

*State of the World 2013*

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## CHAPTER 28

# Resistance: Do the Ends Justify the Means?

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Has the time come for a massive wave of direct action resistance to accelerating rates of environmental degradation around the world—degradation that is only getting worse due to climate change? Is a new wave of direct action resistance emerging, one similar but more widespread than that sparked by Earth First!, the first avowedly “radical” environmental group?

The radical environmental movement, which was formed in the United States in 1980, controversially transformed environmental politics by engaging in and promoting civil disobedience and sabotage as environmentalist tactics. By the late 1980s and into the 1990s, when the most militant radical environmentalists adopted the Earth Liberation Front name, arson was increasingly deployed. The targets included gas-guzzling sport utility vehicles, U.S. Forest Service and timber company offices, resorts and commercial developments expanding into wildlife habitat, and universities and corporations engaged in research creating genetically modified organisms. Examples of such militant environmentalism can be found throughout the world, and they are increasingly fused with anarchist ideologies. Given this history, the question arises as to whether direct action resistance is becoming unambiguously revolutionary, or perhaps even purposefully violent.<sup>1</sup>

People attending the Earth at Risk: Building a Resistance Movement to Save the Planet conference in Berkeley, California, in November 2011 might well have thought so. Some 500 people joined this conference, which called for a new “deep green resistance” movement in response to intensifying environmental decline and increasing social inequality. The format of the conference was a scripted dialogue, or what might be called political performance art, with the writer and activist Derrick Jensen posing questions to a series of environmental activists and writers, including, most prominently, the Man Booker Prize winner from India, Arundhati Roy.<sup>2</sup>

The tone of the meeting was sober and its messages radical. Succinctly put, the speakers issued the following diagnoses: Electoral politics and lob-

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bying, as well as educational and other reformist conversion strategies that give priority to increasing awareness and changing consciousness, have been ineffective. Such strategies do not work because for 10,000 years agricultures have been established and maintained by violence. This violence has foremost targeted foraging societies (and later indigenous and poor people), nonhuman organisms, and nature itself. Fossil-fueled industrial-agricultural civilizations are especially destructive and unsustainable. Popular and democratic movements have been overwhelmed by the increasingly sophisticated ways that elites justify and enforce their rule and promote materialism and the domination of nature.

In concert, the conference speakers offered radical prescriptions. They called for direct and aggressive resistance to plutocracy and environmental destruction. The immediate objective, several of them contended, should be to bring down industrial civilization—which, they claimed, has structural vulnerabilities. Specifically, they urged those gathered to form or support secret cells that would, as their first priority, sabotage the energy infrastructure of today's dominant and destructive social and economic systems. It is also critical, they contended, that activists avoid pacifist ideologies and even carefully consider whether, and when, the time might be ripe to take up arms to overturn the system. After the most inflammatory of these statements, at least a third of the crowd rose in standing ovation.<sup>3</sup>

It is not necessary to hold an anarchist or anti-civilization ideology to wonder if electoral politics, lobbying and educational efforts, or litigation-based strategies are enough. Indeed, one reason that many people in mainstream environmental organizations sympathize with these radicals is that they often share a despairing view of the current destructive trends and recognize that, despite their best efforts, they have been unable to slow or reverse them.

It is also not necessary to be willing to contemplate violent tactics when considering or engaging in resistance. Although definitions of resistance typically include underground organizations opposing an occupying or authoritarian power or regime, often with acts of sabotage or guerilla warfare, the term can also refer to nonviolent, extralegal opposition to a regime or its practices—even a regime that is considered politically legitimate, such as in democratic countries. Examples of such resistance include disruptive protest, civil disobedience, and noncompliance with government laws or with the dictates or operations of public or private institutions considered to be engaged in wrongdoing.

Anyone paying attention can easily identify both actions and negligent inaction on the part of public and private actors that are exacerbating exceptionally harmful environmental and social trends. Is it time, then, for resistance? Has it been effective or counterproductive? If effective or potentially

so, which kinds are, under what circumstances, and by whom? What should the posture of mainstream environmental organizations be toward those who engage in resistance?

It is time to break the taboo against talking about this and to consider what lessons can be drawn from decades of experimentation with direct action resistance.

## Premises

This is ethically fraught terrain. To be as clear as possible, let's begin with a forthright statement of the premises underlying the analysis in this chapter.

First, sometimes it is permissible or even obligatory to resist legally constituted laws and policies. This statement is uncontroversial when it comes to long-settled social conflicts. In hindsight, at least, nearly everyone would agree that the Confessing Church's resistance to the duly elected Nazi regime and its laws was not only morally permissible but obligatory. To this a host of additional examples could easily be added: Mahatma Gandhi leading the resistance to British imperial rule, Martin Luther King, Jr. in his often illegal pursuit of full citizenship for African-Americans, and even Nelson Mandela and the African National Congress' insurrectionary strategy to topple South Africa's apartheid regime.

