Three Questions on Climate Change

Clare Palmer[*]

Climate change will have highly significant and largely negative effects on human societies into the foreseeable future, effects that are already generating ethical and policy dilemmas of unprecedented scope, scale, and complexity. One important group of ethical and policy issues raised here concerns what I call *environmental* values. By this I do not mean the impact that climate change will have on the environment as a valuable human resource, nor am I referring to the changing climate as a threat to humans in terms of floods, storms, and droughts, important as these are. Rather, I am concerned with the way climate change—and the policies that may be adopted to respond to it—threatens both things we value and, potentially, some of our environmental values themselves.

WHAT ARE THE ETHICAL AND POLICY ASPECTS?

Many people value the nonhuman world, or aspects of it, in ways that do not directly concern its usefulness as a resource. One key value is that of *wildness* or *naturalness* as understood to mean "human independence," especially in terms of origin. The U.S. Wilderness Act of 1964, for example, was created to protect places "where the earth and community of life are untrammeled by man."[1] Many people also value particular *places*, that is, places that matter to them personally, that form part of family or community narratives, or that are iconic in regional or national histories. *Species* are also widely valued for reasons other than their actual or potential usefulness: for their beauty, their strangeness, their familiarity, or simply because they exist. Without denying that other values

are also at stake, or that such value-laden narratives are open to critique, the values of wildness, species, and place are, nonetheless, culturally important.[2] This is especially true in the United States, where "the wild" and "wilderness" were particularly significant in the construction of the European settler national identity.[3]

To begin with wildness: Through the changing climate, global ecological processes are being influenced by human activities on a large scale, even where few humans are physically present. For instance, research shows that over the last thirty to forty years in the northwest Eurasian tundra willow and alder, which previously grew there only as ground-hugging shrubs, have become trees two meters in height, changing the landscape into forest and creating "structurally novel ecosystems."[4] These ecosystems, though not intentionally created by humans, have nonetheless been brought about, in part, by anthropogenic global warming. On some interpretations, such human influence on ecosystems through a changing climate means that they have lost value in terms of their wildness or "naturalness."[5] Such changes will also have significant impacts on *places* valued for their very particular character and history, ranging from small-scale environments valued by their local communities (thus, changes in the Eurasian tundra will affect indigenous reindeer-herding groups in the Eurasian Arctic) to large-scale iconic landscapes of national or even global value, such as Glacier National Park. And climate change will likely also lead to the extinction of many valued species. The most well-known (though controversial) estimate is that 15 to 37 percent of the world's species will be committed to extinction by 2050.[6]

Some climate changes will affect locations that manifest wildness, species, *and* place values. Take, for example, the tree line of the American Rockies, the habitat of the whitebark pine. An imported fungus, whitebark pine blister rust, together with the mountain pine beetle (thought to be increasingly active owing to warmer winters), is now killing large numbers of whitebark pine. Climate change looks likely to push the whitebark pine still nearer extinction, as its mountain environments warm; and some scientists suggest that the whitebark pine is likely to lose more than 97 percent of its current climatic niche within the United States by 2085.[7] Yet twisted, battered "krummholz" communities of ancient whitebark pine are important to a widely shared sense of place in the American mountain West, where they are icons of wildness in a harsh, challenging mountain climate and are highly valued as a species. Such mountain tree lines, even if colonized by other tree species, would become different places without whitebark pine. If, as John O'Neill, Alan Holland, and Andrew Light argue, what matters to us in

344   *Clare Palmer*

part are "particular beings and places constituted by their particular histories," then climate change poses a troubling threat to existing valued environments.[8]

We might hope that climate policies would reduce or prevent such losses, but given the kinds of values at stake, and the pervasive nature of climate change, it is not clear that they will, or can, succeed in doing so. Many policies aimed at *mitigating* climate change may themselves threaten wild locations and valued places; in fact, it can be argued that the *intentional* nature of climate policies may compromise wildness more than the *unintended* effects of climate change. For instance, policies to switch energy production from fossil fuels to nuclear power, offshore wind farms, or desert-based solar panels all have the potential to reduce wildness, threaten species, and significantly change valued places, even while they slow or reduce overall climate threats.

