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Editor's Note

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EDITOR'S NOTE

I. Ultimate Paradox

If ever there is one eternal drama in the history of humanity that supercedes all others, it is this: the compulsion to engage nature. In light of this paramount necessity, a tight connection has always existed between the physical and biological systems of the planet and the reproduction of humans. Accordingly, the evolution of humans out of other forms of life that are, in turn, based on elementary particles, chemical atoms, and molecules, underscores our embeddedness in the material world. But we are not only of nature; we are also pitted against it. For, in addition to being aerobic creatures, our individual and collective survival has, ontologically, always been contingent on the essentially entropic but primal claims we make on other species and on the earth's resources. The countless artifacts and complications that have resulted from our modes of living are testimony to our impact on nature. Donald Worster, an eminent environmental historian, reminds us of the length of the trail.

The human past reveals a long chain of crises stemming from a lack of knowledge or foresight, though typically before the modern era they were highly localized. The migrants from Asia, for instance, who entered North America some 30,000 to 40,000 years ago had no idea, as they stalked and slaughtered the hairy mammoths gathering around a waterhole, that they would one day run out of easy meat and then would have to make drastic changes in their weapons and hunting targets. I am sure too that the ancient Mesopotamians never imagined, as they dug their irrigation ditches to raise crops in the desert, that one day they would find those ditches filling with silt and their fields poisoned with salt. Much of human history appears as a succession of ecological surprises, many of them tragic, that communities have encountered on their way to dinner or warm bed.¹

Despite such deep evidence bearing the impress of human onslaught on the natural world, many observers, including Worster, are convinced that ecological transgressions of our time are unparalleled.² This is best represented by a heightening of attitudes and acceleration of actions whose consequences seem to be the further denudation of any lingering kinship between *homo sapiens* and the rest — the biophysical universe. To approach, let alone understand, this

enormously abstruse and changing relationship, a degree of parsimonious, yet holistic, thinking is wise—perhaps unavoidable. With such a mindset, it may be worth suggesting that a fruitful conversation on nature and culture in this epoch of globalization might be organized around five broad areas: geophysical structures, biota, development, social movements, and governance. The first signifies the hard material context of geological landforms, weather, and climate that undergird everything else. Biota focuses our attention on the multiplicity of organisms that constitute life. Combined, the two make up our ecological envelope, whereas the other three are specifically tied to human activities. Development connotes the endless attempts, akin to the burden of Sisyphus, to transform livelihoods by the application of human intelligence, labor, and technology; social movements are associations united by their concern over the degree of correspondence between general well-being and environmental quality. Governance betokens the debate, resolution, codification, and, most important, implementation of rules that prescribe actions of both individuals and collectivities with regard to “the economy of nature.” On its own, each of these five coordinates is rich in complexity and tension—a condition compounded many times over when, as it must be in the final analysis, they are seen to belong together and addressed accordingly.

In our age, there are hardly any disputes over the importance of ecological sensitivity in taming modernity. However, such a consensus quickly descends into disagreements when it comes to identifying specific pathologies, responsibilities, and recommendations. For the purpose of these notes, I mention four issues that seem to capture a large part of the problems and correlative discussions: population, global consumption, climate change, and biodiversity.

Ever since the Reverend Thomas Malthus, the first professor of economics, propounded his famous thesis that uncontrolled growth in human numbers was a direct cause of misery, the relationship between population and source of subsistence, particularly the production of food, has been a contentious point.³ This debate has gathered intensity in the last three decades. For those who follow Malthus, the rate of population growth, or “explosion” in contemporary language, is *the* critical factor in both human impoverishment and the degradation of the natural world.⁴ These scholars stress the fact that since 1970, the human population has expanded by more than two billion people, almost double the increase over the preceding quarter-century. Moreover, the grand total, which is to hit six billion people at the end of the

decade, is expected to rise to ten billion in about fifty years.⁵ On the other side are those who call themselves "optimists."⁶ They are convinced that there is nothing inherently destructive about the expansion of human numbers; rather, the crucial variable is the state of human ingenuity and technical sophistication. Consequently, as long as both are optimally in high gear, there are hardly any problems that cannot be surmounted, including environmental stress.

