Major Problems in American Environmental History

DOCUMENTS AND ESSAYS

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What Is Environmental History?

Environmental history offers an earth's-eye view of the past. It addresses the many ways in which human beings have interacted with the natural environment over time. As one of the newest perspectives within the discipline of history, it is a field that is still in the process of self-definition. It therefore offers the exciting challenge of engaging in a dialogue with the documents of the past and with historians of the present to create individual interpretations of history.

For environmental historians, the term environment refers to the natural and human-created surroundings that affect a living organism or group of organisms' ability to maintain itself and develop over time. Ecology deals with the relationships between these organisms and their surroundings. In the case of humans, it also includes social and cultural patterns. Ecological history is therefore somewhat broader than environmental history, but the two terms are often used interchangeably.

Environmental history's pictures of the past come from a colorful palette of sources. From the natural history side of the picture come data on climatic fluctuations, geological changes, plant and animal ecology, and microbial life. From human history, it draws on tools for extracting resources; account books of traders; journals of explorers; court records of births and deaths; laws; diaries of farmers; interviews with slaves; Indian myths and legends; paintings, poetry, and essays about nature; scientific investigations; and the musings of philosophers.

Environmental historians ask a number of questions of these sources. How and why did people living in a particular place at a particular time use and transform their environment? How did people of different cultural backgrounds and of both genders perceive, manage, exploit, and conserve their environments? What differing economic forms, or modes of production (such as gathering, hunting, fishing, farming, ranching, mining, and forestry), evolved in particular habitats? What problems of pollution and depletion arose under industrialization and urbanization? What political and legal conflicts, struggles, and compromises emerged over resource use and conservation? How did people's attitudes toward nature and their mental constructions of nature change over time? And how do changing concepts of ecology influence the interpretations of environmental historians? In attempting to answer these kinds of questions, environmental historians

have developed a number of different conceptual approaches, four of which are considered in this chapter. (See Maps 1, 2, and 3 in the Appendix.)

ESSAYS

The four essays in this chapter offer contrasting frameworks for interpreting environmental history. In the first essay, Donald Worster, Hall Distinguished Professor of American History at the University of Kansas, discusses three of the environmental historian's most important sources: ecology, modes of production, and ideas, using these three levels of interpretation as the framework for doing environmental history. The second essay is by Jared Diamond of the Geography Department at the University of California, Los Angeles. Diamond argues that Europeans were able to take over the New World because the Eurasian environment had many more species of domesticatable animals than did the Americas, leading to settled agriculture and complex political organizations supported by metal technologies. Europeans thus had an ecological advantage in colonizing the globe. The third essay is by William Cronon, Villas Professor of History at the University of Wisconsin, Madison. Cronon suggests that environmental historians may tell stories about environmental degradation as parables to raise people's consciousness about healing and restoring nature to an earlier ideal. But that romanticized ideal never really exists. Nature is never static or stable, and the awesome human power to change nature means that transformed biotic actors may in turn have immense consequences for humanity. The fourth essay, by Carolyn Merchant, professor of environmental history at the University of California at Berkeley, looks at the importance of gender, race, and class in interpreting environmental history and argues that we also need to consider the category of reproduction when doing environmental history. Together the essays introduce important concepts about nature and society that provide a toolkit for doing and interpreting environmental history.

Doing Environmental History

DONALD WORSTER

In the old days, the discipline of history had an altogether easier task. Everyone knew that the only important subject was politics and the only important terrain was the nation-state. One was supposed to investigate the connivings of presidents and prime ministers, the passing of laws, the struggles between courts and legislatures, and the negotiations of diplomats. That old, self-assured history was actually not so old after all—a mere century or two at most. It emerged with the power and influence of the nation-state, reaching a peak of acceptance in the nineteenth and early twentieth centuries. Often its practitioners were men of intensely nationalistic feelings, who were patriotically moved to trace the rise of their individual countries, the formation of political leadership in them, and their rivalries with other states for wealth and power. They knew what mattered, or thought they did.

From Donald Worster, "Doing Environmental History," in Donald Worster, ed., *The Ends of the Earth: Perspectives on Modern Environmental History.* New York: Cambridge University Press, 1988, pp. 289–299, 301–303, 305–306. Reprinted with the permission of Cambridge University Press.

But some time back that history as "past politics" began to lose ground, as the world evolved toward a more global point of view and, some would say, toward a more democratic one. Historians lost some of their confidence that the past had been so thoroughly controlled or summed up by a few great men acting in positions of national power. Scholars began uncovering long submerged layers, the lives and thoughts of ordinary people, and tried to reconceive history "from the bottom up." Down, down we must go, they maintained, down to the hidden layers of class, gender, race, and caste. There we will find what truly has shaped the surface layers of politics. Now enter still another group of reformers, the environmental historians, who insist that we have got to go still deeper yet, down to the earth itself as an agent and presence in history. Here we will discover even more fundamental forces at work over time. And to appreciate those forces we must now and then get out of parliamentary chambers, out of birthing rooms and factories, get out of doors altogether, and ramble into fields, woods, and the open air. It is time we bought a good set of walking shoes, and we cannot avoid getting some mud on them.

So far this extending of the scope of history to include a deeper and broader range of subjects has not challenged the primacy of the nation-state as the proper territory of the historian. Social, economic, and cultural history are all still commonly pursued within national boundaries. Thus, to an extent that is quite extraordinary among the disciplines of learning, history (at least for the modern period) has tended to remain the insular study of the United States, Brazil, France, and the rest. Such a way of organizing the past has the undeniable virtue of preserving some semblance of order in the face of a threatening chaos—some way of synthesizing all the layers and forces. But at the same time it may set up obstacles to new inquiries that do not neatly fit within national borders, environmental history among them. Many of the issues in this new field defy a narrow nationality; the wanderings of Tuareg nomads in the African Sahel, for instance, or the pursuit of the great whales through all the world's oceans. . . .

Environmental history is, in sum, part of a revisionist effort to make the discipline far more inclusive in its narratives than it has traditionally been. Above all, it rejects the conventional assumption that human experience has been exempt from natural constraints, that people are a separate and "supernatural" species, that the ecological consequences of their past deeds can be ignored. The old history could hardly deny that we have been living for a long while on this planet, but it assumed by its general disregard of that fact that we have not been and are not truly part of the planet. Environmental historians, on the other hand, realize that we can no longer afford to be so naive.

