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# Toward a New Consciousness: Values to Sustain Human and Natural Communities

Anthony A. Leiserowitz

Lisa O. Fernandez

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# Toward a New Consciousness: Values to Sustain Human and Natural Communities

A Synthesis of Insights and Recommendations  
from the 2007 Yale F&ES Conference



Anthony A. Leiserowitz and Lisa O. Fernandez  
With a Foreword by James Gustave Speth  
and an Afterword by Stephen R. Kellert



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Please visit [www.environment.yale.edu/newconsciousness](http://www.environment.yale.edu/newconsciousness) for more details about the October 2007 F&ES conference, as well as a list of resources, organizations, and efforts pursuing the themes of this report.

The opinions, findings, and interpretations of research contained in this volume are those of the authors and do not necessarily reflect positions of the Yale School of Forestry & Environmental Studies, the participants in the conference described in this volume or their institutions.

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*“A human being is part of the whole, called by us “Universe,” a part limited in time and space. He experiences himself, his thoughts and feelings as something separate from the rest – a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty.”*

– Albert Einstein

*“The ideas which are here expressed so laboriously are extremely simple and should be obvious. The difficulty lies not in the new ideas, but in escaping from the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds.”*

– John Maynard Keynes



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# Acknowledgements

In October 2007, the Yale School of Forestry & Environmental Studies convened a conference in Aspen, Colorado entitled “Toward a New Consciousness: Creating a Society in Harmony with Nature.” The conference was spearheaded by Gus Speth, Dean of Yale F&ES, and Professor Stephen Kellert. An enormous thank you to them and the other members of the conference organizing committee – Mary Evelyn Tucker and John Grim – for their dedication and hard work both before and after the conference, and in particular for the many moments of enthusiasm, joy, and laughter even amidst mundane details. Gus, Steve, Mary Evelyn and John all took on many roles in bringing the conference to fruition, as keynote speakers, moderators, chairs of working groups, and authors of background papers. Their imagination and commitment are what made this conference possible.

Our deepest gratitude goes to our conference participants, whose collective efforts on behalf of environmental protection and social justice are truly awe-inspiring, and who were willing to devote their time, energy, and passion to these themes at a moment critical in human and natural history.

Thank you to each of our other keynote speakers – Paul Hawken, David Orr, Jonathan Rose, and Brian Swimme – who inspired and challenged the conference to think big, dig deep, celebrate our connection to the natural world, and resolve to repair the human-nature relationship.

Special thanks as well to Ray Anderson, Peter Brown, Baird Callicott, Alison Hawthorne Deming, Peter Forbes, Clive Hamilton, Richard Norgaard, Carl Safina and John Grim, who framed the conference dialogue by authoring papers on the role of values and worldviews in shaping environmental attitudes and behavior within the domains of business, policy, natural science, social science, the humanities, social transformation, and communication. Likewise, much of the work of the

conference was completed in small working groups chaired by a stellar group of leaders from different domains: Roger Cohn, Stephen Kellert, Paul Raskin, Bill Staudt, Mary Evelyn Tucker, and Peter Teague.

On the first evening of the conference, Kaiulani Lee literally set the stage with a riveting and inspiring performance of her one-woman play portraying the life and struggles of Rachel Carson. On the second evening, we were graced with the poetry and insight of three wonderful nature writers – Alison Hawthorne Deming, Kathleen Dean Moore, and Robert Michael Pyle. Thank you all.

This meeting was only made possible through the generous support of our sponsors, many of whom not only provided financial support, but actively participated in the conference itself. Thank you to the Lewis Foundation, the Kendeda Fund, Jonathan Rose, Christy & Owsley Brown, Albert Nielson, the Rockefeller Brothers Fund, and the Geraldine R. Dodge Foundation. A special thanks also goes to our outstanding Yale School of Forestry & Environmental Studies development team, including Eugenie Gentry, Tim Northrop, Sarah Shrewsbury, Kristin Floyd, Mary Andrew, and Andrew Daly.

We know that we speak for all the conference participants in expressing our enormous gratitude to our student rapporteurs, for their enthusiasm, diligence, and vocal participation. You are the next generation of environmental leaders and we expect that you will play a pivotal role in accomplishing the long-term aims of this conference. Thank you to: Jessica Boehland, Katharine Boicourt, Adrian Cerezo Caballero, Sonia Cooke, Kathryn Doherty, Ezekiel Hausfather, Rachel Holmes, Scott Laeser, Andrew Mackie, Jennifer McIvor, Amir Nadav, Dahvi Wilson, Julie Witherspoon, and Kimberly Yuan-Farrell.

Here at the Yale School of Forestry & Environmental Studies we have been incredibly fortunate to work with colleagues who gave generously of their time, effort, and advice, including Jane Coppock, Dave DeFusco, Matthew Garrett, and Mimi Kurtz, who each helped make the conference and this report possible.

The artist Martin Hill graciously donated the use of his image “Stone Circle” on the cover of this report. We are deeply indebted to him for his generosity. For more about his work, please see About the Cover Artist, page 65.

We also are grateful to Aspen Meadows Resort as our gracious host and to photographer Richard Shock, videographer Chad Shaw, and

graphic designer Russell Shaddox for their excellent work capturing the energy and spirit of the meeting. Inspired by the conference, Chad went back to his firm, Creative Mountain Images, and switched his electricity supplier to wind power. The company is now investigating further ways to operate more sustainably. We hope others will be equally inspired by the themes of this conference to take additional steps toward living more harmoniously with nature.

We wish to express our love and gratitude to our families, Jennifer Marlon and Toby Leiserowitz, and Rich, Will, and Talia Remnick for their support, patience, and understanding each time this project took us away from home, whether physically or virtually.

Finally, a deep bow of thanks to the stone, rivers, and sky of the continental divide and the resplendent golden, autumn leaves of Aspen – wonderful contributors to the success of this conference about the proper role of human beings within the natural world.

Anthony A. Leiserowitz and Lisa O. Fernandez  
Office of Strategic Initiatives  
Yale School of Forestry & Environmental Studies



TOWARD A NEW CONSCIOUSNESS  
CREATING A SOCIETY IN HARMONY WITH NATURE

ASPEN, COLORADO OCTOBER 11-14, 2007  
YALE SCHOOL OF FORESTRY & ENVIRONMENTAL STUDIES



## Foreword

*James Gustave Speth*

*Dean, Yale School of Forestry & Environmental Studies*

Many of our deepest thinkers and many of those most familiar with the scale of the challenges we face have concluded that the changes needed to sustain human and natural communities can only be achieved in the context of the rise of a new consciousness. For some, it is a spiritual awakening – a transformation of the human heart. For others it is a more intellectual process of coming to see the world anew and deeply embracing the emerging ethic of the environment and the old ethic of what it means to love thy neighbor as thyself. But for all it involves major cultural change and a reorientation of what society values and prizes most highly.

Vaclav Havel has stated beautifully the fundamental shift that is needed. “What could change the direction of today’s civilization? It is my deep conviction that the only option is a change in the sphere of the spirit, in the sphere of human conscience. It’s not enough to invent new machines, new regulations, new institutions. We must develop a new understanding of the true purpose of our existence on this Earth. Only by making such a fundamental shift will we be able to create new models of behavior and a new set of values for the planet.”<sup>1</sup> For Havel and many others, the environmental crisis is ultimately a crisis of the spirit.

Aldo Leopold, the father of the land ethic and perhaps the most famous graduate of the school where I am dean, came to believe “that there is a basic antagonism between the philosophy of the industrial age and the philosophy of the conservationist.” Remarkably, he wrote to a friend that he doubted anything could be done about conservation “without creating a new kind of people.”<sup>2</sup>

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<sup>1</sup> Vaclav Havel, “Spirit of the Earth,” *Resurgence*, November-December 1998, 30.

<sup>2</sup> Aldo Leopold, “A Modus Vivendi for Conservationists,” unfinished manuscript, n.d. (circa 1941), p. 1, Leopold Papers 10-6; and letter to Douglas Wade, 23 October 1944, Leopold Papers 10-8, 1.

To explore these issues, the Yale School of Forestry & Environmental Studies brought 57 leading thinkers from many relevant fields to Aspen, Colorado in mid-October, 2007. The participants are listed at the end of this report. For three days, we pursued a two-part agenda.

First, we set out to diagnose the malady by addressing such questions as:

1. How are the values, habits of thought, and world views dominant in our culture at variance with nature's reality and basic human needs? Is it accurate, as sometimes claimed, that we have become alienated simultaneously from ourselves, society, and nature? What is the value of nature to humanity and how does it relate to our evolution, health, culture, and well-being? And, why is it that so many appear to deny its reality and importance?
2. How did we come to this state of mind and affairs and what interests and illusions are served by maintaining the status quo, including our separation from nature?
3. Where did we go wrong in our historical and cultural development, and why do most people in modern society fail to relate personally or collectively with this unfolding human and environmental tragedy? Why do we fail to recognize the connection between our materialism and consumerism, on the one hand, and our alienation from nature and one another, on the other, as well as see both as the root source of our "spiritual hunger in an age of plenty?"<sup>3</sup>

After that, we began searching for the cure by taking up questions such as these:

1. What changes in values, culture, and worldview need occur to live lives rich with personal meaning, strong human ties, and a resonant connection with nature?
2. What sources of inspiration, strength, and vision can reconnect us with nature through rediscovering our historical and biological past, confront the challenges of our

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<sup>3</sup> David G. Myers, *The American Paradox: Spiritual Hunger in an Age of Plenty* (New Haven: Yale University Press, 2000).

political present, and achieve a new sustainable and enriching future?

3. What circumstances, events, and forces can give rise to fundamental value change and a profound transformation in culture and society at both the individual and institutional level? What can precipitate a major shift in identity, worldview, and political behavior?

The conference was certainly not the first to address these important questions. And just as certainly, it should not be the last. We believe we made significant progress in answering these questions, and our conclusions are reflected in the report that follows, but the discussions reinforced that there is much, much more to be learned on these subjects.

Our purpose in preparing this summary of the Aspen conference is to share them with a wider audience, to help stimulate discussion and debate, and to stimulate actions that can move forward the profound changes that are needed. I hope this report contributes to these ends, and I want to express my personal appreciation to Anthony Leiserowitz and Lisa Fernandez for their excellent work in preparing the report and to Stephen Kellert, Mary Evelyn Tucker and John Grim for the thoughtful leadership they provided throughout the entire process.

I had the occasion at Aspen to describe the value shift I believe is necessary and the circumstances that might in a practical way prompt such a shift.

One way of describing the values that are needed is to identify the transitions that are required to move successfully from today to tomorrow. I would describe these transitions as follows:

- from seeing humanity as something apart from nature, transcending and dominating it, to seeing ourselves as part of nature, offspring of its evolutionary process, close kin to wild things, and wholly dependent on its vitality and the finite services it provides;
- from seeing nature in strictly utilitarian terms, humanity's resource to exploit as it sees fit for economic and other purposes, to seeing the natural world as having both intrinsic value independent of people and rights that create the duty of ecological stewardship;

- from discounting the future, focusing severely on the near term, to empowering future generations economically, politically and environmentally and recognizing duties to yet unborn human and natural communities well into the future;
- from hyper-individualism, narcissism, and social isolation to powerful community bonds reaching from the local to the cosmopolitan and to profound appreciation of interdependence both within and among countries;
- from parochialism, sexism, prejudice and ethnocentrism to tolerance, cultural diversity, and respect for human rights;
- from materialism, consumerism, getting, the primacy of possessions, and limitless hedonism to personal and family relationships, leisure play, experiencing nature, spirituality, giving, and living within limits;
- from gross economic, social and political inequality to equity, social justice, and human solidarity.