If rapid increases in human populations are one way in which the earth's resources are dangerously taxed, patterns of consumption can be construed as equally worrisome. This is not only a concern about how many mouths to feed but, more significantly for the argument, how *much*, proportionately, each person uses. While developing societies are the regions of high fertility, the post-industrial is the zone of the fetishism of inordinate consumption. The ramifications are startling. For instance, two-thirds of global emissions of carbon dioxide, three-quarters of sulphur dioxide and nitrogen oxides, and the release of ninety percent of chloroflourocarbons take place in core societies. In other words, the mode of livelihood in these parts of the world, so reliant on automobiles, production of military hardware, packaged and easily discarded goods, rich diets and air conditioning, is fed by astounding inputs of energy, chemicals, metals, and paper that together produce huge and menacing quantities of toxic by-products. Here, for example, the United States is typical: less than 5 percent of the world's people use 25 percent of the global energy as well as belch 22 percent of all CO₂ emissions. It follows, then, that the vast majority (not all) of the approximately 1.1 billion who enjoy this standard of consumption live in OECD countries, a group that makes about 65 percent of the world's income — with the upper half known as the "gold collar class." Now, contrast this with the following: (a) more than 1.7 billion who have *no* access to safe water, of whom 25,000 die every day of maladies directly linked to poor water quality, (b) 700 million people who live in households where smoking fires (largely from fuelwood) are the sole form of energy, a dire situation identified by the World Health Organization as the gravest occupation-related health issue;⁷ and (c) even in societies that are moving on a fast pace to join the charmed circle of the postindustrial consumer economy, the everyday cost is mounting—in the city of Bangkok, for instance, the average motorist can easily spend 44 days over a year sitting in traffic jams, while in Mexico City, air pollution, mostly from automobiles, is esti-

mated to exact an annual cost of around \$1.5 billion in health-related expenditures.⁸

Atmospheric scientists and other researchers taught us long ago that without the clouds and gases that trap heat emitted by the planet's surface such as water vapor (H₂O), carbon dioxide (CO₂), and methane (CH₄), our world will slide into a deep freeze. The implications are tantamount to the end of life. It is increasingly becoming common knowledge that our activities here on earth have already moved us toward that danger.⁹ Heavy use of fossil fuels (coal, oil, and natural gas) have caused enough rise in the amount (twice the onset of the Industrial Revolution) of carbon dioxide in the atmosphere that we are now preoccupied with the phenomenon of the "greenhouse effect." Such a development has great implications for, among others, photosynthesis and the general condition of the planet's weather and climate. A further cause for alarm is the deterioration of the ozone — that is, the depletion of that indispensable form of oxygen that screens most of the solar ultraviolet-B radiation. Moreover, while global warming and the diminution of the ozone have cosmic consequences, one must not underestimate the cost of local and regional climatic problems such as smog and acid rain.

Previously unknown risks to human health are becoming evident from the cumulative and persistent effects of a whole range of chemicals, particularly the persistent organic pollutants. The effect of climate variability and change are already increasing the incidence of familiar public health problems and leading to new ones, including a more extensive reach of vectorborne diseases and a higher incidence of heat-related illness and mortality.¹⁰

Biological diversity looms large in most dissections of the effects of human pressure on the natural world.¹¹ The concept speaks to an old wisdom: an appreciation for singularity is the basis for biological abundance, "the most dependable kind of wealth,"¹² and that "taxonomic depletion" is a deadly curse that inevitably leads to a barren hearth. A telling connection between human activities and biodiversity is how land is used and treated. Habitat desiccation is directly linked to the destruction of nature through a weakening, if not severing, of the numerous feedback loops that connect different components of the planet. Agriculture was the first major human intervention in the workings of ecosystems. However, any damages that ensued were

somewhat mollified by diverse farming methods, honed over the ages, that *worked with* the natural plant resources. It is the coming of more artificial techniques, such as those of the Green Revolution, while producing relatively ample but temporary yields, that is undermining any organic complementarity between human needs and ecological imperatives.¹³

In recent times, threats to non-human life have been uppermost in most considerations of biodiversity. There is a good deal of evidence and compelling moral sentiment for such fixation. But there is an ever more disturbing, albeit quieter, issue. This is the alarming decline of plant species in the world. The rate of decimation is such that at least one of every eight plant species is reported to be under the threat of extinction. William Stevens brings to our attention the pivotal role of plants in the creation and maintenance of an ecology fit for all life.

