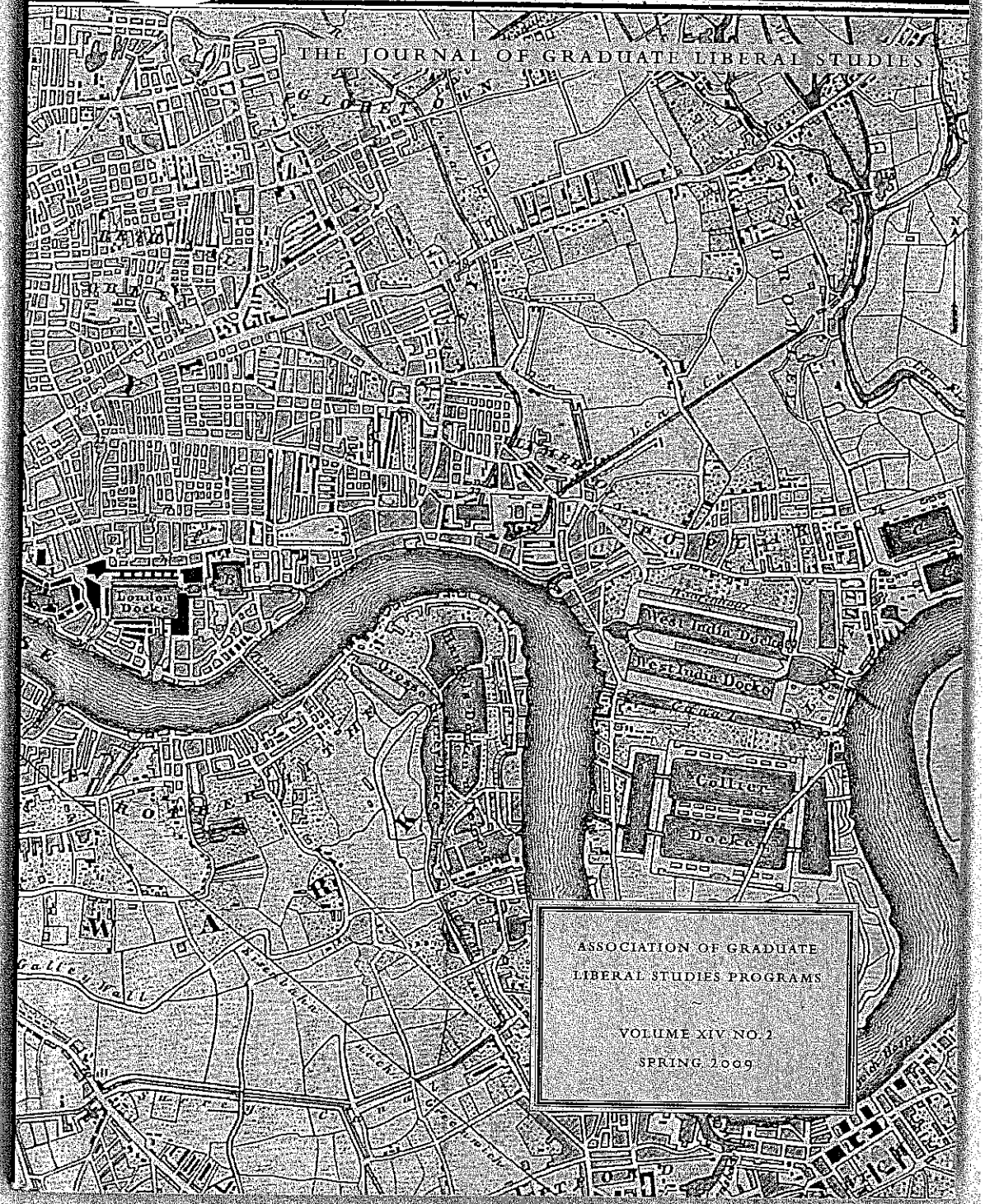
Confluence

THE JOURNAL OF GRADUATE LIBERAL STUDIES



ASSOCIATION OF GRADUATE
LIBERAL STUDIES PROGRAMS

VOLUME XIV NO. 2

SPRING 2009

Confluence

VOLUME XIV ~ NUMBER 2 ~ SPRING 2009
WWW.CONFLUENCE.OU.EDU

Confluence *is a national, interdisciplinary journal published by the Association of Graduate Liberal Studies Programs that reflects the best scholarly and creative work of graduate liberal studies programs. Its broad scope will include scholarly essays and creative work such as short stories, poetry, creative nonfiction, and visual art. Contributors will be all those affiliated with such programs—students, alumni, faculty, and others. From this exchange of ideas and art, the association hopes to generate intellectual discussion, foster an understanding of the range of its multidisciplinary activities, and stimulate research and creative endeavors among its readers.*

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Melting Ice:
Climate Change and the Humanities

The sciences alone cannot work out a sufficiently far-reaching response to climate change.

Jennifer Wells and Carolyn Merchant

Perhaps no issue is as critical for the long-term well-being of humanity in the twenty-first century as climate change. There is now broad agreement among scientists that anthropogenic or human-driven inputs exacerbate climate change and that a wide range of ways to manage its effects is possible. But bringing the implications of global warming and potential resolutions to the American public requires the collaboration not only of scientists but also of humanists. Moving beyond the sciences, we should take note of human elements of climate change and in particular study how the humanities can and should engage with this complex field. In *The End of Nature*, Bill McKibben argued that no area of the earth today remains untouched by human pollution, including the atmosphere of the Arctic; first (evolved, prehuman) nature has been totally subsumed by humans and the human artifacts of second (commodified) nature.[1] Global warming thus calls for new and plural understandings of nature, the nature-culture web, and the post-human technonature that follows.

Ethicists, writers, poets, artists, and theologians have responded to issues

surrounding global climate change and its differing effects on peoples of different race, class, and gender. Humanists are probing such questions as what nature was and is, what it means to be human and techno-adaptive in the Age of Warming, and how climate change debates engaged by scientists and humanists illuminate options for the future.