What might spur human sensibilities in these directions? When one considers our world today, with its widespread ethnic hatreds, intra-state warfare and immense violence, militarism and terrorism, not to mention the dysfunctional values already indicated, the task can seem hopelessly idealistic. In truth, it is precisely because of these calamities, which are linked in many ways, that one must search for answers and hope desperately to find them.

There is a vast literature on cultural change and evolution. In what spirit, then, should we take up the question of spurring change? The goal must be forging cultural change, not waiting on it. Here, the insight of Daniel Patrick Moynihan is helpful: “The central conservative truth is that culture, not politics, determines the success of a society. The central liberal truth is that politics can change a culture and save it from itself.”<sup>4</sup>

Unfortunately, the surest path to widespread cultural change is a cataclysmic event that profoundly affects shared values and delegitimizes the status quo and existing leadership. The Great Depression is a classic example. I believe that both 9/11 and Hurricane Katrina could have led to real cultural change in the United States,

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<sup>4</sup> Quoted in Lawrence E. Harrison, *The Central Liberal Truth: How Politics Can Change a Culture and Save It* (Oxford: Oxford University Press, 2006), xvi.

both for the better, but America lacked the inspired leadership needed.

A Congressman is said to have told a citizens group, “If you will lead, your leaders will follow.” But it doesn’t have to be that way. Harvard’s Howard Gardner stresses this potential of true leadership in his book *Changing Minds*: “Whether they are heads of a nation or senior officials of the United Nations, leaders of large, disparate populations have enormous potential to change minds . . . and in the process they can change the course of history.”

“I have suggested one way to capture the attention of a disparate population: by creating a compelling story, embodying that story in one’s own life, and presenting the story in many different formats so that it can eventually topple the counterstories in one’s culture. . . . [T]he story must be simple, easy to identify with, emotionally resonant, and evocative of positive experiences.”<sup>5</sup>

There is some evidence that Americans are ready for another story. Large majorities of Americans, when polled, express disenchantment with today’s lifestyles and offer support for values similar to those discussed here. But these values are held along with other strongly felt and often conflicting values, and we are all pinned down by old habits, fears, insecurities, social pressures and in other ways. A new story that helps people find their way out of this confusion and dissonance could help lead to real change.

Another source of value change is social movements. Social movements are all about consciousness raising, and if they are successful they can usher in a new consciousness. We speak casually about the environmental movement. We need a real one. Curtis White’s book, *The Spirit of Disobedience*, reminds us of the 1960s. “Although the sixties counterculture has been much maligned and discredited, it attempted to provide what we still desperately need: a spirited culture of refusal, a counterlife to the reigning corporate culture of death. We don’t need to return to that counterculture, but we do need to take up its challenge again.”<sup>6</sup>

Another way forward to a new consciousness lies in the world’s religions. Mary Evelyn Tucker has noted that “no other group of institutions can wield the particular moral authority of the religions,”

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<sup>5</sup> Howard Gardner, *Changing Minds: The Art and Science of Changing Our Own and Other People’s Minds* (Boston: Harvard Business School Press, 2006), 69, 82.

<sup>6</sup> Curtis White, *The Spirit of Disobedience* (Sausalito, Calif.: PoliPoint Press, 2007), 118, 124.

and that “the environmental crisis calls the religions of the world to respond by finding their voice within the larger Earth community. In so doing, the religions are now entering their ecological phase and finding their planetary expression.”<sup>7</sup> The potential of faith communities is enormous. About 85 percent of the world’s people belong to one of the 10,000 or so religions, and about two-thirds of the global population are Christian, Islamic, or Hindu. Religions played key roles in ending slavery, in the civil rights movement, and in overcoming apartheid in South Africa, and they are now turning attention with increasing strength to the environment.

Finally, there is the great importance of sustained efforts at education. Here one should include education in the largest sense as embracing not only formal education but also day-to-day and experiential education. It includes education we get from personally experiencing nature in all its richness and diversity. My colleague Steve Kellert has stressed that such exposure, especially for children, is important to well-being and human development.<sup>8</sup> Education in this broad sense also includes the fast-developing field of social marketing. Social marketing has had notable successes in moving people away from bad behaviors such as smoking and drunk driving, and its approaches could be applied to larger themes as well.

All of these forces for change are potentially complementary: a calamity or breakdown (or, ideally, the public anticipation of one brought on by many warnings and much evidence); occurring in the presence of wise leadership and a new narrative that helps make sense of it all, draws on the best of our values and traditions, and points to the future we must realize; urged on by a demanding citizens’ movement that fuses the causes of environmental sustainability, social justice, and strong democracy; informed and broadened by well-conceived social marketing campaigns; joined by a contagious proliferation of real-world examples that point the way. It is not difficult to envision such circumstances coming together. Except for a real calamity, these are all things we can join together in pursuing.

There was a real calamity off Santa Barbara, California in 1969 – a huge oil leak from the Union Oil Company’s offshore drilling operation that turned beaches black, destroyed fish and wildlife, and,

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<sup>7</sup> Mary Evelyn Tucker, *Worldly Wonder: Religions Enter Their Ecological Phase* (Chicago: Open Court, 2003), 9, 43.

<sup>8</sup> Peter H. Kahn and Stephen R. Kellert, eds., *Children and Nature: Psychological, Sociocultural and Evolutionary Investigations* (Cambridge: MIT Press, 2002).

more than any single event, catalyzed the remarkable environmental progress of the 1970s. Drawing on what had just happened to them, citizens in Santa Barbara were inspired to write the Santa Barbara Declaration of Environmental Rights: “We, therefore, resolve to act. We propose a revolution in conduct toward an environment which is rising in revolt against us. Granted that ideas and institutions long established are not easily changed; yet today is the first day of the rest of our life on this planet. We will begin anew.”<sup>9</sup>

In the midst of that disaster, residents of Santa Barbara found the spirit we need today.

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<sup>9</sup> Roderick Nash and Ross MacDonald, “The Santa Barbara Oil Spill,” in Nash, Roderick, ed. *The American Environment: Readings in the History of Conservation* (Reading, Mass: Addison-Wesley, 2nd Ed., 1976), 298-306.



# I. Introduction

Our world, our only habitat, is a biotic system under such stress it threatens to fail in fundamental and irreversible ways. Major change is required to stabilize and restore its functional integrity. This topic has been extensively elaborated by the scientific community and debated by many in policy and government. This issue has not yet emerged, however, as a high priority among the public or altered prevailing values, attitudes, or behavior toward nature. It is now critical that we understand these failures and determine how we can help catalyze a transformation of our values and behaviors toward the natural world.

Examine any of the great environmental challenges confronting us – climate change, biotic impoverishment, pollution, resource depletion – and a similar pattern emerges. A modest number of people know a great deal about these afflictions and unfolding tragedies – the nature of the threat, what is driving it, what can be done to change course before the impacts become irreversible – but their messages have difficulty overcoming public apathy, political denial, or entrenched opposition. Most of all, they rarely spur responsive public action, basic shifts in values and attitudes, or the behavioral change needed at the scale or within the time frame required. The result is what is commonly referred to as a “failure of political will,” but this phrase fails to capture the depth of the cultural void or social malfunction involved.

At its deepest level, if we are to address the linked environmental, social, and even spiritual crises, we must address the wellsprings of human caring, motivation, and social identity. To understand these issues, we must seek the help of fields not regularly associated with environmental issues. We have many sophisticated scientific and policy analyses of climate change, species loss, and other environmental issues, but our situation also requires the knowledge and wisdom of psychologists and philosophers, poets and preachers, historians and humanists to help us see and communicate hard truths and inspire individual and social change.

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**At its deepest level, if we are to address the linked environmental, social, and even spiritual crises, we must address the wellsprings of human caring, motivation, and social identity.**

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Many have concluded that what we need is a major shift in our core values and dominant culture – in effect, the evolution of a new consciousness. We need, as Paul Tillich has suggested, “a new being,”<sup>10</sup> with a new worldview and deep shift in values at both the individual and social level. Aldo Leopold wrote to a friend in 1944 that little could be done in conservation “without creating a new kind of people.”<sup>11</sup> Peter Senge and his colleagues have similarly argued that “when it is all said and done, the only change that will make a difference is the transformation of the human heart.”<sup>12</sup> Paul Ehrlich and Donald Kennedy have further suggested that “it is the collective actions of individuals that lie at the heart of the [environmental] dilemma,” and “analysis of individual motives and values should be critical to the solution.”<sup>13</sup>

### **CONFERENCE STRUCTURE**

To explore these themes, the Yale School of Forestry & Environmental Studies convened an esteemed group of leaders representing diverse disciplines, including the natural sciences, social sciences, philosophy, communications, education, religion, ethics, public policy, business, philanthropy, history, the creative arts, and the humanities. The conference was held in Aspen, Colorado, on October 11-14, 2007. A list of the conference participants is available at the end of this report.

The conference focused on the role of cultural values and worldviews in environmentally destructive behavior in modern, affluent societies. This is not to imply, of course, that these issues are any less important in the developing world, but given the enormous scope of the topic and the limited resources available, the conference

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<sup>10</sup> Paul Tillich, *A New Being* (New York: Charles Scribners & Sons, 1955).

<sup>11</sup> Aldo Leopold, letter to Douglas Wade, Op. Cit.

<sup>12</sup> Peter Senge, *Presence: An Exploration of Profound Change in People, Organizations, and Society* (New York: Currency Doubleday, 2005), 26.

<sup>13</sup> Paul R. Erlich and Donald Kennedy, “Sustainability: Millennium Assessment of Human Behavior” (*Science*, 22 July 2005: Vol. 309, no. 5734), 562-563.

organizers decided to focus the meeting primarily on the destructive patterns within affluent societies – patterns that are being adopted throughout the world, including the rising centers of western-style affluence in the developing world. The participants and discussions thus reflect this relatively limited emphasis.

The conference consisted of a series of structured working groups and plenary discussions. As such, it was not intended to generate comprehensive lists of diagnoses and prescriptions. Likewise, the conference did not attempt to reach overall consensus or to rank the diagnoses or prescriptions in priority order. This report represents our best effort to reconstruct, distill, and briefly summarize the wide-ranging discussions and conclusions of the conference as a whole. It is also important to note that many of the individual ideas described in this report represent themes that have been the subject of enormous scholarship and debate. We greatly encourage the interested reader to further investigate these rich research traditions. One place to begin is at the conference website: <http://www.environment.yale.edu/newconsciousness>.

This report does, however, attempt to capture some of the key insights and ideas to emerge from the discussions among some of the world's leading environmental experts, thinkers, and doers. We hope it can help catalyze both a broad conversation about the critical role of cultural values and worldviews in the global environmental crisis and the implementation of concrete initiatives to accelerate a paradigm shift in human values, attitudes, and behaviors toward the natural world.

**We invite the interested reader who would like more information about the conference and these themes to visit our website: <http://www.environment.yale.edu/newconsciousness>. It includes links to related resources, organizations and efforts. We also welcome your thoughts, ideas, and reactions by e-mail at: [newconsciousness@yale.edu](mailto:newconsciousness@yale.edu).**



## II. Diagnoses

*“We cannot solve our problems with the same thinking we used when we created them.” – Albert Einstein*

The failure of the developed world to fully comprehend or confront the size, severity, and urgency of the global environmental crisis requires a deep examination of the prevailing values and worldviews within modern society that maintain and reinforce a self-destructive relationship with the natural world. We need to address such questions as:

1. How are the values, habits of thought, and world views dominant in our modern culture at variance with nature’s reality and basic human needs? Is it accurate, as sometimes claimed, that we have become alienated simultaneously from ourselves, society, and nature? What is the value of nature to humanity and how does it relate to our evolution, health, culture, and well-being? And why is it that so many appear to deny or ignore the environmental crisis?
2. How did we come to this state of mind and affairs and what interests and illusions are served by maintaining the status quo, including our separation from nature?
3. Where did we go wrong in our historical and cultural development, and *why do most people in modern society fail to relate personally or collectively with this unfolding human and environmental tragedy?* Why do we fail to recognize the connection between our materialism and consumerism, on the one hand, and our alienation from nature and one another, on the other, as well as see both as the root source of our “spiritual hunger in an age of plenty?”<sup>14</sup>

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<sup>14</sup> David G. Myers, Op. Cit.