While endangered mammals and birds have commanded more public attention, it is plants, scientists say, that are more fundamental to nature's functioning. They undergird most of the rest of life, including human life, by converting sunlight into food. They provide the raw materials for many medicines and the genetic stock from which agricultural strains of plants are developed. And they constitute the very warp and hoof of the natural landscape, the framework within which everything else happens.¹⁴

There are, probably, a host of reasons for this baneful condition, but two seem most important. The first is the accumulated effects of the ruin of large parts of the wild countryside by such activities as farming, logging, and unwise development schemes. Many agree that the 1990s People's Republic of China is the latest site in which this process is most magnified.¹⁵ The second is the invasion of alien plants that, much like all colonists, press hard and eventually marginalize or altogether crowd out native species.

Given the global crescendo of concern over the state of the planet, thinking invariably shifts to the perennial question of what is to be done. I end these brief notes with a few observations on that regard. Perhaps the first act is to confirm with Lawrence Buell, and others before him, that the ecological problems facing us are partly a reflection of a "crisis of imagination."¹⁶ To set our *mentalité* away from a peculiarly rationalistic modernity that accents externalization and domination, bequeathed to us by otherwise towering figures such as

Francis Bacon, Rene Descartes, Adam Smith, and Karl Marx, requires a new and ethical grammar of understanding of, as well as coexistence with, the natural world. That is, a reassertion of the immanence of the original kinship between us and nature.¹⁷ To make headway in this formidable task calls for, among others, a new partnership between even old antagonists such as religion and science. A revival of spirituality, so much part of the essence of humanity, tied closely to imaginative and flexible rationality could trim “self-indulgent anthropocentrism”¹⁸ and, therefore, reverse the estrangement that is at the heart of our predicament.

Second, aligning technological virtuosity, key to a transformation of the material world in order to meet human needs, with a sense of reverence for nature and the *longue dureé* moves us towards “sustainable development” — a subject of enormous interest to many people.¹⁹ In brief, this entails a search for an equilibrium, a balance between the inevitable and legitimate drive everywhere to improve human existence and the obligatory protection of the integrity of the ecological context. Here, such issues as growth, equity, and renewability, oftentimes at odds with each other, come immediately to the fore. Their conciliation is inescapable.

Third, the time has come for a more rigorous and codified regimes that can aid us in monitoring our actions as individuals and communities. Since the Rio Conference of 1992, governments, non-governmental organizations (NGOs), the private sector, civic associations, and scientific groups have taken initiatives that encourage discussions and disseminate information relevant to the environment. Though certainly in the right direction, these activities are not a substitute for an institutionalized and transnational strategies that can competently address the complex interstratification of ecological concerns and chronic socioeconomic problems — a conundrum that directly impinges on human security. A purposive search for an effective global environmental governance, one capable of transmuting dialogue and rewired consciousness into specific and binding agreements, may be one of the most urgent items on our agenda for the twenty-first century.²⁰

II. The Roundtable

The 1997 International Roundtable took shape with the conviction that the crux of contemporary environmentalist concerns around the

world, variability of immediate circumstances notwithstanding, is how to balance the original paradox of living in and of nature in an exceptionally Promethean age of hyperproduction, high consumption, rising populations, and uneven development. We felt, and continue to feel, that the twentieth century is coming to a close with multiple heightened anxieties, of which the condition and fate of the earth and its current and future inhabitants are paramount. This is a mood, we believe, that is increasingly cutting across all social cleavages—gender, class, race, region, and generations. The following broad questions framed our multiple discussions.

- What are the principle environmental concerns of our age, and what are their ultimate origins?
- What are the major obstacles to solving these problems? Are the main constraints scientific/technological or sociological in that they pertain to the values, organization, and management of human affairs?
- In what ways do environmental challenges faced by developed societies differ from those of the developing countries?
- What is the role of science in responding effectively to the pressing ecological problems?

The keynote address is by **Thomas Lovejoy**. He starts by making us aware of the basic fact that environmental issues become major difficulties because of the consequences for biological systems. A pioneer of the seriousness that now surrounds biological diversity, he offers an intricate presentation that combines historical insights, scientific information, and practical thinking about solutions so as to rally around the design of a workable affectivity towards nature.