The idea of environmental history first appeared in the 1970s, as conferences on the global predicament were taking place and popular environmentalist movements were gathering momentum in several countries. It was launched, in other words, in a time of worldwide cultural reassessment and reform. History was hardly alone in being touched by that rising mood of public concern; scholarship in law, philosophy, economics, sociology, and other areas was similarly responsive. Long after popular interest in environmental issues crested and ebbed, as the issues themselves came to appear more and more complicated, without easy resolution, the scholarly interest continued to expand and take on greater and greater sophistication. Environmental history was, therefore, born out of a moral purpose, with strong

political commitments behind it, but also became, as it matured, a scholarly enterprise that had neither any simple, nor any single, moral or political agenda to promote. Its principal goal became one of deepening our understanding of how humans have been affected by their natural environment through time and, conversely, how they have affected that environment and with what results. . . .

Much of the material for environmental history has . . . been around for generations, if not for centuries, and is only being reorganized in the light of recent experience. It includes data on tides and winds, on ocean currents, on the position of continents in relation to each other, on the geological and hydrological forces creating our land and water base. It includes the history of climate and weather, as these have made for good or bad harvests, sent prices up or down, ended or promoted epidemics, led to population increase or decline. All these have been powerful influences over the course of history, and continue to be so, as when massive earthquakes destroy cities or starvation follows in the wake of drought or rivers determine the flow of settlement. The fact that such influences continue in the late twentieth century is evidence of how far we are yet from controlling the environment to our complete satisfaction. . . .

Put in the vernacular then, environmental history is about the role and place of nature in human life. By common understanding we mean by "nature" the nonhuman world, the world we have not in any primary sense created. . . . The built environment is wholly expressive of culture; its study is already well advanced in the history of architecture, technology, and the city. But with such phenomena as the forest and the water cycle, we encounter autonomous energies that do not derive from us. Those forces impinge on human life, stimulating some reaction, some defense, some ambition. Thus, when we step beyond the self-reflecting world of humankind to encounter the nonhuman sphere, environmental history finds its main theme of study.

There are three levels on which the new history proceeds, three clusters of issues it addresses, though not necessarily all in the same project, three sets of questions it seeks to answer, each drawing on a range of outside disciplines and employing special methods of analysis. The first deals with understanding nature itself, as organized and functioning in past times; we include both organic and inorganic aspects of nature, and not least the human organism as it has been a link in nature's food chains, now functioning as womb, now belly, now eater, now eaten, now a host for microorganisms, now a kind of parasite. The second level in this history brings in the socioeconomic realm as it interacts with the environment. Here we are concerned with tools and work, with the social relations that grow out of that work, with the various modes people have devised of producing goods from natural resources. A community organized to catch fish at sea may have very different institutions, gender roles, or seasonal rhythms than one raising sheep in high mountain pastures. Power to make decisions, environmental or other, is seldom distributed through a society with perfect equality, so locating the configurations of power is part of this level of analysis. Then, forming a third level for the historian is that more intangible and uniquely human type of encounter—the purely mental or intellectual, in which perceptions, ethics, laws, myths, and other structures of meaning become part of an individual's or group's dialogue with nature. People are constantly engaged in constructing maps of the world around them, in defining what a resource is, in determining which sorts of behavior may be environmentally degrading and ought to be

prohibited, and generally in choosing the ends of their lives. Though for the purposes of clarification, we may try to distinguish between these three levels of environmental study, in fact they constitute a single dynamic inquiry in which nature, social and economic organization, thought and desire are treated as one whole. And this whole changes as nature changes, as people change, forming a dialectic that runs through all of the past down to the present.

This in general is the program of the new environmental history. It brings together a wide array of subjects, familiar and unfamiliar, rather than setting up some new, esoteric specialty. From that synthesis, we hope, new questions and answers will come.

Natural Environments of the Past

The environmental historian must learn to speak some new languages as well as ask some new questions. Undoubtedly, the most outlandish language that must be learned is the natural scientist's. So full of numbers, laws, terms, and experiments, it is as foreign to the historian as Chinese was to Marco Polo. Yet, with even a smattering of vocabulary, what treasures are here to be understood and taken back home! Concepts from geology, pushing our notions of history back into the Pleistocene, the Silurian, the Precambrian. Graphs from climatology, on which temperatures and precipitation oscillate up and down through the centuries, with no regard for the security of kings or empires. The chemistry of the soil with its cycles of carbon and nitrogen, its pH balances wavering with the presences of salts and acids, setting the terms of agriculture. Any one of these might add a powerful tool to the study of the rise of civilizations. Together, the natural sciences are indispensable aids for the environmental historian, who must begin by reconstructing past landscapes, learning what they were and how they functioned before human societies entered and rearranged them.

But above all it is ecology, which examines the interactions among organisms and between them and their physical environments, that offers the environmental historian the greatest help. This is so in part because, ever since Charles Darwin, ecology has been concerned with past as well as present interactions; it has been integral to the study of evolution. Equally significant, ecology is at heart concerned with the origins, dispersal, and organization of all plant life. Plants form by far the major portion of the earth's biomass. All through history people have depended critically on them for food, medicine, building materials, hunting habitat, and a buffer against the rest of nature. Far more often than not, plants have been humans' allies in the struggle to survive and thrive. Therefore, where people and vegetation come together more issues in environmental history cluster than anywhere else. Take away plant ecology and environmental history loses its foundation, its coherence, its first step.

So impressed are they with this fact that some scholars speak of doing, not environmental, but "ecological history" or "historical ecology." They mean to insist on a tighter alliance with the science. Some years back the scientist and conservationist Aldo Leopold projected such an alliance when he spoke of "an ecological interpretation of history." His own illustration of how that might work had to do with the competition among native Indians, French and English traders, and American settlers for the land of Kentucky, pivotal in the westward movement. The canebrakes growing along Kentucky bottomlands were a formidable barrier to any agricultural settlement,

but as luck would have it for the Americans, when the cane was burned and grazed and chopped out, bluegrass sprouted in its place. And bluegrass was all that any farmer, looking for a homestead and a pasture for his livestock, could want. American farmers entered Kentucky by the thousands, and the struggle was soon over. "What if," Leopold wondered, "the plant succession inherent in this dark and bloody ground had, under the impact of forces, given us some worthless sedge, shrub, or weed?" Would Kentucky have become American property as and when it did? . . .