Through both small-group discussions and plenary sessions, the conference participants worked to identify and describe some of the key worldviews, structural barriers, beliefs and norms underlying the developed world's currently unsustainable relationship with nature.

## **WORLDVIEWS**

### **Anthropocentrism and alienation from nature**

The anthropocentric worldview posits human beings and human society as separate from, independent of, and transcendent over the natural world. The anthropocentric notion that humans stand “above” and independent of nature rather than “within” and interdependent with it, has deep cultural and historical roots, dating back to the Enlightenment, and, some argue, back to the biblical cosmology of Genesis. These worldviews have often been used to reinforce the belief that human beings should have dominion and control over the natural world, and that nature exists as a means for human ends. The idea that human beings and nature are separate also facilitates the utilitarian view of nature merely as a commodity or warehouse of resources to exploit. Further, the common cultural narrative of “man versus nature” often depicts nature as something wild, dangerous, and threatening that needs to be defeated, domesticated, or killed. This oppositional narrative pits humans against a hostile “other” and further severs the human sense of connection with the natural world.

More materially, members of modern societies are increasingly both physically and psychologically separated from the natural world. We live in a system that has severed or rendered invisible many of our connections to nature – such as the food we eat, or the people and ecosystems from which our consumer products are derived. As a result there is little recognition of the natural environment as the foundation upon which civilization stands. People, especially children, are spending less and less time outside in natural settings, which some have called the “extinction of experience.”<sup>15</sup> Human contact with other species and wild nature is increasingly mediated through the television, constrained within the safe confines of the rectangular screen, side-by-side with the Home Shopping Network, cartoons, and the afternoon soaps. There seems to be a growing

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<sup>15</sup> R. M. Pyle, “The Extinction of Experience,” (*Horticulture* 56, 1978), 64-67; and *The Thunder Tree: Lessons from an Urban Wildland* (New York: Houghton Mifflin, 1993).

blindness to the beauty, succor, and necessity of the more-than-human world. Surveys find that people around the world strongly profess environmental values, yet these values are less and less rooted in actual experience and interaction with nature and thus begin to float free, untethered, unintegrated into everyday behavior. The well-documented gap between people's professed environmental values and actual behavior stems in part from this increasing detachment from the natural world.

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**We live in a system that has severed or rendered invisible many of our connections to nature – such as the food we eat, or the people and ecosystems from which our consumer products are derived.**

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### **The loss of cosmological context**

In most human cultures and throughout human history, cosmology (the story of the origins of the world and human beings) provided an essential context and source of meaning for both lived and imagined realities, including human relationships with the natural world. With the rise of the Enlightenment and the modern scientific worldview, however, the humanities increasingly severed ties with religious cosmologies (such as in Genesis), yet have never fully embraced the new cosmology emerging from theoretical physics, astronomy, and biology. This detachment from the greater cosmological context has critical implications for ethics, because as conceptions of human nature and values become increasingly self-referential, there is a pervasive failure to understand human beings as inextricably part of, and emergent from, nature and natural processes, with attendant moral duties, responsibilities, and obligations.

### **Materialism**

Since the Enlightenment, the reigning scientific worldview has held that matter is dead and inert, lacking its own vitality. This “disenchantment” or “de-sacralization” of nature has encouraged human beings to believe that they can manipulate and rearrange the material world any way they like, with few to no moral or ethical constraints, duties, or obligations. Some also argue that the idea of

material nature as a stockpile of inanimate resources lies at the center of the modern consumerist worldview. Further, we have obscured and hidden the natural origins of the myriad products we use everyday. The packaged chicken in the grocery store has been cleaned, sanitized, and presented in a way that disguises the fact that it was once a living, breathing animal, that lived in a particular place (a factory farm), pumped with growth hormones and antibiotics, bred, fattened, and slaughtered by migrant workers, etc. The cell phone is an assemblage of literally hundreds of material elements, mined, milled, and gathered from around the world, manufactured, assembled, distributed, and disposed of by faceless people in unknown places, with unknown environmental consequences. The entire edifice of the global economic system is constructed upon this underlying worldview and accompanying detachment of products from their natural origins.

### **Reductionism**

Reductionism refers to the prevailing scientific worldview that seeks understanding by breaking complex objects of study into smaller and smaller parts, with the assumption that complex behavior is the simple result of the interaction of these parts. Thus, a complex system is nothing but the sum of its parts – if we can just understand and model the behavior of each piece, we will understand the behavior of the whole. While the origins of this worldview have deep cultural roots, it was greatly crystallized in the thought of Descartes, who described the universe as a giant “clockwork” with individual mechanical parts, and Newtonian physics which described the universe as the interaction of billiard ball-like objects.

Over the centuries, this approach has generated tremendous advances in scientific knowledge, leading to the establishment of disciplinary fields of expertise. At the same time, however, this approach has led to hyper-specialization within science, where entire sub-disciplines and entire careers are spent investigating smaller and smaller twigs on the “tree of knowledge.” As a result, many researchers can no longer understand the breadth of their own discipline, much less how their discipline might intersect with others.

This approach, however, has been recently challenged by the findings of systems and complexity theory, which demonstrate the existence of emergent properties unpredictable from the interaction of their constituent parts in systems ranging in size from microscopic

to cosmological, in disciplines as diverse as chemistry, ecology, and astronomy. Likewise, interdisciplinary research has received increasing attention and funding, as scientists and funders have recognized the importance of holistic and systems perspectives at play in both natural and social phenomena and the environmental crisis. Yet interdisciplinary research typically remains woefully underfunded and often either unrewarded or even actively discouraged by academic systems of tenure and promotion. Further, scientists tend to self-replicate. They tend to train students and grant tenure to people who look like themselves, i.e. disciplinary specialists.

### **Binary and dichotomous thinking**

Binary or dichotomous thinking is often problematic, as it separates the world into simplistic, separate, and opposing categories, while privileging one of the two. There are many examples, including:

- Good vs. Evil
- Reason vs. Emotion
- Civilized vs. Primitive
- Us vs. Them
- Humans vs. Nature
- Economy vs. Environment
- Individual vs. Society
- Material vs. Spiritual

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**The dualistic separation of humans and nature reinforces the false notion that humans are outside and above nature and natural processes, instead of emergent from and inextricably interconnected to them.**

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These dichotomies divide the world into opposing sides – “You’re either with us or against us” – and reinforce zero-sum thinking, in which one side wins, while the other side loses. Lost is the potential for gray areas of difference, “win-win” solutions, or the possibility of an interdependent relationship between the two. For example, protecting the environment does not have to come at the expense of the economy. In fact, there are tremendous opportunities to both protect the environment and grow the economy, through green jobs,

renewable technologies, etc. On a deeper level, the dualistic separation of humans and nature reinforces the false notion that humans are outside and above nature and natural processes, instead of emergent from and inextricably interconnected to them. These deep and often unconscious ways of thinking about and categorizing the world place subtle, yet powerful constraints upon our thought and behavior.

### **Radical individualism**

American society often privileges competition over collaboration and individualism over community, equity, or social justice. Meanwhile, studies have demonstrated that extreme individualism is strongly associated with anti-environmental attitudes and behavior. Radical individualists are less likely to believe environmental problems exist, perceive them as low or non-existent risks, and more likely to oppose environmental policies and programs.<sup>16</sup> Taken to an extreme, individualism privileges personal autonomy at the expense of what is best for communities or society as a whole. Radical individualism can lead to selfishness, erode social ties and citizenship, inhibit collective action, and reduce a sense of responsibility to wider society and the global sphere. While individualism remains a core value, it also needs to be balanced with other core American values, such as equality, fairness, and justice.

### **Economism**

Economism refers to the system of myths we hold about the economy. Just as all cultures have a complex of myths about nature and the proper human relation to nature, so do we have a complex of myths about the economy, which can collectively be referred to as economism. Just as cultural myths provide explanations for natural phenomena, facilitate individual and collective decisions, and give meaning and coherence to life, so do modern beliefs about economics.

Economic analysis also has a privileged place, often above all others, in policymaking. The result is a myopic short term view and policies that favor economic growth at all costs. Further, economism is reinforced by the acquiescence, or even capitulation, of other

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<sup>16</sup> Anthony A. Leiserowitz, "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values," (*Climatic Change*, 77, 2006) 45-72.

disciplines to the rules of economic discourse. As a result, many individual decisions, some with deep moral implications, are now determined primarily by income and prices. We increasingly perceive and understand “reality” from our particular position in the economic system and perceive the value of others and of nature through an economic lens. Our dreams for the future are often dominated by portrayals of economic and material progress. Economism has become a secular religion and now plays a similar role to that of religion throughout history – providing context and meaning for the goals, preferred means, and organization of both individual lives and entire societies.

The field of economics makes a number of basic and often unquestioned assumptions, such as the belief that there is a direct and consistent relationship between income and human well-being, a belief in an autonomous, rational actor model of human decision-making and behavior, that the economy is independent of ecology, and that perpetual economic growth is possible on a planet of finite resources. Each of these assumptions is flawed. Meanwhile, the implementation of these ideas in the real world is a major driver of the environmental crisis.

### **Cornucopianism and technological optimism**

For centuries, the bounty of nature seemed unlimited, with seemingly endless resources – timber, minerals, fossil fuels, etc. Calls for restraint, for careful and sustainable use of resources, were often ignored or derided, as there was always more land, more water, more opportunity just over the horizon. In the twentieth century, however, the world witnessed an explosion in scientific knowledge and technology and an accompanying exponential increase in the power of human beings to exploit nature. The success of the modern scientific revolution has led many to believe that improved knowledge and the translation of that knowledge into ever-more powerful technologies and ways of manipulating the physical world lead automatically to an improvement of the human condition, are the primary solution to environmental problems, and that human ingenuity can overcome the finite limitations of the planet.

The impacts of science and technology, however, are far more complicated than this. While science and technology have unquestionably improved human health and well-being, it is also the case that technologies invented to solve one problem have often had

unanticipated and negative human or ecological consequences (e.g., DDT or CFCs). Further, science and technology do not operate in a vacuum – scientific and technological advances are mediated and inflected through existing social structures, norms, and values. For example, the scientific discovery of atomic fission and development of nuclear weapons had enormous social and political consequences for both specific places (Hiroshima and Nagasaki) and the world (the Cold War). In turn, outside forces like capitalism and investment drive much scientific research and lead to the development of certain technologies and not others, based on market values (e.g., the development of drugs to deal with male erectile dysfunction, but few to prevent or cure malaria – a disease of the poor).

Science and technology have vastly increased the human impact on the natural world, ranging from individual environmental disasters, like Chernobyl and the Exxon Valdez to large-scale problems like climate change and the ozone hole. We have now entered the “Anthropocene” era, in which human beings are one of the dominant forces of change on the planet. This rate and scale of the human impact is radically new and is due in large part to the exponential increase in the human ability to manipulate the world. Finally, while environmental science and green technologies will certainly be important contributors to the effort to find solutions to global environmental problems, such as climate change, overfishing, biodiversity extinctions, and ocean acidification, they alone are insufficient to solve these problems, which are also rooted in politics, economics, social relations, and culture.