Once it is acknowledged that laws and policies have been and can be unjust, whether to resist becomes a muddier moral terrain. When laws are enacted through democratic processes, of course, they are generally considered on first appearance to be legitimate, so any decision to break them ought not be taken lightly. Such a decision often requires someone to choose between competing goods, between moral principles that ordinarily would not be in conflict but that can be in specific cases. The best laws try to anticipate exceptions and complexity, including by fashioning penalties that recognize moral ambiguity and unusual circumstances. Breaking into someone's home, for example, is normally and properly judged illegal, but in the case of a fire, it becomes permissible so that lives can be saved.

Criminal codes at their best carefully consider the intent of the accused, and penalties increase according to a crime's maliciousness. But exigent circumstances are not usually factored into criminal statutes. Nor do lawmakers always anticipate and incorporate into law, as they should, new circumstances or understandings. It is not uncommon, therefore, that deeply ethical and well-informed people will decide that some laws are inadequate, outdated, or just plain wrong, that the processes for changing them are too corrupt or the time too short, and that the stakes just too high to justify obeying such laws.

Second, it is wrong for one species to dramatically reduce Earth's biological diversity, and preventing anthropogenic species extinctions should

be a high moral priority. This ethical premise has been defended on many grounds, a survey of which is not possible here, but they include prudential and anthropocentric concern for human welfare, biocentric philosophy or spirituality, and diverse religious grounds in which protecting species is a religious duty.<sup>4</sup>

Third, the best available consensus science indicates that our species is precipitating a rapid decline of biological diversity, and this process is accelerating due to anthropogenic climate change. It is also clear that political systems have not halted these processes.

Fourth, and finally, since species that go extinct are lost forever, the stakes are high and an exigent response is urgently needed. Political systems have utterly failed to arrest biodiversity decline, nor are they poised to respond quickly and effectively.

Given these ethical and factual premises, individuals and organizations should consider the reasons for this decline and how to overcome it. Since current laws and political activities have failed to redress the situation and appear unlikely to do so, it is incumbent to ask what strategies and tactics might be successful. Such an assessment should include determining whether strategies and tactics must be constrained by existing laws and prevailing assumptions about what constitutes acceptable political action.

Put more simply: anthropogenic environmental decline in the light of life-affirming values and political inaction demands analysis of the obstacles to effective action, including laws and mores that might constrain it. Given the urgency of the situation, extralegal tactics should be on the table, as they were in earlier causes where great moral urgency was properly felt.

This does not, however, answer the question of whether the time for resistance has come. For this, we would need to diagnose the reasons for the present predicaments, determine what resources can be acquired, the sort of resistance needed, and whether a given action or campaign would be morally permissible, likely to be effective, and unlikely to be counterproductive. Venturing answers is perilous, in part, because there is so much complexity and uncertainty in the deeply entwined environmental and human socio-economic systems we seek to understand and affect. Yet the urgency of the situation requires nothing less.

## Types of Resistance

Recognizing that social reality never perfectly reflects our maps of it, it is nevertheless useful to proceed with a review of the main types of resistance.

First, but not least, there are many ways that people of conscience resist current trends, including by battling ideas that consider the world to be a smorgasbord for ever-swelling human numbers and appetites and that view human beings as somehow exempt from nature's laws. More impor-

tant, there is a revolution going on with regard to understanding the human place in and responsibilities to nature. These are unfolding rapidly and globally, and while the trends have diverse tributaries and expressions, they also have common emotional and spiritual dimensions, including deep feelings of belonging and connection to nature, as well as convictions about the value of all living things. There are, put simply, many forms of cultural resistance to beliefs and practices that do not cohere with science or progressive



March against the proposed Keystone XL pipeline, Minneapolis.

environmental ethics. These trends are important to note if we are to avoid the disempowering influence of cynicism.<sup>5</sup>

While contemplating the possibility and promise of resistance, it is also important to note that not everyone has the ability to participate in its more radical forms. Economically vulnerable populations, for example, might have few resources or opportunities to directly confront forces they understandably fear or upon whom they directly or indirectly depend. People in such situations, who have much to lose from direct confrontation with workplace authorities or rulers, sometimes

engage in what might be labeled *passive resistance*. This generally involves noncooperation and noncompliance, such as through work slowdowns, theft, feigned ignorance, and sometimes difficult-to-detect forms of sabotage. Such tactics are designed to avoid attention or detection. The focus here, however, is on whether more direct and aggressive forms of resistance are warranted.<sup>6</sup>

For radical environmentalists, the answer is a resounding yes, because they agree that the agricultural-capitalist-industrial system is fundamentally destructive and inherently unsustainable. The earliest Earth First! activists, for example, hoped that a combination of public protest—including civil disobedience and sabotage to thwart and deter the greatest assaults on biodiversity—would increase public sympathy and demands for environmental protection. Often, but not always, a connection was made between the erosion of biological diversity and cultural diversity (especially as represented in indigenous and peasant cultures). And concern for both animated the efforts.