When organisms of many species come together, they form communities, usually highly diverse in makeup, or as they are more commonly called now, ecosystems. An ecosystem is the largest generalization made in the science, encompassing both the organic and inorganic elements of nature bound together in a single place, all in active, reciprocating relationship. Some ecosystems are fairly small and readily demarcated, like a pond in New England, while others are sprawling and ill-defined, as large as the Amazonian rain forest or the Serengeti plain or even the whole earth. All are commonly described, in language derived heavily from physical mechanics and cybernetics, as self-equilibrating like a machine that runs on and on automatically, checking itself when it gets too hot, speeding up when it slows and begins to sputter. Outside disturbances may affect that equilibrium, throwing the machine temporarily off its regular rhythm, but always (or almost always) it returns to some steady state condition. The numbers of species constituting an ecosystem fluctuate around some determinable point; the flow of energy through the machine stays constant. The ecologist is interested in how such systems go on functioning in the midst of continual perturbations, and how and why they break down.

But right there occurs a difficult issue on which the science of ecology has reached no clear consensus. How stable are those natural systems and how susceptible to upset? Is it accurate to describe them as balanced and stable until humans arrive? And if so, then at what point does a change in their equilibrium become excessive, damaging or destroying them? Damage to the individual organism is easy enough to define: It is an impairment of health or, ultimately, it is death. Likewise, damage to a population is not very hard to determine, simply, when its numbers decline. But damage to whole ecosystems is a more controversial matter. No one would dispute that the death of all its trees, birds, and insects would mean the death of a rain-forest ecosystem, or that the draining of a pond would spell the end of that system. But most changes are less catastrophic, and the degree of damage has no easy method of measurement. . . .

There is a further unresolved problem in translating ecology into history. Few scientists have perceived people or human societies as being integral parts of their ecosystems. They leave them out as distractions, imponderables. But people are what the historian mainly studies; consequently, his or her job is to join together what scientists have put asunder.

Human beings participate in ecosystems either as biological organisms akin to other organisms or as culture bearers, though the distinction between the two roles is seldom clear-cut. Suffice it here to say that, as organisms, people have never been able to live in splendid, invulnerable isolation. They breed, of course, like other species, and their offspring must survive or perish by the quality of food, air, and water and by the number of microorganisms that are constantly invading their bodies. In these ways and more, humans have inextricably been part of the earth's

ecological order. Therefore, any reconstruction of past environments must include not only forests and deserts, boas and rattlesnakes, but also the human animal and its success or failure in reproducing itself.

Human Modes of Production

Nothing distinguishes people from other creatures more sharply than the fact that it is people who create culture. Precisely what culture really is, however, is anybody's guess. There are literally scores of definitions. For preliminary purposes it can be said that the definitions tend to divide between those including both mental and material activities and those emphasizing mental activities exclusively, and that these distinctions between the mental and material correspond to the second and third levels of analysis in our environmental history. In this section we are concerned with the material culture of a society, its implications for social organization, and its interplay with the natural environment.

In any particular place nature offers the humans dwelling there a flexible but limited set of possibilities for getting a living. The Eskimos of the northern polar regions, to take an extreme case of limits, cannot expect to become farmers. Instead, they have ingeniously derived a sustenance, not by marshaling seed, plows, and draft animals of other, warmer latitudes, but through hunting. Their food choices have focused on stalking caribou over the tundra and pursuing bowhead whales among floating cakes of ice, on gathering blueberries in season and gaffing fish. Narrow though those possibilities are, they are the gift of technology as much as nature. Technology is the application of skills and knowledge to exploiting the environment. Among the Eskimos technology has traditionally amounted to fish hooks, harpoons, sled runners, and the like. Though constrained by nature, that technology has nonetheless opened up for them a nutritional field otherwise out of reach, as when a sealskin boat allowed them to venture farther out to sea in pursuit of prey. . . .

As historians address these elemental issues of tools and sustenance, they soon become aware that there have been other disciplines at work here too, and for a long time. Among them is the discipline of anthropologists, and environmental historians have been reading their work with great interest. They have begun to search for clues from anthropologists to critical pieces of the ecological puzzle: What is the best way to understand the relation of human material cultures to nature? Is technology to be viewed as an integral part of the natural world, akin to the fur coat of the polar bear, the sharp teeth of the tiger, the fleet agility of the gazelle, all adaptive mechanisms functioning within ecosystems? Or should cultures be viewed as setting people apart from and outside of nature? Everything in the ecosystem, we are told by natural scientists, has a role and therefore an influence on the workings of the whole; conversely, everything is shaped by its presence in the ecosystem. Are cultures and the societies that create them also to be seen in that double position, both acting on and being acted on? Or are they better described as forming their own kind of "cultural systems" that mesh with ecosystems only in rare, isolated cases? Or, to make the puzzle more complicated still, do humans create with their technology a series of new, artificial ecosystems—a rice paddy in Indonesia or a carefully managed German forest—that require constant human supervision? There is, of course, no single or consistent set of answers to be given to such questions; but anthropologists, who

are among the most wide-ranging and theory-conscious observers of human behavior, can offer some provocative insights. . . .

The modes of production are an endless parade of strategies, as complex in their taxonomies as the myriad species of insects thriving in the canopy of a rain forest or the brightly colored fish in a coral reef. In broad terms, we may speak of such modes as hunting and gathering, agriculture, and modern industrial capitalism. . . . [T]he environmental historian wants to know what role nature had in shaping the productive methods and, conversely, what impact those methods had on nature.

This is the age-old dialogue between ecology and economy. Though deriving from the same etymological roots, the two words have come to denote two separate spheres, and for good reason: Not all economic modes are ecologically sustainable. Some last for centuries, even millennia, while others appear only briefly and then fade away, failures in adaptation. And ultimately, over the long stretch of time, no modes have ever been perfectly adapted to their environment, or there would be little history.

Perception, Ideology, and Value

Humans are animals with ideas as well as tools, and one of the largest, most consequential of those ideas bears the name "nature." More accurately, "nature" is not one idea but many ideas, meanings, thoughts, feelings, all piled on top of one another, often in the most unsystematic fashion. Every individual and every culture has created such agglomerations. We may think we know what we are saying when we use the word, but frequently we mean several things at once and listeners may have to work at getting our meaning. We may suppose too that nature refers to something radically separate from ourselves, that it is "out there" someplace, sitting solidly, concretely, unambiguously. In a sense, that is so. Nature is an order and a process that we did not create, and in our absence it will continue to exist; only the most strident solipsist would argue to the contrary. All the same, nature is a creation of our minds too, and no matter how hard we may try to see what it is objectively, in and by and for itself, we are to a considerable extent trapped in the prison of our own consciousness and web of meanings.