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### **Post-modernism and deconstruction**

Postmodernism and deconstruction have led to critical insights about the social construction of knowledge and values and have enabled scholars to dissect and trace the historical evolution, use, and misuse of fundamental concepts, such as “nature,” “self,” and “other.” In its most radical variants, however, postmodernism can slip into solipsism and even the belief that nature itself is a human construct.

At worst, postmodernism can lead to endless “navel-gazing,” constantly questioning and deconstructing sign and symbol, while ignoring the reality of the ongoing environmental crisis.

## **STRUCTURES AND INSTITUTIONS**

### **Structural barriers to change**

There are many structural barriers that prevent individuals from acting in more environmentally sustainable ways, including laws, regulations, perverse subsidies, infrastructure, the constraints of available technology, social norms and expectations, and the broader social, economic and political context (e.g., the price of oil, interest rates, currency exchange rates, etc.). For example, one may wish to use mass transit, such as high-speed rail as an alternative to the automobile, but if the infrastructure is not available, this value cannot be implemented. In many places around the world, structural barriers, including laws, available technology, and social norms, constrain individuals who wish to use contraception or family planning services to reduce fertility. Finally, macroeconomic contextual factors like oil prices and interest rates can have large impacts on sustainability behaviors. For example, as oil and gasoline prices rise, consumer demand for more fuel-efficient vehicles also increases. These structural barriers can also create apathy and even cynicism about the potential for change. Likewise, entrenched institutions can suppress creative transformation, trapping people into patterns of behavior that are destructive to nature and community.

### **Media: Balance equals objectivity**

“Balanced” and “objective” reporting are core values of the news media. Perversely, however, the implementation of these values has led to misleading news coverage of critical environmental issues. “Balance” has often been interpreted as meaning that each side of a debate merits equal mention. Thus many news stories have, in the interest of “balance,” placed the views of the overwhelming majority of scientists on a level playing field with a small minority of dissenters, leading to the false impression that there is more scientific controversy about an issue than actually exists (e.g., climate change). Objectivity and balance have thus become synonymous with equal air time, and in the process, scientific certainties are distorted in the public mind. This problem is exacerbated by the fact that there are

fewer reporters with scientific training who are capable of adequately analyzing and distinguishing between competing scientific claims.

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### **Media: Compartmentalization of the environment**

Too many environmental news stories frame environmental issues only in terms of natural science or politics, which, while important, contributes to the compartmentalization of the environment. This approach often relegates environmental stories to the science section (which fewer people read) or politics section of the newspaper. Furthermore, putting environmental issues in a science or political tug-of-war box ignores the critical cultural, business, lifestyle, ethical, health, national security, and other dimensions of environmental affairs.

For example, many environmental stories describe human impacts on the natural world, without necessarily connecting these impacts back to human beings. Yet human health and well-being are often greatly influenced by environmental impacts, ranging from disasters like Love Canal and Bhopal, to more chronic problems like drought, infectious disease, and air pollution. Meanwhile, stories about environmental justice – the disproportionate environmental harms imposed on the poor, people of color, and the disempowered – often fail to get adequate attention. Likewise, even climate change has often been described in terms of its impacts on non-human nature, such as glaciers, permafrost, Antarctica, or polar bears, with inadequate attention to the potential impacts on human beings or the implications for global environmental justice.

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### **Academia: Disciplinary silos**

Disciplines within academia (natural and social sciences and humanities) are often isolated from one another. The humanities remain relatively self-enclosed and self-referential. Historically, there has been relatively little collaboration or integration with the natural or social sciences in either research or teaching. This extreme disciplinary approach stands in some contrast to the sciences, which tend to promote more interdisciplinary work. Likewise, the humanities are too often trapped in the “ivory tower” with relatively little engagement with the outside world. More broadly, too many academics talk only to each other, using language and jargon incomprehensible to even the educated layperson. The traditional disciplinary structure, along with the reward system of academia (status, tenure, and promotion) all constrain the holistic, integrated, and interdisciplinary research and teaching required to address environmental problems.

### **Humanities: An anthropocentric focus**

The humanities, as evidenced by their very name, continue to retain an almost exclusive focus on human beings and their affairs, often treating the natural world as a mere backdrop to human history and culture. Recent years have seen the growth and establishment of new fields, such as environmental history, environmental philosophy, and eco-criticism within literary studies, yet these remain relatively marginalized within their respective disciplines. One example is the burgeoning genre of non-fiction “nature writing” within the study of literature. This genre has historically been dominated by “cabin” and “wilderness” narratives of lone individuals confronting and reflecting upon the natural world, for example, Henry David Thoreau’s *Walden*, Aldo Leopold’s *A Sand County Almanac*, Annie Dillard’s *Pilgrim at Tinker Creek*, and Henry Beston’s *Outermost House*. Many culturally, racially, and ethnically diverse voices are also now emerging, however, such as philosopher Viola Cordova’s *How It Is*, poet Simon Ortiz’s *Woven Stone*, and novelist N. Scott Momaday’s *House Made of Dawn* that describe both alternative cultural approaches to understanding the natural world and wrenching experiences of environmental and social change. These new perspectives often challenge deeply held conceptions of the human-nature relationship, and attempt to engage new and broader audiences.

**Environmentalism: An inadequate reach**

Some argue that environmentalism largely remains a reform movement committed to the assumption that the environmental crisis can be solved within the current political and economic system, without challenging underlying values or questioning contemporary lifestyles. For 40 years, the environmental movement has worked to develop new policies, regulations, and legislation to protect the environment and relied upon large expert bureaucracies and the judicial system to enforce these rules and regulations. Likewise, many environmentalists today are working to promote green thinking and practice within corporations and consumer markets. Working within the system, rather than questioning it, environmentalists have tended to be pragmatic and incrementalist, often focused on solving individual problems rather than addressing deeper underlying causes.

Environmentalist discourse and action have often been dominated by wonkish, technocratic policy proposals, with relatively little attention paid to the deeper structural flaws in political and economic systems, development of broad-based grassroots movements, or the cultivation and dissemination of environmental values, attitudes, and behavior through mass society. While the environmental movement has won many battles, for which it deserves great credit, it is also evident that the state of the global environment continues to worsen on many dimensions. Environmentalism needs to sharpen its critique of contemporary culture, economics, and politics, reach out and form alliances with other social movements, invest in the intellectual development of core concepts, ideals, and values, and wage effective campaigns to win hearts and minds.

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**Policy: Dysfunctional political systems**

A transition to a sustainable world will require comprehensive change at all levels of society – from the local to the global. Many political

systems, however, are dysfunctional or corrupt. Cronyism, revolving doors, corporations, lobbyists, special interests, gerrymandering, scandal, and a lack of inspired leadership all corrode the ability of government and politics to solve fundamental environmental or social problems.

The local level, however, is proving to be fertile ground for transformative action. Cities, counties, states, and other local groups have taken bold action to address both local and global issues, such as climate change. These smaller-scale actions are often innovative and when they succeed, can provide tangible examples of what is possible. Furthermore, local success can provide a source of hope in the face of despair brought on by corrupt national politics. While serving as the source and testing ground for new ideas and new approaches, however, ultimately these local solutions have to be scaled up to the national and international levels if we are to successfully deal with our global environmental challenges.

Yet even within the network of environmental groups, there is often a lack of leadership and coordination. Some argue there are too many groups, with insufficient collaboration and duplication of effort at best, and dysfunctional competition at worst.

### **Policy: Fragmentation and incrementalism**

The policy discourse has become fragmented. The prevailing pro-environment arguments made today are technocratic, reductionist, and overly specialized. Many policymakers and the public perceive the environment as just another special interest, unrelated to other issues, and thus easier to ignore or discount. Likewise, within the policy community there is insufficient systemic perspective or holistic thinking and an over-reliance on old tools and approaches (e.g., government regulation). We need new ideas “outside the box” to get broad ownership of the problem and participation in the effort to solve our shared environmental challenges.

Further, there is an assumption that policy reform and working within the system will bring about the changes needed, that honing the perfect argument in conventional territory, using the language of economics, lobbying the technocrats in Washington, will eventually achieve success. The environmental crisis, however, is now too big and the time to address it too short to rely on this traditional incremental policy approach. Bold, innovative, and aggressive policies are now called for. We may be entering an historical moment of crisis when

economic concerns and arguments become less dominant than other competing values and appeals (survival, well-being, health, etc.).

### **The imperative of economic growth**

The great sociologist Daniel Bell once noted that economic growth has become “the secular religion of the advancing industrial societies.”<sup>17</sup> Economic growth is a dominant goal in all societies and the system of political economy we call contemporary capitalism is very good at delivering it. Likewise, the measures and indicators of economic growth, productivity and consumption are endlessly reported by the media and permeate the collective consciousness of entire societies. Growth and consumerism now define our measures of success, our self-identity, and our views of others. Countries and companies are judged by how rapidly they grow and people are judged on the basis of their wealth and consumption patterns. Many leaders today believe that “there is no alternative” to consumer capitalism and the corporate-driven economy. Likewise, many continue to believe that market forces are the solution to all problems. Further, the dominance of market forces in decision-making, the privileging and reliance on material consumption as a driver of economic growth, quarterly reporting and short-term shareholder value, and the globalized sprawl and increasing invisibility of product lifecycles, from resource extraction to manufacturing to distribution to consumer use and disposal, have enormous impacts on the environment and society. One historian has even argued that “the overarching priority of economic growth was easily the most important idea of the twentieth century.”<sup>18</sup>

### **Philanthropy: A lack of holistic, systems, and strategic thinking**

The philanthropic sector often invests in projects to fix pressing environmental and social problems. Philanthropic organizations have become very good at describing what they are against (pollution, poverty, disease, etc.). Rarely, however, do they invest in projects that help articulate what they are for – detailed, concrete, and positive visions of a better world and roadmaps to help get us there. Thus, much of philanthropic giving has been relatively tactical and

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<sup>17</sup> Daniel Bell, *The Cultural Contradictions of Capitalism* (New York: Basic Books, 1978), 237-238.

<sup>18</sup> J. R. McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (New York: W. W. Norton, 2000), 336.

piecemeal, not strategic. This tendency is reinforced by the corporatization of foundations, with increasing emphasis placed on quantifiable, short-term results. For example many foundations are afflicted with “projectitis” – a trend toward only funding projects that promise short-term results instead of programs building longer-term transformative capacity. Likewise, the tendency towards tactical, not strategic thinking is reinforced by competition, lack of cooperation, and inadequate coordination among foundations.

## **NORMS AND BELIEFS**

### **A lack of urgency**

Many political leaders and members of the public in the U.S. have not yet comprehended the urgency of the environmental crisis. While the sense of urgency about climate change has grown recently, it still is underappreciated and we are running out of time to avoid the worst consequences. Meanwhile, climate change is just one of many global environmental stressors that have potentially disastrous consequences, yet barely register on the radar screens of leaders (e.g., ocean acidification, nitrogen pollution, overfishing, patterns of consumption, and population growth). Although broad publics profess positive environmental attitudes and express concern about the state of the world’s environment, there clearly remains a very large gap between declared values and actual behavior, at the level of individuals and society as a whole.

### **The belief that scientific knowledge is value-neutral**

Scientists often insist that they deal with facts, not values. Yet others argue that values permeate the scientific process – from guiding which research questions to pursue, what research gets funded, how basic knowledge gets translated into applications, and which scientists are recognized and rewarded. For example, the scientific community typically reserves its greatest rewards for basic research that advances abstract theory, rather than research that solves fundamental social or environmental problems. This professional norm tends to further insulate scientists from the ethical implications of their work. There are also often significant ethical issues in the conduct of research, whether with human subjects, with genetic materials, or more broadly in the scientific problems that get emphasized (and funded) and those that do not. Likewise, university

reward systems (e.g., tenure and promotion) tend to reinforce this belief and predominantly focus on “value-neutral” knowledge production.