Some also supported the political theory that creating an environmental

extreme would serve as a counterweight to the extreme right in political battles, pulling the political center more toward the environmentalist pole of the right/left continuum, which is where laws and policies tend to end up. Yet others, such as the radical environmental activists who, after a number of their comrades were arrested, concluded that they could save nothing from prison, established the Greater Gila Biodiversity Project in 1989, which eventually became the Center for Biological Diversity. These activists were among the ones who pioneered tenacious litigation strategies, using existing laws and rules written by resource agencies to challenge, with great success, practices they considered destructive. This is another form of resistance, although it is seldom recognized as such.<sup>7</sup>

While these early radical environmental activists maintained an apocalyptic view that modern society would collapse of its own unsustainable weight, their priority was to save what they could of the genetic and species variety of the planet before that inevitable collapse. They welcomed the envisioned collapse, believing it would halt the destruction and give the planet a chance to heal.<sup>8</sup>

This stream of thought thus had both radical and reformist dimensions. The more optimistic activists thought that direct action resistance might help precipitate widespread consciousness change, preventing humans from overshooting their carrying capacity and precipitating the collapse of environmental and thus social systems. The more reformist participants resembled those from more mainstream environmental movements, who consider mass protests, accompanied by nonviolent civil disobedience and sometimes spectacular acts of protest and resistance (such as by Greenpeace), as a way to educate and transform public opinion and thus to change behaviors, laws, and policies.

The revolutionary stream of these activists find hope only in actions that would accelerate the collapse of the societies they do not believe can be reformed voluntarily. These activists believe that, given the propaganda power of the elites who are most responsible for the destruction and who control political systems, more egalitarian, democratic, and environmentally sustainable systems have no chance of being established until this system is demolished or falls of its own unsustainable weight.<sup>9</sup>

In sum, when it comes to ecological resistance movements, there is a continuum of types, with varying diagnoses, strategies, and tactics. One extreme of the continuum of activists, who grew in number soon after the founding of Earth First!, is represented by the Earth Liberation Front, green anarchism, and Deep Green Resistance. These forms can be labeled revolutionary resistance, and they boldly proclaim an intention to bring down, “by any means necessary,” an industrial system considered inherently destructive.

More-moderate sectors of radical environmentalism represent a kind

of revolutionary/reformist hybrid, which shares many of the critical perspectives about the roots and current drivers of environmental degradation but which draws more eclectically and pragmatically on revolutionary and reformist ideas, strategies, and tactics. These activists do not absolutely dismiss the possibility that, with the right combination of resistance and reform strategies, there could be an upwelling of public support for environmental health and social equity and therefore that a less catastrophic transition toward sustainability might yet be possible.

On the other end of this spectrum is reformist resistance, which endorses demonstrations, including extralegal tactics such as civil disobedience (which can be highly disruptive, as for example when logging roads or highways are blockaded) as well as diverse pedagogical efforts, hoping to sway public opinion and pressure public officials into changing laws and policies while also affecting whether they honestly and successfully enforce current laws and policies. More so than the previous two types, here the goal is to force a democratic revolution or restore it where it has been subverted. And the hope is that this could create the conditions needed for dramatic action to address the most trenchant environmental and social problems.

Activists taking this approach may share the critical perspective of the more radical advocates of resistance about agriculture and industrialism, but they nevertheless take a more pragmatic approach, sometimes acknowledging that the current systems are powerful, resilient, and difficult to bring down. Or they may conclude that the threat to human beings, to other species, and to environmental systems would be too great should the current systems precipitously collapse and that therefore such an outcome should not be pursued.

## Assessing Resistance

With premises about and types of resistance established, and with humility given the diverse variables in play and the difficulty in predicting the effects of different courses of action, it is possible to venture a broad assessment of resistance strategies. These views are quite properly subject to change, given changed circumstances and understandings.

The radical critique of agricultural, industrial civilization cannot be easily dismissed. It is true that as agricultural societies spread around the world, cultural diversity has dramatically eroded. Agricultures have displaced, murdered, or assimilated foraging peoples, whether through superior numbers and force, through the diseases their lifestyles brought with them, or through processes of settler colonialism. The erosion of biological diversity has gone hand-in-hand with these processes, all of which intensified with the power of the fossil-fuel-driven industrial age.<sup>10</sup>

Modern societies are unduly celebratory of their achievements when they

have amnesia about what has been lost and by whom. With an understanding of the tragic aspects of this history and recognition that these very processes are ongoing, it is clear that dramatic actions to halt these processes and engage in restorative justice and healing where possible are morally obligatory.

This does not mean, however, that the revolutionary prescription of the Deep Green Resistance activists—attacking the energetic infrastructure of industrial civilization—is warranted. Indeed, the claim that this could cause the collapse of industrial civilization is fanciful. Natural disasters (including those intensified or worsened by human activities) demonstrate that as long as energy is available, large-scale societies will rebuild. Even if resisters were to disrupt the system significantly, not only would the system's rulers rebuild, recent history has shown that they would increase their power to suppress resisting sectors.

Moreover, as many radical activists have acknowledged in interviews—even those who have supported sabotage—the more an action risks or intends to hurt people, the more the media and public focus on the tactics rather than the concerns that gave rise to the actions. This means that the most radical tactics tend to be counterproductive to the goal of increasing awareness and concern in the general public.