Environmental historians have done some of their best work on this level of cultural analysis, studying the perceptions and values people have held about the nonhuman world. They have, that is, put people thinking about nature under scrutiny. So impressed have they been by the enduring, pervasive power of ideas that sometimes they have blamed present environmental abuse on attitudes that go far back into the recesses of time: as far back as the book of Genesis and the ancient Hebraic ethos of asserting dominion over the earth; or the Greco-Roman determination to master the environment through reason; or the still more archaic drive among patriarchal males to lord it over nature (the "feminine" principle) as well as women. The actual effects of such ideas, in the past or in the present, are extremely difficult to trace empirically, but that has not deterred scholars from making some very large claims here. Nor should it altogether. Perhaps we have too wildly exaggerated a notion of our mental prowess and its impact on the rest of nature. Perhaps we spend too much time talking about our ideas, neglecting to examine our behavior. But however overblown some of these claims may be, it is certainly true that our ideas have been interesting to contemplate, and nothing among them has been more interesting than our reflections on other animals, plants, soils, and the entire biosphere that gave birth to us. So, for good reason, environmental history must include in its program the study of aspects of esthetics and ethics, myth and folklore, literature and landscape gardening, science and religion—must go wherever the human mind has grappled with the meaning of nature.

For the historian, the main object must be to discover how a whole culture, rather than exceptional individuals in it, perceived and valued nature. Even the most materially primitive society may have had quite sophisticated, complex views. Complexity, of course, may come from unresolved ambiguities and contradictions as well as from profundity. People in industrial countries especially seem to abound in these contradictions: They may chew up the land wholesale and at a frightful speed through real estate development, mining, and deforestation but then turn around and pass laws to protect a handful of fish swimming in a desert spring. Some of this is simply confusion, some of it may be quite reasonable. Given the protean qualities of nature, the fact that the environment presents real dangers as well as benefits to people, this contradictoriness is inescapable. It has everywhere been true of the human reaction. Yet not a few scholars have fallen into the trap of speaking of "the Buddhist view of nature" or "the Christian view" or "the American Indian view," as though people in those cultures were all simple-minded, uncomplicated, unanimous, and totally lacking in ambivalence. Every culture, we should assume, has within it a range of perceptions and values, and no culture has ever really wanted to live in total harmony with its surroundings.

But ideas should not be left floating in some empyrean realm, free from the dust and sweat of the material world. They should be studied in their relations with those modes of subsistence discussed in the preceding section. Without reducing all thought and value to some material base, as though the human imagination was a mere rationalization of the belly's needs, the historian must understand that mental culture does not spring up all on its own. One way to put this relationship is to say that ideas are socially constructed and, therefore, reflect the organization of those societies, their techno-environments and hierarchies of power. Ideas differ from person to person within societies according to gender, class, race, and region. Men and women, set apart almost everywhere into more or less distinctive spheres, have arrived at different ways of regarding nature, sometimes radically so. So too have slaves and their masters, factory owners and workers, agrarian and industrial peoples. They may live together or in close proximity but still see and value the natural world differently. The historian must be alert to these differences and resist easy generalizations about the "mind" of a people or of an age. . . .

As it tries to redefine the search into the human past, environmental history has, as indicated above, been drawing on a number of other disciplines, ranging from the natural sciences to anthropology to theology. It has resisted any attempt to put strict disciplinary fences around its work, which would force it to devise all its own methods of analysis, or to require all these overlapping disciplines to stay within their own discrete spheres. Each may have its tradition, to be sure, its unique way of approaching questions. But if this is an age of global interdependence, it is surely also the moment for some cross-disciplinary cooperation. Scholars need it, environmental history needs it, and so does the earth.

Using Environmental History

WILLIAM CRONON

When I first started teaching a lecture course on American environmental history at Yale over half a decade ago, I came to the end of the semester feeling that despite all the rough spots and gaps, it had gone as well as I could have expected. My ordinary practice on such occasions is to distribute teaching evaluations during the penultimate week of classes so I can read students' comments and report back to them on what they collectively see as the strengths and weaknesses of the course. When I did

From William Cronon, "The Uses of Environmental History," *Environmental History Review* by John Opie (Fall 1993): pp. 1–3, 10–20. Copyright 1993 by American Society for Environmental History. Reproduced with permission of American Society for Environmental History in the format of Textbook via Copyright Clearance Center.

this for the new environmental history class, I was taken aback to discover that despite my students' enthusiasm for the course, the vast majority seemed profoundly depressed by what they had learned in it. I was unprepared for this reaction. What my students had apparently concluded from their encounter with my subject was that the American environment had gone from good to bad in an unrelentingly depressing story that left little or no hope for the future. Because my own feelings about the matter were not nearly so bleak, I had not intended to lead students to this dreary conclusion, and the more I thought about it, the more it seemed to me that I had no right to end the course on such a note. Whether or not my students' sense of despair was justified, I did not think it was a particularly useful emotion, either personally or politically. To conclude that the environmental past teaches the hopelessness of the environmental future struck me as a profoundly disempowering lesson—albeit a potentially self-fulfilling one—and I felt that my responsibility both as a teacher and as someone who cares about the future must be to resist such a conclusion.

I therefore wrote a final lecture that ended the class on a deliberately upbeat note with a very personal set of reflections about lessons I had extracted from my study of environmental history—the morals I drew from its stories—and the reasons why I continue to remain hopeful despite all the apparent reasons for feeling otherwise. Leaving aside my own worries about the appropriateness of temporarily turning my lectern into the secular equivalent of a pulpit, I'm persuaded that it was the right thing to do, for my students seemed genuinely grateful for this unusual bout of sermonizing on my part. I still end my environmental history course with a similar lecture. And yet I also think there's something odd about an academic subject that seems to require such an antidote against despair. Certainly I've never felt the need for a comparable closing lecture in my classes on the history of the American West, where I suspect that a residue of frontier optimism and high spiritedness somehow combine with moral outrage and regional pride to produce more ambiguous lessons. Because I've also encountered this sense of despair not just among students but among readers as well, I think it's worth asking why environmental history seems regularly to provoke such a response. A more general way of framing the question is to ask how our study of the environmental past affects our sense of the environmental present and future. Perhaps the simplest way to put this is just to ask: what are the uses of environmental history?