### **Scientists should not advocate**

Many scientific disciplines are currently struggling with the proper role of science and the scientist in society. Some argue that scientists should focus only on the production of scientific facts and leave value judgments to policymakers and the public. They further argue that when scientists speak out as advocates for action, say on environmental problems, they diminish the public perception that scientists provide objective truth, debase scientific credibility, and reduce scientists to just another special interest group prone to making up, selecting, or distorting facts to fit a pre-established subjective agenda.

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**Many scientists have found that the natural systems they have devoted their lives to understanding are disappearing literally before their eyes.**

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In response, other scientists argue that science – through the scientific method and rigorous empiricism – has identified and described a wide array of human factors currently tearing ecosystems apart, degrading human health and well-being, and destroying the life-support systems of the planet, in rapid and irreversible succession. Further, many scientists have found that the natural systems they have devoted their lives to understanding are disappearing literally before their eyes. Given these pervasive and dangerous impacts, these scientists argue that to stand by and say nothing, especially given scientists’ unique understanding of what is happening, is problematic at best and immoral at worst.

### **Environmental behavior is an individual responsibility**

The prototypical environmental behavior today is recycling – which is primarily an individual behavior. Likewise, individuals are told they should buy green products, turn down the thermostat, buy compact fluorescent light bulbs, drive less, buy more fuel efficient cars, eat organic, eat local, etc. Meanwhile, relatively little attention is focused

on the vital need for systemic changes in collective behavior. Political action, carbon pricing, government incentives and subsidies for clean energy development, increased regulation of polluters, etc. are all examples of social policies and behaviors that are required to deal with the environmental crisis. Individual consumption and conservation, while important on many levels, are simply inadequate to address the scale and scope of our current challenges.

### **Consumerism as the basis of self-identity**

The desire for and expression of individual identity has become a major force in modern culture and societies. These desires have been amplified and exploited by marketers to sell products, by which people can now construct and display their identities through conspicuous consumption. Individuals now adopt distinct “lifestyles” or particular ensembles of material products, homes, color schemes, hobbies that become both sources of individual identity and the means by which these identities are signified to others. A new home, wardrobe or hairstyle hold the tantalizing promise and thrill of self-fulfillment, actualization, and happiness, followed inevitably by the return of restless dissatisfaction, leading to the next product, the next service, the next marker of identity. As one participant argued, consumption is no longer merely an act by which we satisfy our needs, but a means to acquire an identity and a “lifestyle” that represents the type of person we want to be.

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This process helps to fuel consumerism, which is the primary engine of many developed economies, which in turn drives much of the increasing exploitation and degradation of the global environment. Finally, as personal identity becomes further entangled with consumer behavior, it becomes harder and harder to challenge existing patterns of consumption.



### III. Prescriptions

*“If we don’t change our direction,  
we’re likely to end up where we’re headed.”*

– Chinese Proverb

After diagnosis comes the difficult, but critical challenge of searching for cures. We must ask ourselves what kind of a world we want to live in, what kind of world we want our descendants to live in, and how we can we get there. Fundamental questions include:

1. What changes in values, culture, and worldview need occur in order to live lives rich with personal meaning, strong human ties, and a resonant connection with nature?
2. What sources of inspiration, strength, and vision can reconnect us with nature and help us rediscover our historical and biological past, confront the challenges of our political present, and achieve a sustainable and enriching future?
3. What circumstances, events, and forces can catalyze changes in fundamental values and transform culture and society at both the individual and institutional level? What can precipitate a major shift in identity, worldview, and political behavior?

Again working in both small discussion groups and plenary sessions, the conference participants generated a number of promising initiatives and proposals to help catalyze a shift in the values and worldviews underlying the environmental crisis. These include the development of new narratives to guide and inspire social transformation, and changes in the practice of science and education, religion and ethics, and policy and economics. Given the enormity of the task, these proposals certainly do not exhaust the realm of

possibilities. Effecting a mass change in public environmental values, priorities, and behavior will require the concerted efforts of millions of committed individuals and organizations seeking a better and more sustainable world – a movement which is already well underway. These proposals are intended to spark a broader conversation about ways to catalyze deep change and inspire others to search for, create, and implement their own answers to these fundamental questions.

### **NEW NARRATIVES**

#### **Create new narratives that:**

- *Vividly depict the kind of world we are “for,” not just the problems we are “against.”* One part of the story is about crisis: conveying the idea that the relationship between humanity and the natural world is at a tipping point and that the situation is urgent. This approach can help generate dissatisfaction with the status quo, but fear and worry by themselves are insufficient. People must also see a way out of the current dilemma – a vision of a better world and the pathway there. To inspire new narratives, one potential initiative is a literary competition offering a prize for the best novel and work of non-fiction depicting a sustainable world and how to get there.

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**How should individuals and societies measure success? Higher incomes, growing GNP, greater material consumption? How much is enough? What constitutes “quality of life”? What truly makes individuals happy?**

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- *Raise fundamental questions:* How should individuals and societies measure success? Higher incomes, growing GNP, greater material consumption? How much is enough? What constitutes “quality of life”? What truly makes individuals happy? The economy and markets are human constructs, human tools, but to what ends? What means are appropriate, ethical, and acceptable to achieve our individual and social aims?

- *Re-envision “The Good Life”* while recognizing pluralism and allowing multiple visions – there is no single master narrative that fits all people, all places, and all circumstances.
- *Seek to alter the trajectory of ever-greater material consumption.* Social psychology research has demonstrated that people who voluntarily simplify their lives are happier than others in affluent society. These individuals have shifted their focus from the acquisition of more and more things, to the goals of self-acceptance, strong relationships with friends and family, and community engagement. They also embody a shift from material affluence to time affluence. This story puts a different spin on traditional environmental arguments because it does not depend on expert and scientific descriptions of the state of the world to motivate change. Instead, it works at a deeper psychological and cultural level by asking people what truly makes them happy, and how they might realign their lives accordingly.
- *Articulate ecocentric and biophilic ways of thinking.* In this view humanity is understood as co-existing within nature— a community that includes land, water, air and biota. It is Aldo Leopold’s land ethic expanded. The central challenge is for humans to develop an ecological identity: to conceptualize ourselves as existing as part of and because of the biosphere. Further, the experience of the natural world is vital to human health and well-being. Our ecological niche is now the entire planet, but cultural evolution has not yet caught up to this new fact. We must now adapt to this global scale by reconceptualizing our relationship to nature.

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- *Emphasize themes of health and wellness.* The global environmental crisis is part of a broader set of enormous challenges to human physical and mental health, the health and viability of other species, and planetary health. When individuals develop a life-threatening illness, they often experience extraordinary transformations of the human spirit and values that are rarely toward materialism. Is the current threat to planetary health an analogous situation for humankind? Is the same kind of transformation possible?
- *Emphasize liberation, not sacrifice.* We must anticipate that the opposition will continue to caricature environmentalism as sacrifice in its bleakest sense (“back to the Stone Age”). We must subvert these attacks and reclaim the meaning of a better quality of life. The “less is more” message is tired. More aspirational: “Rich lives, instead of lives of riches.”

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### **“Rich lives, instead of lives of riches.”**

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- *Reclaim the word “sacrifice.”* Sacrifice for a purpose greater than one’s self has a long, deep, and rich cultural history – human beings have long been willing to sacrifice their comfort, possessions, and even their lives for freedom, for equality, for God or for country. History demonstrates that human beings are often willing to endure hardships, bear burdens, and make sacrifices in pursuit of a greater good. How can we reclaim and harness this force for the common good?
- *Invoke the language of faith and spirituality.* The discourses of science and policy, while necessary, are not sufficient to motivate mass changes in values and behavior. The work in world religions and ecology has important contributions to make in this regard. In particular, the language of faith and spirituality can inspire a sense of human embeddedness in living systems. The prevailing language of science too often conveys a sense that the universe is like a machine – a collection of non-living parts operating by natural laws. Many people will be more motivated to save the planet if the

sacredness of creation is included in the conservation message. The sense of an enchanted, awe-inspiring universe and creation can reawaken a commitment to the Earth that the scientific narrative alone tends not to stimulate.

- *Embed the human story in a deeper understanding of the human relationship to nature – the Universe Story.* A deep understanding of modern cosmology places human beings within the grand narrative of the universe – from the Big Bang, to the formation of galaxies, the coalescing of Earth and the solar system, and the origins and evolution of life. This narrative reminds us that human beings are not separate from nature and its processes – we emerged from it, we are the descendants of a vast, complex, terrifying, and beautiful universe, inhabitants of an incredibly precious planetary home, and kin, literally, genetically, to all other life on Earth. These ideas and this story fundamentally challenge our traditional understandings of what it means to be human in relation to the natural world. Yet this emerging awe-inspiring story has yet to be adequately translated from the natural sciences into the humanities or into the culture at large, where it could help transform our deepest conceptions, values, and worldviews.

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**Create new metaphors**

Recent advances in cognitive science have demonstrated that metaphor is not merely the domain of artists and poets, but fundamental to the very workings of human cognition. The magnitude of the global environmental crisis requires a critique of the inherited and dominant metaphors of nature used by contemporary society, an exposure of their limitations and destructive implications, and the creation of new metaphors that articulate more ecologically responsible conceptions of human beings, of nature, and the proper relations between them. More practically, metaphor fundamentally shapes how people understand and respond to environmental problems, like the “ozone hole,” the “greenhouse effect” and “global warming.” We need new metaphors that accurately represent scientific understanding, but also engage powerful and emotionally motivating networks of associations in the human mind.

**Develop television programs and films to model and promote the transition to a new environmental consciousness, sustainable behavior, and lifestyle**

This technique (entertainment-education) has sparked rapid and sweeping social change – in social values, norms, and most importantly in behavior – in developing countries around the world with great success. This approach has changed mass values and behavior regarding issues such as HIV/AIDs, infant mortality, family planning, literacy, and women’s rights. These projects start with in-depth social science research (interviews, focus groups, surveys) to identify key target audiences in a society and the barriers preventing them from adopting the new behavior. Screenwriters then create stories with characters that represent the target audience, confronting the same barriers they confront, but finding ways to overcome them. Research has found that millions of viewers and listeners often strongly identify with these characters and their struggles and are inspired to change their own lives through the example of these role models.

**Organize a national conversation on “The Good Life” and “The New American Dream”**

A series of structured dialogues in cities across the United States, perhaps held simultaneously and linked electronically, could be

organized to help local communities and the country at large confront the challenges Americans currently face, including the global ecological crisis, and provide a forum to discuss and deliberate the meaning of the “American Dream” in the 21<sup>st</sup> century. Such a forum should provide the opportunity to reflect on the meaning of “The Good Life” and our deepest values, goals, and aspirations as individuals, families, and communities, as well as to question the current trajectories of material consumption, environmental and social degradation, and the current meaning of the “pursuit of human happiness.” The National Conversation on Climate Action (a partnership between Yale F&ES, ICLEI – Local Governments for Sustainability, and the Association of Science and Technology Centers) is a potential model.<sup>19</sup>

### **Identify, profile, and promote examples of “The Good Life”**

It is vital that we track, catalogue and broadcast real world examples of the changes in behavior and ethical lifestyle we are trying to promote. Further, we need to develop a concrete positive vision through living examples: What does a two-tons-of-carbon-per-year lifestyle actually look like, and what would it take to get there? Can we demonstrate that this way of living can be exciting, meaningful, and more fulfilling than current lifestyles?