Four overlapping themes offer insights into the humanistic dimensions of climate change: climate ethics, climate justice, climate change and the arts, and climate change and religion. The sciences, history, art history, English, philosophy, and religious studies have made significant contributions as have artists, writers, philosophers, and theologians. A theoretical framework for the environmental humanities and new theories of ethics and justice are applicable to large-scale, complex environmental problems.

The Earth Charter of 2000 states:

> We stand at a critical moment in Earth's history, a time when humanity must choose its future....In the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny....It is imperative that we, the peoples of the Earth, declare our responsibility to one another, to the greater community of life, and to future generations.[2]

The cross-cutting theme of the "humanistic dimensions of climate change" can help individuals resolve personal dilemmas and governing bodies resolve political dilemmas concerning the human implications of climate change.

Climate Change as a Scientific Issue

As a result of the Conference on Global Warming held in Kyoto, Japan, in 1997, the Kyoto Protocol was drafted with the goal of cutting emissions of greenhouse gases by 5 percent of 1990 levels by 2012. Revised in Brussels in 2001, the Protocol was ratified in 2005 by thirty of the world's industrialized nations, with the United States and Australia holding out for developing nations to be included in the targets. Within the United States, however, California has assumed a leadership role with the passage of the Global Warming Solutions Act of 2006 (AB32), which seeks to reduce greenhouse gas emissions to 1990 levels by 2020, and in September 2007, California's Governor Arnold Schwarzenegger addressed the United Nations on the urgency of responding to global climate change.[3]

Scientific consensus on the severity of unmanaged climate change is well established, but the extent to which global warming can be mitigated and the ways it can be managed are still under discussion. Recent data match certain

predictions of leading climate scientists for the past thirty years, such as: the bleaching of one half of the world's coral reefs (1998); devastating droughts and floods throughout much of the world (1995-2007); and the fact that fourteen of the past fifteen years have been the hottest in recorded history. In addition, some events have occurred that seem worse than most climate scientists had predicted, owing to multiple "feedback effects," leading to a marked increase in the speed of glacial melting. In September 2007, a piece of ice twice the size of the United Kingdom broke off the Greenland ice sheet. It now appears that the fabled Northwest shipping passage through the Arctic will soon become a reality.[4] Circumpolar countries are vying for rights to oil reserves under the melting ice.