Do practitioners of environmental history have special reason to worry about their field's usefulness? Yes. Like the several other "new" histories born or reenergized in the wake of the 1960s—women's history, African-American history, Chicano history, gay and lesbian history, and the new social history generally—environmental history has always had an undeniable relation to the political movement that helped spawn it. The majority (but not quite all) of those who become environmental historians tend also to regard themselves as environmentalists. And so it is no accident that many of the most important works in the field approach their subjects with explicitly present-day concerns. Any number of environmental histories have clearly been framed to make contemporary political interventions. Roderick Nash's *Wilderness and the American Mind* has played a significant role in helping frame debates about wilderness protection in the three decades since its publication. Samuel Hays's *Conservation and the Gospel of Efficiency* and *Beauty, Health, and Permanence,* though less obviously partisan in their politics than Nash's book, speak just as powerfully

to major trends in conservation and environmental politics in the twentieth century. Among the most consistently interventionist of environmental historians has been Donald Worster, whose unflinching moral vision has never failed to produce works of history that are also passionately committed to change. *Nature's Economy* critiqued the twentieth-century evolution of ecological science by seeking to rehabilitate an older natural-history tradition that had fallen into disrepute with many modern ecologists, while *Dust Bowl* and *Rivers of Empire* located the origins of environmental degradation in capitalist world-views and modes of production that are as alive in the present as they have been in the past. Carolyn Merchant joined Worster in bringing an environmentalist perspective to the history of science, but combined it with a more feminist approach to argue in *The Death of Nature* that western science has harmed nature and women in parallel ways; her *Radical Ecology*, though less historical, is still more activist in its efforts to intervene in contemporary political struggles. Even scholars whose work has been less explicitly political have consciously sought to make it relevant to contemporary environmental concerns. Joel Tarr's many studies of pollution and waste streams have always aimed to address the concerns of contemporary policymakers, while Steven Pyne's epic histories of fire have consistently tried to persuade present-day resource managers of the complexity of their task. Pyne has even gone so far as to author a textbook on fire management practices. And so on and on. The list of such interventions is long, and applies in varying degrees to the majority of historians who work in this field. So I think we can take it as a given that many if not most environmental historians aspire to contribute to contemporary environmental politics: they want their histories to be useful not just in helping us understand the past, but in helping us change the future. . . .

One reason I emphasize the importance of our historical practice is that there are impulses within environmentalism that are quite strongly *a*historical or even *anti*historical, placing environmental history in some considerable but little noticed tension with the larger political movement that helped spawn it. This tension is fascinating in its own right, and it significantly complicates the already difficult task that environmental historians face in trying to make themselves "useful" to their fellow environmentalists. One of the longstanding impulses that environmentalism shares with its great ancestor, romanticism, has been to see human societies, especially those affected by capitalist urban-industrialism and the cultural forces of modernity, in opposition to nature. Ironically, environmentalism often commits itself to a fundamentally dualistic vision even as it appeals for holism. According to the standard terms of this dualism, nature is assumed to be stable, balanced, homeostatic, self-healing, purifying, and benign, while modern humanity, in contrast, is assumed to be environmentally unstable, unbalanced, disequilibrating, self-wounding, corrupting, and malign.

Implicit in this opposition is the belief that ideal nature is essentially without history as we know it, save on the very long time-scales that affect plate tectonics, biological evolution, and climatic change. Another way of putting this is to say that natural time is cyclical time, while the time of modern humanity is linear. Time's cycle is the proof of nature's self-healing homeostasis and equilibrium, while time's arrow is the proof of humanity's self-corrupting instability and disequilibrium. Humanity's arrow is the fall, while nature's cycle is salvation. These metaphorical dualisms are among the most powerful in our culture, with roots that stretch back literally to Biblical times, and by stating them in this way I do not intend to

critique one or the other half of their implied dialectic. As with most dualisms, both poles of the opposition reveal important truths even as they work to disguise their mutual interdependence. I simply want to note that the environmentalist affection for natural equilibrium and cyclical time as the Archimidean foundation from which to judge the human drama as it unfolds in linear time necessarily implies a not-so-disguised flight from history. The natural or primitive utopia which serves as counterpoint for so many environmentalist critiques of modern society posits a rupture between past and future so radical as to imply what Francis Fukuyama would call an "end of history."

However one may feel about this utopian environmentalist vision—and it has many attractive features—it collides at numerous points with the intellectual agenda that environmental historians have set for themselves. Our task, after all, far from trying to escape from history into nature, is to pull nature itself into the stream of human history. Whatever affection we may feel for the attractions of cyclical time and natural equilibrium, our chief stock in trade is linear time and disequilibrium: we study change. Perhaps one might argue that this is a temporary phenomenon. Maybe, for instance, we tell linear narratives of environmental degradation as moral fables whose purpose is to transform people's consciousness and behavior in ways that will ultimately mean an end to linear time, heralding the coming millennium when cyclical time will reign once again over a stable equilibrium that applies as much to humanity as to nature. But I'm frankly dubious that many of us really believe this: most historians have pretty powerful negative reactions to pronouncements like Fukuyama's about "the end of history"—and not just because we have a professional vested interest in linear time! . . .

Let me move toward a close by offering what seem to me to be some of the core lessons that make environmental history useful not just in its specific claims but in its habits of thought. I'll state these as a general set of very broad, very simple morals for the stories we've been telling. They are among the deepest articles of faith for at least this environmental historian, articles of faith which I suspect many of my colleagues share.

1. All human history has a natural context.

This is so obvious to most environmental historians that it is almost a truism of our subfield, and yet it is also the claim that seems to come as the greatest surprise to our colleagues. History since the 1930s has had a powerful bias toward cultural determinism, spawned in part as a reaction against the extreme environmental determinism that characterized some fields of history and geography in the pre-World War II era when racialist theories held sway. The chief defenders of materialist history in the intervening period were Marxists who had their own reasons for deemphasizing the natural context of human history. Their critics in turn used the attack on Marxism as a reason to reject all determinisms as inherently destructive to human freedom. One important contribution of environmental history, then, has been to reintroduce materialist styles of analysis to the study of past human-environment interactions while trying to finesse a full-blown determinism. Our strategy has been to argue for a dialogue between humanity and nature in which cultural and environmental systems powerfully interact, shaping and influencing each other, without either side wholly determining the outcome. One can restate this prescriptively as follows: *in studying*

environmental change, it is best to assume that most human activities have environmental consequences, and that change in natural systems (whether induced by humans or by nature itself) almost inevitably affects human beings. As a corollary, most environmental historians would add that human beings are not the only actors who make history. Other creatures do too, as do large natural processes, and any history that ignores their effects is likely to be woefully incomplete.