The first panel begins with an essay by **Danilo Antón**. His central argument is that globalization is as old as the making of Latin America. Periodizing this history into three “waves,” he flushes out the main attributes of each. The essay ends with a reminder that the transformation in progress could further deepen marginalization as well as create new possibilities. **Natalie Powell** responds by acknowledging the enormous telescopic capacity of the essay but is leery of the idea that new communication technologies can equip Latin Americans to solve old socioeconomic and environmental ills. **Ding Zhaolin** recalls how the tenants of the Tao confirm the connections between humans and nature. His discussion of the merits of the essay is accompanied by identifying some of the weighty environmental problems facing the

People's Republic of China. **Mark Davis** takes note of the value of the model proposed by Dr. Antón to make sense of a vast universe of information. However, he points to a silence — that Latin America, contrary to earlier decades, is experiencing a time of peace and democratic politics. Davis thinks that war is deadly for humans but can be good for the environment. It is his hope that Latin America and the rest of us could capitalize on technological innovation to both create peaceful and prosperous communities cognizant of the fragility of the environment.

The second essay is by **Sallie McFague**. She uses the case of climate change to present touching discernments that demand a reordering of Christianity in order to discipline modernist craving for more consumption and the domination of nature, and an attention to the basic needs of the world's most vulnerable human beings. **Rachel Coyne** is sympathetic to the tenor of the essay but is doubtful that, given its history, even a reformulated Christianity could measure up to the cry of both the dispossessed and the desiccated planet. **Anjie Blardony Ureta** brings in the experience of the Philippines as an instructive site to observe the grinding power of Western globalization. For her, this is one of the major culprits of the environmental devastation in many parts of the developing world. **David Hopper's** response is a learned and extensive one — in fact, longer than the main essay itself. He restates the intellectual debates that are, in his opinion, critical for a thorough deliberation over the relationship between Christianity, modernity, and environmentalism. From there, he moves on to challenge Dr. McFague on a number of points, including the subject-object question and the making of human consciousness.

The third discussion is anchored by **Bina Agarwal's** presentation. Her focus is on the relationship between tradition, gender, and the environmental challenges that face South Asia, particularly India. While appreciative of the importance of class analysis in environmental issues in the region, she is disturbed by the invisibility of gender and the inequalities that accompany the category. In this regard, Dr. Agarwal takes to task the work of notable ecofeminists. **Paul Gerdes** wishes for clear conception of the phenomenon of globalization in a discussion of feminist environmentalism. He uses two women-centered cooperative projects—one in Bangladesh, the other in Brazil—to illustrate what local women can do to empower themselves. **Denis Mzembe** calls on his knowledge of Malawian gender roles and environmental concerns in the country. **Julie Bunn** endorses most of Dr.

Agarwal's main arguments but defends the proposition that "a true environmental ethic must be an ecofeminist ethic." Bunn's response is wide-ranging and rightly connects with the other essays of the Roundtable. She concludes with brief but very provocative thoughts on the dense relationship between civic space, private power, and the environment.

We conclude this Roundtable with **Pyar Ali Memon's** essay. Moored by the thesis that the most productive social science treatment of environmental questions can be achieved through "a political-economy approach," he takes us to New Zealand to explore the evolution of human/nature relations. The essay makes an effort to touch upon both the historical and contemporary state policies with regard to the environment. **Li Cowell** begins her response by bringing in some relevant observations from study abroad experience in Ecuador. Later, she laments the absence from Dr. Memon's essay, in her opinion, of detailed "grounding" in material context as well as the underemphasis of values in the making of environmental policy. **Małgorzata Rzepka** interjects into the discussion the memory of the highly regimented and interventionist state in Central and Eastern Europe, specifically Poland. Two major points she makes are that (a) Polish people are extremely suspicious of any revival of central state authority, and (b) attaining the consumption levels of the West is a most seductive ambition for the vast majority. She puts her faith in "corporations and free markets" to deal with environmental questions. **Daniel Hornbach** reminds us that not all Western culture elevates ecological exploitation to a deserved human privilege. In fact, he asserts, there has always been a streak of environmental consciousness as part of the historical development of these societies. As a result, contemporary environmental movements' spiritual roots could be traced back to earlier thought. He concludes by underscoring the importance of sustainable development as an effective way to respond to the big environmental problems of our own time and beyond. In reflecting on and working through that strategy, he urges us to "think *and* act *both* globally and locally."

Regardless of the topics of the International Roundtable thus far, we are astonished by the omnipresence of references to the global economy in our conversations. Consequently, the 1998 theme will be "Globalization and Economic Space."