Through four Working Groups between 2001 and 2007, the Nobel Prize winning Intergovernmental Panel on Climate Change (IPCC)[5] analyzed data on climate change and presented scenarios for managing its impact. Additionally, numerous peer-reviewed scientific papers and scholarly books have assessed environmental impacts from the poles to the tropics and human impacts from the poor to the affluent, while skeptics have challenged the rates and severity of anthropogenic changes and possibilities for effective mitigation. The issues and debates surrounding the severity of climate change and its impact on humanity and the environment demand immediate attention.

Responding to global warming is now considered by many to be "the moral imperative of our time." In 2005, 56 percent of the American public considered global warming a very serious issue.[6] With the release of Al Gore's film, *An Inconvenient Truth*, in the summer of 2006, public concern skyrocketed, and Gore himself has pledged to work toward the signing of an international treaty. In receiving the 2007 Nobel Peace Prize, awarded jointly to Gore and the IPCC, Gore characterized the problem as "a moral and spiritual challenge to all of humanity." By 2007, 57 percent of those in a recent survey believed that global warming was caused by human activities, while 66 percent agreed that the United States could take actions that would help reduce global warming and 55 percent believed that they themselves could take individual actions to reduce global warming.[7] Environmental programs and courses on college campuses are overflowing with students who wish to be informed on issues and approaches to the resolution of climate change for their own futures and those of their children and grandchildren.

Scenarios for dealing with global warming range from continuing business as usual to taking drastic measures now before it is too late. Skeptics such as Bjørn Lomborg[8] argue that imposing limits on greenhouse gas (GHG) emissions is ineffective and too costly, while Ted Nordhaus and Michael Schellenberger maintain that it is politically unfeasible and that efforts to

convince Americans to adopt changes will be unpersuasive.[9] Nevertheless, of those surveyed by Anthony Leiserowitz, 67 percent strongly favor "requiring automakers to increase the fuel efficiency of cars, trucks, and SUVs to 35 miles per gallon, even if it means that a new car would cost up to $500 more to buy"; 64 percent favor "requiring any newly constructed home, residential, or commercial building to meet higher energy efficiency standards"; 55 percent strongly favor "requiring electric utilities to produce at least 20 percent of their electricity from wind, solar, or other renewable energy sources, even if it cost the average household an extra $100 a year"; and 42 percent strongly favor an international treaty that requires the United States to cut its emissions of carbon dioxide by 90 percent by 2050.[10] Scientific issues and debates about climate change set up possibilities for responses by the humanities.

Climate Change as an Issue for the Humanities

The topic of climate change has taken on increasing cogency among all branches of the humanities. Four themes—ethics, justice, the arts, and religion—reflect advances made in these areas of inquiry, creating a foundation for a "humanities of climate change." Significant questions are:

- In what ways are the humanities responding to awareness of global climate change and how are they formulating responses to the dilemmas posed by it?
- What ethical systems are being developed to help individuals resolve personal dilemmas, peoples resolve social-cultural dilemmas, and governing bodies resolve political dilemmas concerning the human implications of climate change?
- What impacts of global warming on peoples of different race, class, and gender in the United States are being addressed through the humanities? What is justice and how do scholars think it might it be achieved, given that climate change is expected to exacerbate existing inequities? Are new theories of justice needed?
- What conceptions of nature and human interactions with nature ("nature-cultures") are particularly pertinent to understanding global climate change, and how might new conceptions contribute to crafting productive and just responses? How might such ideas and concepts contribute to an emerging theory of the environmental humanities?
- What specific contributions to raising public awareness of global climate change are being made by writers, philosophers, artists, historians, and theologians? In what ways do representations of nature instill behavioral and social changes in individuals and societies?