This raises my second concern: that climate change threatens our ability to uphold certain environmental values themselves. Policies that attempt to protect one environmental value may well have the effect of compromising another. And some environmental values may become so difficult to protect that trying to hold onto them—at least in a policy context—may be impractical, and a distraction from what can, realistically, be achieved. To illustrate: Proposals to protect endangered valuable species that can no longer survive *in situ* by moving them to new locations—a process called "assisted migration"—may threaten other environmental values. Selected strains of rust-resistant whitebark pine, if planted further north in the Canadian Rockies to prevent extinction, would lose the wildness value associated with their current tree-line location; these relocated trees would, after all, have been genetically chosen and selectively located. Any existing narrative of valuable place in the new Canadian location would be disrupted; and (though this seems highly unlikely in the case of the whitebark pine) the flourishing of a non-native species migrated to a new location might endanger the flourishing of native species in the recipient system, thus threatening the very species value the whitebark pine was moved to protect.[9]

While in the past it was frequently possible to protect valuable species and wild places together, doing so in an era of climate change is increasingly difficult; while tensions between these different environmental policy goals were once latent, now they are unavoidable. Some of those who have recognized this difficulty have argued for a reprioritization, or even a revisiting, of the environmental values embedded in environmental policies. Ronald Sandler, for instance, argues that, in the light of rapid and uncertain ecological change, species preservation should

be de-emphasized.[10] Preserving species where they currently are, he argues, will inevitably fail owing to a changing climate; but assisted migration is very rarely justified, since it frequently fails, and the moved species may become invasive. Also, by moving a species many associated values (such as wildness and place) are anyway lost. Conservation practice should, he suggests, focus instead on providing adaptive space (such as wildlife corridors) for populations and systems, and managing land for the provision of ecosystem services, such as clean water and carbon sequestration.

Others, such as Emma Marris, Peter Kareiva, and Michelle Marvier, argue that we should move away from emphasizing the value of wildness—or at least wildness as it is traditionally understood—and instead explore what kind of "post-wild world" or "rambunctious garden" we want to live in.[11] To defend this position would require a much longer discussion than this one, but these are clearly central questions for environmental ethics and policy in a world of anthropogenic climate change.

What Does the Public Need to Know?

While almost everyone surveyed in Western industrial countries has heard of "climate change," "global warming," or "the greenhouse effect," research also suggests that "people's beliefs about climate change are complex and situationally dependent (to a degree) and that members of the public disagree with one another regarding nearly every facet of the issue."[12] In the United States, in particular, a significant minority of "the public" does not accept that climate change is happening at all; and among those who do accept that the climate is changing, there is uncertainty about causes. Data suggest that only half of those who accept that climate is changing attribute this change to human activities (a 2013 survey puts this figure at 49 percent).[13] And among those, in the United States at least, who think that climate change is happening, is anthropogenic, and is a problem, there is still confusion about which human activities are actually responsible.[14] Clearly, large groups of the public still do not have a basic understanding of climate change—not least that there is virtual scientific consensus both that climate change is happening (accepted by only 42 percent in the United States),[15] and that the basic causal mechanisms are anthropogenic greenhouse gas emissions.

The question here, though, is not just what empirical information about climate change people *actually* have, but what the public needs to know, and for what end.

346   *Clare Palmer*

Better public knowledge should not just increase information but rather help to achieve goals such as assisting people to protect themselves from the effects of climate change, helping them to consider how to prevent harm and suffering to others (including future people and nonhumans) and how to reduce the loss of valued places, species, and wilderness. The needed public knowledge, then, should combine empirical information about the causes and likely effects of climate change on humans and the environment with strategic and practical information about how to reduce these threats, probably focusing on how members of the general public could change their behavior in order to do so.

However, while better knowledge about climate change among the general public may be *necessary* to achieve these goals, it is not *sufficient*—for several reasons. Many ways in which the public contributes to climate change are somewhat indirect (for instance, through embedded emissions in purchased goods, rather than directly produced emissions such as through burning gas in a car); and many emissions are produced by sources other than the general public. But even if we only focus on direct emissions, as I discuss below, evidence suggests that obstacles litter the path that leads from individuals' knowledge about climate change to a reduction in emissions-producing behavior.

What Needs to Be Done?

Obviously, a variety of constituencies (individuals, corporations, small businesses, local and national governments, international agencies, technological researchers, and so on) need to act to address climate change. Here I will focus on just one small area, but one nonetheless worth tackling: reducing the greenhouse gas emissions of the relatively affluent individuals in wealthy countries who by their lifestyles are very significant producers of these emissions. I will narrow the concern still further by considering the possibility of *voluntary* behavioral change in the absence of major policy instruments that strongly financially incentivize or coerce such change—especially given that, in many affluent nations, there is little short-term likelihood of such policies being adopted. It has been argued that the "behavioral wedge" from altering individual choices could result in a decrease of 7.4 percent of emissions in the United States and could have relatively quick returns—in contrast to, say, waiting for successful technological or policy change.[16] However, motivating such a behavioral shift is clearly difficult.