## **SCIENCE AND EDUCATION**

### **Support and promote sustainability science**

A major initiative should be undertaken to support the new field of sustainability science. Sustainability science (also known as “boundary science”) occurs in the “ecotones” where basic and applied research overlap. Sustainability science focuses on theoretically important questions that also have real-world applications. It seeks to understand the drivers of sustainability – economic growth, wealth and distribution, environmental protection, and human development and security – and often partners with real-world decision makers to answer their pressing questions and needs.

For example, we currently lack fundamental knowledge about the role of human values, attitudes, and worldviews, in (un)sustainable behavior. To address this critical knowledge gap, some have called for

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<sup>19</sup> More information on the National Conversation on Climate Action can be accessed at [www.climateconversation.org](http://www.climateconversation.org)

a Millennium Assessment of Human Behavior – an international effort to identify, measure, and explain global trends in sustainability values, attitudes, and behaviors.<sup>20</sup> We need to understand, through rigorous empirical studies, the role core values play in human behavior. Which values matter most? How do values and worldviews differ around the world and how do they influence different cultural trajectories of development and consumption? What are the barriers to translating declared values into actual behavior?

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Similarly, we need empirical research on human well-being. What factors drive not only human health, but happiness and fulfillment? What implications do these have for the way our societies and economies are currently structured? What are their ecological implications? How can they be used to promote ecological sustainability? How are human and ecological well-being linked and mutually supportive?

Another potentially useful direction for sustainability science is an examination of re-localization movements. Re-localization is, in many ways, the opposite of globalization and includes the recent development of decentralized and local economic and social networks. For example, relatively little academic research has examined the environmental effects of bioregionalism, local markets, or community supported agriculture. What is driving these re-localization movements? What are their ecological and social consequences? Do they help transform people's relationship with their local ecosystems? Do they lead to greater human and ecological health? Are they economically sustainable?

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<sup>20</sup> A. Leiserowitz, R. Kates, and T. Parris. "Sustainability Values, Attitudes and Behaviors: A Review of Multi-national and Global Trends" (*The Annual Review of Environment and Resources*, 2006), 413-444. Paul R. Ehrlich and Donald Kennedy, Op. Cit.

Although often relatively marginalized within individual disciplines, there is also a large and growing movement of humanities scholars exploring and analyzing the links between the environment and literature, history, philosophy, religion, and the creative arts. These pioneering efforts need further support, expansion, and integration across disciplinary boundaries, including reaching out to engage broader society in a critical evaluation and transformation of dominant cultural narratives and practices regarding human-nature relationships.

### **Increase funding for global change and sustainability science**

Science to understand and develop solutions to the ecological crisis requires significantly more, long-term support from funders, including the National Science Foundation, philanthropies, and scientific organizations. Likewise, the traditional structures of academia, funding, and reward systems remain major obstacles to the conduct of interdisciplinary research. Traditional funding is for relatively short individual research projects lasting only a few years. Interdisciplinary research, however, inherently takes longer to conduct as scientists must integrate different fields, methodologies, and theories in the effort to understand the complex, interconnected reality of major environmental and social problems, which cannot be understood solely from the standpoint of any one discipline.

### **Produce an IPCC-like assessment of global sustainability values, attitudes, and behavior**

Our current empirical understanding of the current state, trajectories, and drivers of sustainability values, attitudes, and behaviors around the world is very limited. There is a critical need for collaborative research to identify, measure, and explain the trends in sustainability values, attitudes, and behaviors over time. This research should integrate survey, ethnographic, historical, and experimental methods leading to both global-scale surveys repeated at regular time intervals, and local-scale, intensive studies to identify and overcome critical barriers to sustainable behavior. As a first step, an international workshop could be convened to gather the lessons learned from past studies of global values, attitudes, and sustainability behaviors and develop a collaborative research program. Key research questions include:

- What are the key factors that drive cultural evolution and social change? What can we learn from the analysis of past societal paradigm shifts? What universal and particular factors underlie each?
- What explains the differences in sustainability values, attitudes, and behaviors across different nations, regions, or levels of economic development?
- Overall, what value and lifestyle changes will be required to achieve a sustainable world?
- What can we learn from past successful and unsuccessful efforts to change public attitudes and behaviors (e.g., smoking and drunk driving)?
- What are the primary value, attitudinal, and structural barriers that constrain sustainable behavior in particular social, economic, political, cultural, and geographic contexts?

### **Construct and convey a range of possible futures**

Scientists can help support change by constructing empirically-based scenarios, illustrating a range of potential futures for policymakers and the public to consider, evaluate, and choose between. Most people are so caught up in the activity of the present that it is very difficult to imagine where current global trends and trajectories might be leading. These scenarios should describe both the potential futures that we desire and those that we do not, extrapolating from both current trends and trajectories, and the key decisions that individuals, governments, companies, and civil society will be making over the next several decades.

### **Encourage greater engagement of scientists in societal decision-making**

Scientists need to be encouraged to participate in education, outreach, and policy-making. If scientists remain in their laboratories, offices, and campuses and do not engage with the outside world, they risk alienating the public and policymakers. More fundamentally, the engagement of science and scientists will be absolutely necessary (although insufficient) to achieve a global transition toward a sustainable world. Courses to teach scientists how to speak publicly about their research and about the policy

implications should be integrated into graduate school science programs. The Aldo Leopold Leadership Program at Stanford University is one example of a successful effort to help scientists better communicate with journalists. Reward systems within science and academia should be developed to encourage scientists to engage with different audiences outside the lab and outside the ivory tower. Further, this communication should not be unidirectional, with scientists merely translating and disseminating their findings to the public. Scientists need to engage the public in dialogue about the fundamental ends and means of scientific research.

### **Create a national center for environmental education**

This organization would develop environmental science and studies curricula, materials, and teaching plans, train teachers, and integrate environmental science and studies into state standards, AP courses, and local curricula for grades K-12, based on a number of curriculum principles:

- *Promote environmental education as part of the core curriculum*, not just the occasional event or field trip.
- *Develop interdisciplinary, integrative, and theme-based approaches* to environmental education. Draw upon multiple subjects like science, mathematics, geography, history, art, and literature to teach environmental awareness and understanding.
- *Teach about both local and global environmental change* and the connections between these scales. There are many opportunities to observe global change at the local level and to examine local contributions to global problems.
- *Provide place-based experiential learning* and exploration of ecological processes and problems.
- *Further develop virtual learning*. The Internet, Google Earth, on-line games, and social network sites provide many opportunities to facilitate environmental awareness and understanding.
- *Promote public service learning*. Students can engage in hands-on projects to solve local environmental problems, using the knowledge and skills they learn in the classroom.

- *Involve students in the sustainable design of their own schools.*
- *Promote courses in world history and geography.* These subjects help students understand the often invisible threads of culture, economics, politics, material flows, environmental and social impacts that link disparate people and places in this increasingly globalized and interconnected world.
- *Develop courses, readers, curricula on worldviews and nature.* Teach how different cultures, religions, and historical periods have conceptualized the origins and nature of human beings, the natural world, and the proper relationship between them. The Forum on Religion and Ecology, through its conferences, publications, and website, provides a rich set of resources.<sup>21</sup> Western civilization can learn much about sustainability from ancient cultures, other religions, and indigenous peoples around the world. Many of these cultures have long emphasized the need for humans to maintain respect, reciprocity, partnership, kinship, and a sense of being-in-relation with the more-than-human world – key principles deserving rediscovery and renewal in the development of a global, 21<sup>st</sup> century worldview.
- *Integrate the story of the universe in the science curriculum.* Our place in nature, on earth, and in the universe could be woven throughout the entire curriculum. A soon-to-be-released film and a DVD series titled “The Heart of the Universe” will tell the universe story and seek to inspire and activate the sense of environmental responsibility.

## **RELIGION AND ETHICS**

### **Develop an ethics of reverence for the Earth**

Spirituality, ritual, and scripture are all critical resources to draw on during this moment of transition. At the heart of the great transformation we seek is a sense of belonging and interdependence, which religious and spiritual traditions are especially competent to articulate. Religions are one of the oldest of wisdom traditions and have shaped views of human-nature relations in cultures around the

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<sup>21</sup> The Forum on Religion and Ecology can be accessed at [www.yale.edu/religionandecology](http://www.yale.edu/religionandecology).

world. Religions are not static, but adapt in response to challenging circumstances. Though embedded in worldviews, religions are also formative, and often transformative, of those worldviews as the examples of the Quaker rejection of slavery in the 19<sup>th</sup> century and the role of religion in the civil rights movement of the 20<sup>th</sup> century make clear. Indeed, the moral force of reverence for nature evident in the world's religions is currently being activated to respond to the environmental crisis. Moreover, contemporary attention to religion's role in shaping environmental ethics has facilitated the realization that there are inseparable connections between social and environmental justice. Thus, the world's religions may make novel and significant contributions that will change both our conceptions of environmental issues as well as the religions themselves.

### **Revitalize the sense of the sacred**

The Western humanities and culture have often either dismissed or marginalized the sacred by placing it in the realm of the transcendent instead of the "here and now." For many, the sacred is limited to notions of the afterlife, or specific spaces such as churches, mosques, and synagogues. The sense of the sacred needs to be revitalized and reintegrated into our understanding of the natural systems of the planet to enhance the sense of connection and inextricable embeddedness in nature. The humanities and the world's religions can provide the language to reinvigorate this sense of connection to something vital, older, and more comprehensive than any individual human life.

### **Convene a dialogue on cosmology**

Each religious tradition has emerged out of different cosmological frameworks, scriptures and practices. At the same time, science now offers its own large-scale cosmological story. While there are certainly fundamental differences in these cosmological worldviews and epistemologies, there is also a tremendous opportunity to invite world religions to enter into a dialogue with the natural sciences to discuss the deeper significance of these scientific findings and how science and religion could work together to address the interlinked global environmental and human crises of sustainability.

**Revitalize the Golden Rule**

“Treat others as you would have them treat you.” This fundamental statement of human ethics can be found in many of the world’s greatest religions. How do we reinvigorate this precept in our relations with each other, especially with regard to the great questions of environmental justice between the haves and have-nots both within and between countries? How might it be expanded to include ethical consideration of the natural world within the human community and vice versa?

**Emphasize compassion as part of the human relationship with nature**

Altruism is more than a biological/evolutionary phenomenon. The term “compassion” better captures the human ability to “feel with” and care for other human beings, species, and non-living nature. Human compassion (and outrage) can invoke deep moral intuitions and motivations to protect the natural world from further destruction and degradation. Demonstrating how humanity is part of creative, natural processes, not separate and detached, can help to catalyze compassion for the more-than-human world. We should tear down the conceptual walls that stand between humans and nature to view ourselves more properly as part of the natural world and vice-versa.

**Articulate intergenerational responsibility**

We need to expose the false trade-off between saving people and saving the planet and develop a stronger sense of intergenerational responsibility. Relieving the poverty of the majority of the planet’s children today is essential to the creation of a long-term sustainable and harmonious relationship with the Earth. Focusing on the next generation of humanity can also help unite the social justice and environmental protection communities. The end is the same: protecting the offspring of all species.

**Promote ecological ethics as integral to social ethics and vice-versa**

Environmental ethics has for too long been focused solely on the ethics of human behavior toward the non-human world. Likewise, social ethics have rarely incorporated a consideration of human moral duties and responsibilities toward the natural world. These two domains need to be interconnected, as it has become increasingly evident that the health and functioning of the environment impacts

the health and functioning of society, and vice versa. For example, there are critical links between social injustice and biological degradation, ranging from mountaintop removal for coal, to the siting of polluting factories and waste disposal facilities in poor and minority neighborhoods, to the injustice of climate change, in which the primary beneficiaries of fossil fuel burning (developed countries) are not the primary victims of the impacts of climate change (developing countries). Environmental quality should be a human right.