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- How are environmental questions, ideas, and outcomes being framed by those who are most immediately affected by climate change? What contributions to understanding, analyzing, and determining responses to climate change are being made by those who are directly engaged in the practice of art and religion and in movements for equity and justice?

Here we focus on four intersecting themes, examine linkages among them, and suggest that the results can contribute to an emerging theoretical framework for the environmental humanities: Climate Ethics, Climate Justice, Climate Change and the Arts, and Climate Change and Religion.

Climate Ethics

Many leading scholars, as well as politicians and scientists, have argued that ethics is not just important to the resolution of climate change, it is *the* principal factor needed to manage global warming. "Natural, technical, and social sciences can provide essential information and evidence needed for decisions on what constitutes 'dangerous anthropogenic interference with the climate system.' [But] at the same time, such decisions are value judgments," notes the IPCC.[11] New principles are needed to help determine which parties are responsible for climate change mitigation and to what degree. New atmospheric targets are required to account for differences in previous and current emissions, wealth and poverty, quality of life, and stages of industrial development. Given that in poor countries carbon is used mostly for necessary activities such as cooking and home heating, while in the industrialized nations it is used predominantly for activities such as driving, flying, and heating water, differences in carbon needs must be evaluated.

Because of the gap between need and will, ethics is an essential ingredient for a productive response to climate change. Every major aspect of climate negotiation is an ethical issue; ethical principles and reasoning are needed in order to work through each of the challenging issues on the negotiating table: responsibility for damages, reasonable targets, allocation of carbon emissions trading, costs to national economies, degrees of responsibility, assessment of new technologies, and procedural fairness. Existing ethical theories need to be evaluated and new theories proposed for resolving the complex issues associated with climate ethics.

According to philosopher Peter Singer, we must "see the atmosphere as a resource for which we are all responsible; we must agree on how responsible each party is for protecting the atmosphere and who must pay how much to protect it."[12] Singer makes an analogy between two hundred villages overfishing a nearby lake and two hundred nations over-polluting the atmosphere

on which we all depend. The best way to understand this ethical problem, he says, is to think about how best to divide a scarce resource that no one owns—in this case, the atmosphere, or more specifically "the capacity of the atmosphere to absorb our waste gases without changing the planet's climate in harmful ways." Singer and other leading ethicists who focus on global change, and especially on climate change, have developed an ethical basis for managing those changes.

In a foundational article in 2006, entitled "A Perfect Moral Storm," philosopher Stephen Gardiner pointed out that climate change comprises deep ethical challenges and is far more complex than the single-substance, single-industry changes such as the CFCs (chlorofluorocarbons) that were expanding the ozone hole in the 1980s.[13] CFCs required the action of very few parties, and industry leaders and government regulators saw that replacement technologies were actually cost-effective.

But in the case of climate change, says Gardiner, we face three stark challenges: a vast dispersion of causes and effects, great fragmentation of agency, and deep institutional inadequacy, and these three challenges demand ethical solutions. Thus, climate change "is a complex problem raising issues across and between a large number of disciplines, including the physical and life sciences, political science, economics, and psychology. But without wishing for a moment to marginalize the contributions of these disciplines, ethics does seem to play a fundamental role."[14]

Due to the dispersion of causes and effects, and the great fragmentation of agency—as almost everybody on the earth uses and emits fossil fuels—we need to build much stronger institutional capacity to deal with alternative energy sources. In the absence of individual compliance, we need a strong system of global governance. If we see climate change as posing a problem, Gardiner says, then we see that our actions that force climate change are open to moral assessment. This leads to the need for "some account of moral responsibility, morally important interests, and what to do about both. And this puts us squarely in the domain of ethics."[15]

Climate Justice

The term environmental justice came into wide use in the early 1990s to describe the movement born of hundreds of individual movements created by minority and underprivileged groups in the United States and abroad addressing unjust distribution of environmental burdens and benefits—such as industrial facilities and pollution and access to wealth, good food, clean air and water, and parks and recreation. Environmental justice is environmental ethics "on the ground." In turn, ethics playing out in the offices of social and

political institutions is spurred on by climate justice issues at ground zero.