When assessing the effectiveness of resistance, it is also important to address how effective authorities will be at preventing and repressing it. The record so far does not lead easily to enthusiasm for the most radical of the tactics deployed thus far. Authorities use tactics that are violent or can be framed as such to justify to the public at large spying, infiltration, disruption, and even violence against these movements. Such repression typically succeeds in eviscerating the resistance, in part because as people are arrested and tried, some will cooperate with the prosecution in return for a reduced sentence.

More than half of those arrested did just that during what Federal authorities dubbed “operation backfire,” which led to the arrests and conviction of more than two dozen Earth Liberation Front saboteurs who had been involved in arson cases. One of the leaders, facing life in prison under post-9/11 terrorism laws, committed suicide shortly after his arrest, while several others became fugitives. The individuals convicted drew prison terms ranging from 6 to 22 years. The noncooperating activists, and those for whom terrorism enhancements had been added to the arson charges, drew the longest terms.<sup>11</sup>



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At the University of California, Berkeley, protestors refuse to leave the last standing tree of a grove of mostly oaks leveled to make way for construction of a campus building.

As if this were not devastating enough to the resistance, broader radical environmental campaigns that were not using such radical tactics ebbed dramatically in the wake of these arrests. This was because movement activists who were friends and allies of those arrested rallied to provide prison support, which then took their time and resources away from their campaigns. But it was also because the resistance community was divided over whether (and if so, how) to support the defendants who, to various degrees, cooperated with investigators. Given this history, it makes little sense to base strategy and tactics on such an unlikely possibility that communities of resistance will ever be able to mount a sustained campaign to bring down industrial civilization, even if that were a desirable objective.<sup>12</sup>

The envisioned alternative to this objective—creating or, in the view of many activists, returning to small-scale, egalitarian, environmentally friendly lifestyles—would not be able to support the billions of people currently living on Earth, at least not at anything remotely like the levels of materialism that most people aspire to. So the most radical of the resistance prescriptions would quite naturally lead to strong and even violent counter-resistance.<sup>13</sup>

These ideologies, explicitly or implicitly, make unduly optimistic assumptions about our species, including about our capacity to maintain solidarity in the face of governmental suppression, as well as about the human capacity for cooperation and mutual aid. To expect such behavior to become the norm may be conceivable, and it may be exemplified by some small-scale societies, but it is not something to be expected universally, let alone during times of social stress intensified by increasing environmental scarcity.<sup>14</sup>

So despite the accurate assessment about the ways agricultural and industrial societies have reduced biocultural diversity, there is little reason to think that the most radical resistance tactics would be able to precipitate or hasten the collapse of such societies. Nor is there much evidence that such tactics would contribute to more-pragmatic efforts to transform modern societies. In contrast, there is significant evidence that these sorts of tactics have been and are likely to remain counterproductive.

## Spiking Awareness of Biodiversity Decline

There are, nevertheless, concrete historical examples where extralegal resistance has played a significant and even decisive role in campaigns to protect natural habitats and change government policies. Examples from diverse sites of contention around the world are documented in *Ecological Resistance Movements: The Global Emergence of Radical and Popular Environmentalism*. Many other studies have documented the successes and promise of such movements, as well as the failures and often-violent resistance that they face.<sup>15</sup>

These dynamics were all present a few decades ago when activists aggressively, and often illegally, campaigned to halt deforestation in the for-

ests of the Pacific Northwest and Rocky Mountains of the United States. Tree spiking, which involves putting metal or ceramic spikes in trees that are slated for logging, was among the most controversial of tactics. First used in anti-logging campaigns in Australia in the late 1970s and in Canada in 1982, radical environmentalists took up the practice with a vengeance in the United States during the 1980s and early 1990s.<sup>16</sup>

Tree spiking was a tactic that, it was hoped, when combined with blockades and other forms of sabotage, would bankrupt logging companies believed to be engaged in unsustainable and species-threatening logging. Failing that, the hope was that logging would slow down when some of it became unprofitable due to the additional costs of removing the spikes.

Although there have been examples of spiking leading directly to the quiet cancellation of a timber sale or to economic distress for a small logging company, the practice did not often, in a direct way, significantly reduce deforestation. It did, however, have another important impact. In a short period of time, the controversy it precipitated contributed significantly to public awareness of deforestation and related endangered species issues. As Mike Roselle, one of Earth First!'s cofounders, later claimed, before they began spiking trees nobody had even heard of the ancient forests or the threats to them. Indeed, before these campaigns the term *biodiversity* was not in the public lexicon, nor was its value advanced in public discourse. It took these campaigns to bring the very idea of biodiversity and its importance out from obscure scientific enclaves and into public view.<sup>17</sup>

With the occasional destruction of logging equipment, publicity stunts such as banner hangings, increasingly sophisticated blockades of logging roads, and the occupation of logging equipment or trees to prevent logging, public awareness of these issues grew. So did expressions of concern (and sometimes outrage) to public officials. In several cases, the resistance gained enough strength to orchestrate large protests that included mass arrests, as when in 1996 thousands of citizens gathered in a sparsely populated area of northern California to protest logging by the Pacific Lumber Company (PALCO) in ancient redwood groves. More than a thousand people were arrested for trespassing on land owned by the timber company.<sup>18</sup>