2. Neither nature nor culture is static.

This is the historicist argument I've already mentioned. Any vision of a past human place in nature that posits an ideal relationship of permanent stability or balance must defend itself against almost overwhelming evidence to the contrary. Descriptions of historical eras in which human populations were supposedly in eternal equilibrium with equally stable natural systems are almost surely golden-age myths. A comparable rejection of stasis has occurred within the modern science of ecology, where the notion of a permanent climax community as postulated by Frederic Clements and his followers now seems thoroughly discredited. In its stead, we have a newly dynamic, even stochastic or chaotic ecology in which history plays a crucial role in shaping the pattern and process of ecosystems whether or not people are involved.

Recognizing the dynamism of natural and cultural systems does not, of course, mean that all change is good or that there are no benchmarks for comparing one kind of change with another. Most past societies, for instance, have not altered the natural world at anything like the rate or scale that has typified the modern era. To argue otherwise would be to engage in a different form of myth-making, in which the values and behaviors of different cultures toward nature are assumed to be everywhere and always the same—"economic man" being undoubtedly the most familiar subspecies of the genre. The insights of environmental history tend to be powerfully anti-essentialist, lying in the middle ground between the golden-age myth of permanent equilibrium and the economistic myth of a reductively universal human nature. Our work suggests that nature and culture change all the time, but that the *rate* and *scale* of such change can vary enormously. . . . Restated prescriptively, this suggests that *the relationship between nature and culture should always be viewed as a problem in comparative dynamics, not statics.* Naive assumptions about the stability of natural systems can produce behavior that is as environmentally destructive as it is culturally inappropriate. As a corollary, essentialist arguments about past cultures and environments are almost always historically suspect.

3. All environmental knowledge is culturally constructed and historically contingent—including our own.

On the surface, this will probably seem the most radical challenge that environmental history has to offer environmentalists who regard nature as a source of absolute authority for their vision of how people ought to behave in the world. Here again we encounter the problem of sacred versus historical time. If one is inclined to regard nature as an eternal realm of absolute facts, stable processes, and permanent values, it is not at all reassuring to discover that such beliefs have clear historical roots and that people in other times and other places and other cultures have held very different views. Much of what they took to be permanent and absolute has since changed, and

the same will likely happen to many of our own most cherished beliefs as well. The historicist impulse seems to undermine sacred knowledge and replace it with a relativist world in which nature is apparently no more than what we think it is, with literally everything up for grabs. If static nature is our moral compass, then historicism threatens to set us adrift on an unfamiliar sea with no way of taking our bearings. . . .

Let me sum up this third lesson more prescriptively: *recognizing the historical contingency of all knowledge helps us guard against the dangers of absolute, decontextualized "laws" or "truths" which can all too easily obscure the diversity and subtlety of environments and cultures alike.* An historical, social-constructionist perspective takes seemingly transparent, absolute environmental "facts" and places them in cultural contexts which render them at once more problematic, more interesting, and more instructive. Paradoxically, by making reality more contingent the historicist approach to knowledge lends greater realism to our understanding of nature and culture alike.

My final lesson may seem oddly put, but seems to me the core of what sets environmental history apart from most other fields that seek to understand and influence the way we relate to the natural world. It describes a peculiar quality that characterizes most historical writing and sets it apart from the social and natural sciences. It is simply this:

4. Historical wisdom usually comes in the form of parables, not policy recommendations or certainties.

The significance of this point is hardly intuitive for anyone who is not a historian. Whenever I lecture to the general public or to scholars in the social or natural sciences, I'm invariably asked afterwards for my predictions about the future course of environmental change. Just as invariably, I explain that historians usually make reluctant prophets, despite the teleological similarities between the stories we tell about the past and the prophecies that others may wish us to make about what will happen in the future. The power of our history derives from the fact that, when speaking about the past, we can at least pretend that we know the end of the story. Doing so enables us to make our arguments and narratives point toward the present and hence seem to explain it, if only for the brief period in which that supposed "ending" continues to hold good. This sense of narrative closure is never available to us for the future, the very contingency of which is what prophecy seeks to contain and resist. Because historians cannot help but respect the awesome, terrifying complexity of past cause and effect, and because we recognize the dangers of teleology even as we embrace it as a necessary consequence of the narrative form, most of us—unlike many of our colleagues in the sciences—are reluctant to predict the future course of events.

This is not to say that we are silent about the future, or that we regard our histories as irrelevant to present concerns. Instead we adopt a much older, albeit less seductively scientific, rhetorical strategy. Rather than make *predictions* about what *will* happen, we offer *parables* about how to interpret what *may* happen. Strange as it may sound, I believe this may be the most important contribution we environmental historians can make in a world where expert knowledge has for the most part forgotten the peculiar form of wisdom that the parable represents. . . .

Is telling parables about nature and the human past a useful thing to do? Yes. I believe so in my bones, which is what I told my students when they expressed despair about the seemingly hopeless lessons they thought they had learned from our course in environmental history. Let me close by returning for a moment to my secular pulpit to repeat some of the articles of faith I shared with those students.

The answers we environmental historians give to the question "What's the story?" have the great virtue that they remind people of the immense human power to alter and find meaning in the natural world—and the even more immense power of nature to respond. At the same time, they remind us that whatever we do in nature, we can never know in advance all the consequences of our actions. This need not necessarily point toward despair or cynicism, but rather toward a healthy respect for the complexity and unpredictability of history, which is much akin to the complexity and unpredictability of nature itself. The proper lesson of such complexity, I believe, should be to teach us humility. It should make us more critical of our own certainty and self-righteousness, and deepen our respect for the subtlety and mystery of the lives we lead on this planet, entangled as we are in the warp and woof of linear and cyclical, secular and sacred time. . . .

. . . All of us change the world around us, and yet different people choose to confront their problems and make their changes in strikingly different ways. The diversity of their experiences, past and present, can serve almost as a laboratory for exploring the multitude of choices we ourselves face. Stories about the past lives of such people teach us how difficult it is to act in ways that benefit humanity and nature both—and yet how crucial it is to try. By telling parables that trace the often obscure connections between human history and ecological change, environmental history suggests where we ought to go looking if we wish to reflect on the ethical implications of our own lives.

And that, on reflection, seems quite a useful thing to do.

Interpreting Environmental History

CAROLYN MERCHANT

In *The Hidden Wound*, published in 1989, environmentalist Wendell Berry writes that "the psychic wound of racism has resulted inevitably in wounds in the land, the country itself." When he began writing the book in 1968 during the civil rights movement, he tells us, "I was trying to establish the outlines of an understanding of myself, in regard to what was fated to be the continuing crisis of my life, the crisis of racial awareness." Berry's book is an effort to come to terms with the environmental history of race as reflected in his family's history as slaveholders, in his own childhood on a Kentucky farm in the segregated South, and in his adult life as a conservationist and environmentalist.