Climate change as an ethical issue may greatly alter the larger field of justice. Already, climate scholars are calling into question the tensions between utilitarian and rights-based approaches to equity, with the realization that for real problems both approaches are necessary and must be brought into a common, functional framework. Looking at how these basic ethical theories play out on the ground, scholars have noted that "the distinction between utilitarian and rights-based approaches to equity...actually lies at the heart of the crisis of governance that pervades the local, national, and global communities....[I]ndividual, local, or ethnic rights...ought not to be violated even at the expense of the aggregate good."[16] New theories of climate justice are required to meet emerging challenges and new frameworks are needed for practice by groups on the ground who are immediately impacted by climate change.

Environmental justice reflects the direct involvement by marginalized peoples in the naming and claiming of environmental issues impacting their communities. The U.S. Commission on Civil Rights states clearly in its 2003 report that the direct involvement by low-income populations and communities of color in all aspects of decision-making, planning, and evaluation of environmental projects and policies is essential to any ongoing effort to mitigate the negative impacts of environmental hazards.[17] The environmental justice literature emphasizes the role that communities of color play in deciding what "justice" looks like. These groups can help to determine the character of climate justice and how it is applied through their focus on race, gender, and class differences that inform individual and community responses to outcomes. Thus new theories of climate justice can be defined by those most affected.

Environmental justice movements are likewise informed by academic ethics. Ethical frameworks must account for distributive justice, unequal access to resources, and unequal abilities to pay. Theories of justice should capture the complexities of climate inequities. Existing justice systems must respond adequately to climate change and new theories and practices must be developed.

Climate change is a special environmental justice issue in its global character. It synthesizes many smaller environmental justice movements, as so many of them are tied to questions of energy and equity. Almost across the board, the wealthiest nations have benefited from industrialization and may continue to live prosperously for some time, while developing nations face more immediate crises. Equity issues are particularly poignant in the United States, which has the largest gap between poor and wealthy classes of any industrialized nation. While the wealthy can make their personal wagers—insurance, mortgages, housing locations—against catastrophic climate change in the coming few decades, the poor face subsistence crises, diminishing resources,

and flooding that can lead to immediate catastrophic loss.

Climate justice has different meanings for Alaskan Natives, American Indians, and Latino and African Americans. These groups, facing harder burdens than most Americans and with fewer economic resources, have important history and knowledge that can contribute to mitigating difficult climate impacts. Across great differences in cultural perspectives, worldviews, and language, scholars and activists have begun identifying the ingredients necessary for climate adaptation and equity, including viable networks of social, cultural, political, and economic support. Native peoples from around the mainland United States and the Hawaiian islands have identified six key sectors critical to native peoples in the United States: "Water, agriculture, human health, wildlife and ecosystem loss, sovereign borders and boundaries, and tourism and recreation."[18] Active engagement of Native American leaders in the climate policy process engages people highly affected by climate change, while bringing the strengths and cultural history of native groups to the policy table.

Two of the most heavily impacted groups within the United States, Arctic Native peoples and Native Americans of the lower forty-eight states, not only have immediate experiences of climate change but bring long-held practices, cultural views, and tools to understanding the issues involved. In the past few years Inuit villagers have seen large pieces of their shoreline break off and float away and are now moving their entire lives hundreds of miles inland at a cost of tens of millions of dollars. But their real story is much worse. In the immediate future, these native tribes face famine and bankruptcy as energy prices rise and Arctic species that are staple foods lose habitat and face extinction. Nor is it only a question of certain key resources—we are losing the integrity of entire Arctic ecosystems as life-support systems.[19] Native groups aim to focus Congress's attention on "the unique needs of Native American communities,...the need for money for relocation efforts, the need for legislation that caps emissions, and the need for some kind of governmental entity that is responsive to these needs," according to Heather Kendall-Miller of the Native American Rights Fund.[20] Alaskan Native and American Indian concerns about global warming make visible the energy and subsistence crises faced by native peoples.