This, plus a decade of resistance to PALCO's practices, contributed to political pressures to reduce social disruption and the loss of political support, and it led to heightened scrutiny and a citation to the company for violating the law. Eventually, a deal was worked out to sell the most biologically precious old-growth groves to the state of California. Not long afterward, the company went bankrupt and was sold to another firm that promised to protect the remaining ancient groves and manage the rest of its forestland more gently.<sup>19</sup>

This was not the only case in which blockades of logging roads or tree

occupations, which were sustained for months and even years, forced concessions from business or resource managers or provided time for attorneys to win injunctions or lawsuits against the logging. Not incidentally, one rationale for extralegal resistance is the often-accurate charge, as validated in the courts in responses to lawsuits, that industries or the government itself had broken environmental laws. Such facts allow those engaged in resistance to contend that they are actually displaying respect for laws by risking arrest and incarceration in their efforts to force companies and the government to obey existing statutes. And when governments and corporations see that they are being monitored, it contributes to improved compliance with environmental laws and regulations.<sup>20</sup>

Sometimes resistance movements put so much pressure on government officials that major victories are won, as when the U.S. Forest Service under President Bill Clinton issued the Roadless Area Conservation Rule in 2001, which protected some 25 million hectares (more than 58 million acres) of federal forestland. Although it took more than a decade of legal battles for opponents of this rule to exhaust their legal challenges to it, this has become the law of the land. And it is inconceivable that this rule would have been issued without more than a decade of very strong and often disruptive resistance to the Forest Service's timber program. Although the rule does not do everything that activists sought, it is a significant advance for biodiversity conservation in North America.<sup>21</sup>

## A Time for Resistance?

People engaged in environmental causes around the world, including those who deploy resistance strategies, lose far more often than they win. But there are signs that direct action resistance is growing. Reports of desperate people resisting displacement from their lands and livelihoods for environmentally devastating projects justified under the rubrics of progress and development appear to be increasing in many regions, including in China, South America, Russia, and a variety of other sites. Increasingly, those resisting are threatening or even in a few cases resorting to violence, although such movements have generally been the object of far more violence than they have ever used against others.<sup>22</sup>

It is by no means certain that these movements will succeed or even survive the repression by authorities that they all too typically face. This will depend in no small measure on whether strong, international alliances are established and whether repressive acts are publicized internationally. Done in a way that minimizes or prevents reactionary counter-resistance and that does not lead to widespread public revulsion, ecological resistance has played and can continue to play a valuable and important role in environmental protection and sustainability.<sup>23</sup>

Indeed, direct action resistance can bring attention to issues in a way that electoral politics and lobbying cannot. It can inspire action and apply political pressure on corporate and governmental officials. Like a rowdy audience or angry coach riding a referee, it can affect the decisions that are made and even whether officials will enforce the law. More significant in the long term is that such resistance may even contribute to shifting the center of public debate more toward the positions of environmentalists.

That mainstream environmental organizations and actors are reticent to acknowledge the positive role of resistance is understandable. After all, they work within the system and by its rules, and it would seem hypocritical to work for laws, policies, and enforcement mechanisms while refusing to abide by society's existing laws. Yet there are many examples of individuals and groups honored today for obeying the overwhelming majority of existing laws while protesting highly consequential and exceptionally harmful immoral laws. Martin Luther King, Jr., for one, claimed that disobeying unjust laws and facing the consequences for doing so actually expresses the highest regard for the importance and value of the law as an institution.<sup>24</sup>

In August 2011, journalist and activist Bill McKibben and his group 350.org orchestrated a protest at the White House demanding action and leadership by the United States on climate change. The action led to 143 arrests that same day and over a thousand that month. Most prominent among those arrested was James Hansen, the head of the National Aeronautics and Space Administration's Goddard Institute for Space Studies. It was not Hansen's first arrest, for he had become so alarmed about climate change and the government's anemic response that he had decided the time for resistance had come. In 2013, more such protests are being organized.<sup>25</sup>

But how much more powerful these protests would be if there were a march on Washington comparable to those during the civil rights era and involving thousands of arrests by individuals demanding action on climate change? And how much more powerful yet if similar marches took place in Brussels, Beijing, Brasília, London, Moscow, Cairo, Pretoria, and other centers of power around the planet? Of course, there have been some large demonstrations already, beginning most notably with the anti-globalization protests at the World Trade Organization meeting in Seattle in 1999 and continuing at other such international meetings. But the complaints and demands in these cases were diluted, ultimately unspecific, and thus easier to ignore. Climate change protest could provide a unifying focus for forcing global changes toward sustainability. Indeed, as there are many precedents where "people power" has toppled regimes, the global nature of the threat posed by climate change certainly makes it feasible that social protest and unrest could force concerted action on the part of targeted governments and businesses.

