failing to meet needs); and pricing nature (treating the gift of life as a commodity) (*Lowly*, 49-71).

After dealing with failures that arise from the prevailing world view, Ratcliffe the epidemiologist moves into her areas of passion: naming the underlying causes of the ecological crisis and describing the cures most likely to be effective. As causes, she considers “the layers of paradigms and frames (that) drive our ecological predicament.” She sees underneath these, “at the deepest root level . . . our most invisible, but arguably most resistant, beliefs about the way things are and *should* be, indeed about the nature of reality itself” (*Lowly*, 130).

The common themes that run through the dominant western technical, economic, political, and even religious worldviews or frames that have brought us to this predicament are centered on a fundamental paradigm of dualism. . . . Rather than being a concept of philosophical concern only, dualism and the paradigms that flow from it affect almost every aspect of the way we think, from our anthropocentrism with respect to nature to our fundamental sense of separation and our ideas of hierarchy, domination, and of opposites in opposition. In turn, these ideas foster a culture of competition, either/or, winning or losing, and isolated individualism. (*Lowly*, 130)

As elements of the dualistic worldview she lists (1) the stance that regards other life forms as insentient, (2) an “unconscious sense of fear, alienation, and even hatred of nature as something that cannot ultimately be controlled,” and (3) the hubristic sense of agency “that permeates the relentless quest to push forward the frontiers.” These postures lead to the outward violence that we are experiencing: acts committed by individual humans; war and conflict with its individual, cultural, and environmental costs; and the exploitation of nature that brings down the greatest harm on those who benefit the least from it (*Lowly*, 105-107).

 As cure, Ratcliffe offers the wisdom of great sages and prophets who saw the One or All beyond separation, hierarchy, and dualism. The Taoist “yin-yang” symbol and the non-hierarchic web of life image depict spiritual postures that will heal the brokenness and injustice (*Lowly*, 139). “Western philosophy and religious traditions have posited a dualism between spirit and matter . . . but in a nondualistic world view, as the Buddhist sutra has it, ‘emptiness is form, form is emptiness.’ The spiritual dimension is not distinct from the material, physical, and biological dimension; rather, one dimension is an aspect of the other.” She quotes Thomas Berry: “There is a spiritual capacity in carbon as there is a carbon component functioning in our highest spiritual experience. If some scientists consider that this is merely a material process, then what they call matter, I call mind, soul, spirit or consciousness”³ (*Lowly*, 145).



Conclusion

³ Thomas Berry, *The Great Work: Our Way into the Future* (New York: Bell Tower, 1999), 25.

All four of these books meet my customary requirement that climate information be communicated out of concern about the destruction. When the caring is missing, I think of I Corinthians 13 in the King James Version which says, “Though I speak with the tongues of men and of angels and have not charity (love), I am become as sounding brass or a tinkling cymbal.” Clearly Dahr Jamail, Bill McKibben, and Jennie Ratcliffe care, and while I wonder if David Wallace-Wells’ involvement is limited to his concern for human wellbeing, I’m clear that he doesn’t want the destruction to go on.

The new standard I identified from this recent reading goes beyond shared concern. What I ask from climate disruption literature from now on is this: *Remind me of what will not be changed by climate change.* I’m sure I’ll continue to read reports as the consequences of temperature rise come in, but for me to stay with a book-length analysis, I’ll need more than descriptions of what is happening told with some degree of emotion. What I want from here on is to spend time with people who are saved from despair by their strong sense of connection with the whole of life—with their sense that everything is held together by bonds I can only call love, bonds that will hold past the Holocene epoch and into the next era. To me there doesn’t seem to be a better word for this connectedness than love, and if I seem to be turning now to the realm of spirit to name my faith, it is spiritual as Jennie Ratcliffe describes it in this paragraph:

The spiritual is the province of every religious believer and none; its nature is what is thought of as secular as well as religious; and it is the province of science and philosophy, from quantum physics to the nature of evolution, as well as of human psychology, morality, religion, and culture. And, as we will see as we explore further, its essential nature is love. Love is not just a feeling or emotion, but rather a force for integrity, for truth, and for transformative power. In its deeper meanings, it is the Great Attractor, the felt bond of unity with all that is, and the force of evolution and life itself. (Lowly, 149)

I believe this bond can be sensed by humans because it is a feature of nature, internal to the universe in which we live. If the ice melts, the tropics burn, the trees fall, and the oceans rise to cover all but the mountains, the “force of evolution and life itself” will still be present. Humans can choose to affirm the connection or deny it and bring down severe consequences, but “the Great Attractor, the felt bond of unity” will endure. “Love never faileth.”⁴ We don’t know how much of the web of Earth life will survive climate change, but the web’s spirit will hold forever, and as the warming advances, I will increasingly value the writers who speak from that spirit.

⁴ I Corinthians 13:8 KJV.