Notes

1. Donald Worster, *The Wealth of Nature: Environmental History and the Ecological Imagination* (Oxford: Oxford University Press, 1993), 206. Another episode of how the ancients contributed to lasting ecological concerns can be gleaned from Roman overexploitation and cultivation of North Africa's fragile lands. For more on relevant environmental history, see Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 1986); B. L. Turner II et al., eds., *The Earth as Transformed By Human Action: Global and Regional Changes in the Biosphere Over the Past 300 Years* (Cambridge: Cambridge University Press, 1990); Andrew Goudie, *The Human Impact on the Natural Environment* (Cambridge, Mass.: MIT Press, 1993); and Lynn Margolis and Lorraine Olendzenski, eds., *Environmental Evolution: Effects of the Origins and Evolution of Life on Planet Earth* (Cambridge, Mass.: MIT Press, 1992).

2. Kellert thinks that the situation is so grave that there is a likelihood of "a massive hemorrhaging of life on earth." Steven R. Kellert, *The Value of Life: Biological Diversity and Human Society* (Washington, D.C.: Island Press, 1996). Also, Michael Jacobs, ed., *Greening the Millennium: The New Politics of the Environment* (Oxford: Basil Blackwell, 1998); Rodney R. White, *North, South and the Environmental Crisis* (Toronto: University of Toronto Press, 1993); Lester R. Brown, Michael Renner, and Christopher Flavin, *Vital Signs: The Environmental Trends that are Shaping Our Future* (New York: W. W. Norton, 1997); UNEP, *Global Environmental Outlook* (Oxford: Oxford University Press, 1997); and Charles H. Southwick, *Global Ecology in Human Perspective* (Oxford: Oxford University Press, 1996).

3. Thomas R. Malthus, *An Essay on the Principle of Population* (London: J. Johnson, 1803); and E. P. Hutchinson, *The Population Debate* (Boston: Houghton Mifflin, 1967).

4. Paul Ehrlich, *The Population Bomb* (New York: Ballantine Books, 1968); and Paul Ehrlich and Anne Ehrlich, *The Population Explosion* (New York: Simon and Schuster, 1990). The Ehrlichs write:

The alarm has been sounded repeatedly, but society has turned a deaf ear. Meanwhile, a largely prospective disaster has been turned into the real thing. A 1990s primer on population by necessity looks very different from our original work. *The Population Explosion* is being written as ominous changes in the life-support system of civilization become more evident daily. It is being written in a world where hunger is strife and the prospects of famine ever imminent. (10)

Also, Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (1968): 1243-48, "Living on a Lifeboat," *Bioscience* 24 (1974): 561-68, and *Living Without Limits: Ecology, Economics, and Population Taboos* (Oxford: Oxford University Press, 1993); Bryan Carthedge, ed., *Population and the Environment* (Oxford: Oxford University Press, 1995); UNFPA, *State of the World's Population* (UNFPA: New York, 1993); J. Mayone Stycos, "Population and the Environment: Polls, Policies, and Public Opinion," *Population and Environment* 18, no. 1 (1996).

5. While it is important to note that annual population growth rates did drop from the high 2.2 percent of the mid-sixties, the actual addition for 1997 was 80 million persons, compared to 69 million in 1963. Of course, not all zones of the world share responsibility for this. On the contrary, it is in developing societies (particularly Africa and West Asia) where the rates are highest.

6. Julius Simon, ed., *The State of Humanity* (Oxford: Basil Blackwell, 1995); Julius Simon, *The Ultimate Resource* (Princeton: Princeton University Press, 1996); Richard D. North, *Life on a Modern Planet: A Manifesto For Progress* (Manchester: Manchester University Press, 1995); David Rothenberg, *Hand's End: Technology and the Limits of Nature* (Berkeley: University of California Press, 1993); Frances Cairncross, *Green, Inc.: A Guide to Business and the Environment* (Washington, D.C.: Island Press, 1995); Gregg Easterbrook, *A Moment on Earth: The Coming Age of Environmental Optimism* (New York: Viking Press, 1995); and Dixie Lee Ray and Lou Guzzo, *Environmental Overkill: Whatever Happened to Common Sense?* (New York: HarperCollins, 1993).

7. World Health Organization, *Our Planet, Our Health* (Geneva: WHO, 1992). Also, Eric Chivian et al., *Critical Condition: Human Health and the Environment* (Cambridge, Mass.: MIT Press, 1993).