Arguably, such protests would be all the more effective if they were protracted and scrupulously nonviolent, while also disrupting business as usual. Social disruption is often a prerequisite to concessions by political elites. Yet for such a dramatic, global movement of conscience to arise and gather strength, there would need to be leadership from the most powerful environmental organizations, alliance building by them and the world's religious communities, and careful planning regarding the kind of public theater that would be the most effective. Given how high the stakes are, and how slow the global response has been, it is reasonable to ask whether the time has come for the most prominent and respected environmental organizations and individuals to add another dimension to their advocacy for environmental sanity: direct action resistance.

If there are regrets in the struggle for sustainability among those who know the facts and the stakes involved, it may well be akin to the musings of Henry David Thoreau. Toward the end of his life, after noting how out-of-step he was with the conventional wisdom of his day, he commented, "If I repent of anything, it is very likely to be my good behavior. What demon possessed me that I behaved so well?" That is a timely question for us all.<sup>26</sup>

“One Million Missionaries, Thirteen Million Members,” press release (Provo, UT: 25 June 2007).

22. Isaiah Thompson, “Idealists for Hire,” *Philadelphia City Paper*, 11 August 2010; Dana R. Fisher, *Activism, Inc.* (Stanford, CA: Stanford University Press, 2006); Green Corps canvas operations, winter 2001, author’s observations.

23. Uzma Anzar, “Islamic Education: A Brief History of Madrassas With Comments on Curricula and Current Pedagogical Practices,” March 2003.

24. Population and area from Muchiri Karanja, “Myth Shattered: Kibera Numbers Fail to Add Up,” *Daily Nation*, 3 September 2010, and from Mikel Maron, “Kibera’s Census: Population, Politics, Precision,” *Map Kibera* (blog), 5 September 2010; school calculation based on Map Kibera’s education database at [www.mapkibera.org](http://www.mapkibera.org), viewed 11 December 2012, and on Mikel Maron, Map Kibera Trust, email to author, 11 December 2012.

25. Maron, email to author, op. cit. note 24.

26. Erik Assadourian, “The Living Earth Ethical Principles: Life of Service and Prepare for a Changing World,” *World Watch Magazine*, May/June 2009, pp. 34–35.

27. Erik Assadourian, “The Living Earth Ethical Principles: Right Diet and Renewing Life Rituals,” *World Watch Magazine*, November/December 2008, pp. 32–33; Sarah Catherine Walpole et al., “The Weight of Nations: An Estimation of Adult Human Biomass,” *BMC Public Health*, vol. 12 (2012), pp. 439–45.

28. Eduardo Porter, “Charity’s Role in America, and Its Limits,” *New York Times*, 13 November 2012.

29. Salvation Army USA, op. cit. note 18; Michael H. Shuman and Merrian Fuller, “Profits for Justice,” *The Nation*, 24 January 2005.

30. Friends World Committee for Consultation, *Finding Quakers Around the World* (Philadelphia: 2007); A. Glenn Crothers, *Quakers Living in the Lion’s Mouth* (Gainesville: University Press of Florida, 2012); see, for example, American Friends Service Committee, at [afsc.org/afsc-history](http://afsc.org/afsc-history).

31. Box 27–2 based on the following: Gary Gardner, “Engaging Religions to Shape Worldviews,” in Worldwatch Institute, *State of the World 2010* (New York: W. W. Norton & Company, 2010), pp. 23–29; Sarvodaya from Gary Gardner, *Invoking the Spirit* (Washington, DC: Worldwatch Institute, 2002), pp. 38–42.

32. Potsdam Institute for Climate Impact Research and Climate Analytics, *Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided* (Washington, DC: World Bank, 2012).

33. Walter M. Miller, Jr., *A Canticle for Leibowitz* (Philadelphia: Lippincott, 1959).

34. “A Wild Love for the World,” Joanna Macy interview by Krista Tippett, *On Being*, American Public Media, 1 November 2012.

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1. “The Religion and Politics of Earth First!,” *The Ecologist*, November/December 1991, pp. 258–66; “Radical Environmentalism” and “Earth First! and the Earth Liberation Front,” in Bron Taylor, ed., *The Encyclopedia of Religion and Nature* (New York: Continuum, 2005), vol. 2, pp. 1,326–35, and vol. 1, pp. 518–24; Bron Raymond Taylor, ed., *Ecological Resistance Movements: The Global Emergence of Radical and Popular Environmentalism* (Albany: State University of New York Press, 1995).

2. Derrick Jensen and Lierre Keith, *Earth at Risk* (video), at PMPress/Flashpoint, 2012; Deep Green Resistance, at [deepgreenresistance.org](http://deepgreenresistance.org); Aric McBay, Lierre Keith, and Derrick Jensen, *Deep Green Resistance: Strategy to Save the Planet* (New York: Seven Stories Press, 2011).

3. For an example of radical prescriptions, see Alex Budd, “Time is Short: Systems Disruption and Strategic Militancy,” *DGR (Dark Green Resistance) News Service*, 24 October 2012; for an influential anti-pacifism statement in 1994, see Ward Churchill, “Pacifism as Pathology,” in *Pacifism as Pathology: Reflections on the Role of Armed Struggle in North America* (Oakland, CA: AK Press, 2007).