Indigenous peoples' responses to climate change reveal several dimensions of climate justice. Thus a tribal body might advocate a response to climate change that addresses a very local impact (e.g., pressure on treaty-negotiated water reserves by non-native communities) in a way that is a regulatory intervention posed within a specific federal-tribal legal and ethical framework. But that response might also reflect the need for certain types of water for certain cultural and spiritual uses. Not all water is the same. Some is spiritually

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acceptable and some is spiritually contaminated. Hence a tribal response might be about ethics, justice, and religion simultaneously.

The list of climate-related concerns for poor African-American and Latino communities is daunting: a much higher percentage of poor versus affluent groups live near toxic sites; a high percentage of them are in regions vulnerable to climate change catastrophes, such as urban centers and coastal regions. Moreover, in the coming decades, poor classes will pay escalating energy and food bills, while already consuming a much higher percentage of their pay for food and energy than do rich classes. While blacks experience much higher rates of cancer and asthma due to toxic pollution, twice as many blacks as whites lack health insurance. Increasing impacts of climate change in the United States will quickly worsen existing gaps in wealth. The neglect and abuse of African Americans during and after the Katrina crisis poignantly illustrate the dimensions of justice that will continue to be at play under strengthening hurricanes associated with global warming. In responding to these issues, minority communities, those most immediately impacted by climate change, are making significant contributions to climate justice.

Policy makers have begun to formulate concepts and frameworks for climate justice. Until recently, debate centered primarily on a limited schema, focused on allocating to each country equal per capita emissions, rights according to historical responsibility, rights according to a country's ability and willingness to pay, or some combination thereof. But climate scholars are increasingly including other justice issues. One major area is procedural justice, such as the role of developing countries in decisions on adaptation to climate change.[21] Another way to develop a more pluralist climate justice framework is to find ways to incorporate various criteria or indicators of justice. These include: equality of social positions and powers, equity of rights, resources, and opportunities; human welfare; human health, human finances, average life spans, or environmental welfare, including ecosystem services, key species, habitat loss, and the like.

Climate Change and the Arts

Poets, writers, artists, and photographers who have engaged with global warming believe that the arts are an essential part of creating the large-scale public awareness and understanding of climate change that can bring about substantive policy change. Diverse academics have investigated this view in recent years. The effects of art and photography on climate change may be quite significant. Not only in galleries and museums but almost everywhere in media, words are ceding space to images. Throughout newspapers, magazines, and institutional publications, perceptions and framing of issues happen

increasingly through images. Art and literature can reveal major changes to the landscape occurring throughout the country as global warming progresses. They challenge the standard human/environment narrative, in which humans are both privileged and separate from nature, and show how individuals and communities who are marginalized within the larger climate change debate seek to change the conversation.

Artists have proposed new images and representations of global warming in myriad forms. Artists, writers, and poets are working in a wide array of art forms, including painting, sculpture, poetry, documentaries, photo-essays, photography exhibits, and innovative techniques. Cutting edge works include those of Olafur Eliasson. At a San Francisco Museum of Modern Art exhibition in the fall of 2007, visitors could don a gray blanket and enter a room kept at exactly 10°F to see Eliasson's "ice car," a BMW hydrogen-powered racing car covered in a thick coat of ice. Eliasson, touted as "cutting edge" by the international art world, hopes his "ice car" will spur thinking on the relation between car design and climate change. Like many climate change artists, Eliasson uses art to create environmental awareness by engaging and prompting the public to acknowledge responsibility and foster social change. He hopes his work will inspire more responsible public behavior. He states, "What I find so interesting in this research on movement and environmentally sustainable energy is the fact that it enhances our sense of responsibility regarding how we navigate as individuals in our shared, complex, and polyphonic world."[22]

The Cape Farewell Project leads Arctic expeditions with artists, scientists, and journalists in hopes of increasing environmental awareness and engaging the public and schools in more fruitful debates about climate change. Project founder David Buckland believes in the power of art in helping to bring about policy change. "One salient image, sculpture, or event," says Buckland, "can speak louder than volumes of scientific data and engage the public's imagination in an immediate way."[23]