8. By the year 2000, it is forecast that there will be twenty-one cities in the world with more than 10 million inhabitants each. Seventeen of these urban concentrations will be located in developing countries. World Bank, *World Development Report* (Oxford: Oxford University Press, 1992), 27-28. One of the countries in this zone where the cost industrialization and new habits and levels of consumption are taking the greatest toll is the People's Republic of China. Its own National Environmental Agency reports that "polluted air and respiratory disease is now the leading cause of death in the urban and many rural areas of the country." Richard Smith, "Creative Destruction: Capitalist Development and China's Environment," *New Left Review* 222 (1997). For an example of serious environmental health inside the United States, a most developed country, see Phil Brown and Edwin J. Nikkelson, *No Safe Place: Toxic Waste, Leukemia, and Community Action* (Berkeley: University of California Press, 1990). Also, David Pearce, "Economic Valuation and Health Damage from Air Pollution in the Developing World," *Energy Policy* 24, no. 7 (1996).

9. Joel S. Levine, ed., *Biomass Burning and Global Change*, vols. 1 and 2 (Cambridge, Mass.: MIT Press, 1996); R. T. Watson, M. G. Zinyowera, and R. H. Moss, eds., *Climate Change 1995* (Cambridge: Cambridge University Press, 1996); S. Zwerwer et al., eds., *Climate Change Research: Evaluation and Policy Implications* (Amsterdam: Elsevier, 1995); J. Alcamo and G. J. J. Kreileman, *The Global Climate System: Near Term Action for Long Term Protection* (Bilthoven, Netherlands: RIVM, 1996); Arjun Makhijani and Kevin R. Gurney, *Mending the Ozone Hole* (Cambridge, Mass.: MIT Press, 1995); T. A. Boden et al., eds., *Trends '93: A Compendium of Data On Global Change* (Oak Ridge, Tenn.: Oak National Laboratory, 1994); Ross Gelbspan, *The Heat is On: The High Stakes Battle Over Earth's Threatened Climate* (New York: Addison-Wesley, 1997); and Simon F. B. Tett et al., "Human Influence on the Atmospheric Vertical Temperature Structure: Detection and Observations," *Science* 274, no. 5290 (1994).

10. UNEP, *Global Environment Outlook* (Oxford: Oxford University Press, 1997), 3.

11. The literature on biodiversity is extensive and growing. For a sample, see Edward O. Wilson, *The Diversity of Life* (New York: W. W. Norton, 1992); and Nina L. Etkin, ed., *Eating on the Wild Side: The Pharmacologic, Ecologic, and Social Implications of Using Noncutigens* (Tucson: University of Arizona Press, 1994). This interesting volume accents the preservation of genetic diversity by focusing on the linkage between diet, medicine, and natural products. Also, Philippe Descola, *In the Society of Nature: A Native Ecology in Amazonia* (Cambridge: Cambridge University Press, 1986); Mark A. S. McMenamin and

Diana L. S. McMenamin, *Hypersea: Life on Land* (New York: Columbia University Press, 1994); A. W. Kaaless, *Pilot Study on the Feasibility of Some Biodiversity Indicators at the Regional and Global Levels, applied to Europe* (Bilthouen, Netherlands: RIVM, 1996); John Lawton and Robert May, eds., *Extinction Rates* (New York: Oxford University Press, 1995); Niles Eldredge, *Dominion* (Berkeley: University of California Press, 1995); Edward Goldsmith et al., *Imperiled Planet: Restoring Our Endangered Ecosystems* (Cambridge, Mass.: MIT Press, 1990); Jonathan S. Adams and Thomas O. McShane, *The Myth of Wild Africa: Conservation without Illusion* (Berkeley: University of California Press, 1997); and Neil Roberts, "The Human Transformation of the Earth's Surface," *International Social Science Journal* 48, no. 4 (1989).

12. David Ehrenfeld, *Beginning Again: People and Nature in the New Millennium* (Oxford: Oxford University Press, 1994), 114.

13. Curtis H. Freese, ed., *Harvesting Wild Species: Implications for Biodiversity Conservation* (Baltimore: Johns Hopkins University Press, 1997); Jane Risseler and Margaret Mellon, *The Ecological Risks of Engineering Crops* (Cambridge, Mass.: MIT Press, 1996); and Chris Reji, Ian Scoones, and Cimillia Toulmin, eds., *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa* (London: Earthscan, 1996).