### **Stress local community while fostering global solidarity**

Listening and connecting to others is critical. Deliberate efforts must be made to include people who have not traditionally been associated with the environmental movement. Further, community must be understood as encompassing multiple dimensions ranging from the local to the global. Globalization increasingly links people around the world, but we must also reinvigorate our relationships with neighbors and local communities. At the same time, while local communities need to be inclusive of diverse local groups and revitalize their connection to place, they must also strengthen connections with larger regional, national and global concerns and networks. To achieve human solidarity requires fostering awareness and connection to the concerns of other people, both locally and globally. The language of faith can also work at this local-global interface by conveying how local commitment relates to something greater than ourselves and our own time on Earth. For example, the new film “Renewal” provides eight case studies of grassroots religious environmentalism in the United States.

### **Endorsement and adoption of the Earth Charter**

The Earth Charter Initiative originated in the call of the World Commission on Environment and Development for the creation of “a universal declaration” that would “consolidate and extend relevant legal principles” creating “new norms . . . needed to maintain livelihoods and life on our shared planet” and “to guide state behavior in the transition to sustainable development.” Launched in 1994, the Initiative claims to be “the most open and participatory consultation process ever conducted in connection with an international document. Thousands of individuals and hundreds of organizations from all regions of the world, different cultures, and diverse sectors of

society . . . participated.” The Charter presents four general-level values (community of life; ecological integrity; social and economic justice; and democracy, nonviolence, and peace). These are elaborated with sixteen intermediate-level principles and an additional sixty-one specific-level values. Since its release in 2000, the Charter has been endorsed by over 13,000 individuals and organizations representing millions of members. This soft-law document for a global ethics remains open for endorsement by other organizations and communities.<sup>22</sup>

## **POLICY AND ECONOMICS**

### **Support a grassroots movement**

Policy analysts cannot create a movement by themselves. They can, however, help to prepare the ground so that when a movement coalesces, policy tools and leaders are at the ready with a clear sense of the goals and paths to take. The movement to ban the slave trade provides an inspiring example. The British Parliament ultimately banned the slave trade, but it was a religious movement, in particular the Quakers, that demanded and created the social and political conditions for this change, otherwise known as “political will.” This change was not evolutionary, it was revolutionary. The demand was not, “cut back on slavery” – it was “do away with slavery altogether.” Incremental policy change, while important, is ultimately inadequate to the size and scale of the global environmental crisis.

Given that the task is to bring about a new consciousness, which represents change much deeper than new programs, laws, regulations, and institutions, it is imperative that environmentalism cease being viewed as a special interest. What is required is a systems shift, a new holistic view of the world we live in. The challenge of working for change through policy measures is that they tend to make change at the margins. What’s needed instead is not just the idea that there is something very wrong with the status quo, but a powerful, inspiring vision of a better world. If widely accepted, the policy changes will follow. In this sense, policy is the cart, not the horse. Yet, policymakers and analysts can help to develop the social capital, the political capital, the planning for a movement that may be emerging in response to the ecological, social, and economic challenges of the present and future.

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<sup>22</sup> The Earth Charter is available online at [http://earthcharterinaction.org/ec\\_splash/](http://earthcharterinaction.org/ec_splash/)

### **Encourage behavior change along with a change in values**

The late Senator Daniel Patrick Moynihan argued that, “The central conservative truth is that culture, not politics, determines the success of a society. The central liberal truth is that politics can change a culture and save it from itself.”<sup>23</sup> Sociologists have found that the engrained, routinization of behavior, over time, can lead to sea changes in values. Focusing solely on changing values first may miss the opportunity to engrain new behaviors, which may themselves lead to new values. Part of the value of policy is that policy can require changes in behavior, whether or not citizens and companies currently hold the values that would lead to those behaviors without regulation.

Democratic governments, however, cannot govern without the consent of the governed and often cannot adequately enforce changes in individual behavior. Thus policy and value change need to support each other, creating synergies and positive feedbacks that lead to large-scale changes in human behavior. Changes in smoking, seat belt use, and drunk driving are all recent examples of the mutually reinforcing impacts of shifts in public values and attitudes on the one hand and changes in government policies on the other.

Incremental approaches remain important and can achieve success as well, in part by laying the groundwork for more rapid, revolutionary change later. Start small, but aim for increasing returns. We may desire and even need revolutionary change now, but in the interim, incremental progress is still vital.

### **Prepare for the opportunities inherent in future crises**

There is often opportunity in crisis and the policy domain needs to be prepared to act when it occurs. Crises like Pearl Harbor, Three Mile Island, and 9/11 resulted in rapid and fundamental shifts in public priorities and institutions. As global environmental conditions continue to deteriorate, there will be inevitable surprises, shocks, and disasters. How can leaders be prepared not only to better respond to the damage and destruction of these events, but also to take advantage of these “teachable moments”? We need to prepare for future ecological crises by creating institutions, systems, and roadmaps for change so that negative responses, such as authoritarianism, do not seize the day.

We need to reach out to each other, create committees of correspondence or networks that understand all these issues as parts of a

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<sup>23</sup> Lawrence E. Harrison, *Op. Cit.*

common project. Likewise, we must prepare a diverse portfolio of policy options and strategies. It is impossible to predict exactly which seeds will grow, which policies will be adopted, or which pathways the world will chose. There will undoubtedly be surprises, and both unforeseen crises and opportunities are highly likely.

### **Develop better measures of societal progress and well-being than GDP**

Many economists have argued that the Gross Domestic Product does not adequately measure the current state of either the economy or social progress and well-being. For example, many social and ecological “bads” are mischaracterized as positive economic benefits. An oil spill may generate millions of dollars in clean-up costs, which are counted merely as an increase in GDP. Meanwhile, the many environmental costs, such as killed birds, fish, and animals are not accounted for – they become “externalities.” Redefining Progress is one example of an organization that has tried to design a measure of economic progress that internalizes these environmental and social “externalities.” Meanwhile, others are calling for new national measures of subjective well-being, as better indicators of changes in social welfare than a simplistic and misleading measure like GDP.

### **Establish an American “Land Service” or “Green Corps” modeled on the Peace Corps**

Volunteers could work within the United States or internationally to help conserve, preserve, or restore natural environments and processes, or address global environmental challenges, such as climate change.

### **Reconnect people with nature**

A trend toward bringing the land back to the city is already quietly building in the form of Community-Supported Agriculture (CSA) programs, farmers markets, efforts to source school lunches locally, and the conversion of abandoned properties and brownfields into community gardens. A concerted effort is needed to amplify these innovations and explore other ways of reconnecting people to nature within urban settings.

It is equally imperative to support efforts to connect people with experiences of wildness. There remains tremendous value in the experience of places and settings that are not human-dominated. Experiences with wild nature can also help instill and amplify a sense of human embeddedness in nature, as opposed to the negative frame associated with protecting land *from* people.

## Afterword

*Stephen R. Kellert*  
*Tweedy/Ordway Professor of Social Ecology*  
*Yale School of Forestry & Environmental Studies*

This conference focused on an extraordinarily important and historic issue. We confronted two profound and linked crises – the environmental crisis marked by threatening perturbations to many of our basic life support systems, as reflected in widespread biodiversity loss, increasing toxification of food chains, depletion of critical natural resources, and above all global climate change; and the equally grave and linked crisis, one of the human spirit, as reflected in a culture of alienation, placelessness, and a loss of meaning and purpose. A fundamental premise of this gathering was that these crises of nature and humanity are opposite sides of the same coin, reflecting a species that has lost its place in the natural order of creation.

Only by recalibrating our basic values and consciousness toward nature can humanity achieve the wisdom and will to address this connected environmental and social crisis. No amount of clever regulatory tinkering, technological innovation, economic efficiency, or scientific knowledge can alone answer the scale of our need. We need to address the roots of our predicament – an adversarial relation to the natural world – and find a way to shift our core values and worldviews not just toward the task of sustainability, but toward a society with a meaningful and fulfilling relationship with the creation. In striving for harmony with nature, we need to seek not just a more physically secure and prosperous society, but one marked as well by moral and spiritual wellbeing.

This is, of course, an enormous and perhaps even arrogant undertaking. Yet, however great this challenge, there is cause for hope. Various currents are at work in the world today that have laid the basis for a great reawakening and transformation of the human

relationship with the natural world. These include rapidly expanding public awareness of the ominous global scale of our environmental crisis; increasing cognizance of the relation of environmental degradation to fundamental economic, social, and political forces; the development of new knowledge and technological innovation seeking to mitigate and even reverse our environmental impacts; and, an expanding realization that human health, productivity, and even moral and spiritual wellbeing depend on the quality of our connections to the more than human world. Despite the dominance until now of a value system that has encouraged environmental degradation and alienation from nature, we are now coming to appreciate that an impoverished biotic system is not only a threat to our physical security, but also to our fullest potential for fulfillment and happiness.

We may be at a proverbial tipping point where modern society aspires not just for economic sustainability, but for harmony and grace that can only be engendered by a richer and more celebratory relation to creation. The moment is at hand for us to serve as an instrument for noteworthy and enduring change. Our aspirations are echoed in the words of the great environmental sage and 1909 graduate of the Yale Forest School, Aldo Leopold, when he remarked:

*“There must be some force behind conservation, more universal than profit, less awkward than government, less ephemeral than sport, something that reaches into all times and places . . . something that brackets everything from rivers to raindrops, from whales to hummingbirds, from land-estates to window-boxes . . . I can see only one such force: a respect for land as an organism . . . out of love for and obligation to that great biota.”*<sup>24</sup>

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<sup>24</sup> Aldo Leopold, “The Meaning of Conservation” (undated handwritten notes, circa 1946) quoted in Curt Meine and Richard L. Knight, eds., *The Essential Aldo Leopold: Quotations and Commentaries* (Madison: The University of Wisconsin Press, 1999), 309.

## Conference Participants

The conference “Toward a New Consciousness: Creating a Society in Harmony with Nature” was convened by the Yale School of Forestry & Environmental Studies in Aspen, Colorado, October 11-14, 2007. The conference brought together 57 leaders from diverse fields. More detailed biographies can be found at [www.environment.yale.edu/newconsciousness](http://www.environment.yale.edu/newconsciousness).

**Daniel Abbasi** is a Director with MissionPoint Capital Partners, where he leads the firm’s regulatory and public policy research and is responsible for originating and structuring energy and environmental finance transactions.

**Michael D. Bertolucci** is Chairman of the Envirosense Consortium, Inc. He is past President of Interface Research Corporation and Senior Vice President of Interface, Inc.

**H. Emerson “Chip” Blake** is Editor-in-Chief of Orion Magazine and Executive Director of the Orion Society.

**Christy Brown** is co-founder and past President of the Center for Interfaith Relations (CIR) and serves on its board of directors as well as many others in her hometown of Louisville, KY.

**Owsley Brown** is former Chairman of the Board of the Brown-Forman Corporation.

**Peter Brown** is a Professor at McGill University. He holds appointments in the departments of Geography, Natural Resources Sciences and the School of Environment, where he was the first full time Director.

**Baird Callicott** is Regents Professor of Philosophy and Religion Studies in the Institute of Applied Sciences at the University of North Texas.

**Benjamin Cashore** is a Professor at the Yale School of Forestry & Environmental Studies with a joint appointment in the Department of Political Science.

**Roger Cohn** is Editor of *Yale Environment 360*, an online magazine focusing on global environmental issues that is published by the Yale School of Forestry & Environmental Studies. Formerly, he was Editor of *Mother Jones* and *Audubon*.