4. Bron Taylor, “Environmental Ethics,” in Taylor, *Encyclopedia*, op. cit. note 1, vol. 1, pp. 597–606.

5. Bron Taylor, *Dark Green Religion: Nature Spirituality and the Planetary Future* (Berkeley: University of California Press, 2010).

6. James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven, CT: Yale University Press, 1985); Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Berkeley: University of California Press, 1989, expanded edition 2000).
7. Peter Galvin and Kieran Suckling, cofounders of the Center for Biological Diversity, discussion with author, 1 August 1992.
8. Donella H. Meadows, Jørgen Randers, and Dennis L. Meadows, *The Limits to Growth: The 30-Year Update* (White River Junction, VT: Chelsea Green Publishing Company, 2004); William Catton, *Overshoot: The Ecological Basis of Revolutionary Change* (Chicago: University of Illinois Press, 1980); Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking, 2005).
9. For green anarchism, see John Zerzan, *Future Primitive* (Columbia, MO: C.A.L. Press, 1994); *Elements of Refusal* (Seattle, WA: Left Bank Books, 1988); John Zerzan, ed., *Against Civilization: Readings and Reflections*, 2nd ed. (Los Angeles, CA: Feral House, 2005); for a sense of the scale of such activism, see [greenanarchy.org/earthliberation](http://greenanarchy.org/earthliberation).
10. Steven Stoll, "Farm against forest," in M. L. Lewis, ed., *American Wilderness: A New History* (New York: Oxford University Press, 2007); Julie L. Lockwood and Michael L. McKinney, eds., *Biotic Homogenization* (New York: Springer, 2001); Jared Diamond, "The Worst Mistake in the History of the Human Race," *Discover*, May 1987, pp. 64–66; Jared Diamond, *Guns, Germs, and Steel* (New York: W. W. Norton & Company, 1997); Jim Mason, *An Unnatural Order: Uncovering the Roots of Our Domination of Nature and Each Other* (New York: Simon and Schuster, 1993); Paul Shepard, *Coming Home to the Pleistocene* (Washington, DC: Island Press, 1998); Clive Ponting, *A New Green History of the World: The Environment and the Collapse of Great Civilizations*, rev. ed. (New York: Penguin Books, 2007).
11. Kera Abraham, "Flames of Dissent" (five-part series), *Eugene Weekly*, 2006; Vanessa Grigoriadis, "The Rise and Fall of the Eco-Radical Underground," *Rolling Stone*, 10 August 2006, pp. 73–77, 100–07; "Operation Backfire," at [en.wikipedia.org/wiki/Operation\\_Backfire\\_\(FBI\)](http://en.wikipedia.org/wiki/Operation_Backfire_(FBI)).
12. For rules of radical activism, see Saul David Alinsky, *Rules for Radicals* (New York: Random House, 1971), and Bron Taylor, "Experimenting with Truth," in Steven Best and Anthony J. Nocella, eds., *Igniting a Revolution: Voices in Defense of the Earth* (Oakland, CA: AK Press, 2006), pp. 1–7; interviews with affected activists in Oregon and California, September and October 2011.
13. Joel E. Cohen, *How Many People Can the Earth Support?* (New York: W. W. Norton & Company, 1995); Garrett Hardin, *Living within Limits* (New York: Oxford University Press, 1993).
14. Bron Taylor, "Deep Ecology and Its Social Philosophy: A Critique," in E. Katz, A. Light, and D. Rothenberg, eds., *Beneath the Surface: Critical Essays on Deep Ecology* (Cambridge, MA: The MIT Press, 2000), pp. 269–99.
15. Taylor, *Ecological Resistance Movements*, op. cit. note 1; David Helvarg, *The War against the Greens* (San Francisco: Sierra Club Books, 1992); Andrew Rowell, *Green Backlash: Global Subversion of the Environmental Movement* (New York: Routledge, 1996).
16. Jeni Kendell and Eddie Buivids, *Earth First: The Struggle to Save Australia's Rainforest* (Sidney, Australia: ABC Enterprises, 1987); Paul Watson, "In Defense of Tree Spiking," *Earth First!* 10.8 (1989): pp. 8–9.
17. Mike Roselle, discussion with author, 8 March 1992; Mike Roselle, *Tree Spiker: From Earth First! to Lowbagging: My Struggles in Radical Environmental Action* (New York: St. Martin's Press, 2009).
18. "Hundreds Arrested at Protest Against Redwood Logging," *Los Angeles Times*, 16 September 1996.
19. David Harris, *The Last Stand: The War between Wall Street and Main Street over California's Ancient Redwoods* (New York: Times Books/Random House, 1995); Richard Widick, *Trouble in the Forest: California's Redwood Timber Wars* (Minneapolis: University of Minnesota Press, 2009); Bill Dawson, "Redwood Protests Ease amid Reports of Deal," *Houston Chronicle*, 17 September 1996.
20. Bron Taylor, "Earth First! Fights Back," *Terra Nova* 2.2, spring 1997, pp. 29–43; Nina Witoszek, Lars Trägårdh, and Bron Taylor, eds., *Civil Society in the Age of Monitory Democracy* (New York: Berghahn Books, 2013).
21. For the October 2011 ruling in *Wyoming v. United States Department of Agriculture*, see [caselaw.findlaw.com/us-10th-circuit/1583397.html](http://caselaw.findlaw.com/us-10th-circuit/1583397.html); "US Supreme Court Supports Clinton's Roadless Rule," at [pennfuture.blogspot](http://pennfuture.blogspot)