14. William K. Stevens, "One in Every 8 Planet Species is Imperiled, a Survey Finds," *New York Times* (9 April 1998): A1. Stevens reports that the United States heads the list of countries whose plant species are most at risk—29 percent of a total of 16,108 species. Also Peter Dauvergne, *Shadows in the Forest: Japan and the Politics of Timber in Southeast Asia* (Cambridge, Mass.: MIT Press, 1997); and A. S. Mather, *Global Forest Resource* (London: Pinter Publisher, 1990). Richard Smith tells us that within the tropical areas, it is in East Asia where deforestation has been most intense in the 1980s. Moreover, "nearly three-quarters of the natural habitat in Asia has been lost or irreversibly degraded. It is estimated that Asia will lose a higher proportion of its species and natural ecosystems than any other region during the next twenty-five years" (Smith, "Creative Destruction," 18).

15. Lester Brown, *Who Will Feed China: The Challenge of Food Scarcity* (New York: W. W. Norton, 1996).

16. Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, Mass.: Harvard University Press, 1995).

17. Tariq Banuri and Frédérique Affel Marglin, eds., *Who Will Save the Forests? Knowledge, Power and Environmental Destruction* (London: Zed Books, 1993); John Foster, *Valuing Nature? Economics, Ethics, and Environment* (London: Routledge, 1997); and Herman E. Daly and Kenneth N. Townsend, *Valuing the Earth: Economics, Ecology, Ethics* (Cambridge, Mass.: MIT Press, 1992).

"Conservation," warns David Ehrenfeld, "is inextricably linked to human values—linked in its methodology and linked in its chances of success. Until science and society regain a fascination with diversity, with difference, with uniqueness, and with exceptions, all in their own right, there will continue to be a shortage of taxonomists, there will continue to be new and faster methods of cutting down tropical forests, there will continue to be an accelerating loss of species and communities, despite all the science, land, and money that conservation can muster." Ehrenfeld, *Beginning Again*, 123.

18. The phrase is from E. O. Wilson, *On Human Nature* (Cambridge, Mass.: Harvard University Press, 1978), 17. Also, Mitchell Thomashaw, *Ecological Identity: Becoming a Reflec-*

tive Environmentalist (Cambridge, Mass.: MIT Press, 1995); David Browee, *Let the Mountains Speak, Let the Rivers Run: A Call to Those Who Would Save the Earth* (San Francisco: HarperCollins, 1995); and Bron Taylor, ed., *Ecological Resistance Movements: The Global Emergence of Radical Popular Environmentalism* (Albany: SUNY Press, 1995).

19. Joel Darmstadter, *Global Development and the Environment: Perspectives on Sustainability* (Washington, D.C.: Johns Hopkins University Press, 1992); Uday Desai, *Ecological Policy and Politics in Developing Countries: Economic Growth, Democracy, and Environment* (Albany: SUNY Press, 1998); P. Raskin et al., *The Sustainability Transition: Beyond Conventional Development*, Polestar Services Report, no. 1 (Stockholm: Stockholm Environment Institute, 1996); Rose Braidotti et al., *Women, the Environment and Sustainable Development* (London: Zed Books, 1994); Peter Bartelmus, *Environment, Growth, and Development: The Concepts and Strategies of Sustainability* (London: Routledge, 1994); Thaddeus C. Trzyna, ed., *A Sustainable World: Defining and Measuring Sustainable Development* (Sacramento: International Center for the Environment and Public Policy, 1995); and World Bank, *Towards Environmentally Sustainable Development in Sub-Saharan Africa* (Washington, D.C.: World Bank, 1995). Here, it is worth noting that there is a particular cluster of writings that argue for the existence of a positive relationship between environmental care, market efficiency, and the role of private enterprise. Examples include Stephan Schmidheiny, *Changing Course: A Global Business Perspective on Development and the Environment* (Cambridge, Mass.: MIT Press, 1992); Stephan Schmidheiny and Frederico Zorraquin, *Financing Change: The Financial Community, Eco-efficiency, and Sustainable Development* (Cambridge, Mass.: MIT Press, 1996); Livio D. DeSinnio and Frank Popoff, *Eco-efficiency: The Business Link to Sustainable Development* (Cambridge, Mass.: MIT Press, 1997); and Frances Cairncross, *Costing the Earth: The Challenge for Governments, the Opportunities for Business* (Boston: Harvard Business School Press, 1992).

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