Similarly, journalist Alex Morrison said of an exhibit traveling the world from 2007 through 2008, *Envisioning Change*, which chronicles the effects of climate change on diverse global regions such as the Polar Regions, the Andes, and the Himalayas: "The beautiful, thought-provoking, and sometimes shocking images engage viewers on an emotional level that can't be achieved through words alone."[24] The goal is to increase awareness of the effects of climate change on the world's coldest regions and to inspire changes in behavior that can slow it down.

There is also a rich history of landscape art in the United States, as well as the art and literature of naturalists such as John James Audubon; romantic

philosophers such as Ralph Waldo Emerson and Henry David Thoreau; and nature poets, such as Walt Whitman, Robert Frost, and today's Gary Snyder and Robert Hass. Indeed, many of the prominent figures in the environmental humanities were deeply influenced by nature and America's rich natural aesthetics. Aldo Leopold was a naturalist, ecologist, and farmer, as well as a "green" philosopher. Annie Dillard grew up in the wilds of Pennsylvania's rivers and forests. And writers such as John McPhee and Barbara Kingsolver find their inspiration in the remains of American "wilderness."

Increasingly, with most individuals living in cities, fewer scholars enjoy childhoods or even summers in the wilderness. In cities that are increasingly urban, art remains one of the best ways to educate large numbers of Americans about the rich heritage of wilderness aesthetics that played such a large role in fueling environmental movements, from the parks movements of the early twentieth century, to the sweeping legal changes of the 1970s, to the climate change movement today. Rapid changes taking place in parks and forests are a vital spark for the climate change movement today. To name just one poignant example, Glacier National Park is facing the declassification of a large number of its glaciers.

Images could play a formative role in changing personal behavior and public policy. Viewing art or reading poetry could help to promote individual and collective action, even when the consequences of climate change seem distant in place and time. Climate change may be directly experienced as a few hot days or connected to a powerful hurricane, but that awareness could be used to stimulate behavioral changes over longer time frames. Thus, viewing spectacular canvasses such as those of the American West by Albert Bierstadt and Thomas Moran, reading compelling novels such as John Steinbeck's *Grapes of Wrath* that portray the consequences of climate on the Great Plains, or seeing a powerful film such as Al Gore's *An Inconvenient Truth* can indeed inspire social change.

Climate Change and Religion

The mainstream narrative of Western culture from the Scientific Revolution to the present has been the re-creation of the entire earth as a managed Garden of Eden.[25] Global warming challenges that narrative by threatening both the possibilities for human control of the environment and the predictability of environmental change itself through science and technology. World religions draw on ancient traditions and spiritual roots for new ways of responding to change and alleviating the impacts of a warming world on the poor and other life forms. The role of the religions in addressing climate change is no longer the exception but the rule. In the United States and abroad, religious organizations

are flocking to the cause of climate change. Indeed, it seems that every major denomination in the United States has a program to combat climate change, including Bahai, Buddhist, Christian Ecumenical, Unitarian, Indigenous spiritual groups, Islam, Jewish, Quaker, and more.[26] Some of the largest of these groups are interfaith groups bringing people together across dogmas and creeds to focus on concrete issues that can be agreed upon and acted upon, such as climate change.

Interfaith groups such as Green Faith in New Jersey are making major inroads. Green Faith's mission is to mobilize "religious institutions and people of diverse faith to strengthen their relationship with the sacred in nature and to take action for the earth." To this end they encourage conversion to renewable energies across the state. For instance, they are collaborating to place solar panels at twenty faith-based sites around New Jersey. The Interfaith Center on Corporate Responsibility has made one of their top priorities "reversing global warming."[27]

The National Council of Churches, with approximately 45 million members of Protestant, Anglican, and Orthodox faiths, is one of the featured partners of StopGlobalWarming.org. And several large evangelical networks reach similar numbers of congregants. Just one of these groups, the Evangelical Climate Initiative, comprises more than eighty-five U.S. evangelical leaders who have signed the statement "Climate Change: An Evangelical Call to Action."[28]