**Robert Costanza** is Gund Professor of Ecological Economics and Director of the Gund Institute for Ecological Economics at the University of Vermont.

**Alison Deming** is Professor of Creative Writing at the University of Arizona.

**Dianne Dumanoski** is an author and environmental journalist. She is co-author of *Our Stolen Future*.

**John Ehrenfeld** is Executive Director of the International Society for Industrial Ecology. He retired in 2000 as the Director of the MIT Program on Technology, Business, and Environment, an interdisciplinary educational, research, and policy program.

**Duane Elgin** is Co-Director of Our Media Voice. His books include *Promise Ahead: A Vision of Hope and Action for Humanity's Future* and *Voluntary Simplicity: Toward a Way of Life that is Outwardly Simple, Inwardly Rich*.

**Howell Ferguson**, an attorney, has served as Chairman and Chief Executive Officer of Lykes Bros. Inc., a family-owned diversified business headquartered in Tampa, Florida.

**Peter Forbes** is Executive Director of the Center for Whole Communities. He is a writer, photographer, farmer and conservationist.

**Dave Foreman** is Executive Director and Senior Fellow of the Rewilding Institute, a conservation think tank advancing ideas of continental conservation.

**Michel Gelobter** is President of Redefining Progress, an NGO that works to shift public policy to achieve a sustainable economy, a healthy environment and a just society.

**Chip Giller** is founder, President and CEO of *Grist*, the online environmental news magazine.

**Ursula Goodenough** is Professor of Biology, Anatomy and Neurobiology at Washington University.

**David Grant** is President and Chief Executive Officer of the Geraldine R. Dodge Foundation.

**John Grim** is Senior Lecturer and Research Scholar at Yale University where he has appointments in the School of Forestry & Environmental Studies as well as the Divinity School and the Department of Religious Studies. He is Co-Director of the Forum on Religion and Ecology.

**Clive Hamilton** is the founder of The Australia Institute, Australia's leading progressive think tank. Among his many books are *Growth Fetish* and *Affluenza*.

**Paul Hawken** is an environmentalist, businessman, and author. His latest book is *Blessed Unrest: How the Largest Movement in the World Came Into Being, and Why No One Saw it Coming*.

**Randall Hayes**, founder of Rainforest Action Network, is Senior Fellow at IFG (International Forum on Globalization), a think-tank on the global economy that advocates community-led economic localization.

**Bruce Hull** is Professor of Forestry at Virginia Tech, focusing on public ecology and sustainability, human dimensions of natural resource management, understandings of nature and environmental quality, forest fragmentation, urbanization and recreation.

**Diane Ives** advises donors interested in investing in environmental, community economic development and international sustainable development efforts.

**Wes Jackson** is founder and President of The Land Institute. His published works include *Rooted in the Land: Essays on Community and Place*. He was a MacArthur Fellow in 1992.

**Willis Jenkins** is Assistant Professor of Environmental Ethics, Religion, Sustainable Development, and Moral Theologies at the Yale Divinity School.

**Tim Kasser** is Assistant Professor of Psychology at Knox College. His research focuses on human values and goals, and how they relate to quality of life, particularly considering ‘materialistic values.’

**Stephen R. Kellert** is Tweedy/Ordway Professor of Social Ecology at the Yale School of Forestry & Environmental Studies. His books include *Building for Life: Designing and Understanding the Human-Nature Connection* and *Kinship to Mastery: Biophilia in Human Evolution and Development*.

**Pamela Kohlberg** is an environmental activist and advocate for sustainable development. She is currently a trustee of a family foundation focusing on active grant making in the fields of environment, education, complementary health, and youth at risk.

**William Kunkler** is Executive Vice President for CC Industries, Inc. (CCI), a private equity firm focused on manufacturing companies and real estate investments. He is also Vice President of Henry Crown and Company, the parent company of CCI.

**Kaiulani Lee** is the OBIE award winning writer and performer of the one-woman play about Rachel Carson, “A Sense of Wonder.”

**Anthony Leiserowitz** is Director of the Yale Project on Climate Change and a Research Scientist at the Yale School of Forestry & Environmental Studies. He is also a principal investigator at the Center for Research on Environmental Decisions at Columbia University.

**Michael Lerner** is President and founder of Commonweal. His interests include mind-body health with a special interest in cancer, high-risk children and young people, and the architecture of an environmentally sustainable future. He was a MacArthur Fellow in 1983.

**Paul Lussier** is a playwright, Emmy-nominated executive producer and bestselling author. His current work focuses on climate change communications and includes *Final Hour*, a global media event tracking a path to sustainability from 2010 to 2050 to reach a global audience of 1.4 billion for the Discovery Channel.

**Julia Marton-Lefèvre** is Director General of IUCN: the World Conservation Union. Formerly, she was Rector of the University for Peace and Executive Director of LEAD (Leadership for Environment and Development) International, a program established by The Rockefeller Foundation.

**Kathleen Dean Moore** is Distinguished Professor of Philosophy at Oregon State University, where she teaches Environmental Ethics and the Philosophy of Nature. Her most recent book is *The Pine Island Paradox*.

**Richard B. Norgaard** is Professor in the Energy and Resources Group and of Agriculture and Resource Economics at the University of California at Berkeley.

**Elliott Norse** is founder and President of the Marine Conservation Biology Institute in Bellevue, Washington. His latest book is *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity* (2005).

**David W. Orr** is Paul Sears Distinguished Professor of Environmental Studies and Politics and Chair of the Environmental Studies Program at Oberlin College. He is also James Marsh Professor-at-Large at the University of Vermont.

**Robert Michael Pyle** is an author and conservation biologist. His monographs range from books and poems to scientific articles. He won the 1987 John Burroughs Medal for Distinguished Nature Writing for *Wintergreen*.

**Paul Raskin** is founder and President of the Tellus Institute and Director of the Stockholm Environment Institute-Boston (SEI-B). He is also founder of the Global Scenario Group (GSG) and the Great Transition Initiative (GTI).

**Theodore Roosevelt IV** is Managing Director at Lehman Brothers and a member of the Firm's Senior Client Coverage Group. He is former Chairman of the Board of the League of Conservation Voters and former Co-Chair of the Center for Biodiversity and Conservation at the American Museum of Natural History.

**Jonathan F. P. Rose** is President of Jonathan Rose Companies LLC, a network of community and land use planning and development firms focusing on environmentally responsible projects.

**Carl Safina** is co-founder and President of the Blue Ocean Institute. Previously, he was Vice President for Ocean Conservation at the National Audubon Society. His first book, *Song for the Blue Ocean*, won the Lannan Literary Award for nonfiction.

**Juliet Schor** is Professor of Sociology at Boston College. The author of four books, she is currently working on issues of environmental sustainability and their relation to Americans' lifestyles.

**Richard C. J. Somerville** is Distinguished Professor Emeritus at Scripps Institution of Oceanography, University of California, San Diego. He is a Fellow of both the American Association for the Advancement of Science and the American Meteorological Society, and a Coordinating Lead Author for the 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

**James Gustave Speth** is the Carl W. Knobloch, Jr. Dean of the Yale School of Forestry & Environmental Studies and Sara Shallenberger Brown Professor in the Practice of Environmental Policy at Yale. His most recent book is *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability*.

**William W. Staudt** is Founding Partner of Environmental Capital Partners, a private equity firm that provides long-term capital and management support to leading middle-market companies, exclusively in the environmental industry.

**Pavan Sukhdev** is Managing Director and Head of CIB Global Markets in India for Deutsche Bank. He pursues long-standing interests in nature conservation and environmental economics through his work with many NGOs in India and in the UK.

**Brian Swimme** is founder of the Center for the Story of the Universe which is affiliated with the California Institute of Integral Studies where he is a mathematical cosmologist on the graduate faculty.

**Peter Teague** is Program Director for Environment/Contemplative Practice at the Nathan Cummings Foundation in New York City. Prior to joining NCF, he was an environmental advisor to Senators Feinstein and Boxer and a business litigator.

**Mitchell S. Thomashow** is President of Unity College in Maine, a small environmental liberal arts college whose mission entails stewardship, sustainability, and service. He is also a Distinguished Faculty Member in the Antioch New England Department of Environmental Studies.

**Mary Evelyn Tucker** is Senior Lecturer and Research Scholar at Yale University where she has appointments in the School of Forestry & Environmental Studies as well as the Divinity School and the

Department of Religious Studies. She is Co-Director of the Forum on Religion and Ecology.

**George Woodwell** is Director Emeritus and Senior Scientist at the Woods Hole Research Center. The author of more than 300 major papers and books in Ecology, he is a member of the National Academy of Sciences and a Fellow of the American Academy of Arts and Sciences.



## About the Authors

**Anthony Leiserowitz** is Director of the Office of Strategic Initiatives and the Yale Project on Climate Change, and a Research Scientist at the School of Forestry & Environmental Studies at Yale University. He is also a principal investigator at the Center for Research on Environmental Decisions at Columbia University. He is a widely recognized expert on American and international public opinion on global warming, including public perception of climate change risks, support and opposition for climate policies, and willingness to make individual behavioral change. His research investigates the psychological, cultural, political, and geographic factors that drive public environmental perception and behavior and includes survey, experimental, and field research at multiple scales, including studies with the Inuit of Northwest Alaska, individual states (Alaska and Florida), the United States (seven national surveys), and internationally (USA, UK, Mexico, Brazil and Argentina). He also recently conducted the first empirical assessment of worldwide public values, attitudes, and behaviors regarding global sustainability, including environmental protection, economic growth, and human development. He has served as a consultant to the John F. Kennedy School of Government (Harvard University), the United Nations Development Program, the Gallup World Poll, and the Global Roundtable on Climate Change at the Earth Institute (Columbia University).

**Lisa Fernandez** is with the Office of Strategic Initiatives at the Yale School of Forestry & Environmental Studies. Her previous work involved urban environmental conservation and economic development in the US and Latin America. She has served as a consultant to the United Nations Development Programme, the Organization for Economic Cooperation and Development, and the World Bank. She was a Fellow at the World Wildlife Fund and a City

Planner implementing solid waste prevention policy for the City of New York. Her most recent publications are *Institutionalizing Sustainability in Higher Education* (co-editor, Yale F&ES Publication Series, 2007) and “The Wheels Go ‘Round: Is Walking to School Just a Nostalgia Trip?” in *The Next American City*. She serves on the boards of the East Coast Greenway Alliance and the Farmington Canal Rail-to-Trail Association and holds an appointment on the Connecticut Greenways Council.

The Office of Strategic Initiatives at the Yale School of Forestry & Environmental Studies works to advance public understanding and discourse on critical environmental issues. Key initiatives include the Yale Project on Climate Change, the New Consciousness Program, and the quarterly Roper/Yale Environmental Poll.

## About the Cover Artist

**Martin Hill** is an internationally recognized communications designer, environmental artist, and photographer. His design work has won awards and is featured in international galleries. His environmental sculpture photographs have been published on cards, posters, calendars and books since 1995 and his work has been exhibited internationally and featured in many magazine articles, on television and websites. His book *Earth to Earth* (P. Q. Blackwell, Ltd., 2007) is a collection of his work.

From his website:

“In 1992 I became so concerned about products causing environmental damage because of their unsustainable design that I turned my focus to understanding and communicating about solutions to these design issues. By creating and publishing environmental art my message of sustainability by design now reaches millions of people. My sculptures are a response to the environment from which they are made and to which they return. I use natural materials gathered from the site so that when I have made my photographs they can be absorbed back into the natural cycle without harm, transformed in time by natural processes into biological nutrients from which new life will grow. The form of the sculptures metaphorically expresses our concern for the interconnectedness of all living systems.”

[www.martin-hill.com](http://www.martin-hill.com)



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