Ethicists have pointed out that climate change is not a "paradigm" ethical issue (in the sense that one individual deliberately harming another would be). Instead, it is caused by the actions of billions of people, many of whom are now dead; it will affect billions of people (and nonhumans), most of whom are spatially distant or not yet alive; there is a significant disjunction between causal actions and harmful effects; and it is brought about by doing something—emitting greenhouse gases—that would not be morally problematic if millions of others were not doing it, too.[17] This creates what Stephen Gardiner calls a "grasping" problem. And psychological studies appear to support this ethical analysis, showing that, for instance, people generally have difficulties in recognizing moral duties to other people who are temporally or spatially distant.[18] More specifically, the majority of Americans do not perceive climate change as "hitting home"—that is, as likely to harm themselves, their family, or people in their community.[19] Climate change is also abstract and analytically complex, failing to trigger the "rapid, emotional, visceral reactions" that often underpin moral responses.[20] Research also suggests that concerns about harm and fairness, central to most ethical debates about climate change, are not everyone's moral priority. Conservatives, for instance, may prioritize loyalty, respect for authority, and sanctity, but these have so far played little part in discussions about climate ethics.[21]

To change individual behaviors, then, requires not only that people know more about climate change but also—and more problematically—that climate change is made psychologically salient in the right kinds of ways to activate appropriate moral and behavioral responses. However, we do have recent psychological research outlining possible strategies that may help to achieve this. E. M. Markowitz and A. F. Shariff, for instance, suggest alternating the framing of climate change in ways that appeal to a variety of different moral foundations (including those relating to the "sanctity of nature"), not just to those based on harm and fairness. They also suggest focusing on the future of specific existing children, rather than on faceless future generations, distant in time.[22]

Many of the *environmental* shifts that climate change brings, such as migration and extinction of species and changes in leafing and blooming times, signal the loss of things and states we value, but may be imperceptible in the short term, despite being significant over longer periods. Because of their slow, gradual nature, such ecological shifts may also lack psychological salience. This suggests the need for strategies to increase the psychological salience of the environmental impacts of climate change, though I do not know of specific research aimed at developing

Clare Palmer

such strategies. Nonetheless, initiatives that may have this effect do exist. For instance, a new art installation in the 606 Park in Chicago involves planting 453 apple serviceberry trees to "bloom in a wave, spreading east to west over the course of five days, thanks to Chicago's legendary lake effect, which keeps temperatures cooler near Lake Michigan."[23] The installation has been set up with barcoded trees, allowing the annual dates of tree blossoming—and changes in these dates—to be tracked by scientists and the public alike. Admittedly, such projects are likely to affect only a small, resident, and (probably) already concerned population; and empirical studies would be needed to examine whether exposure to projects such as this, over time, actually does change emission-producing behaviors. But at least this kind of project can demonstrate to individuals—in ways that more abstract arguments about effects that are distant in time and space do not—how climate change is indeed hitting home by having measurable effects on familiar environments and cherished places.

Of course, such strategies to increase psychological salience by framing climate change in different ways—for instance, ways that show that climate impacts are not distant and faceless, but are here and now—may have little effect on individual behavior. The link between actually seeing the climate changing in undesirable ways and changing one's behavior is not necessarily direct. A recent British report identifies the phenomenon of "practical denial"—the view held by 65 percent of Britons that "there is nothing I can do personally that will have any significant effect on changing climate."[24] If that is the case, then policy instruments involving nudges, strong incentives, or some degree of coercion will ultimately become the primary way of promoting behavioral changes, even though acceptance of such policies in most affluent countries looks far off.[25]

More positively, attempts to raise the awareness of climate change impacts on our own places and place-narratives through diverse media, including art, performance, film, horticulture, and local natural histories may already be contributing to changes in behaviors. Such awareness-shifting projects can and to some extent are being pursued by civil societies, nongovernmental organizations, and corporations even before national policies are in place. The effects of such projects need to be studied. But given that they can be small in scale, driven by individual creativity, and involve local communities, they seem worth undertaking in the short and medium term—and they have multiple additional aesthetic and community benefits. As just one strategy, among the many necessary strategies, for attempting to address climate change, it surely is worth a try.