Academics likewise have established venues for studying and responding to climate change as it impacts ecology and humanity. The Forum on Religion and Ecology at Yale University highlights the important role that religions play in constructing moral frameworks for interacting with other people and the environment. It facilitates academic and engaged discourse on the intersection of religious studies, science, and environmental policy. The Center for the Study of World Religions at Harvard Divinity School has held a series of major conferences involving more than eight hundred world religious leaders and coordinates a book series on *Religions of the World and Ecology,* edited by Mary Evelyn Tucker and John Grim.

In April 2007, the University of Florida at Gainesville hosted the inaugural conference of the International Society for the Study of Religion, Nature, and Culture with the goal of promoting "critical inquiry into the relationships among human beings and their diverse environments, cultures, and religions." The conference was attended by scholars from around the world who discussed ways in which new religious and spiritual engagements with nature and culture can help to resolve environmental problems such as that of climate change. The journal *Religion, Nature, and Culture* began publication in March 2007 to investigate questions such as: What are the

relationships among human beings and what are variously understood by the terms religion, nature, and culture? What constitutes an ethically appropriate relationship between our own species and the places, including the entire biosphere, that we inhabit?

Pope Benedict XVI has urged bishops, scientists, and politicians to "respect Creation" while "focusing on the needs of sustainable development." To achieve this, Benedict recommends putting climate change on the top of the agenda. On April 26-27, 2007, the Vatican hosted a conference on climate change and development. Organized by the Pontifical Commission on Justice and Peace, it involved some forty participants and forty observers. It included scholars, scientists, and environmental ministers, as well as bishops of the Catholic and Anglican Churches and representatives of Catholic religious orders and other ecclesial bodies representing some twenty countries. A number of theologians and clergy have also spoken about the need for an encyclical as well as for an ecumenical statement on the environment from the Christian churches.[29]

Conclusion

Concerns over climate change raise significant issues for the environmental humanities. Humanity's relationships with the environment should address the consequences of climate change and intersect with ethical and climate justice frameworks and theories to assist vulnerable populations and influence policy and individual choices. Dichotomies such as those between nature/culture; ethics/environment; and mind/body are themselves challenged by climate concerns. The humanities, however, can contribute spiritual/religious and artistic/poetic insights to natural resource management strategies in ways that respond to and curtail climate change effects.[30] There are thus significant linkages and overlapping issues between four focal points of the humanities—ethics, justice, the arts, and religion—that may help to build a framework for the environmental humanities and contribute to the resolution of environmental problems facing humanity in the twenty-first century.[31]

NOTES

[1] Bill McKibben, *The End of Nature* (New York: Random House, 1989).

[2] Homero Aridjis et al., "The Earth Charter," The Earth Charter Commission, 2000, http://www.earthcharter.org/.

[3] Union of Concerned Scientists, "Capping Global Warming Emissions," *California Climate Choices, A Fact Sheet*, 2006, http://www.law.stanford.edu/program/centers/enrlp/pdf/AB-32-fact-sheet.pdf; Jamey Keaten, "Melting Ice Opens Route Through Arctic," *San Francisco Chronicle*, September 16, 2007, A2.

[4] Keaten, "Melting Ice," A2.

[5] IPPC (Intergovernmental Panel on Climate Change), Working Group II Report: "Impacts, Adaptation and Vulnerability"; Working Group III Report, "Mitigation of Climate Change"; Working Group IV Report, "The Physical Science Basis," http://www.ipcc.ch/.

[6] Anthony Leiserowitz, "American Opinions on Global Warming," Press Release, Yale University School of Forestry and Environmental Studies, 2007, http://environment.yale.edu/news/5305-american-opinions-on-global-warming/.

[7] Leiserowitz, "American Opinions."

[8] Bjørn Lomborg, Cool *It: The Skeptical Environmentalist's Guide to Global Warming* (New York: Knopf, 2007).

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