.com/2012/10/us-supreme-court-supports-clintons.html, and at [wilderness.org/blog/roadless-rule-becomes-law-land](http://wilderness.org/blog/roadless-rule-becomes-law-land).

22. Helvarg, op. cit. note 15; Will Potter, *Green Is the New Red: An Insiders Account of a Social Movement under Siege* (San Francisco: City Lights Books, 2011); Christian Parenti, *Tropic of Chaos: Climate Change and the New Geography of Violence* (New York: Nation Books, 2011).

23. On the changing political discourse, see Bron Taylor, “The Religion and Politics of Earth First!” *The Ecologist*, November/December 1991, pp. 258–66, and Taylor, *Ecological Resistance Movements*, op. cit. note 1; Lynne Davis, ed., *Alliances: Re/Envisioning Indigenous-Non-Indigenous Relationships* (Toronto, Canada: University of Toronto Press, 2010).

24. Martin Luther King, Jr., “Letter from Birmingham Jail,” in S. Jonathan Bass and Martin Luther King, *Blessed Are the Peacemakers* (Baton Rouge: Louisiana State University Press, 2001).

25. Mark Drajem, “NASA’s Hansen Arrested Outside White House at Pipeline Protest,” *Bloomberg*, 29 August 2011; see also [www.350.org](http://www.350.org).

26. Henry David Thoreau, *The Annotated Walden*, ed. Philip Van Doren Stern (New York: Barnes and Noble, 1970), p. 153.

## Chapter 29. The Promises and Perils of Geoengineering

1. Box 29–1 based on Royal Society, *Geoengineering the Climate: Science, Governance and Uncertainty* (London: 2009), and on D. Keith, “Geoengineering the Climate: History and Prospects,” *Annual Review of Energy and the Environment*, vol. 25 (2000), pp. 245–84.

2. For an accessible discussion of geoengineering options, see J. Goodell, *How to Cool the Planet* (New York: Mariner Books, 2010); for an authoritative statement of the current state of geoengineering research, see The Royal Society, op. cit. note 1.

3. Intergovernmental Panel on Climate Change (IPCC), Expert Meeting on Geoengineering, Lima, Peru, 20–22 June 2011; U.S. government efforts from E. Kintisch, *Hack the Planet* (Hoboken, NJ: John Wiley & Sons, 2010), p. 12.

4. Holdren quoted in A. Jha, “Obama Climate Adviser Open to Geo-engineering to Tackle Global Warming,” (London) *Guardian*, 8 April 2009.

5. J. Fleming, *Fixing the Sky: The Checkered History of Weather and Climate Control* (New York: Columbia University Press, 2010).

6. L. Lane et al., eds., *Workshop Report on Managing Solar Radiation*, Ames Research Center, 18–19 November 2006 (Washington, DC: National Aeronautics and Space Administration, 2007).

7. J. Fleming, “The Climate Engineers: Playing God to Save the Planet,” *Wilson Quarterly*, spring 2007, p. 46.

8. P. Crutzen, “Albedo Enhancement by Stratospheric Sulfur Injections: A Contribution to Resolve a Policy Dilemma?” (essay), *Climatic Change*, August 2006, pp. 212, 217.

9. Periodic assessments from the IPCC available at [www.ipcc.ch](http://www.ipcc.ch); a useful popular primer is B. McKibben, “Global Warming’s Terrifying New Math,” *Rolling Stone*, 2 August 2012.

10. IPCC, *Third Assessment Report: Climate Change 2001—Working Group III: Mitigation*, section 4.7.

11. Figure 29–1 designed by Isabelle Rodas.

12. A. Ridgwell et al., “Tackling Regional Climate Change by Leaf Albedo Bio-geoengineering,” *Current Biology*, vol. 19, no. 2 (2009), pp. 146–50; U.S. Department of Energy, “Secretary Chu Announces Steps to Implement Cool Roofs at DOE and Across the Federal Government,” press release (Washington, DC: 19 July 2010).

13. See C. Mims, “‘Albedo Yachts’ and Marine Clouds: A Cure for Climate Change?” *Scientific American*, 21 October 2009.

14. Gates Foundation from O. Dorell, “Can Whiter Clouds Reduce Global Warming?” *USA Today*, 11 June 2010; for what Ken Caldeira calls the “Pinatubo option,” see Kintisch, op. cit. note 3, p. 56.

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ISBN 13: 978-1-61091-449-9

ISBN 10: 1-61091-449-X



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