Adapted from Carolyn Merchant, "Shades of Darkness: Race and Environmental History," *Environmental History*, 8, no. 3 (July 2003): 380–394 and Merchant, "Gender and Environmental History," *Journal of American History*, 76, no. 4 (March 1990): 1117–1121.

Over the past several decades, environmental historians, like other historians, have become increasingly conscious of the place of race, gender, and class in the interpretation of history. Environmental history has widened its scope to include questions of the meanings and relationships between the environment and the roles played by people of color, by women and men, and by rich and poor. Environmental historians have questioned prejudices such as using environmental conditions and apparent human adaptations to justify slavery in the hot, humid South. They have looked at how women have used and changed the environment in arid, treeless locales, such as the Great Plains. And they have studied environmental conditions and human health in urban neighborhoods and industries in which poor people live and work in a capitalist society that exploits wage labor for the sake of wealth, power, and privilege.

In interpreting environmental history, therefore, one needs to ask probing questions such as: What is race and how is it historically and socially constructed at different times and places? What is gender and how do gender roles change over time in different environments and under different social circumstances? How do different types of societies in different environments, from Native American tribal groupings, to rural farming communities, to industrial capitalist economies foster various egalitarian, hierarchical, or class structures that define people and their access to a good life? What is the character of a just society in which environmental goods and services are distributed in humane ways and in which all people have access to a high quality of life? Historical documents and essays help to answer such questions and to reveal hidden assumptions underlying the writer's own race, gender, and class background. What follows are some examples of the ways in which race, class, and gender enter into the interpretation of environmental history.

In recent years, environmental historians have reflected on the place of racial awareness in the field and have begun the process of writing an environmental history of race. They have explored the negative connections between wilderness and race, cities and race, toxic wastes and race, and their reversal in environmental justice and have analyzed the ideology and practice of environmental racism. These include the following perspectives:

- Native Americans were removed from the lands they had managed for centuries, not only during settlement, as is well known, but during the creation of the national parks and national forests. Indians resisted these moves in an effort to maintain autonomy and access to resources.
- American Indians and African Americans perceived wilderness in ways that differed markedly from those of white Americans.
- Slavery and soil degradation are interlinked systems of exploitation and deep-seated connections exist between the enslavement of human bodies and the enslavement of the land. Blacks resisted that enslavement in complex ways that maintained African culture and created unique African American ways of living on the land.
- A "coincidental order of injustice"—in environmentalist Jeffrey Romm's terminology—reigned in post-Civil War America as emancipated blacks in the South were expected to pay for land with wages at the same time that free lands taken from Indians were being promoted to whites via the Homestead Act and other land acts.
- African Americans bore the brunt of early forms of environmental pollution and disease as whites fled urban areas to the new streetcar suburbs. Black neighborhoods became toxic dumps and black bodies became toxic sites. Out of such experiences

arose African American environmental activism in the Progressive Era and the environmental justice movement of the late twentieth century.

- Over time the meanings attached to skin colors have been redefined in ways that reinforce environmental and institutional racism.

Viewed from the perspective of race, the rich resources of the American environment were developed at the expense of Indians and blacks. From the ideological standpoint of European settlers, the wilderness and its native peoples needed to be tamed, improved, and civilized. Native American lands were appropriated by Europeans as free lands, while Africans were enslaved to provide the free labor that enabled many European Americans to claim political freedom. Warfare, disease, and dependency on trade goods all undercut Indian power to resist European expansion. As Indian populations declined, African American populations increased, first from the slave trade and then, after its official demise in 1808, through smuggling and natural increase as tobacco dominance gave way to the cotton boom. On economic grounds, the slave system both caused the destruction of black bodies and contributed to the rapid degradation of Southern soils, as tobacco, rice, sugar, and cotton became cash crops in an expanding world market.

Despite their racial degradation, however, Native and African Americans maintained their cultural identities, making significant contributions to agriculture and hence to environmental history. Indians contributed maize (corn), beans, squash, and pumpkins to America as well as Europe. African foods were stowed on slave ships and then grown in provision gardens. As a result, African, Native American, and European foods became mixed together, mutually influencing each other. Slave traders, as well as slaves, introduced crops, having obtained them in other parts of the world. Yams were brought by slaves from Africa. Eggplant came from Africa to South America, whence it was brought by Portuguese slave trading ships to the United States. Peanuts came from South America and were introduced into Virginia by African cooks who arrived aboard slave ships. But food is also a cultural construct and is therefore not only good to eat, but is important to people in maintaining historical and cultural identities. Rituals and traditions, such as songs and dances, were important in association with the foods grown by Indians and brought by black people from Africa. And from an environmental standpoint, both Native American and African American gardens exhibited ecological effects that enhanced food production. Crops grown together kept down insect pests and weeds, hence gardens packed with crops might result in relatively higher yields per acre than fields of monocultures grown alone. A racial perspective is therefore an important element in understanding environmental history.

A class perspective is likewise important for interpreting environmental history. People at all levels of society use natural resources and contribute to environmental pollution. Working class people often interact most directly with the land in extracting resources for the market. Fishers, loggers, trappers, farmworkers, ironworkers, coal miners, and industrial workers supply much of the labor for the food and fuel on which society depends. They are in turn the most vulnerable to environmental disasters such as droughts, fires, fishery collapses, mine accidents, fluctuations in the labor supply, and market prices. Middle- and upper-class citizens are often the most conspicuous consumers of environmental goods and energy sources. From automobiles and gasoline to television sets and computers, those with the most wealth and status often extract the most from nature and return the most waste.

On the other hand, many of those who are closest to the land practice conservation and have developed an intimate environmental awareness, while many middle- and upper-class individuals become environmental leaders and activists who help to spear conservation movements and to develop environmentally friendly technologies. Knowing who is writing environmental history is also important. Lower-class workers are usually too busy making a living to write their stories or leave literary legacies, while educated elites contribute much of the material that can be replicated in printable sources. In reading environmental history, therefore, it is important to ask who is writing, what they are advocating, and from what class or environmental perspective they are making their argument.