NOTES

1. United States Wilderness Act, Pub. L. No. 88–577, 16 U.S.C. 1131–36, 88th Cong., 2nd Session, September 3, 1964, www.wilderness.net/nwps/legisact.
2. Katie McShane, "Some Challenges for Narrative Accounts of Value," *Ethics & the Environment* 17, no. 1 (2012), pp. 45–69.
3. Roderick Frazier Nash, *Wilderness and the American Mind*, 4th ed. (New Haven, Conn.: Yale University Press, 2001); and William Cronon, "The Trouble with Wilderness," in William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W. W. Norton & Company, 1995), pp. 69–90.
4. Marc Macias-Fauria et al., "Eurasian Arctic Greening Reveals Teleconnections and the Potential for Structurally Novel Ecosystems," *Nature Climate Change* 2, no. 1 (2012), pp. 613–18.
5. Bill McKibben, *The End of Nature* (New York: Random House, 1989).
6. Chris D. Thomas et al., "Extinction Risk from Climate Change," *Nature* 427 (2004), pp. 145–48.
7. S. C. McLane and S. N. Aitken, "Whitebark Pine (*Pinus albicaulis*) Assisted Migration Potential: Testing Establishment North of the Species Range," *Ecological Applications* 22, no. 1 (2012), pp. 142–53.
8. John O'Neill, Alan Holland, and Andrew Light, *Environmental Values* (London: Routledge, 2008).
9. See Clare Palmer and Brendon Larson, "Should We Move the Whitebark Pine? Assisted Migration, Ethics and Global Environmental Change," *Environmental Values* (forthcoming). On early view at: www.erica.demon.co.uk/EV/papers/Palmer.pdf.
10. Ronald Sandler, "Climate Change and Ecosystem Management," *Ethics, Policy and Environment* 16 no. 1 (2013), pp. 1–15.
11. Peter Kareiva and Michelle Marvier, "What is Conservation Science?" *BioScience* 62, no. 11 (2012), pp. 962–69; and Emma Marris, *Rambunctious Garden: Saving Nature in a Post-Wild World* (New York: Bloomsbury, 2011).
12. Janet K. Swim, Ezra M. Markowitz, and Brittany Bloodhart, "Psychology and Climate Change: Beliefs, Impacts, and Human Contributions," in Susan Clayton, ed., *The Oxford Handbook of Environmental and Conservation Psychology* (New York: Oxford University Press, 2012), pp. 645–72.
13. Anthony Leiserowitz et al., *Climate change in the American mind: Americans' global warming beliefs and attitudes in April 2013*, Yale University and George Mason University (New Haven, Conn.: Yale Project on Climate Change Communication, 2013).
14. A. Leiserowitz and N. Smith, *Knowledge of Climate Change across Global Warming's Six Americas* (New Haven, Conn.: Yale Project on Climate Change Communication, 2010).
15. Leiserowitz et al., *Climate change in the American mind*.
16. Thomas Deitz et al., "Household Actions Can Provide a Behavioral Wedge to Rapidly Reduce US Carbon Emissions," *PNAS* 106, no. 44 (2009), pp. 18452–56.
17. See Dale Jamieson, "Climate Change, Responsibility and Justice," *Science and Engineering Ethics* 16, no. 3 (2010), pp. 431–45; and Stephen Gardiner, *A Perfect Moral Storm: The Ethical Tragedy of Climate Change* (New York: Oxford University Press, 2011).
18. Leiserowitz and Smith, *Knowledge of Climate Change across Global Warming's Six Americas*.
19. Leiserowitz et al., *Climate change in the American mind*.
20. Ezra M. Markowitz and Azim F. Shariff, "Climate Change and Moral Judgement," *Nature Climate Change* 2, no. 4 (2012), pp. 243–47.
21. Jonathan Haidt and Jesse Graham, "When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals may not Recognize," *Social Justice Research* 20, no. 1 (2007), pp. 98–116.
22. Markowitz and Shariff, "Climate Change and Moral Judgement," pp. 243–47.
23. Lori Rotenberk, "When It Comes to Climate Change, This Artist Lets the Trees Do the Talking" *Grist*, December 3, 2013, grist.org/people/when-it-comes-to-climate-change-this-artist-lets-the-trees-do-the-talking/.
24. Jonathan Rowson, *A New Agenda on Climate Change*, RSA Action and Research Centre, December 2013. Download the report at: www.thersa.org/action-research-centre/learning,-cognition-and-creativity/social-brain/reports/a-new-agenda-on-climate-change.
25. T. J. Kasperbauer makes this argument in "The Implications of Psychological Limitations for the Ethics of Climate Change" (unpublished paper, 2014).