A gender perspective can also add to environmental history in important ways. Women and men have historically had different roles in production relative to the environment. In subsistence modes of production such as those of native peoples, women's impact on nature is immediate and direct. In gathering-hunting-fishing economies, women collect and process plants, small animals, bird eggs, and shellfish and fabricate tools, baskets, mats, slings, and clothing, while men hunt larger animals, fish, construct weirs and hut frames, and burn forests and brush. Because water and fuelwood availability affect cooking and food preservation, decisions over environmental degradation that dictate when to move camp and village sites may lie in the hands of women. In horticultural communities, women are often the primary producers of crops and fabricators of hoes, planters, and digging sticks, but when such economies are transformed by markets, the cash economies and environmental impacts that ensue are often controlled by men. Women's access to resources to fulfill basic needs may come into direct conflict with male roles in the market economy, as in Seneca women's loss of control over horticulture to male agriculture and men's access to cash through greater mobility in nineteenth-century America or in India's chipco (tree-hugging) movement of the past decade, wherein women literally hugged trees to protest declining access to fuelwood for cooking as male-dominated lumbering expanded.

In the agrarian economy of colonial and frontier America, women's outdoor production, like men's, had immediate impact on the environment. While men's work in cutting forests, planting and fertilizing fields, and hunting or fishing affected the larger homestead environment, women's dairying activities, free-ranging barnyard fowl, and vegetable, flower, and herbal gardens all affected the quality of the nearby soils and waters and the level of insect pests, altering the effects of the microenvironment on human health. In the nineteenth century, however, as agriculture became more specialized and oriented toward market production, men took over dairying, poultry-raising, and truck farming, resulting in a decline in women's outdoor production. Although the traditional contributions of women to the farm economy continued in many rural areas and some women assisted in farm as well as home management, the general trend toward capitalist agribusiness increasingly turned chickens, cows, and vegetables into efficient components of factories within fields managed for profits by male farmers.

In the industrial era, as middle-class women turned more of their energies to deliberate child rearing and domesticity, they defined a new but still distinctly female relation to the natural world. In their socially constructed roles as moral mothers, they often taught children about nature and science at home and in the elementary schools. By the Progressive era, women's focus on maintaining a home for husbands

and children led many women . . . to spearhead a nationwide conservation movement to save forest and waters and to create national and local parks. Although the gains of the movement have been attributed by historians to men such as President Theodore Roosevelt, forester Gifford Pinchot and preservationist John Muir, the efforts of thousands of women were directly responsible for many of the country's most significant conservation achievements. Women writers on nature such as Isabella Bird, Mary Austin, and Rachel Carson have been among the most influential commentators on the American response to nature.

At the level of cognition as well, a sensitivity to gender enriches environmental history. Native Americans, for example, construed the natural world as animated and created by spirits and gods. Origin stories included tales of mother earth and father sky, grandmother woodchucks and coyote tricksters, corn mothers and tree spirits. Such deities mediated between nature and humans, inspiring rituals and behaviors that helped to regulate environmental use and exploitation. An animate earth and an I/thou relationship between humans and the natural world does not prevent the exploitation of resources for human use, but it entails an ethic of restraint and propitiation by setting up rituals to be followed before mining ores, damming brooks, or planting and harvesting crops. The human relationship to the land is intimately connected to daily survival. Environmental history can thus be made more complete by including a gender analysis of the effects of women and men on ecology and their roles in production.

When mercantile capitalism, industrialization, and urbanization began to distance increasing numbers of male elites from the land in seventeenth-century England and in nineteenth-century America, the mechanistic framework created by the "fathers" of modern science legitimated the use of nature for human profit making. The conception that nature was dead, made up of inert atoms moved by external forces, that God was an engineer and mathematician, and that human perception was the result of particles of light bouncing off objects and conveyed to the brain as discrete sensations meant that nature responded to human interventions, not as active participant, but as passive instrument. Thus the way in which world views, myths, and perceptions are constructed by gender at the cognitive level can be made an integral part of environmental history.

Additionally, ideas drawn from feminist theory suggest the usefulness of another level of analysis—reproduction—that has both biological and social aspects. First, all species reproduce themselves generationally and their population levels have impacts on the local ecology. But for humans, the numbers that can be sustained are related to the mode of production: More people can occupy a given ecosystem under a horticultural than a gathering-hunting-fishing mode, and still more under an industrial mode. Humans reproduce themselves biologically in accordance with the social and ethical norms of the culture into which they are born. Native peoples adopted an array of benign and malign population control techniques such as long lactation, abstention, coitus interruptus, the use of native plants to induce abortion, infanticide, and senilicide. Carrying capacity, nutritional factors, and tribally accepted customs dictated the numbers of infants that survived to adulthood in order to reproduce the tribal whole. Colonial Americans, by contrast, encouraged high numbers of births owing to the scarcity of labor in the new lands. With the onset of industrialization in the nineteenth century, a demographic transition resulted in fewer births per

female. Intergenerational reproduction, therefore, mediated through production, has impact on the local ecology.

Second, people (as well as other living things) must reproduce their own energy on a daily basis through food and must conserve that energy through clothing (skins, furs, or other methods of bodily temperature control) and shelter. Gathering or planting food crops, fabricating clothing, and constructing houses are directed toward the reproduction of daily life.

In addition to these biological aspects of reproduction, human communities reproduce themselves socially in two additional ways. People pass on skills and behavioral norms to the next generation of producers, and that allows a culture to reproduce itself over time. They also structure systems of governance and laws that maintain the social order of the tribe, town, or nation. Many such laws and policies deal with the allocation and regulation of natural resources, land, and property rights. They are passed by legislative bodies and administered through government agencies and a system of justice. Law in this interpretation is a means of maintaining and modifying a particular social order. These four aspects of reproduction (two biological and two social) interact with ecology as mediated by a particular mode of production.

While in most societies governance may have been vested in the hands of men (hence patriarchy), the balance of power between the sexes differed. In gatherer-hunter and horticultural communities, extraction and production of food may have been either equally shared by or dominated by women, so that male (or female) power in tribal reproduction (chiefs and shamans) was balanced by female power in production. In subsistence-oriented communities in colonial and frontier America, men and women shared power in production, although men played dominant roles in legal-political reproduction of the social whole. Under industrial capitalism in the nineteenth century, women's loss of power in outdoor farm production was compensated by a gain of power in the reproduction of daily life (domesticity) and in the socialization of children and husbands (the moral mother) in the sphere of reproduction. A gender perspective on environmental history therefore both offers a more balanced and complete picture of past human interactions with nature and advances its theoretical frameworks.

Race, gender, and class are lenses through which to view history and interpret human interactions with the environment. How these three categories are constructed socially and culturally, how and why they change over time, and why they are important add to the complexity of history. They help us to envision the possibility of a socially just world that could be a better place in which to live.

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